

GRRF Meeting 20 - 24 February 2012

L-category vehicle EU type-approval legislation

Obligatory fitting of advanced brake systems










European Commission
Enterprise and Industry



Introduction

- Scope of the Commission proposal (1)
 - Framework related to **APPROVAL** and **MARKET SURVEILANCE** of L-category (light) vehicles on the Union market
 - Manufacturers can obtain approval for L-category vehicle types (W V T A), systems, components and separate technical units intended for such vehicles in one Member State.
 - If it meets the Union technical requirements then the manufacturer can market it EU-wide with no need for further tests or checks. Registration must be granted on simple presentation of a certificate of conformity.

Introduction


- Scope of the Commission proposal (2)
 - 2-wheel
- or 3-wheel vehicles

Category & Category Name	Sub category & Sub category name	Example
L1e, light two-wheel vehicle	L1A e powered cycle	
	L1Be Moped	 
L2e Three-wheel moped		
L3e, motorcycle	A1, A2, A3 < 130 km/h ≥ 130 km/h	 
L4e, motorcycle with side car	-	

Category & Category Name	Sub category & Sub category name	Example
L5e, tricycles	L5Ae Tricycles	
	L5Be Commercial tricycles	

Introduction

- Scope of the Commission proposal (3)
 - Quadricycles

L6e, Light quadricycle	L6Ae Light quad	
	L6Be Light mini car	
L7e, Heavy quadricycle	L7Ae On-road quad	
	L7Be All Terrain Vehicles	
	L7Be Heavy mini car	

Introduction

- Vehicles not in the scope of the Commission proposal (4)



- maximum design speed not exceeding 6 km/h;
- exclusively intended for use by the physically handicapped;
- exclusively intended for pedestrian control;
- exclusively intended for use in competition under on-road or off-road conditions;
- exclusively intended for use by the armed forces, law enforcement agencies, civil defence services, fire brigades or public-works bodies;
- agricultural or forestry vehicles, machines, motor vehicles
- primarily intended for off-road use and designed to travel on unpaved surfaces;
- light powered cycles ≤ 250 Watt and ≤ 25 km / h with pedal assistance;
- self-balancing machines;
- vehicles not equipped with at least one seating position.



Identified concerns and objectives – L-category vehicles

- Identified concerns in the EU related to L-category vehicles:
 - the **complexity** of the current legal framework;
 - the **level of emissions** and its **increasing share** in total road transport emissions, which are decreasing overall;
 - **safety aspects** related to type-approval requirements for vehicles;
 - the **lack of a legal framework** for vehicles fitted with **new technologies**;
 - the **entry of products** into the EU market **which do not comply** with the current type-approval requirements regarding functional vehicle safety and/or environmental protection.
- Main Objective
 - Efficiently and effectively address the above listed issues.

