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Appendix 1.
United Nations Economic Commission for Europe (UNECE) seat-belt questionnaire

A. Introduction

Motor vehicle crashes represent a major cause of fatality and injury, both in highly motorized, as well as developing countries. This is an issue that is a major public health problem, predicted to become even more of a global challenge over the next several decades. The use of safety belts and child restraint systems are the most effective means of reducing fatalities and serious injuries to vehicle occupants. Increasing the use of safety belts is also seen as the most effective defensive step individuals can take to reduce serious injury from the reckless behaviour of, for example, impaired drunk and drugged motorists and drivers displaying aggressive behaviour on the roadways.

This questionnaire was developed by the Special Work Group on Increasing Safety Belt Use set up during the 43rd session (22–25 September 2003) of the UNECE Working Party on Road Traffic Safety. Please refer to working document TRANS/WP.1/2003/15, Use of Seat Belts, for further information on the purpose and work mandate of this group.
B. **Explanation**

- The most appropriate person to fill out this survey would be a senior government official who has ongoing responsibility for managing and directing your country’s policies, programmes and practices related to seat belt and child restraint use.
- Child restraints refers to a separate seat or device, used in concert with the vehicle, that secures the child, generally using the vehicle’s seat belt devices, e.g. infant seats, booster seats, etc.
- Please attach, on a separate continuation sheet, to this questionnaire any further explanations to any of the questions that you feel are necessary.

C. **Overview**

1. What strategies does your Government use to raise seatbelt and child restraint use?

   **Tick relevant boxes**

<table>
<thead>
<tr>
<th></th>
<th>Seatbelts</th>
<th>Child restraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enforcement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public information campaigns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other: please specify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. **Data/statistics**

2. Does your Government routinely collect detailed information about road traffic crashes that result in death or injury?

   - ☐ Yes
   - ☐ No

3. Does that data include information about whether seatbelts/child restraints were in use at the time of the crash?

   - Seatbelts: ☐ Yes ☐ No
   - Child restraints: ☐ Yes ☐ No

4. Do you routinely collect data on seatbelt/child restraint wearing?

   - Seatbelts: ☐ Yes ☐ No
   - Child restraints: ☐ Yes ☐ No

   If yes, what was the most recent usage percentage?
5. How do you collect information about seatbelt and child restraint wearing?

Check all that apply:

- Observation
- Crash data
- Self-reported by occupants
- Opinion/telephone surveys
- Other, please state:

6. In your country, are vehicles legally required to have seatbelts fitted/installed?

<table>
<thead>
<tr>
<th>Type of Vehicle</th>
<th>Front</th>
<th>Rear</th>
<th>Centre rear</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y/N</td>
<td>Year</td>
<td>Y/N</td>
</tr>
<tr>
<td><strong>Cars</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger cars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-commercial vans, Multi-purpose vehicles (MPVs)(^1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports utility vehicles (SUVs)(^2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Commercial vehicles</strong> (trucks, goods carriers, commercial vans)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Buses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public buses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist buses/motor coaches</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minibuses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School buses</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) MPVs or non-commercial vans (for the US and Canada) are also called people carriers. They provide space for more vehicle occupants than in a normal passenger car (e.g. 7 seats) and provide more luggage capacity.

\(^2\) SUVs: e.g. 4 x 4, pick-up trucks.
7. Do you have an international or domestic technical standard for seatbelt installation/performance?

☐ Yes
☐ No

If yes, please state: .................................................................................................................................
............................................................................................................................................................

8a. Is your seatbelt legislation:

☐ Federal/National
☐ State/Provincial

Extra comments: ........................................................................................................................................
............................................................................................................................................................

8b. Do you have legislation making seatbelt use mandatory?

<table>
<thead>
<tr>
<th></th>
<th>Front 1</th>
<th></th>
<th>Rear 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y/N</td>
<td>Year Y/N</td>
<td>Y/N</td>
</tr>
<tr>
<td>Cars</td>
<td>In any circumstance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial vehicles</td>
<td>In any circumstance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buses</td>
<td>In any circumstance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public buses</td>
<td>In any circumstance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist buses / minibuses</td>
<td>In any circumstance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School buses</td>
<td>In any circumstance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In town only</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside town only</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 For commercial vehicles and buses, driver and co-driver, if applicable.
2 For buses, it concerns passengers.

9a. Are there exemptions for mandatory use?

☐ Yes
☐ No
If yes, please state:

☐ Medical reasons
☐ Size (too small or too big)
☐ Taxi driver in service
☐ Police
☐ Fire vehicles
☐ Ambulances
☐ Mail services in town
☐ Vehicles carrying out deliveries
☐ Other, please state:

…………………………………………………………………………
……………………………………………………………………

9b. When there are medical reasons, does an official medical certificate have to be present for checking?

☐ Yes (What is the maximum duration: ………………………………)
☐ No

9c. Does this certificate have a symbol recognised at an international level?

☐ Yes
☐ No

10a. Do you have legislation making child restraint use mandatory?

<table>
<thead>
<tr>
<th>National/federal law</th>
<th>State/provincial law</th>
<th>Front</th>
<th>Rear</th>
<th>Date law enacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10b. Please provide a breakdown of legal requirements by age bands and specific child restraint type*:

<table>
<thead>
<tr>
<th>Age band (e.g. 0–2)</th>
<th>Type of restraint</th>
<th>Seating position (if specified)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Front</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Child restraint: forward-facing (FFCRS) or rear-facing (RWCRS) child restraint or booster seat.
Would you like to add any other observations? (e.g. is a particular child restraint not allowed in a particular seating position?)

……………………………………………………………………………………………………………………………………

11. Are drivers in buses/taxis obliged to carry child restraints?
   □ Yes
   □ No
   If yes, please state: ………………………………………………………………………………………………
   ……………………………………………………………………………………………………………………………

F. Enforcement
12. What are the sanctions for violations of seatbelt/child restraint laws?

<table>
<thead>
<tr>
<th></th>
<th>Seatbelts</th>
<th>Child restraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monetary fines – amount:</td>
<td>Driver</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Passenger</td>
<td></td>
</tr>
<tr>
<td>Penalty points against driver’s license, if applicable. Specify number/total points:</td>
<td>_ _ / _ _</td>
<td>_ _ / _ _</td>
</tr>
<tr>
<td>Other: please state:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Are the police involved in any seatbelt/child restraint activities other than enforcing seatbelt/child restraint laws?
   □ Yes
   □ No
   If yes, briefly describe:
   ……………………………………………………………………………………………………………………………
   ……………………………………………………………………………………………………………………………

G. Education
14. Do you have a road safety education programme in schools?
   □ Yes
   □ No
15. At what age does the education programme start?
   ……………………………………………………………………………………………………………………………
16a. Does the education programme include information about seatbelts?
    □ Yes
    □ No
If yes, what type of information is included?
........................................................................................................................................
........................................................................................................................................

16b. Does the education programme include information about child restraints?
☐ Yes
☐ No
If yes, what type of information is included?
........................................................................................................................................
........................................................................................................................................

