



Task Force – Bumper Test Area: Proposed EC study

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Independent Transport Research, Consultancy & Testing

Creating the future of transport



Agenda

EC proposing study to support Task Force

1 Context

2 Understanding of issue / collation of previous research

3 Vehicle geometry

4 Legform test work

5 Benefit of change

1st meeting: Task Force – Bumper Test Area

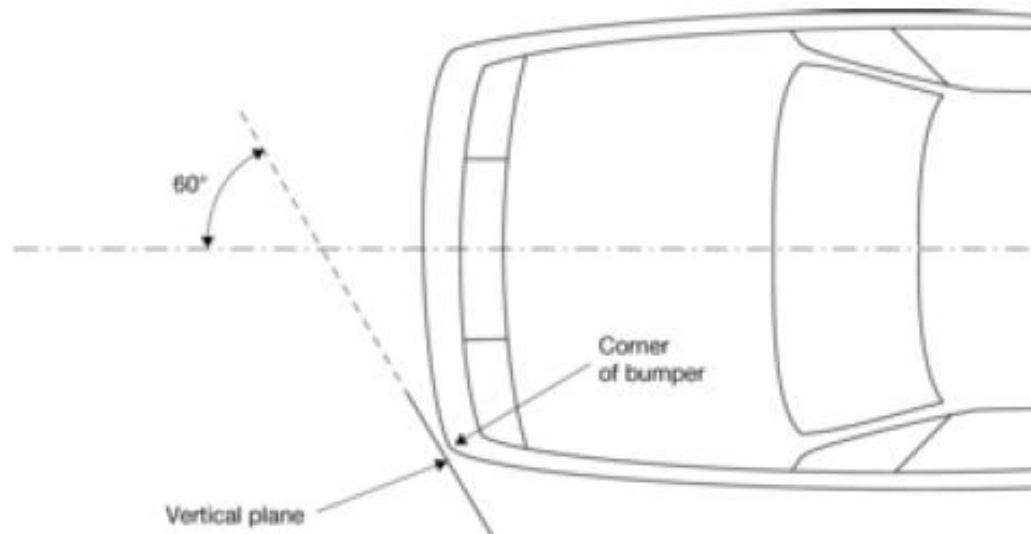
- Welcome
- 1st web meeting concerning modification of the legform test procedure
 - Practical issue and general observation; decreasing legform test areas for type-approved vehicles
- Proposal for an EC study
 - Present contents of draft service request
 - Define project objectives to match the activities of this group
 - Attempt to optimise available contribution



Context for group and EC study

Regulation (EC) No 78/2009 – type approval with regard to protection of pedestrians

- Interpretation of test area in Commission Regulation (EU) 459/2011
- Bumper corner =
- ... the vehicle's point of contact with a vertical plane which makes an angle of 60° with the vertical longitudinal plane of the vehicle and is tangential to the outer surface of the bumper.



Context for group and EC study

- Phase 2 of UN Global Technical Regulation (GTR) No. 9
 - Draft text on bumper area is initially the same as EU interpretation
 - Request for clarification on bumper test area
- Task Force – Bumper Test Area
 - Set-up to consider the bumper corner definition

Context for group and EC study

- Activities of the Informal Group on Pedestrian Safety Phase 2
 - Address remaining items for introducing the FlexPLI
 - Finalise wording of draft regulations
 - Submit proposal on amending GTR No.9 – Phase 2
 - Consider proposals to amend draft UN Regulation on ped. safety

- Bumper test area programme could support last three activities

Context for group and EC study

- Subject of EC study:
 - to investigate whether the 60 degree plane definition could be adjusted in a sensible and cost-effective way to once again define the corners of the bumper as being close to the side of the vehicle

- Introduction of project tasks

Understanding of issue / collation of previous research

- This is not the first time the bumper corner definition has been discussed
 - Original EEVC Working Groups discussed and ultimately agreed to 60 degree plane
 - Try to find original documents supporting this definition
 - A bumper definition is used in other regulations
 - Try to document where a defined bumper is used – how it is defined
 - Need to understand implications of changing pedestrian safety definition
 - Euro NCAP in process of switching to their new definition (underlying structures)
 - Collate information from those discussions
- If others have prepared information previously, EC study can bring that information together in this task

Vehicle geometry

- Consider the proportion of vehicle front outside of test area
 - What is representative of the vehicle fleet?

 - Vehicle measuring task
 - Compare width of vehicle with bumper test area
 - Consider potential changes to the bumper corner definition

 - Measure as many vehicles as possible to make findings representative

 - Would be helpful if information is available that could support this task
 - By assessing more cars the final study results should be more robust

Legform test work

- Evaluate typical vehicles with legform impactors
 - Want to know level of protection offered inside and outside of current regulatory test area
 - Ideally, this task should use both EEVC impactor and FlexPLI
 - Maximise usefulness of study
 - Provide comparative test data (if that is useful for GTR Phase 2)
 - Test programme could be extended substantially depending on costs for cars and car parts
 - Suggestions for how to get most from available resource will be welcome

Legform test work

Test programme

Typical cars

- Based on vehicle geometry task
- Representative modern vehicles
- Ideally two or more cars
- Perhaps one narrow test area car and one wide area car



Legforms

- Test programme will be most cost effective if legform tests can be scheduled together
- EEVC legform should be available(?)
- FlexPLI dependednt on GTR Phase 2 scheduling



Test ideas

- 5 or 6 tests per car?
- Around bumper corner
- Need to consider options for changed definition – must receive those options in good time

Benefit of change

- Effectiveness and potential benefit of changing bumper corner definition
 - Final task is review of potential changes with respect to the accident data

 - How many leg injuries could be saved by increasing the width of the bumper test area?
 - Previous assumption that distribution of contact points is even across vehicle front (bias to one corner is offset by reduction to other side, etc.)

 - How did example vehicles perform around the corner region?
 - It could be that a change in the test area would not alter the accident situation very much
 - Need to confirm one way or the other

Summary

- Provided an overview of the EC study proposal
 - Understanding / previous research
 - Vehicle geometry
 - Testing
 - Benefit estimate

- Providing an opportunity to comment
 - Project intended to compliment activity within Task Force
 - Contribution to Task Force will be greatest with input from all stakeholders
 - At this stage your suggestions will be welcomed

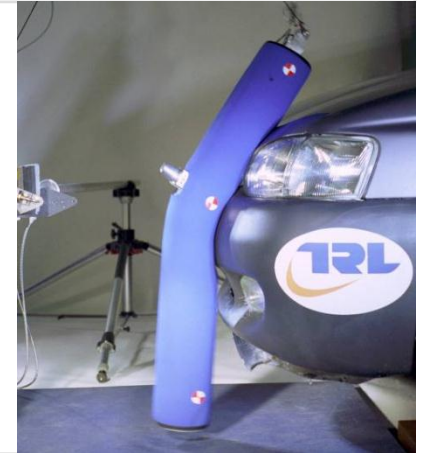
Summary

Opportunities for cooperation

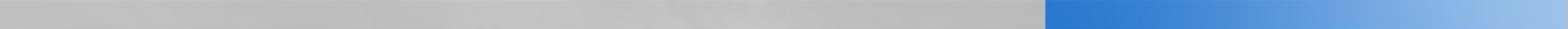


- Exchange of data and test results?
- What vehicles have already been measured and/or tested?

- Legform testing dependent on FlexPLI availability
- Proposed test vehicles - suggestions
- What can be obtained to make funding go further?



- Will consider accident data for Europe
- Need to consider how results and analysis will affect other regions



Do You Have Any Questions?

Thank you Task Force – Bumper Test Area: Proposed EC study

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