



Task Force – Bumper Test Area: EC study update

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Agenda

EC study to support Task Force

- 1 Update
- 2 Understanding of issue / collation of previous research
- 3 Vehicle geometry
- 4 Legform test work
- 5 Benefit of change

2nd meeting: Task Force – Bumper Test Area

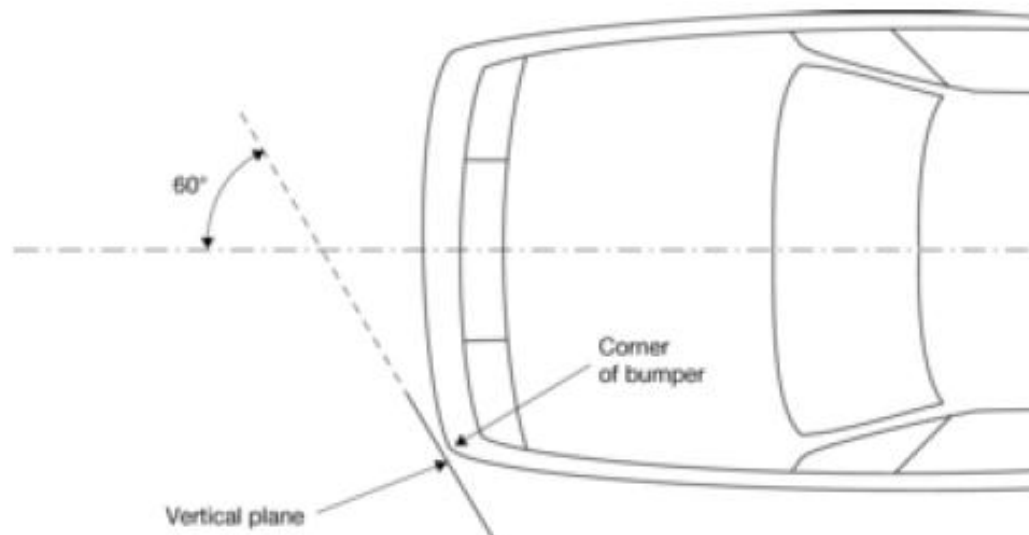
- At the 1st web meeting concerning modification of the legform test procedure presented 'Proposal for an EC study'
 - Presented contents of a draft service request
 - Project objectives hopefully matching the activities of this group
 - Attempt to optimise available contribution

- TRL have now bid for this work
 - Waiting to hear result from EC

Context for group and EC study

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

- Technical prescription of test area in Commission Regulation (EC) 631/2009
- 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

- UN Global Technical Regulation (GTR) No. 9
 - Text on bumper area not altered in current draft phase 2 amendment
 - Amended GTR would use the same definition as Commission Regulation
 - 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 is able to 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 define the corners of the bumper as being close to the side of the vehicle

- Summary 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°
 - A bumper definition is used in other regulations
 - e.g. UNECE Reg. 42, FMVSS581/CMVSS581
 - Try to document where a defined bumper is used – how it is defined
 - Euro NCAP has written into their protocol a new bumper definition (based on underlying structures)
 - James Ellway provided information from old discussions and material presented at 1st meeting

- If others have information, EC study can collate it and summarise discussions 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
 - Would be helpful if information is available that could support this task
 - Request for vehicle geometry information included as action in minutes from 1st meeting – thank you
 - Looking forward to receiving information

Legform test work



- Evaluate typical vehicles with legform impactors
 - Want to know level of protection offered inside and just outside of current regulatory test area

 - Ideally, this task should use both EEVC impactor and FlexPLI
 - Maximise usefulness of study
 - Could provide comparative test data (if that is useful for GTR Phase 2)
 - Suggestion from Dr. Konosu to start initial phase with EEVC impactor
 - Move to prove-out phase with FlexPLI later

 - Test programme could be extended substantially depending on costs for cars and car parts
 - Suggestions for
 - Priorities for testing
 - How to get most from available resource

Legform test work

Test programme

Typical cars	Legforms	Test ideas
<ul style="list-style-type: none">▪ Based on vehicle geometry task▪ Representative modern vehicles▪ Ideally two or more models▪ Perhaps one narrow test area car and one wide area car▪ Consider previous version of model if style change is obvious 	<ul style="list-style-type: none">▪ As mentioned, start with EEVC legform<ul style="list-style-type: none">▪ Test initial ideas▪ Investigate practical limits▪ Refine ideas▪ FlexPLI dependent on GTR Phase 2 scheduling▪ Also consider need to use upper legform for high bumper tests 	<ul style="list-style-type: none">▪ 5 or 6 tests per car?▪ Around bumper corner▪ Need to consider options for changed definition – must receive those options in good time▪ Info from Euro- and J-NCAP could be used here to help define tests

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
 - Some discussion of this at the 1st meeting
 - Need to confirm one way or the other

Benefit of change

- Received offer of information from Japanese accident data
 - The Japanese Accident Data – from NTSEL (Shunsuke Takagi)
 - Look forward to this presentation at a future meeting

 - Hope to provide European data analysis
 - Subject to license agreements with data owners, etc.

 - Delighted to receive other information regarding injurious contacts (or otherwise) outside of the bumper corners

Summary

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

- Opportunity to comment
 - Project intended to complement activity within Task Force
 - Contribution to Task Force will be greatest with input from all stakeholders
 - Suggestions are still welcomed

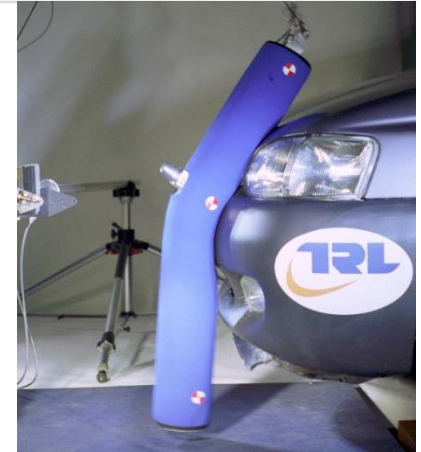
Summary

Opportunities for cooperation – as discussed



- Exchange of discussion documents, data and test results
- Vehicle geometry information

- Proposed test vehicles
- Proposed alternative definitions
- Suggestions please



- Will review accident data for Europe
- Happy to receive information from Japan
- Need to consider how results and analysis will affect other regions



**Do You
Have Any
Questions?**

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

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