17. Does the wider national education programme for the rest of the population include information for parents/carers, e.g. grandparents, about correct child restraint use?
☐ Yes
☐ No

18. In the last 12 months, has your Government advertised seatbelt messages using the following media? Please tick all that apply:

**Seatbelts:**
- ☐ TV campaigns
- ☐ Radio campaigns
- ☐ Cinema advertising
- ☐ Outdoor/posters/billboards
- ☐ Leaflets
- ☐ Print e.g. newspapers, magazines
- ☐ Internet, new media
- ☐ Public relations
- ☐ Other, please describe:

**Child restraints:**
- ☐ TV campaigns
- ☐ Radio campaigns
- ☐ Cinema advertising
- ☐ Outdoor/posters/billboards
- ☐ Leaflets
- ☐ Print e.g. newspapers, magazines
- ☐ Internet, new media
- ☐ Public relations
- ☐ Other, please describe:

19. Do you use shock tactics in advertising?
☐ Yes
☐ No
If yes, how does the impact compare with more subtle tactics?
........................................................................................................................................
........................................................................................................................................

H. Evaluation and research
20. Do you routinely measure the effectiveness of your seatbelt programme?
   □ Yes
   □ No
   **If yes,** how do you determine the impact of:
   a) individual interventions (e.g. a new law enacted, a new TV advertisement)

   b) the entire seatbelt strategy (e.g. seatbelt wearing rates, reduction of casualty rates, awareness of seatbelt messages, publicity, etc.)

21. Have you carried out research into the characteristics of people who don’t use safety restraints?
   □ Yes
   □ No
   **If yes,** how did you use the information?

22. Do you enlist the support of third parties to help focus on and improve seatbelt use among some low use groups, e.g. young men 16–24?
   □ Yes
   □ No
   **If yes,** please give examples:

23. Does your seatbelt programme offer your stakeholders incentives to help (e.g. grants, additional police equipment, etc.) to increase seatbelt/child restraint use:

   **Seatbelts**
   □ Enforcement bodies
   □ Other governmental bodies
   □ Vehicle users
   □ Other, please state:

   **Child restraints**
   □ Enforcement bodies
   □ Other governmental bodies
   □ Vehicle users
   □ Other, please state:
If yes, please give examples for seatbelts:

......................................................................................................................
......................................................................................................................

If yes, please give examples for child restraints:

......................................................................................................................
......................................................................................................................

Name of person responding to this survey:..................................................
Title: ..............................................................................................................
Service and/or administration:.................................................................
......................................................................................................................

May we contact you if we have questions about any of your answers?

☐ Yes ☐ No

E-mail:.................................................................
Telephone number:......................... Fax number:..........................................

Appendix 2.
Sample seat-belt wearing observation form

<table>
<thead>
<tr>
<th>TREL CAR OCCUPANT RESTRAINT USAGE SURVEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ref.No. ______________________________</td>
</tr>
<tr>
<td>FRONT SEAT PASSENGER</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>14y+</td>
</tr>
<tr>
<td>Un-restrained</td>
</tr>
<tr>
<td>Occupant on lap</td>
</tr>
</tbody>
</table>

| Male | Female |
| 14y+ | Large child (10-13) | Medium child (5-9) | Small child (1-4) | Baby (0-1) |
| Un-restrained | Seat belt | Child seat | Rear facing seat | Carrycot-strapped | Carrycot-Unstrapped |
| Occupant on lap | |

Note any odd details of rear seat passengers or any occupants behind rear seats:

| Comment | |

<table>
<thead>
<tr>
<th>VEHICLE DETAILS</th>
<th>G/F</th>
<th>TAXI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration letter</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>(1st letter)</td>
<td>D</td>
<td></td>
</tr>
</tbody>
</table>

Older |
Other (Personal, Forces etc.) |

Model Law

Standard (Primary) Safety Belt Model Law

National Committee on Uniform Traffic Laws and Ordinances

June 16, 1997

**Purpose:** The purpose of this legislation is to reduce injuries and fatalities on the streets, roads and highways by requiring all drivers and all passengers to wear safety belts meeting applicable federal motor vehicle safety standards while riding in motor vehicles and by authorizing primary enforcement.

**Section 1: Title**

This act may be cited as the [State’s] Safety Belt Use Act.

**Section 2: Definitions**

As used in this act:

(a) “Motor vehicle” means any motor vehicle having a gross vehicle weight of 10,000 pounds or less that is required to be equipped with safety belts by Federal Motor Vehicle Safety Primary No. 208. Passenger cars are required to have belts if built after December 31, 1967. Light trucks and multi-purpose vehicles are required to have safety belts if built after December 31, 1971.

(b) “Driver” means a person who drives or is in actual physical control of a motor vehicle.

(c) “Safety belt” means any strap, webbing, or similar device designed to secure a person in a motor vehicle including all necessary buckles and other fasteners, and all hardware designed for installing such safety belt assembly in a motor vehicle.

**Section 3: Application**

This act shall apply to drivers and all occupants of motor vehicles on the streets, roads, and highways of this State.
Section 4: Operation of motor vehicles with safety belts

(a) Each driver of a motor vehicle in this State shall have a safety belt meeting applicable federal motor vehicle safety standards properly fastened about his or her body at all times when operating a motor vehicle.

[(b) Alternate 1 – The driver of a motor vehicle in this State shall not operate a motor vehicle unless the driver secures or causes to be secured in a properly adjusted and fastened safety belt or child restraint system meeting applicable federal motor vehicle safety standards all passengers and secures any passenger 12 or younger in the rear seat, unless all available rear seats are in use by other passengers 12 or younger.]

[(b) Alternate 2 – The driver of a motor vehicle in this State shall not operate a motor vehicle unless every occupant is secured in a properly adjusted and fastened safety belt or child restraint system meeting applicable federal motor vehicle safety standards and consistent with the [State's] child restraint use law.]

(c) Every occupant of a motor vehicle in this State shall have a safety belt meeting applicable federal motor vehicle safety standards properly fastened about his or her body at all times when the vehicle is in operation.

Section 5: Exemptions

(a) The provisions of sections (4) (c) shall not apply to children covered by [cite to the State's child restraint use act or law].

(b) The provisions of section (4) shall not apply to persons with a physically disabling condition whose physical disability would prevent appropriate restraint in safety belts, provided, however, such condition is duly certified by a physician who shall state the nature of the condition, as well as the reason such restraint is inappropriate.

(c) The provisions of this law shall not apply to passenger cars built prior to December 31, 1967 and possessing no safety belts.

(d) The provisions of this law shall not apply to passenger vehicles which are not required to be equipped with safety belts under federal law.

Section 6: Penalties

A person who violates section (4) (a), (b), or (c) of this act shall be punished by a fine of not less than $25.00 nor more than $50.00, [and court costs] and [for States with points systems] 2 demerit points.

