

## Briefing

### The Trans-Atlantic Trade and Investment Partnership (TTIP) - Safeguarding Safety

#### 1. General Principles: Vehicle Safety Standards Must be Improved

The Transatlantic Trade and Investment Partnership (TTIP) is a trade agreement that is currently being negotiated between the European Union and the United States. It aims to remove trade barriers in a wide range of economic sectors including passenger cars. The EU and the U.S. also want to tackle barriers such as differences in technical regulations, standards and approval procedures.

ETSC stresses that, it is essential that common vehicle safety standards are moved up, not down. ETSC emphasises that there is an urgent need to compare the different standards so as to work out item by item which standards are higher and suited to the EU. ETSC calls on the EC not to rush into merging the two vehicle safety standards and approaches. Both need to be evaluated and assessed carefully. The EU should not allow a harmonisation with U.S. standards unless EU vehicle safety standards can be matched or bettered.

Vehicle safety addresses the safety of all road users and currently comprises measures to help avoid a crash (crash avoidance) or reduce injury in the event of a crash (crash protection). Substantial and evidence-based improvements have been made in the last 15 years and research has identified large scope for enhancing vehicle safety further<sup>1</sup>.

#### 2. Road Deaths in the EU

Latest EU figures from 2012 show a total of 27,700 people were killed in the EU27 as a consequence of road collisions, representing a 49% reduction in road deaths since 2001<sup>2</sup>. The adoption of the EU target in 2001 gave a boost to the combined efforts at national and EU level. As a result, reductions in the number of deaths have been much steeper in 2001-2010 than in preceding decades.

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<sup>1</sup> SafetyNet (2009) Vehicle Safety, retrieved 03/2014.

<sup>2</sup> ETSC (2013) Annual PIN Report.

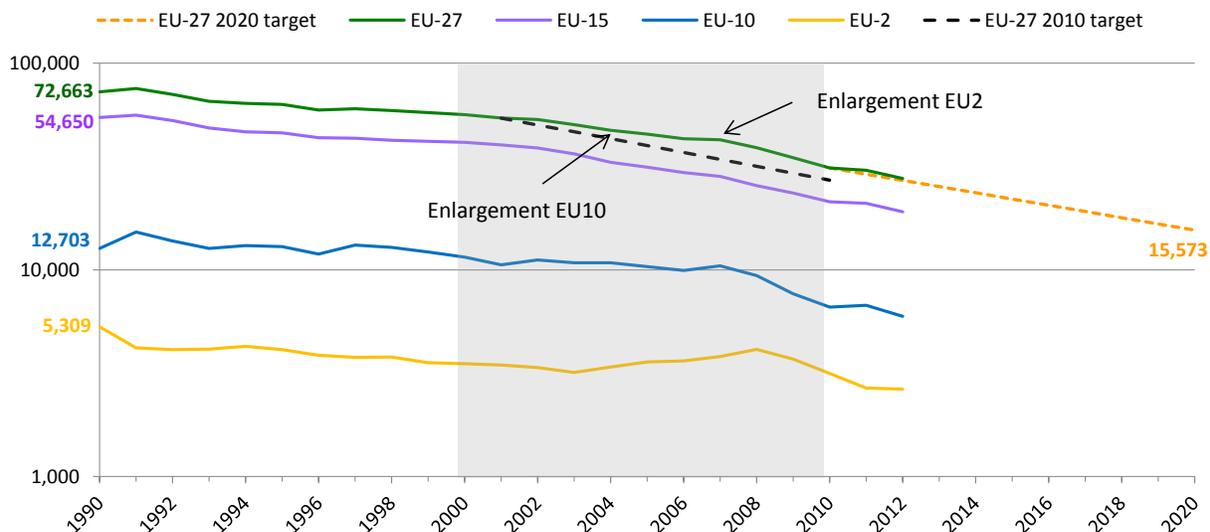


Fig. 1 Reduction in road deaths since 1990 in the EU27 (green line), the EU15 (purple line), the EU10 (blue line) and the EU2 (Bulgaria and Romania, yellow line). The logarithmic scale is used to enable the slopes of the various trend lines to be compared.

Source: CARE database 1990-2000 and PIN Panellists (2001-2012)<sup>3</sup>.

ETSC welcomed the adoption of a new EU target to reduce road deaths by 50% by 2020 as well as the longer term “vision zero” set out in the EU’s Transport White Paper. Recent U.S. research endorses the EU’s outstanding road safety performance<sup>4</sup>.

