Note: This presentation on SAE activity was prepared by the experts from SAE in order to inform GRB regarding SAE work as noted in the 48th GRB session report (paragraph 12.2.) and to recognize the decision of WP.29 to assign responsibility for this task to GRB.

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SAE Safety and Sound Investigations

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SAE Action to date

- SAE Hybrid Electric Vehicle (HEV) Committee formed the Hybrid Sound task force in summer 2007.
- Hybrid Sound task force identified potential for a recommended practice to address the concerns brought to SAE by the National Federation of the Blind (NFB).
- SAE Motor Vehicle Council tasked the Safety & Human Factors Committee in October 2007 to take this subject up where the Hybrid Sound task force left off.
- SAE Safety & Human Factors Committee established Vehicle Sound for Pedestrian Subcommittee November 2007.
- VSP subcommittee to determine if a Recommended Practice is appropriate, and if so to develop one.
- Maintain technology neutral approach

SAE Scope and Purpose

- (1) Identify key knowledge expert areas needed for defining the crash problem and developing potential crash countermeasures with respect to pedestrian-vehicle crashes involving visually impaired pedestrians. Foster participation of key knowledge experts on the committee.
- (2) Using the "best available" information, define the crash problem by identifying the conditions under which pedestrian-vehicle crashes involving visually impaired pedestrians are most likely to occur.
- (3) From the crash problem definition developed in (2), identify "target" crash scenarios where hybrid vehicles may play a contributing role (e.g., street crossings).
- (4) Identify the full range of potential (current and emerging) "vehicle related" countermeasures that may address the "target" crash scenarios developed in (3) and accommodate the needs of visually-impaired pedestrians.
- (5) From the set of potential crash countermeasures in (4), identify the most promising subset of countermeasures. This countermeasure downsizing process should also more broadly consider the extent to which the countermeasures identified in (4) enhance efficient and accessible travel for visually-impaired pedestrians and provide a promising means of helping "sighted" road users (e.g., walkers, joggers, and bicyclists) avoid crashes with vehicles.
- (6) Based on the level of information available, develop a SAE report (Information Report, Technical Report, or Recommended Practice) corresponding to the most promising counter measure(s) developed in (4) above. As appropriate, recommendations should be provided for additional research and studies.

Specific SAE Work Groups

- **Task Force 1**: *Audience Identification & Harmonization*
  - *Who and what is(are) the issue(s) of concern?*
  - *What are the other, potentially conflicting, noise emission regulations?*
- **Task Force 2**: *Crash Problem Definition & Crash Scenario Identification*
  - *What are the specific vehicle/pedestrians scenarios of concern?*
- **Task Force 3**: *Countermeasure Performance Evaluation & Test Procedure*
  - *Specific test procedures to quantify vehicle performance attributes (minimum noise emission, vehicle to pedestrian communication, vehicle to infrastructure communication, pedestrian to vehicle communication, etc.)*

Work of Interest to GRB

TF3 Working Group is revising test procedure of ISO 362-1 (SAE J2805) for maximum noise emissions by evaluating the exterior noise at various vehicle operating conditions below 20 km/hr

SAE Continuing Collaboration

SAE will continue to work with other organizations (ISO, NHTSA, FHWA, IIHS, universities, consortia, etc.) to gather any relevant data and anecdotal information to define the issue of crashes at intersections involving hybrid vehicles with other road users.

NHTSA National Highway Traffic Safety Administration
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U.S. Department of Transportation
Federal Highway Administration

The Volpe National Transportation Systems Center

Next Steps

Sound-measurement data will be used to substantiate revision of ISO 362-1 for low speed testing (as J2889-1), then additional testing will be performed in 2009 to revise draft test procedure

ISO TC43/SC1/WG42 has also approved work on this subject. ISO WG42 members have already provided substantial contributions to the SAE work. ISO and SAE will work cooperatively to develop test procedures.

THANK YOU