Source: National Highways Traffic Safety Administration, USA
Appendix 4.
Inspecting seat-belts and their components
(from United Kingdom Vehicle Inspectorate inspection manual)

5.1 Seat Belts

<table>
<thead>
<tr>
<th>Information</th>
<th>Method of Inspection</th>
<th>Reason for Rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td>This inspection applies to: Only those seat belts which are required to be fitted. The vehicle presenter should be informed of a defect noticed on any additional seatbelt fitted.</td>
<td>1. Check that each seat which requires a seat belt is fitted with one of the appropriate type (see table on pages 4 &amp; 5). 2. Pull each seat belt webbing against its anchorage to see that it is properly secured to the vehicle structure. <strong>Note:</strong> For seats with integral seat belts, it might not be possible to examine the fixing of the seat belt to the seat.</td>
<td>1. A seat belt missing or of the wrong type.</td>
</tr>
<tr>
<td></td>
<td>3. Examine the condition of all seat belt webbing for cuts or obvious signs of deterioration. Pay particular attention to webbing around anchorages, buckle slots and loops.</td>
<td>2. a. a seat belt not securely fixed to the seat or to the structure of the vehicle. For example, a fitting belt not secure b. for seats with integral seat belts, any insecure attachment of the seat to the vehicle structure.</td>
</tr>
<tr>
<td></td>
<td>4. Examine the condition of the attachment fittings and adjusting fitting on each belt.</td>
<td>3. a. a cut which causes the fibres to separate b. fluffing or fraying sufficient to obstruct correct operation of the belt or which has clearly weakened the webbing c. stitching badly frayed, not secure, incomplete or repaired</td>
</tr>
<tr>
<td></td>
<td>5. Examine front and back buckle stalks for: a. signs of corrosion or weakness. Pull the sheaths aside, if this can be done without damage b. ‘waggle’ flexible buckle stalks and listen for a clicking noise indicating broken strands of cable.</td>
<td>4. An attachment fitting or adjustment fitting of a seat belt fractured or badly deteriorated.</td>
</tr>
</tbody>
</table>

**Method of Inspection**

6. Fasten each belt locking mechanism and try to pull the locked sections apart. On retracting seat belts, check that with the mechanism fastened and the seat unoccupied, excess webbing is wound into the retracting unit. **Note:** Some types of retracting belt might need manual help before they retract. Operate the release mechanism while pulling on the belt to check that the mechanism releases when required.

7. As far as is practicable without dismantling, check the condition of the vehicle structure around the seat belt anchorage points (ie. within the 'prescribed area' see Appendix C). The floor-mounted anchorage points might need to be inspected from underneath the vehicle.

**Reason for Rejection**

6. a. the locking mechanism of a seat belt does not secure or release the belt as intended b. a retracting mechanism does not retract the webbing sufficiently to remove all the slack from the belt with the locking mechanism fastened and the seat unoccupied **Note 1:** In doubtful cases, this should be checked with the seat base set in its nearmost position. **Note 2:** The vehicle presenter should be advised of and given the opportunity to remove any temporarily fitted device likely to cause failure under this reason for rejection before notification of refusal is issued.

7. Deliberate modification which significantly reduces the original strength, excessive corrosion, severe distortion, a fracture or an inadequate repair of a load bearing member or its supporting structure or paneling within 30cm of a seat belt anchorage. **Note:** For integral seat belt anchorages, this reason for rejection applies to any part of the seat frame between the anchorage point and the nearest non-rost seat mounting to the vehicle structure. The 30cm rule applies to the vehicle structure near that seat mounting.
## Seat belt requirements for vehicles first used before 1 April 1987

### Vehicle Description

1. **Passenger and dual purpose vehicles**
   - with 4 or more wheels
   - with up to 12 passenger seats
   - first used on or after 1 January 1965

2. **3-wheeled vehicles**
   - with an unladen weight over 410kg first used on or after 1 January 1965, or
   - with an unladen weight over 255kg if first used on or after 1 September 1970
   
   Except vehicles
   - less than 410kg unladen, equipped with a driving seat of a type requiring the driver to sit astride it, and
   - constructed or assembled by a person not ordinarily engaged in the trade or business of manufacturing vehicles of this type.

3. **Goods vehicles, motor caravans and ambulances**
   - with an unladen weight not exceeding 1525Kg
   - first used on or after 1 April 1967

4. **Goods vehicles, motor caravans and ambulances**
   - with a design gross weight not exceeding 3500Kg
   - first used on or after 1 April 1980

   except those first used before 1 April 1982, if they are of a model manufactured before 1 October 1979 with an unladen weight exceeding 1525Kg.

### Seat Position

<table>
<thead>
<tr>
<th>Driver’s and “Specified Front Passenger’s” Seat</th>
<th>Centre Front Seat</th>
<th>Forward Facing Rear Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Vehicles first used before 1 April 1981:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A belt which restrains the upper part of the body (but need not include a lap belt) for each seat.</td>
<td>No requirement</td>
<td>No requirement</td>
</tr>
<tr>
<td><strong>B. Vehicles first used after 31 March 1981:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A 3 point (lap/diagonal) belt (see Note 2 below)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note 1:** The “specified front passenger seat” requiring a seat belt is the seat which is
- Foremost in the vehicle, and
- Furthest from the driver’s seat unless there is a fixed partition separating the passenger seat from a space in front of it which is alongside the driver’s seat, eg certain types of taxis, buses etc.

**Note 2:** 3 point belt means a seat belt which
1. Restrains the upper and lower parts of the torso
2. Includes a lap belt
3. Is anchored at not less than three points, and
4. Is designed for use by an adult.

**Note 3:** An adult harness belt comprising a lap belt and shoulder straps bearing a British Standard marking is an acceptable alternative to any of the seat belt types listed.

---

## Seat belt requirements for vehicles first used before 1 April 1987

### Vehicle Description

1. **Passenger and dual purpose vehicles**
   - with 4 or more wheels
   - with up to 12 passenger seats
   - first used on or after 1 January 1965

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   - with an unladen weight over 255kg if first used on or after 1 September 1970
   
   Except vehicles
   - less than 410kg unladen, equipped with a driving seat of a type requiring the driver to sit astride it, and
   - constructed or assembled by a person not ordinarily engaged in the trade or business of manufacturing vehicles of this type.

3. **Goods vehicles, motor caravans and ambulances**
   - with an unladen weight not exceeding 1525Kg
   - first used on or after 1 April 1967

4. **Goods vehicles, motor caravans and ambulances**
   - with a design gross weight not exceeding 3500Kg
   - first used on or after 1 April 1980

   except those first used before 1 April 1982, if they are of a model manufactured before 1 October 1979 with an unladen weight exceeding 1525Kg.

### Seat Position

<table>
<thead>
<tr>
<th>Driver’s and “Specified Front Passenger’s” Seat (See Note 1 below)</th>
<th>Centre Front Seat</th>
<th>Forward Facing Rear Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Vehicles first used before 1 April 1981:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A belt which restrains the upper part of the body (but need not include a lap belt) for each seat.</td>
<td>No requirement</td>
<td>No requirement</td>
</tr>
<tr>
<td><strong>B. Vehicles first used after 31 March 1981:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A 3 point (lap/diagonal) belt (see Note 2 below)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note 1:** The “specified front passenger seat” requiring a seat belt is the seat which is
- Foremost in the vehicle, and
- Furthest from the driver’s seat unless there is a fixed partition separating the passenger seat from a space in front of it which is alongside the driver’s seat, eg certain types of taxis, buses etc.

**Note 2:** 3 point belt means a seat belt which
1. Restrains the upper and lower parts of the torso
2. Includes a lap belt
3. Is anchored at not less than three points, and
4. Is designed for use by an adult.