### 3. Contribution of EU Vehicle Safety Legislation

Major improvements in vehicle safety design have taken place over the last decade in Europe leading to a large reduction in fatal and serious injury risk amongst car occupants<sup>5</sup>. These results are due to a combination of the effects of new European legislative crash protection standards and the impact of new consumer information systems providing objective data on the performance of cars in state of the art crash tests and real crashes<sup>6</sup>. The European Commission has stated that if all cars were designed to provide crash protection equivalent to that of the best cars in the same class, half of all fatal and disabling injuries could be avoided<sup>7</sup>.

<sup>3</sup> ETSC (2013) Annual PIN Report.

<sup>4</sup> Sivak, M. (2013) Why is road safety in the U.S. not on par with Sweden, the U.K., and the Netherlands? Lessons to be learned.

<sup>5</sup> SafetyNet (2009) Vehicle Safety, retrieved 03/2014.

<sup>6</sup> Ibid.

<sup>7</sup> European Commission (2003) European road safety action programme: Halving the number of road accident victims in the European Union by 2010: A shared responsibility Communication from the Commission Com (2003) 311 final.

Car occupants make up 47% of total EU (28) road traffic death<sup>8</sup>: 15,300 pedestrians, cyclists and motorcyclists were killed in 2009<sup>9</sup>. Research in Europe suggests that the majority of all fatally and seriously injured pedestrians are hit by the front of a car<sup>10</sup>.

Broughton<sup>11</sup> reviewed the effectiveness of casualty reduction measures in the UK and demonstrated that the greatest contribution to casualty reduction over the years 1980 – 1996 was secondary safety improvements to vehicles. These accounted for around 15% of the reduction. An update was published in 2010 estimating the overall benefit of past improvements in secondary safety<sup>12</sup> and suggesting that the number of deaths in 2010 will have been between 18.5 and 20.5% less than it would have been if there were no improvement in secondary safety between 2006 and the forecast year of 2010.

A 2013 UK study<sup>13</sup> recognised that improved crash protection has contributed to the steady reduction in the total number of car occupants seriously or fatally injured. The study examined developments in the risk of crash involvement and injury to car occupants by model year using vehicle specific exposure data from the UK. One of the conclusions was: “Cars manufactured after 2008 typically had a crash involvement rate that was 36% below that of cars manufactured in 2000 for the accident year 2011.”

#### 4. Contribution of EuroNCAP

Car manufacturers’ efforts to meet consumer demands for safer cars have been driven mainly by the European New Car Assessment Programme (EuroNCAP). This has led to considerable improvements in occupant protection over the past decade. When EuroNCAP started to test the crash performance of cars fifteen years ago, the average car was awarded 2 stars for occupant protection. Now almost all cars tested are awarded 5 stars for combined occupant and pedestrian protection. Improved vehicle safety has been demonstrated to make a large contribution to casualty reduction.

Lie and Tingvall estimated that an increase in occupant protection from 4 to 5 stars reduces the risk of fatal injury by 12%<sup>14</sup>. Based on the hypothesis that the new cars represent 7% of the total car fleet and are involved in the same proportion of road crashes<sup>15</sup>, one can determine the number of car occupant deaths prevented thanks to improvements in vehicle passive safety. ETSC’s PIN programme calculated that improvements in occupant protection have helped to prevent some 10,640 adult car

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<sup>8</sup> ETSC (2014) PIN Report in Draft.

<sup>9</sup> ETSC, PIN Annual Report (2011).

<sup>10</sup> SafetyNet (2009) Vehicle Safety, retrieved 03/2014.

<sup>11</sup> Broughton, J., Allsop, R.E., Lynam, D.A. and McMahon, C.M. (2000). The Numerical context for setting national casualty reduction targets; TRL report 382. TRL Ltd., Crowthorne, UK.

<sup>12</sup> Broughton, J. (2010) Updated Casualty Forecasts TRL Ltd. PPR 552.

<sup>13</sup> Thomas, P. (2013) Developments in the Risk of Crash Involvement and Injury to Car Occupants by Model Year Using Vehicle Specific Exposure Data.

<sup>14</sup> Lie A. and Tingvall C. (2002), How Do Euro NCAP Results Correlate with Real-Life Injury Risks? A Paired Comparison Study of Car-to-Car Crashes in Traffic Injury Prevention, 3:288–293.