Examples of features addressed by proposed Regulation

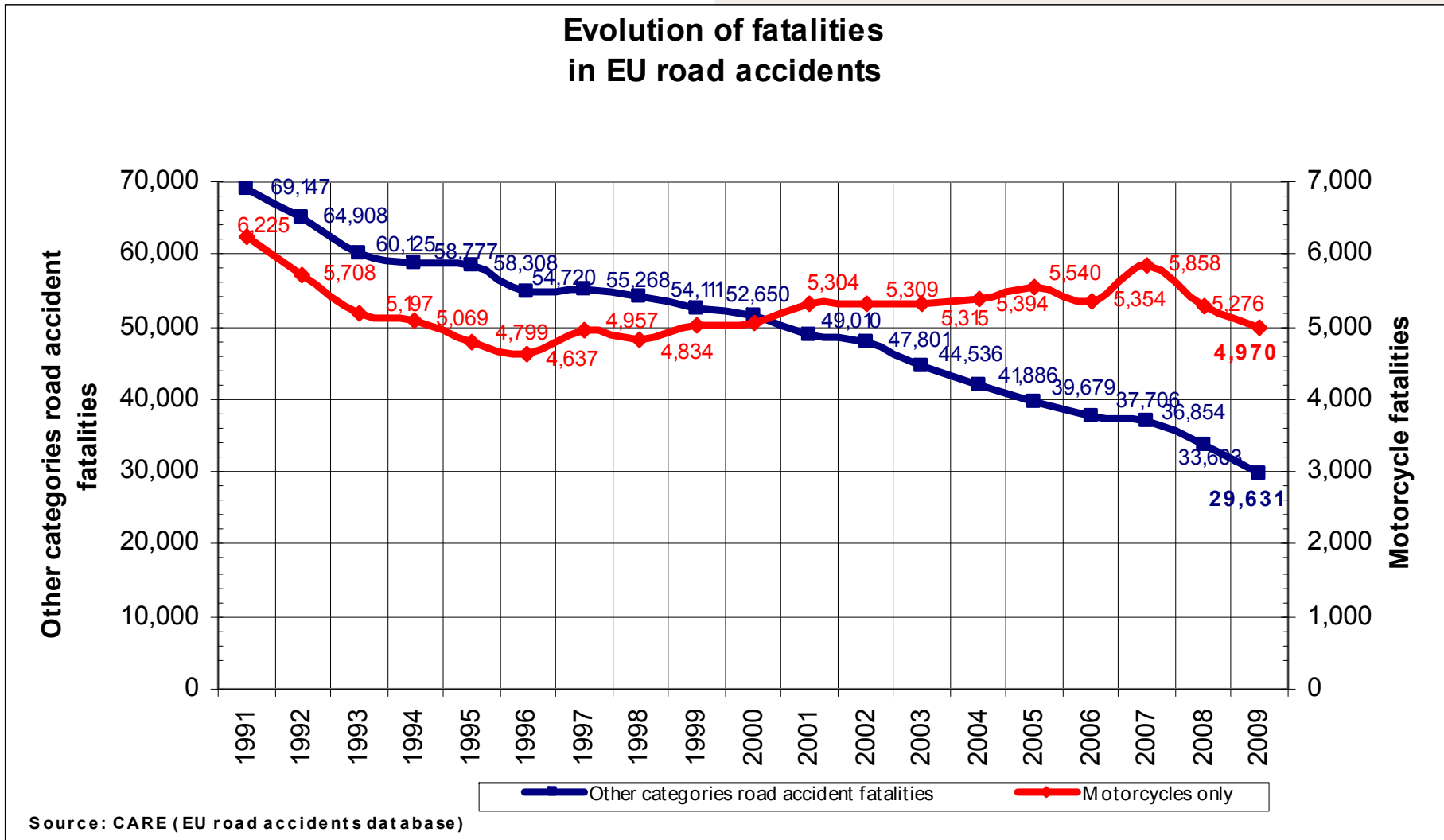
- The proposal for the codecision Regulation includes the following features, among many others :
 - Market surveillance;
 - Obligatory fitting of Advanced Brake Systems;
 - Abandon 74 kW power restriction;
 - Anti-tampering measures;
 - Re-categorisation;
 - Access to repair and maintenance information;
 - New emission steps Euro 3, Euro 4, Euro 5 (and Euro 6 for L3e motorcycles only);
 - Evaporative emission requirements
 - Dedicated anti-tampering measures;
 - Mandatory fitting of Automatic Headlamp On feature.

Safety measures

- Safety measures why ?
 - Powered Two Wheeler (PTW) riders face a much higher risk of a fatal or serious accident than other drivers. The fatality rate per million kilometres travelled is, on average, **18 times greater** than passenger cars, and, in 2006, PTWs accounted for **2%** of distance travelled, but accounted for **16%** of road deaths in the EU-25 (ETSC, 2007).
 - While other road transport modes have shown significant decreases in fatalities and serious injuries over time, those for PTWs have exhibited much lower decreases or remained static.
 - Compare 1994 and 2009 in the next graph

Safety measures

- Safety measures why ?



Safety measures

- Safety measures why ?
 - In 2009 **4970** Powered Two Wheeler (PTW) riders died in road accidents.
 - In addition the number of heavily injured riders is estimated to be **5.5** to **13** times higher than the number of fatalities (27,335 – 64,610 riders) in the EU-27.
 - The number of slight injuries, which is even more difficult to estimate, might be between **12** to **28** times higher (59,640 – 139,160 riders) in the EU-27.