**Note 3:** An adult harness belt comprising a lap belt and shoulder straps bearing a British Standard marking is an acceptable alternative to any of the seat belt types listed.
# Seat belt requirements for vehicles first used after 31 March 1987

## Seat Position

<table>
<thead>
<tr>
<th>Vehicle Description</th>
<th>Driver's and &quot;Specified Front Passenger's&quot; Seat (See Note 1, page 4)</th>
<th>Centre Front Seat</th>
<th>Forward Facing Rear Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Passenger vehicles and dual purpose vehicles with not more than 8 passenger seats, except 3 wheeled vehicles</td>
<td>3 point belts for each seat. (See Notes 2 &amp; 3, page 4)</td>
<td>3 point belt, lap belt, or a disabled person's belt.</td>
<td>A. Vehicles with not more than 2 rear seats: Either i. A 3 point inertia reel belt for at least one seat, or ii. A 3 point belt, lap belt, disabled person's belt or child restraint for each seat. B. Vehicles with more than 2 rear seats: Either i. A 3 point inertia reel belt on an outboard seat and a 3 point static or inertia reel belt, lap belt, disabled persons belt or child restraint for at least one other seat, or ii. A static 3 point belt for one seat and a disabled person's belt or child restraint for at least one other seat, or iii. A 3 point belt, lap belt, disabled person's belt or child restraint for each seat. See additional information on pages 6 &amp; 7.</td>
</tr>
<tr>
<td>2. Goods Vehicles</td>
<td>As above</td>
<td>As above</td>
<td>No requirement (see Notes 5 &amp; 6, page 7)</td>
</tr>
<tr>
<td>3. Vehicles first used before 1 October 1988 which are: * minibuses with up to 12 passenger seats * motor caravans and ambulances with a design gross weight not exceeding 3500kg</td>
<td>As above</td>
<td>No requirement</td>
<td>No requirement</td>
</tr>
<tr>
<td>4. Minibuses, motor caravans and ambulances with a design gross weight not exceeding 3500kg * first used after 30 September 1988</td>
<td>As above</td>
<td>3 point belt or a lap belt</td>
<td>No requirement</td>
</tr>
</tbody>
</table>
Seat Belts
(Additional information: Forward facing rear seats)

Vehicles first used after 31 March 1987. Forward facing rear seats must have at least the type and number of seat belts shown below.

ONE or TWO REAR SEATS

EACH of these seats with either a
- Lap belt
- Child restraint belt
- Disabled person’s belt
- 3 point belt (static or inertia reel)

THREE REAR SEATS

EACH of these seats with either a
- Lap belt
- Child restraint belt
- Disabled person’s belt
- 3 point belt (static or inertia reel)

Note: Any combination of these is permitted

Seat Belts
(Additional information: Forward facing rear seats)

MORE THAN THREE REAR SEATS

Note 1: Outboard seats are seats closest to the vehicle sides.
Note 2: Rear seat belts are not required for vehicles with more than 8 passenger seats in any configuration.
Note 3: Rear facing or side facing seats are not required to be fitted with seat belts.
Note 4: Occasional seats that fold when not in use, fitted in the rear of extended limousines, are not required to be fitted with seat belts.

Note 5: Seats fitted to the rear of the driver’s compartment in a goods vehicle do not require to be fitted with seat belts (unless the seat is the specified passenger seat, see Note 1, page 4).
Note 6: A goods vehicle (e.g., a car derived van) which has been converted to a passenger vehicle specification (i.e., fitted with rear seats and side windows etc.) is required to comply with the passenger vehicle requirements.
Appendix C

Structural Integrity and Corrosion

1. Introduction
The effect of corrosion on the safety of a vehicle depends on:
• Its extent
• The function of the section on which it has occurred
A small amount of corrosion on an important part of a vehicle structure can make a vehicle unsafe where it destroys the continuity of the load bearing structure.
On the other hand, heavy corrosion of unimportant sections may have no effect on the vehicle’s safety.
Corrosion of a particular part, such as a body sill, may be very important on one type of construction, but of less importance on another. This is shown in figures A to D where the shaded portions indicate the important load bearing parts of different typical vehicle constructions.

2. Prescribed Areas
To assist with the assessment of corrosion, Sections 2, 3 and 5 of the Manual identify the parts of the vehicle structure which are particularly important and to which particular attention must be paid during an inspection.
These are:
• The load bearing parts of the vehicle to which certain testable items (as specified in Section 2, 3 and 5) are mounted

3. Assessment
Having identified the important load bearing members and ‘prescribed areas’ on a vehicle, the tester should determine whether they are excessively corroded, firstly by visual inspection and then by finger/thumb pressure.
If necessary careful scraping or light tapping of the affected areas with the Corrosion Assessment Tool is permitted. Excessively corroded metal, or metal treated with filler, emits a duller sound than does unaffected metal. It is not necessary to apply heavy impact blows or to use a sharp instrument to ‘dig’ at the structure.

4. Failure Criteria
Any structure or panelling which is supportive to either the component mounting or its load bearing member within 50cm of the mounting location, e.g. in the examination of a seat belt mounting on an inner sill, consideration must be given to the outer sill, door pillar, floor panel, wheel arch or any other supportive structure within 50cm of the component mounting point.
Section 6 of the Manual deals with structural cracks, fractures, damage or corrosion not within the ‘prescribed areas’.

5. High-stressed components
The severity of general or local corrosion in highly stressed steering and suspension components (e.g. arms, rods, levers etc) can be assessed by lightly tapping or scraping with the Corrosion Assessment Tool.
A small screwdriver may be used to push and probe, but only in places inaccessible to the Corrosion Assessment Tool.
A highly stressed component should be rejected if it has been:
• Seriously reduced in overall thickness by corrosion, or
• Local corrosion has resulted in even a small hole or split

6. Corrosion Assessment Tool
The Corrosion Assessment Tool must be used carefully to avoid unnecessary damage. The tool comprises:
• A durable engineering plastic head for light tapping, and
• An aluminum alloy shaft with a curved ‘spade end’ for light scraping. The alloy shaft can also be used as a small lever.

WARNING
The curved spade end must only be used for light scraping and not to prod and poke the vehicle structure.

7. Safety Precautions
Eye protection is recommended when assessing corrosion in vehicle structures and components. Any sharp edges on the Corrosion Assessment Tool should be removed.

8. General Guidance
Corrosion which has not reduced the metal thickness sufficiently to weaken it will clearly not warrant rejection. However, the tester should inform the vehicle presenter that corrosion has started.
On the other hand, where there is severe corrosion, it may be necessary to refuse to carry out a brake test if this could cause danger or further damage.

9. Thin gauge steel pressings
In some vehicles, comparatively thin gauge steel pressings are used for certain steering and suspension components, mountings, sub-frames and cross members.
Many of these parts have hollow sections or up-facing areas in which road dirt is inevitable due to the ingress of moist air, dirt, road salt etc. Therefore, special attention should be paid to these areas of the important structural and testable components.

10. Platform or underframe
Some vehicle types (such as VW ‘beetle’ etc) have bodies and various mechanical parts attached to a platform or underframe which is the main load bearing structure. Defective body panels considered to be part of a load bearing structure should only be rejected if they:

a. play an active part in directly supporting the steering, suspension, braking components or seat belt anchorage, or
b. are likely to adversely affect the correct functioning of the braking system or steering gear (e.g. by fouling a wheel)

11. Corrosion around drainage holes
Corrosion can be more prevalent in areas around drainage holes due to the ingress of moist air, dirt, road salt etc. Therefore, special attention should be paid to these areas of the important structural and testable components.

