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Cost / Benefit of Side Impact Test Procedures

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on behalf of
EEVC WG 13 and WG 21

Informal Group on a Pole Side Impact GTR (PSI)
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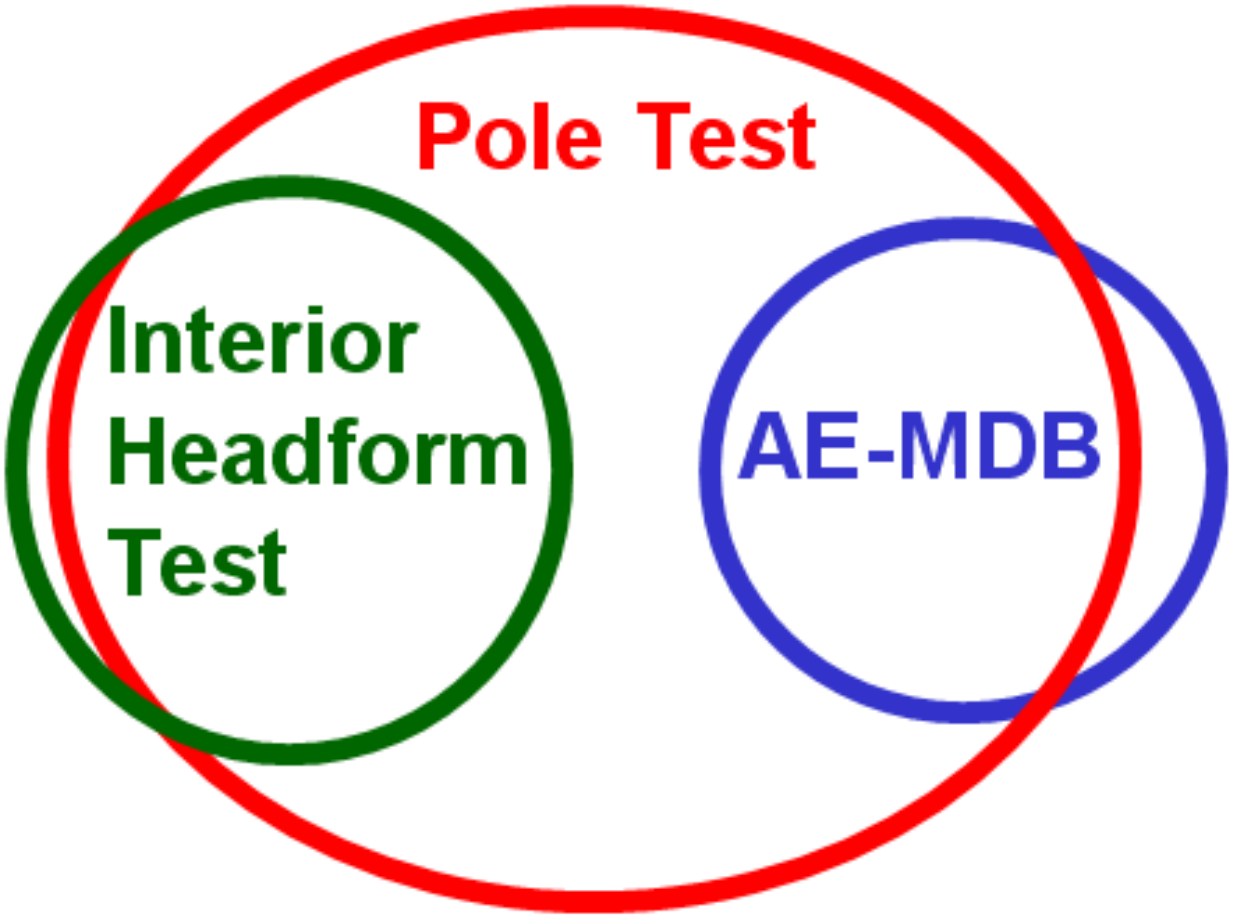
Options for regulatory change

- **Option A** – To do nothing and allow current measures to propagate throughout the vehicle fleet, taking account of additional safety benefits derived from vehicles complying with Euro NCAP **(Do nothing option)**.
- **Option B** – Amend the existing Regulation 95 with a new barrier face, test conditions and assessment criteria **(AE-MDB option)**.
- **Option C** – Adopt a pole test, to compliment the existing Regulation 95 **(Pole test option)**.
- **Option D** – Adopt a head impact test procedure, to compliment the existing regulation **(Interior Headform or FMH test option)**.
- **Option E** – Combination of Option B and Option C