Safety measures

- Safety: condition of being safe; freedom from danger, risk, or injury.
- Two primary safety fields
 - Accident avoidance
 - Human being
 - **Technical features of the vehicle (approval requirements)**
 - The environment in which the vehicle is operated
 - Mitigation of injuries
 - Protection just before / during the crash
 - Protection after the accident

Safety measures

- Assessed Advanced Brake Systems (not abbreviated as ABS in this presentation):
 - Anti-lock Brake Systems (ABS)
 - preventing wheel lock during emergency braking
 - Combined Brake Systems (CBS)
 - both front- and rear-wheel brakes of the PTW responding to a single actuator (brake pedal and/or lever) and
 - automatic distribution of the braking force between the two wheels, thereby reducing the risk of, but not necessarily preventing, wheel lock
- Advanced brake systems have been shown via predictive and retrospective accident studies to significantly reduce the risk of fatal and serious injuries, yet are fitted to a relatively small proportion of the EU fleet.

Safety measures - Impact Assessment

- Essential questions after **pros and cons** of policy options listed when developing measures:
 - How to be **effective** in achieving the objective ?
 - effectiveness: doing "right" things, i.e. setting right targets to achieve an overall goal (the effect)
 - How to be **efficient** in achieving the objective ?
 - efficiency: doing things in the most economical way (good input to output ratio, time = money)
 - **Coherence** of the option with overarching EU objectives, strategies and priorities
 - Consideration of potential (undesirable) side effects.

Safety measures - Impact Assessment

- Advanced Brake Systems - summary impact assessment
 - Qualitative and quantitative analysis policy options regarding obligatory fitting of advanced brake systems
 - **Option 1:** No policy change;
 - **Option 2:** Anti-lock Brake Systems on all Powered Two Wheelers (PTWs);
 - **Option 3:** Anti-lock Brake Systems on PTWs with cylinder capacity $>125 \text{ cm}^3$ and advanced brake systems (Combined Brake System (CBS) and/or Anti-lock Brake Systems) on motorcycles with $50 \text{ cm}^3 < \text{cylinder capacity} \leq 125 \text{ cm}^3$;
 - **Option 4:** To make mandatory the fitting of Advanced Brake Systems (Combined Brake System (CBS) and/or Anti-lock Braking Systems) on those motorcycles which conform to the performance criteria defined by the A2 driving licence . Obligatory fitting of Anti-lock Brake Systems on all other L3 category motorcycles;
 - **Option 5:** Industry self obligation.

Safety measures - Impact Assessment

- Advanced Brake Systems - summary impact assessment
 - Preferred option: a combination of options **3** and **4**,
 - Over **a 10 year period** the following data were estimated

FATALITY REDUCTION Long term life saving			
	Min.	Best Estimate	Max.
	2,799	5,332	11,331
Monetary benefit (million euro)			
	Low	Best estimate	High
Fatality avoidance	€ 2,383	€ 4,539	€ 9,646
Mitigation heavy injuries	€ 739	€1,407 - €3,268	€ 6,945
Mitigation slight injuries	€ 95	€182 - €409	€ 868
Cost (million euro)			
	Low	Best estimate	High
	€ 1,602	€ 3,463	€ 2,597
Estimated benefit to cost ratio			
	Low	Best estimate	High
Accident avoidance	1.2	2.4 – 3.2	6.7
Casualty mitigation	1.1	2.0 – 2.6	5.6

Safety measures – Proposed measures

- Advanced Brake Systems
- Consequence of preferred option: new sub classification L3e two-wheel motorcycles
 - Generic classification criteria L3e motorcycle:
 1. length \leq 4000 mm and
 2. width : \leq 2000 mm and
 3. height \leq 2500 mm and
 4. two wheels and powered by propulsion as listed under Article 4(3) and
 5. maximum mass = technically permissible mass declared by the manufacturer and
 6. two-wheel vehicle that cannot be classified as category L1e two-wheel moped ($> 50 \text{ cm}^3$ or $> 45 \text{ km/h}$ or maximum continuous rated or net power $> 4000 \text{ W}$) and

Safety measures - Proposed measures

- Advanced Brake Systems - summary impact assessment
 - Consequence of preferred option: new sub classification L3e two-wheel motorcycles, continued;
 - Specific classification criteria L3e motorcycles coherent with driving licence Directive.