12. Method of Repair
It is essential that repairs to corroded areas are properly carried out. Only welding is acceptable for repairs to ‘prescribed areas’.
Suitable materials of appropriate gauge or thickness should be used for repairs so that:

• Any plating or welding extends to a sound part of a load bearing component, and
• The repair must be as strong or stronger than the original structure.
So only a continuous seam weld is acceptable for patch repairs, although spot welded joints are acceptable where they originated.
Welded repairs to highly stressed components such as steering/suspension arms, rods, levers etc are not normally acceptable.
13. Brazing, soldering, glass fibre and body filler

These are bonding processes and are not regarded as strong enough for repairs to load-bearing members although they are normally adequate for other repair work. Brazing, bonding and riveting are only acceptable where used by the vehicle manufacturer and the standard of any such repair must be comparable to the original.

14. Identifying types of repair

It is sometimes difficult to distinguish between welding and brazing after the repair has been covered in paint or underneath. However, brazing may be detected by the smooth inter of fibre or a gold coloration at the edge of a joint.

Glass fibre, body filler, aluminium etc. may often be detected by a difference:

- In appearance, or
- In sound when tapped, or
- By the use of a magnet

15. Plastic and Fibreglass

Plastics are becoming more common in vehicle structures. Glass reinforced plastic (GRP - also known as Fibreglass) is the most common, and variations include bodies with metal chassis or subframes and plastic monocoque (chassis-less) construction.

16. Testable items mounted to plastic structures

Testable items, such as steering racks, subframes and seat belts, are sometimes mounted directly to plastic structures which do not have metal reinforcement. Although usually designed to support these components, some are not, particularly self build kits.

Non-metallic structures must be assessed on their merits. Look for evidence of weakness: Cracks, separation or delamination within a 'prescribed area' or a component flaking on its mounting to the extent that it is clear that it is likely to work loose or break away are reasons for rejection.

17. Repairs to plastics

- Within a 'prescribed area', or
- Which affect the load bearing structure should be as strong as the original part.

18. Structural integrity and the removal or substitution of metal panels

On a vehicle of integral construction the strength and stiffness of the whole structure may be seriously affected by any panel being removed or replaced by a panel of different material.

In considering whether the original strength and stiffness has been significantly reduced following a modification, the inspector must consider whether he/she is qualified to make this assessment.

If the inspector decides that the modification renders the vehicle unsafe, he/she must issue a 'Notification of Refusal' within two weeks from inspection, and the vehicle may not be used on the road until the matter has been resolved.

It is unacceptable for plastics to replace or reinforce corroded or weak metal in 'prescribed areas' or load bearing members or components.

---

**Appendix C**

**Structural Integrity and Corrosion**

**Figure A**

<table>
<thead>
<tr>
<th>SIDE SILL</th>
<th>OUTRIGGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEGRAL LONGITUDE SUB-FRAME FRONT TO REAR</td>
<td></td>
</tr>
<tr>
<td>GEARBOX CROSSMEMBER</td>
<td></td>
</tr>
<tr>
<td>STEERING BOX</td>
<td></td>
</tr>
<tr>
<td>REAR SUSPENSION MOUNTING AREA</td>
<td></td>
</tr>
<tr>
<td>FRONT SUSPENSION MOUNTING AREA</td>
<td></td>
</tr>
</tbody>
</table>

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Structural Integrity and Corrosion

Appendix C

Figure B

C Appendix Structural Integrity and Corrosion

Figure C

Reproduced by kind permission of the Motor Industry Repair Research Centre (M.I.R.R.C.)

Note: Underside view of a typical vehicle monocoque construction without doors or front wing fitted.
Figure D

Reproduced by kind permission of the
Saxon Industry Repair Research Centre
(P.I.R.R.C.)

Note: Underside view of a typical vehicle
monocoque construction without doors or
front wings fitted.

Source: Vehicle Inspectorate. The MOT inspection
manual: car and light commercial vehicle testing,
Appendix 5.
Roadblock or checkpoint management

Intercepting moving vehicles in the flow of traffic for random or specific enforcement requires the utmost attention to planning and risk assessment.

The primary consideration when setting up a checkpoint or roadblock is the safety of police officers, suspected drivers and other road users. No site should be in operation without a designated safety officer who has the responsibility of ensuring overall safety (this person may have other roles as well). Even where only two or three officers are operating, one officer should be the safety officer. Managing checkpoints includes:

1. **Choosing a safe location**
   Selecting a safe location includes considering:
   - locating the site where approaching drivers have sufficient time and visibility to adjust their driving in order to safely negotiate the checkpoint. If in doubt, choose another location;
   - safety factors for officers when setting up and dismantling the site. Persistent bad weather can render a site impractical or unsafe;
   - moving the site to multiple locations during the course of the work period to maximize the visible police presence;
   - sun glare for drivers approaching the site (the sun will change its position during the course of the day);
   - visibility for motorists, which is of particular concern at dusk and dawn, so extra precautions should be taken if the operation is taking place over one of those periods;
   - locating night-time operations where there is effective illumination and providing additional lighting for high visibility;
   - control of vehicles moving into the site as well as those vehicles passing it;
   - the avoidance of unnecessary traffic congestion. Judgement as to what constitutes unreasonable congestion is subjective but, as a general rule, if the end of the traffic cannot be seen in the distance, it is time to suspend testing operations and allow it to flow until the end can be seen;
   - the use of natural barriers where traffic calming is achieved, e.g. tollgates.

2. **Slowing traffic safely**
   On a two- or three-lane carriageway, it is best to slow the traffic down using a funnel formation of delineation cones, a police checkpoint sign and a merge sign so that the selection and interception of vehicles can be done from a line of slow-moving traffic rather than a high-speed one. A police car with flashing lights acts as a visible
warning to approaching motorists and more importantly provides a safety corridor for officers to interview offending drivers. If the funnel method (see figure) is chosen, be aware of the traffic volume both at the time of establishment and what could be expected later. Narrowing to one lane will automatically create congestion so those not selected must be moved through quickly.

This method may create advance notice that enforcement is being undertaken. Suspected drivers may take a number of evasive actions e.g. change positions with a passenger, abandon their vehicle, attempt to drive through the checkpoint, turn left or right before the interception point, or carry out a U-turn. For these reasons it is important to have an intercept vehicle strategically placed prior to the interception point to pick up drivers attempting to evade the checkpoint or roadblock.

A team approach to the management of checkpoints is particularly beneficial where only two or three police officers are operating, for example, at a set of traffic lights where there is a safe interception point just through the intersection. One officer may stand at the traffic lights and identify drivers who stop at the red light. They can be directed by that officer to his colleague(s) undertaking the check. This system also operates successfully at tollgates. It provides a mix of visible enforcement and warnings to motorists.
3. Using equipment to ensure safety

Safety is paramount. The right equipment must be used properly to ensure the safety of traffic police officers and road users at all times.

- All members on site should wear reflective vests or jackets both day and night.
- All members must be in police uniform.
- Use police vehicles as traffic protection.
- Use marked police vehicles with lights flashing to maximize visibility (be conscious of the battery life with lights flashing and engine off).
- If there are any official observers, they should not be permitted on site without reflective vests.
- Equipment should include illuminated torches fitted with a red cone to provide a contrasting colour.
- Delineation of the site should be with strobe lighting or red safety cones.
- Consider if any of the surrounding equipment could be used as a safety barrier.
- Consider natural barriers or natural interception points, e.g. tollgates, service stations, parking centres, entries and exits.
- Ensure there are sufficient police numbers for a safe, effective operation.
- Ensure the operations command centre is aware of the site location.
- Consider photographic or video evidence.

4. Contingency planning

Ensure there is a process for dealing with:

- no licence
- no registration
- stolen vehicles
- intoxicated drivers
- refusal to stop at interception point.

