

# Vehicle Sound for Pedestrians (VSP) Committee - Status Update

at the  
2010 SAE Government-Industry Meeting  
Washington Convention Center

*January 28, 2010*



# VSP Status Report

## Background of VSP Committee

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

**Regular monthly conference calls throughout 2008 and 2009, and numerous additional meetings of the Committee's three Task Forces**

# VSP Status Report (continued)

Approved the following Scope & Purpose on March 27, 2008:

- ⇒ (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 countermeasure(s) developed in (4) above. As appropriate, recommendations should be provided for additional research and studies.

# VSP Status Report (continued)

## Formed three task forces:

- ≡ Task Force 1: *Audience Identification & Harmonization*
- ≡ Task Force 2: *Crash Problem Definition & Crash Scenario Identification*
- ≡ Task Force 3: *Countermeasure Performance Evaluation & Test Procedure*

# VSP Status Report (continued)

Despite title of “Vehicle Sound for Pedestrians” this Committee maintains a *technology-neutral* approach.

SAE document reference now established as:  
J2889 – Vehicle Sound Measurement at Low Speeds

TF3 Working Group revised the ISO test procedure ISO 362-1 (SAE J2805) for maximum noise emissions by evaluating the exterior noise (from 20 kph down to idle) to create J2889-1



JAMA shared a summary of their noise study from their work in Japan and had several meetings with the VSP Committee TF3 Working Group throughout 2009

# VSP Status Report (continued)

Committee worked with the NFB to survey visually impaired pedestrians involved in crashes with vehicles at the NFB Convention in July 2008



**The Volpe National Transportation Systems Center**



Committee continued to work with other organizations (UN-ECE, ISO, NHTSA, FHWA, IIHS, universities, consortia, etc.) to gather relevant data and anecdotal information to define the issue of crashes involving hybrid and electric vehicles with non-motorized road users.



# VSP Status Report (continued)

## Presented summary of activity at 2009 SAE World Congress with NFB Rep.

- Information well received, and discussed opportunities to participate in a 'walkthrough'

## Participated in NHTSA Research Plan meetings and discussions

- NHTSA referenced a modified DRAFT J2889-1 test procedure
- NHTSA issued data on pedestrian fatalities and suggested a higher incidence of crashes involving hybrid vehicles through an initial data sample
- NHTSA provided a report to Congress on October 1 (not released to public)
- SAE VSP Committee supported NHTSA research plan through regular meetings and communications

## Attended NFB/NHTSA Cognitive Walkthrough

- "Walked a mile..." in blind person's shoes to learn about reliance on audible cues for pedestrian navigation in traffic
- Will continue to gather information from NFB and work with Western Michigan University to learn about this topic



# VSP Status Report (continued)

**By end of 2009, various legislative initiatives were undertaken:**

- ≡ US House Resolution 5734 (Towns) – failed to be heard in 2008 Legislative Session, was re-introduced in January 2009 as H.R. 734 and expected to have hearing this year
  - Had over 168 co-signers of the bill
- ≡ US Senate Resolution 841, was introduced (Kerry) in April 2009.
  - Only eight co-signers of the bill which was identical to House version.
- ≡ In 2008, 7 state bills introduced, and 2 passed:
  - MD – commission studying the problem and continued to review throughout 2009 as well as conducting their own testing. Expect a Report to be issued.
  - CA – vetoed by the Governor

**Expect other states to begin legislation depending on Federal activity**

# Next Steps

VSP Committee continued to work with NFB, ACB, NHTSA, Alliance, AIAM, IIHS and others as NHTSA developed their own research plan

- The VSP Committee supports collaborative research to identify a *global* means of communicating a vehicle's presence and the intent to cover all vulnerable road users
- WP29 is reviewing this issue and will evaluate existing information and identify any needed information to determine if a 'GTR' is warranted. Anticipate that J2889-1 to be the basis of any ISO work product.

Draft test procedure being practiced now, sound-measurement data gathered to validate the current draft of J2889-1

- 'Background Noise' requirements were revised; as well as options provided for acoustically stationary or non-stationary 'time varying' vehicle noise
- Expect J2889-1 to be balloted by the SAE Safety & Human Factors Steering Committee, and the SAE Exterior Sound Committee by the end of February 2010

The J2889 Information Report will be drafted by the VSP Committee to compile resources and references as well as provide background information on this issue

- A draft outline (Rationale) of this document has been completed, and expect that an internal VSP editorial committee will complete a draft document by mid-2010

After review by the Committee & other technical experts, the Information Report (J2889) and Test Procedure (J2889-1) will continue to advance through the SAE approval process



THANK YOU