Sub-categories	Subcategory name	Supplemental sub-classification criteria:
L3e - A1	Low-performance motorcycle	(7) engine capacity $\leq 125 \text{ cm}^3$ and
		(8) maximum continuous rated or net power $\leq 11 \text{ kW}$ and
		(9) power / weight ratio $\leq 0.1 \text{ kW/kg}$.
L3e - A2	Medium-performance motorcycle	(7) maximum continuous rated or net power $\leq 35 \text{ kW}$ and
		(8) power / weight ratio $\leq 0.2 \text{ kW/kg}$ and
		(9) not derived from a vehicle equipped with an engine of more than double its power and
		(10) L3e vehicle that cannot be classified under supplemental sub-classification criteria (6) to (7) of sub-category L3-A1.
L3e - A3	High-performance motorcycle	(7) any other vehicle of the L3e category that cannot be classified according to the classification criteria of subcategories L3e-A1 or L3e-A2.

Safety measures - Proposed measures

- Advanced Brake Systems
 - Some uncertainty exists in the percentage of the fleet equipped with Anti-lock Braking Systems or Combined Braking Systems.
 - The number of PTWs with optional uptake of Anti-lock Braking and/or Combined Braking Systems is largely unrecorded.
 - EC measures are designed to increase the fitment of advanced brake systems in order to realise the predicted safety benefits available with these technologies.

Safety measures - Proposed measures

- Advanced Brake Systems – Commission proposed Regulation, Annex VIII, obligatory fitting of advanced brake systems make part of the proposed enhanced functional safety requirements.
 - **As 01 January 2017 for all new L3e motorcycles:**
 - a. new motorcycles of the **L3e–A1** subcategory which are made available, registered and entering into service are to be equipped with **either an Anti-lock or a Combined Brake System or both types** of advanced brake systems, at the choice of the vehicle manufacturer;
 - b. new motorcycles of subcategories **L3e–A2 and L3e–A3** which are sold, registered and entering into service to be equipped with an **Anti-lock Brake** System.
 - **Exemption:**
 - **Enduro** and **Trial** motorcycles are proposed to be exempted from the obligatory fitting of advanced brake systems

Safety measures – European Council and Parliament

- Advanced Brake Systems – Commission proposal
 - The proposal (codecision act) for market surveillance and approval of L-category vehicles is currently under scrutiny by the European Council and Parliament
 - Issues under discussion:
 - **Split** as of which classification limits L3e motorcycles shall be equipped with Anti-lock Brake Systems;
 - European Parliament IMCO committee voted positively on all L3e motorcycles to be equipped with Anti-lock Brake Systems;
 - The European Parliament has a separate impact assessment conducted, available before plenary vote (19 April 2012);
 - Council supports Commission proposal;
 - Obligation to equip motorcycles with Anti-lock Brake System active on **both wheels**;
 - **On/Off Switch** Anti-lock Brake System.

Proposed legal structure

- Anticipated structure regulation on market surveillance and approval of L-category vehicles.
- **Co-decision** act (anticipated adoption, 2012)
- **Delegated** acts (anticipated adoption 2012, pending EP plenary vote)
 - Regulation on environmental and propulsion performance requirements (REPPR);
 - Regulation on vehicle [functional safety requirements \(RVFSR\)](#);
 - Regulation on vehicle construction requirements (RVCR).
- **Implementing** act (anticipated adoption 2012, pending EP plenary vote)
 - Regulation on administrative requirements (RAR)
- This whole legal package listed above is proposed to become first applicable as of [01 January 2014](#).

Next steps

- Completion of 4 policy studies as input to drafting of delegated acts:
 - Durability requirements (near completion);
 - Powertrain tampering prevention measures (near completion);
 - International (UNECE) environmental requirements (start);
 - Conformity of Production requirements (start).
- Stakeholders are kindly invited to provide input through:
Matthew.Smith@Ecorys.com
- Bilateral meetings with stakeholders;
- Drafting and vote of 3 delegated act;
- Drafting of the implementing act.
- Next Motor Cycle Working Group meeting: 17 April 2012.

More information ?

http://ec.europa.eu/enterprise/sectors/automotive/documents/proposals/index_en.htm

THANK YOU FOR YOUR ATTENTION !

Contact: Secretariat DG ENTR, automotive unit D.5

T: +32 (2) 29 91976 or (2) 29 53298

E-mail: entr-automotive-industry@ec.europa.eu