While the majority of drivers will be compliant and not present any problems, there are others who may be argumentative, or who try to avoid being stopped – e.g. nervous drink drivers or criminals.

5. Getting the message across

The most important aspect of this method of policing is to provide a deterrent to both those being checked and drivers who pass by unchecked. Drivers passing the site should be made aware of the purpose of the checkpoint by means of either a variable message sign or large fixed sign advising “Seat-belt enforcement”. It is highly important to have a message clearly visible.

If this is not done, other drivers may assume it is an ordinary police security check or other traffic checkpoint and no change to their attitude will occur.
6. **Processing offenders quickly**

If drivers are to be processed it should be undertaken with minimum delay to the driver. Observations should be clearly stated to the driver and corroboration from fellow officers sought if there is denial. Evidence should be recorded without argument or bargaining. Police must always be courteous and polite and maintain a high degree of skill and professionalism.

7. **Meeting statistical requirements**

The following information should be recorded:
- number of motor vehicles that passed the site (estimated by taking a number of sample counts during the operation and multiplying the numbers for the time at the location);
- number of offenders processed;
- number of police persons involved;
- number of hours worked at the location.
Appendix 6.
Sample lesson plan for teaching seat-belt safety in secondary school

In-car safety

Lesson plan

Topic of lesson: In-car safety (use of safety devices, such as seat-belts and airbags).

Length of lesson: 45 minutes (5 minutes of video).

Target audience: 12–15-year-olds.

Curriculum subject: Personal, social and health education, citizenship.

Equipment required: Television and video player.

Resources required: crash test video; seat-belt sample (a belt can be used if a seat-belt sample is unobtainable); relevant leaflets such as that highlighted in Module 4 of the manual; other leaflets outlining the current legal situation for seat-belt wearing; “7/10ths of a second” text sheet (included at end of lesson plan); national and local publicity material, such as posters, key rings etc.

Note: Some educational resources may contain project work or teaching ideas that can be incorporated into the lesson.

Aims and objectives of the lesson

• to raise pupils awareness of the dangers of irresponsible occupant behaviour;
• to highlight the consequences of non-use of in-car safety devices;
• to encourage the use of in-car safety devices;
• to highlight the benefits of using in-car safety devices.

Introduction: what is the role of a safety device in a vehicle?

Vehicle safety features fall into two categories; “primary” and “secondary” safety features. Primary safety features aim to prevent an accident taking place, e.g. good brakes, tyres. Secondary safety features aim to prevent or minimize injury to a vehicle occupant once the accident has occurred, e.g. side impact protection systems, airbags.
Seat-belts are a secondary safety device with a number of objectives. These include:

- preventing ejection from the vehicle in an impact;
- reducing the risk of contact with the interior of the vehicle or reducing the speed of such impacts;
- providing a distributed force to the wearer to give the necessary support in an accident, restraining the vehicle occupant before guiding them back into their seat.

The American College of Emergency Physicians (1) suggests that seat-belts are the most effective means of reducing deaths and serious injuries in traffic accidents. They also calculate that 75% of all vehicle occupants ejected from a vehicle in an accident die as a result. **Seat-belts provide the greatest protection against ejection in a crash.**

Airbags are an active, high-energy device commonly designed to act as a supplementary measure to the performance of a seat-belt. If an occupant is unrestrained, or the vehicle has an airbag installed but no seat-belt, it is possible that the occupant may come into contact with the airbag before it has fully inflated. This is also the case for people who need to sit closer to the steering wheel as a result of their size. **Airbags deploy at approximately 300 km/h. If the vehicle occupant comes into contact with the airbag before it is fully inflated, there is a real risk of the vehicle occupant sustaining serious injuries.**

**Note.** There are three collisions to every crash where occupants are unrestrained. The first collision involves the vehicle and another object (e.g. car, barrier or form of street furniture). The second collision occurs between the unbelted occupant and the vehicle interior. Finally, the third collision occurs when the internal organs of the body hit against the chest wall or the skeletal structure. Although there are many factors to consider, it is the second collision that is most responsible for injuries, and can be reduced significantly by the use of seat-belts.

In an accident travelling at 50 km/h, a vehicle occupant’s body weight increases significantly (approximately 30 times). In such circumstances the weight of the occupant would be similar to that of an elephant. A seat-belt is designed to withstand such a force.

**Body of lesson**

- Use leaflet containing current seat-belt wearing legislation to outline the audience’s legal responsibility. If no legislation exists continue to next point.
- Discuss the effects of non-seat-belt use in a collision to outline the audience’s moral responsibility.

Bring two volunteers to the front of the room and seat them one directly behind the other (about 1 metre apart). Enact the scenario of the driver travelling at 50 km/h wearing a seat-belt, and the back seat passenger in the same vehicle not wearing a seat-belt. Demonstrate that there are three movements for seat-belt wearers in an
accident: first, they move forward, and are then restrained by the seat-belt; second, they move back into their seat; third, they ride down into the seat.

For occupants not wearing a seat-belt, there is one movement; forward until they come into contact with the vehicle interior or other occupants or are thrown from the vehicle.

Reinforce that it is calculated that 75% of all vehicle occupants ejected from a vehicle in an accident die as a result. **Seat-belts provide the greatest protection against ejection in a crash.**

Demonstrate the movements of the two occupants:
- **Driver/front occupant:** moves forward, is restrained, is brought back into seat.
- **Rear occupant:** moves forward, hits the back of the driver’s seat, the two heads collide, rear occupant crushes the driver between their seat and their seat-belt.
- **Likelihood:** driver/front occupant is dead.

Discuss the moral responsibility of the rear occupant to wear their seat-belt.

Show video of sample crash tests that clearly demonstrate the use of seat-belts and airbags.

Talk audience through the test. Explain that research has shown that the simple act of buckling a seat-belt can improve an occupant’s chance of surviving a potentially fatal crash by **45% to 73%**.

Reinforce the point that although airbags can be an effective restraint, reducing the severity of injury to occupants involved in an accident, they are designed to act as a supplementary measure to the performance of a seat-belt and should not be used individually.

Demonstrate correct fitting of seat-belt with the use of a seat-belt sample (a trouser belt or piece of material of similar length and thickness can be used if a seat-belt sample is not available).
- It is recommended that cars are fitted with a three-point lap and diagonal belt.
- The diagonal section should fit from the buckle, up across the centre of the chest and over the shoulder on the opposite side.
- The lap section should sit across the lap (hip bones).
- For added safety, pull upwards on the diagonal strap to minimize all slack, particularly in the lap section.
- Do not allow the lap section to position itself over the waist. In the event of an accident the strength of the hip bones will not be brought into use, and the occupant could suffer internal injuries as their body surges forward, increasing its weight to that of an elephant.
- It takes 10 seconds to fit a seat-belt. But it’s 10 seconds that could save your life.
Conclusion

The forces generated in a 50 km/h accident can increase a vehicle occupant’s body weight to that of an elephant. This can be fatal for those who choose not to wear a seat-belt. It can also prove fatal for those front seat occupants who have occupants directly behind them that also do not wear a seat-belt.

There may be a legal responsibility on occupants to be appropriately restrained, but more importantly, there is a moral responsibility on all passengers to ensure that they do not kill their friends and family because of their actions. Although an occupant may die as a result of their actions, it is their family and friends who will be left suffering because of their loss.

