

ASA Fall 2013 - 166th Meeting of the Acoustical Society of America

San Francisco

SS: Minimum Sound Requirements for Hybrid and Electric Vehicles to Protect Pedestrians

Authors: André Fiebig, Klaus Genuit

Title: Sound design concepts meeting minimum sound requirements - Advantages and disadvantages

A young field of activity for acoustic engineers has emerged in the context of vehicle exterior noise design considering the aspect of pedestrian safety. The fear of blind associations, public authorities and governmental agencies to have a high collision risk for visually-impaired persons with “quiet” vehicles led to the definition of new minimum sound requirements for hybrid and electric vehicles ostensibly leading to ten times fewer pedestrian and cyclist injuries. The requested sound should be detectable under a wide range of background noises when a vehicle is traveling under 18 miles per hour.

It is still open, whether hybrid and electric vehicles cause verifiably a higher collision risk for vulnerable persons and consequently the German Federal Environmental Agency rejects the idea of introducing additional sounds to enhance the audibility of vehicles operating in electric mode. Nevertheless acoustic engineers have to deal with the new requirements in the context of vehicle exterior noise and must find sustainable solutions considering product sound quality, detectability of vehicles and noise annoyance in equal measure. The paper will discuss the context-related need for additional sounds to improve pedestrian safety and the conceptual scope of sound design taking into account community noise aspects.

Words: 197

INVITED

PACS: 43.50.Qp (Effects of noise on man and society)

Find more event abstracts in our >> abstracts archive <<

HEAD acoustics GmbH
Ebertstraße 30a
52134 Herzogenrath, Germany