Interaction of different test procedures

based upon potential benefits



Benefit estimation UK

Options	Car Occupant Injury Severity		
	Fatal	Serious	Slight
(A) Do nothing	72 (5%)	285 (2%)	-357
(B) AE-MDB	+28 (+2%)	+88 (+0.7%)	-116
(C) Pole	+75 (+5%)	+230 (+2%)	-305
(D) FMH	+1(+0.07%)	+49 (+0.4%)	-50
(E) AE-MDB + Pole	+75 (+5%)	+230 (+2%)	-305

+ further reduction to option A

- further increase to option A

Compared to 2006/2007 accident date if all cars complied to option A, B, C, D or E

Result:

- Estimates show that if all cars on UK roads offered a 'typical' level of protection seen in post 2003 vehicles, then 72 fatal and 285 serious injuries would have been prevented on 2006 / 2007 accident data.

- The introduction of a pole test would have prevented an additional 75 fatal and 230 serious injuries

Benefit estimation UK

Great Britain monetary value of a road traffic casualty based upon willingness to pay:

- £1,648,390 -> 1,813,229€ for fatality;
- £185,220 -> 203,742€ for serious; and
- £14,280 -> 15,708€ for a slight.

Options	(million)
(A) Do nothing	183€
(B) AE-MDB	+ 67€
(C) Pole	+178€
(D) FMH	+ 10€
(E) AE-MDB + Pole	+178€

Result:

- Pole test provides highest benefit of side impact procedures

Cost estimation for UK

Car Category (% of fleet)	Option B (AE-MDB)			Option C (Pole)			Option D (FMH)	Option E		
	Low	Base	High	Low	Base	High		Low	Base	High
Super-mini Small family (66%)	€144	€328	€431	€118	€290	€377	€64	€238	€430	€541
Large Family Executive (18%)	€105	€236	€307	€141	€348	€453	€62	€225	€407	€511
Roadster Coupe (4%)	€0	€0	€233	€42	€105	€135	€187	€58	€105	€131
SUV MPV (12%)	€21	€49	€56	€131	€322	€419	€72	€189	€342	€430
Weighted Average based on fleet mix	**€98**	**€264**	**€356**	**€121**	**€297**	**€387**	**€69**	**€223**	**€402**	**€506**

High: Providing a level of side impact protection required by the current Regulation 95

Low: Upgrading a Regulation 95 compliant vehicle that also achieved a maximum score within the Euro NCAP side impact test (2008 protocol).

Base: Vehicle that meets the current requirements of Regulation 95, achieves 13 points (from a total of 18 available) in the Euro NCAP side impact test (2008 protocol), with airbags providing thorax protection, but not side head protection.

Cost estimation for UK

Result:

-The costs were estimated for upgrading a vehicle within its scheduled design cycle.

-2004, NHTSA published an economic assessment of adding an oblique pole and estimated compliance costs of between **€64 and €203**. These costs only included part costs because it was assumed that other costs, such as those for structural changes, padding and packaging, would be subsumed in ongoing vehicle redesign costs.

Cost / benefit estimation for UK

Option	Benefits Killed (Seriously Injured)	Benefits €(million)	Annual costs €(million)for low 'state of the art'	Annual costs €(million) for base 'typical'	Annual costs €(million) for high 'just R95'
(A) Do nothing	72 (285)	183	-	-	-
(B) AE-MDB	+28 (+88)	+ 67	275	627	843
(C) Pole	+75 (+230)	+ 178	287	705	916
(D) FMH	+1 (+49)	+ 10	166	166	166
(E) AE-MDB + Pole	+75 (+23)	+ 178	527	955	1199

The benefits estimations represent a conservative (or even 'worst case') estimate. The costs have been calculated depending on the safety performance level of the vehicle and are full costs. Hence, it is recommended that a comparison of the absolute values of the benefits and costs should not be made because it could well be misleading. However, a comparison of the relative values of the benefits and costs BETWEEN THE OPTIONS should be meaningful because the benefits and costs have been derived in a consistent manner and hence can be used with a reasonable degree of confidence.

Result:

- Best cost / benefit for pole side impact test

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Thank you for your attention