Read “7/10ths of a second” (below). Conclude by stating that “There are 101 reasons not to wear a seat-belt. Every one is a killer.” Distribute relevant promotional and educational material reinforcing the objectives of the lesson.

| 1/10th of a second: | The front bumper and chrome frosting of the grillwork collapse. Slivers of steel puncture the wall to a depth of one and a half inches. |
| 2/10ths of a second: | The hood rises, crumples, smashes into the windshield. Spinning rear wheels leave the ground. The fenders come into contact with the wall, forcing the rear parts out over the front doors. Your body continues to move forward at 55 miles per hour – 20 times the normal force of gravity. You now weigh more than 3000 pounds. Your legs, ramrod straight, snap at the knee joints. |
| 3/10ths of a second: | Your body is now off the seat, torso upright, broken knees pressed against the dashboard. The plastic and steel frame of the steering wheel begins to bend beneath your death grip. Your head is now near the sun visor, your chest above the steering column. |
| 4/10ths of a second: | The car’s front 24 inches have been demolished, but the rear end is still travelling at about 35 miles per hour. The half-ton motor block crunches into the fire wall. |
| 6/10ths of a second: | Your feet are ripped from your tightly laced sneakers. The brake pedal shears off the floorboards. The chassis bends in the middle. The car begins its downfall, spinning wheels digging into the ground. |
| 7/10ths of a second: | The entire body of the car is forced out of shape. Hinges tear, doors spring open. In one last convulsion, the seat rams forward, pinning you against the cruel steel of the steering shaft. Blood leaps from your mouth, shock has frozen your heart. YOU ARE DEAD. |

Total time elapsed: seven tenths of a second!

Reference:

Partner organizations in the development of the manual

World Health Organization (WHO)

As the United Nations specialized agency for health, the World Health Organization aims to integrate road safety into public health programmes around the world in order to reduce the unacceptably high levels of road traffic injuries. A public health approach is used, combining epidemiology, prevention and advocacy. Special emphasis is given to low- and middle-income countries where most road traffic crashes occur. In recent years WHO has focused its efforts on the implementation of the recommendations contained in the World report on road traffic injury prevention, which it co-produced with the World Bank, and in particular on addressing the main risk factors for road traffic injuries. Following a United Nations General Assembly resolution on road safety, adopted in 2004, WHO acts as a coordinator for road safety initiatives within the United Nations system, and to this end has facilitated the development of the United Nations Road Safety Collaboration – a group of over 40 international road safety organizations, including many United Nations agencies. This coordinating role was further endorsed by a fourth United Nations General Assembly resolution, adopted in 2005.

Address: World Health Organization, 20 Avenue Appia, CH-1211 Geneva 27, Switzerland

URL: www.who.int/violence_injury_prevention/en/

Contact person: Margie Peden, Coordinator, Unintentional Injury Prevention, Department of Injuries and Violence Prevention

E-mail: traffic@who.int

World Bank

The World Bank promotes the improvement of road safety outcomes in low- and middle-income countries as a global development priority, in accordance with its transport business strategy “Safe, Clean and Affordable Transport for Development 2008–2012.” It provides financial and technical support to countries, working through government agencies, nongovernmental organizations and the private sector to formulate strategies to improve road safety. The World Bank's mission is to assist countries in accelerating their implementation of the recommendations of the World report on road traffic injury prevention, which it developed jointly with the World Health Organization in 2004. To achieve this, it emphasizes country capacity building and the development of related global and regional partnerships,
with a focus on the achievement of measurable road safety results. In support of this focus the World Bank Global Road Safety Facility has been established to generate increased funding and technical assistance for global, regional and country activities designed to accelerate knowledge transfer to low- and middle-income countries and catalyse increased country investment in road safety programmes.

**Address:** World Bank, 1818 H Street, NW, Washington DC 20433, United States

**URL:** http://www.worldbank.org/grsf

**Contact person:** Anthony Bliss, Lead Road Safety Specialist, Transport Division, Energy, Transport and Water Department

**E-mail:** abliss@worldbank.org

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**Global Road Safety Partnership (GRSP)**

The Global Road Safety Partnership is a partnership between business, civil society and government dedicated to the sustainable reduction of death and injury on the roads in developing and transition countries. By creating and strengthening links between partners, GRSP aims to increase awareness of road safety as an issue affecting all sectors of society. GRSP seeks to establish sustainable partnerships and to deliver road safety interventions through increased resources, better coordination, management, greater innovation and knowledge sharing, both globally and locally.

GRSP is a hosted programme of the International Federation of Red Cross and Red Crescent Societies.

**Address:** Global Road Safety Partnership, c/o International Federation of Red Cross and Red Crescent Societies, PO Box 372, 17 Chemin des Crêts, CH-1211 Geneva 19, Switzerland

**URL:** www.grsproadsafety.org

**Contact person:** Andrew Pearce, Chief Executive

**E-mail:** grsp@ifrc.org

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**FIA Foundation for the Automobile and Society**

The FIA Foundation for the Automobile and Society is a registered United Kingdom charity with the objectives of promoting public safety and public health, the protection and preservation of human life, and the conservation, protection and improvement of the physical and natural environment. Since its establishment in 2001, the FIA Foundation has become a prominent player in promoting road safety around the world. It conducts advocacy to raise awareness about the growing epidemic of road traffic injuries and place road safety on the international political agenda. It promotes research and the dissemination of results to encourage best
practice in road safety policy, and offers financial support to third-party projects through a grants programme.

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Glossary of terms

**airbag.** Safety device installed in a vehicle that inflates to protect the driver or passengers in case of a collision. Most airbags are fitted in the driver and right passenger positions, but some newer cars also contain side airbags.

**attachment.** Part of the seat-belt assembly including the necessary securing components that enable it to be attached to the seat-belt anchorages.

**belt adjusting device.** A device enabling the seat-belt to be adjusted according to the requirements of the individual wearer and to the position of the seat. The adjusting device may be part of the buckle, or a retractor, or any other part of the seat-belt.

**booster seat.** A seat that boosts a child up, providing a higher sitting height in the vehicle, which allows the adult seat-belt to fit properly.

**buckle.** A quick-release device enabling the wearer to be held by the seat-belt, securing the open end of the seat-belt to the floor mounting by means of a tongue.

**Centers for Disease Control and Prevention (CDC).** The CDC includes the National Center for Injury Prevention and Control, which has a focus on preventing motor vehicle-related injury through research and programmes. It is the principle prevention agency of the United States Department of Health and Human Services, located in Atlanta, Georgia.

**change in velocity during a collision (ΔV).** In crash reconstructions, the change in velocity occurring as a result of an impact – usually at the centre of gravity of the vehicle – is widely used as the measure of the severity of a collision. At high speeds, collisions between cars are almost totally inelastic and so there is very little rebound. Thus if a car travelling at 100 km/h strikes a stationary car of the same mass, they will both undergo a change in velocity of 50 km/h.

**child restraint.** An infant seat (for under 1 year of age) or child safety seat (for 1–4 years of age) designed according to the age and weight of the child, offering protection in the event of a car crash.

**cost.** Use of resources that have alternative uses. Costs are generally measured in monetary terms, but the concept of cost includes any use of resources, not just direct out-of-pocket expenses.

**cost–benefit analysis.** A formal analysis of costs and benefits of a programme, in which all relevant impacts are converted to monetary terms ($).  

**diagonal belt.** A seat-belt that passes diagonally across the front of the chest from the hip to the opposite shoulder.