<sup>15</sup> Given their relatively higher usage rate but compensated by the lower accident risk of their users.

occupant deaths and 5,470 between 1998-2008 in the EU-27<sup>16</sup>. More recent research<sup>17</sup> updated the original 2002 findings and found that 5 star rated EuroNCAP cars were found to have a  $69 \pm 32\%$  lower risk of fatal injury than 2-star rated cars. The corresponding risk reduction for collisions resulting in death and serious injuries was found to be  $23 \pm 8\%$ .

EU legislation on passive safety has not changed to a great extent over the last decade and as a result type approval crash tests have become largely outdated. There is an urgent need to align EU regulations governing crash tests with high performing EuroNCAP crash tests. The impact of EuroNCAP means that most new cars now exceed the legal requirements in areas such as crash protection, child occupant protection and, possibly, pedestrian protection.

## 5. Key EU Vehicle Safety Legislation

The EU has exclusive competence on vehicle safety and vehicle type approval under Article 114 of the EU Treaty. ETSC calls on the EC to evaluate and assess carefully the EU's vehicle safety legislation. ETSC has selected the most important elements, which are listed below. ETSC's Review on Priorities for EU Motor Vehicle Safety Design states: "Vehicle engineering improvements for safety can either be achieved by modifying the vehicle to help the driver avoid accidents, or by modifying the vehicle to provide protection against injury in the event of a crash<sup>18</sup>."

### 5.1 Whole Vehicle Type Approval

Whole Vehicle Type Approval Directive 2007/46/EC<sup>19</sup> applies to passenger cars and to motorcycles on a mandatory basis since January 1998 and June 2003, respectively. As a result, these categories of vehicles must comply with all the relevant EC type-approval directives in order to be placed on the market. The Framework Directive requires the Member States to verify that the type to be approved complies with the relevant safety requirements. The U.S. uses self-certification so that manufacturers themselves check that vehicles comply with regulations.

### 5.2 Crash Tests

The EU and U.S. testing regimes differ. For example, under the EU's side impact regulation<sup>20</sup>, the EU's crash barrier is lighter and lower whereas the U.S. uses a rigid barrier. Tests in the U.S. mirror the U.S. fleet. The U.S. uses a mandatory pole test. It would be important to establish which test is most appropriate for the vehicle mix on EU roads.

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<sup>16</sup> ETSC, PIN Flash 13 (2009).

<sup>17</sup> Kullgren, A., Lie, A., Tingvall C. (2010) Comparison Between EuroNCAP Test Results and Real-World Crash Data Traffic Injury Prevention 11:587-593, 2010.

<sup>18</sup> ETSC (2001) Priorities for EU Motor Vehicle Safety Design.

<sup>19</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2007L0046:20130110:EN:PDF>

<sup>20</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1996:169:0001:0038:EN:PDF>

There have been big improvements in EU vehicle safety design, but the crash testing regime is not keeping up and must be updated.

**Seat belt testing:** Occupant restraint is the single most important safety feature in the car and most crash protective design in the EU is based on the premise that a seat belt will be used. In the U.S. testing assumes unbelted occupants and different designs of airbag are used. The thresholds for testing seat belts in the U.S. and the EU are different. In the EU tests are done belted up. This European system should be upheld, in Europe seat belt wearing rates are very high, up to 98% in some cases. Thus it makes sense to continue to carry out crash tests fully belted.

**Airbags:** Although the airbags are similar in the EU and the U.S. the testing thresholds are different. It's important again to choose a testing regime that gives the better level of safety.

### 5.3 Daytime Running Lights

From 2011 onwards, DRLs are mandatory for all new cars and small delivery vans in the EU under the General Safety Regulation 2009/661/EC.

### 5.4 Rear Lights

Rear turn signals, are permitted to be red in North America whereas Europe requires amber. The European standard included in Directive 2008/89/EC<sup>21</sup> is clearly better as it provides separation of function between brake lights and turning signals.

### 5.5 ESC

ESC has become mandatory under the new vehicle safety Regulation 2009/661/EC. ESC has helped to prevent some 7,200 car occupant deaths over the past decade and 2,500 between 1998 and 2008<sup>22</sup>.

### 5.6 Side mirror legislation – field of vision

Another crucial area of legislation relevant to preventing collisions is field of vision for car drivers covered by EC Directive 77/649/EEC, as last amended by 90/630/EEC, with recent amendments to ECE 125 which will enter into force 2015.