**emergency medical services (EMS).** The services provided by trained personnel using adequate equipment soon after an emergency. EMS for injuries aim to reduce
the rates of death from potentially life-threatening injuries. These services include the care provided before the person reaches the hospital (pre-hospital EMS, including care delivered in the field and transport to a fixed site of definitive care) and the medical care provided in a hospital-based setting.

**evaluation.** An ongoing process to assess the effectiveness of a programme in achieving its objectives. Evaluation also aims to identify problems that may arise with the implementation of a programme, so that concerns are fed back into the planning process and modifications can be carried out during the implementation. An evaluation is usually designed to try to distinguish the effects of a programme from those of other factors.

**FIA Foundation for the Automobile and Society.** Established by the Fédération Internationale de l’Automobile (FIA) in 2002 as a registered charity in the United Kingdom, the FIA Foundation is a leader in global road safety advocacy and a major supporter of road safety research, working closely with international partners to promote road safety and a sustainable approach to mobility.

**first aid.** Emergency treatment administered to an injured person at or near the injury site, prior to receiving professional medical care.

**full harness belt.** A seat-belt assembly comprising lap, thigh and shoulder straps with a central locking device.

**Global Road Safety Partnership (GRSP).** A global partnership involving business, civil society and governments dedicated to the sustainable improvement of road safety in developing and transition countries.

**high-income country.** For the purpose of this document the World Bank classification has been used to classify countries, based on gross national income (GNI) per capita. A high-income country is one whose GNI per capita is US$ 9076 or more (2).

**high-visibility law enforcement.** Patrolling by the police that is easily seen by passing road users, for example random alcohol and sobriety checkpoints.

**human capital approach in costing road crashes.** This approach is based on human capital theory, which focuses on the centrality of human beings in the production and consumption system. The human capital approach model includes both direct and indirect costs to individuals and society as a whole due to road traffic injuries. Such costs include emergency treatment, initial medical costs, rehabilitation costs, long-term care and treatment, insurance administration expenses, legal costs, workplace costs, lost productivity, property damage, travel delay, psychosocial impact and loss of functional capacity (3).

**integrity of the passenger compartment.** Ability of a vehicle's passenger compartment to stay whole and not collapse on impact with another vehicle or object.
ISOFIX. An international standard attachment that child restraints can be connected to, with the objective of reducing the likelihood of incorrect fitting and making restraint removal and fitting easy for the vehicle user.

**key performance indicator (KPI).** An indicator against which specific items or services can be compared as a measure of how closely they meet the stated requirement.

**lap and shoulder belt.** *See three-point lap and diagonal seat-belt.*

**lap belt.** *See two-point lap belt.*

**legislation.** Acts or provisions that have the force of law, i.e. that give the police the right to enforce their provisions and the courts of law the right to impose penalties (1).

**low-income country.** For the purpose of this document the World Bank classification has been used to classify countries, based on gross national income (GNI) per capita. A low-income county is one whose GNI per capita is US$ 735 or less (2).

**middle-income country.** For the purpose of this document the World Bank classification has been used to classify countries, based on gross national income (GNI) per capita. A middle-income county is one whose GNI per capita is between US$ 736 and US$ 9,075 (2).

**offset deformable barrier test.** A frontal crash test that aims to reproduce real-world conditions of car-to-car frontal crashes. In this test, the front of the striking vehicle partially overlaps a deformable barrier.

**Organisation for Economic Co-operation and Development (OECD).** The OECD brings together countries sharing the principles of the market economy, pluralist democracy and respect for human rights.

**out-of-position occupant.** A vehicle driver or passenger who is out of his or her seating position at the time of the crash – for example, a child lying across the rear seat.

**passenger airbag.** *See airbag.*

**passive safety device.** Any device that automatically provides protection for the occupant of a vehicle, such as seat-belts, padded dashboard, bumpers, laminated windshield, head restraints, collapsible steering columns and airbags.

**pre-hospital care.** The care provided to reduce the effects of trauma or injury before the injured person reaches a hospital-based setting (*see emergency medical services*). This includes the formal response provided by trained and equipped personnel, as well as the bystanders’ response provided by lay people.

**pretensioner.** An additional or integrated device that tightens the seat-belt webbing in order to reduce the slack of the seat-belt during a crash.
release mechanism. A red-coloured push button device that, when pressed, releases the tongue from the buckle of the seat-belt.

retractor. Device to accommodate part or all of the strap of a seat-belt.

risk. The possibility of an unwanted event occurring.

risk factor. A factor that affects the probability of an unwanted event occurring or influences the severity of the consequences that arise as a result of the event.

road traffic crash. A collision or incident that may or may not lead to injury, occurring on a public road and involving at least one moving vehicle.

road traffic fatality. A death occurring within 30 days of a road traffic crash (3).

road traffic injury. Non-fatal injury incurred as a result of a road traffic crash.

road user. A person using any part of the road system as a non-motorized or motorized transport user.

safety performance standard. Definition or specification for equipment or vehicle performance that provides improved safety. Such standards are produced nationally, regionally or internationally by a variety of organizations.

seat-belt. A seat-belt, sometimes called a safety belt, is a safety harness designed to secure the occupant of a vehicle against harmful movement that may result from a collision or a sudden stop. Seat-belts are intended to reduce injuries by stopping the wearer from hitting hard interior elements of the vehicle or other passengers and by preventing ejection from the vehicle.

seat-belt anchorage. A point in the vehicle to which a seat-belt is attached.

seat-belt reminder system. Intelligent visual or audible device that detects whether or not seat-belts are in use in different seating positions and gives out increasingly aggressive warning signals until the seat-belts are used. The signal may be a buzzer, chime or voice reminder.

submarining. During a collision, sliding of the occupant under the seat-belt into the foot well compartment as a result of too much slack in a seat-belt assembly.

surveillance. Systematic ongoing collection, collation and analysis of data and the timely dissemination of information to those who need to know so that action can be taken.

three-point lap and diagonal seat-belt. Any seat-belt that is essentially a combination of a lap strap fitting over the pelvis and a diagonal strap that fits over the shoulder. A three-point lap and diagonal seat-belt is much safer than a lap belt or shoulder belt alone.

tongue. A metal insert connected to the seat-belt and fastening into the buckle, only disconnected by pressing the release mechanism.
Transport Research Laboratory (TRL). An independent, internationally recognized centre of excellence in surface transport issues.

two-point lap belt. A seat-belt that passes across the front of the wearer’s pelvic region.

United Nations Economic Commission for Europe (UNECE). The UNECE strives to foster sustainable economic growth among its 55 member countries. It provides a forum for communication between States; brokers international legal instruments addressing trade, transport and the environment; and supplies statistics and economic and environmental analysis. It includes the World Forum for Harmonization of Vehicle Regulations (WP29).

United Nations Road Safety Collaboration. Established after the passing of United Nations resolution 58/289, it brings together over 42 organizations to share their experiences and expertise on road safety.

webbing. The strap section of the seat-belt system used to counteract the momentum of the vehicle occupant in the rapid deceleration experienced in a crash.

World Bank. A development bank that provides loans, policy advice, technical assistance and knowledge-sharing services to low- and middle-income countries to reduce poverty. The Bank’s mission is to fight poverty and improve the living standards of people in the developing world.

World Health Organization (WHO). The United Nations specialized agency for health, headquartered in Geneva, Switzerland.

References