### 5.7 Seat Belt Reminders

The EC Regulation 661/2009 on Type Approval requirements for the general safety of motor vehicles foresees the compliance with the provision of visual and audible seat belt reminders for the driver's seat since November 2012. ETSC stresses that this should be

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<sup>21</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:257:0014:0015:EN:PDF>

<sup>22</sup> ETSC PIN Flash 13 (2009) Methodological Note.

extended swiftly to all seat positions based on existing best practice and guidelines developed by EuroNCAP. Around 12,400 car occupants survived serious crashes in 2009 because they wore a seat belt. Another 2,500 deaths could have been prevented if 99% of occupant had been wearing a seat belt<sup>23</sup>. The seat belt remains the single most effective passive safety feature in vehicles.

### 5.8 Pedestrian Protection

Improvements in pedestrian protection have been provided more slowly than for occupant protection. The Regulation 78/2009 lays down type approval requirements with respect to the protection of pedestrians and other vulnerable road users. It provides for the mandatory installation of Brake Assist Systems on new vehicles in an attempt to compensate for the relaxation of certain parameters on passive safety performance tests. ETSC fought hard against the relaxation of the tests arguing that benefits accident avoidance technologies offer should have been additional rather than substitutive<sup>24</sup>. The 2009 EuroNCAP protocol is challenging car makers by increasing the emphasis on all-round safety performance and demanding higher levels of achievements in pedestrian protection.

### 5.9 Categorizing SUVs as Cars

ETSC would not support the EU adopting the U.S. system of categorizing SUVs as light trucks instead of cars since in the U.S. light trucks are subject to less demanding requirements than cars. In the EU they must meet car standards.

### 5.10 Event Data Recorders

EDRs have been mandated for certain vehicle classes in the U.S. since the start of 2014. This is an example of where the EU could gain from legislation which is more advanced in the U.S. than in the EU. ETSC recognises the safety potential of EDRs and supports the introduction of EDRs especially for fleet vehicles<sup>25</sup>.

## 6. Recommendations

- Maintain the EU's right of initiative to legislate for type approval on vehicle safety regulations.
- Evaluate and assess EU and U.S. vehicle safety regulations.
- Aim for high standards for future EU vehicle safety regulation.

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<sup>23</sup> ETSC (2010) 4<sup>th</sup> Road Safety PIN Annual Report, Chapter 3, <http://www.etsc.eu/PIN-publications.php>

<sup>24</sup> ETSC Position on the EC's proposal for a Regulation on the protection of pedestrians and other vulnerable road users (2008) . <http://etsc.eu/documents/ETSC%202008%20Position%20Paper.pdf>

<sup>25</sup> ETSC (2012) PRAISE Handbook Chapter 2: How Can In-Vehicle Safety Equipment Improve Road Safety at Work.

- Update the EU crash testing regime to catch up with high performing EuroNCAP crash tests.
- Maintain and improve EU vehicle safety standards enabling vehicles to contribute to the ambitious EU target of reducing road deaths by 50% by 2020.
- Ensure that the workload required to normalise EU and U.S. standards does not impede further improvements in safety standards for vehicles in the EU.

## **Acknowledgements**

ETSC gratefully acknowledges the contributions of Pete Thomas, Transport Safety Research Centre at the UK Loughborough University (UK), Anders Kullgren from Folksam (Sweden) and Oliver Carsten of ITS Leeds (UK).

## **Further information**

### ETSC Positions and Responses

ETSC (2013) ETSC's Contribution to CARS 2020 on Road Safety

ETSC (2011) Response to the Transport White Paper

ETSC (2011) Position on Longer and Heavier Vehicles

ETSC (2010) Response to the EC Policy Orientations on Road Safety

ETSC (2009) Position on the EC proposal for an ITS Action Plan and Directive

ETSC (2008) Blueprint for the 4<sup>th</sup> Road Safety Action Programme

ETSC (2008) Position on the EC proposal for a Regulation on Type-Approval Requirements for the general Safety of Motor Vehicles

ETSC (2008) Position on the EC proposal for a Regulation on the protection of pedestrians and other vulnerable road users.

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### ETSC Reports

ETSC (2013) 7<sup>th</sup> Road Safety PIN Report Back on Track to Reach the EU 2020 Target?

ETSC (2012) 6<sup>th</sup> Road Safety PIN Report, A Challenging Start to the EU 2020 Road Safety Target

ETSC (2005) The Safety of Vulnerable Road Users

ETSC (2001) Priorities for EU Motor Vehicle Design

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The European Transport Safety Council (ETSC) is an independent, non-profit organisation dedicated to reducing the numbers of deaths and injuries in transport across Europe.