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Submitted Online

U.S. Department of Transportation
Docket Management Facility
1200 New Jersey Avenue SE
Washington, DC 20590-0001

Re: Comments Concerning Minimum Sound Requirements for Hybrid and Electric Cars
Docket Number: NHTSA-2019-0085-0001

The Consortium for Citizens with Disabilities (CCD) Transportation Task Force is pleased to submit comments in response to the National Highway Transportation Safety (NHTSA) NPRM concerning the minimum sound requirements for hybrid and electric vehicles. CCD is the largest coalition of national organizations working together to advocate for federal public policy that ensures the self-determination, independence, empowerment, integration and inclusion of children and adults with disabilities in all aspects of society. The Transportation Task Force urges NHTSA to limit the number of sounds car owners can select from. Instead, a set number of sounds that are uniform should be developed, and car owners should have little or no involvement in selecting such sounds.

Uniformity in the sound that electric cars emit is imperative. The different environments that cars travel through, in many situations, can be heavily riddled with a myriad of other sounds. This symphony of sounds can be difficult to sort through for many blind and visually impaired persons. As a result, a distinguishable and uniform sound is necessary to assist the blind community in identifying hybrid or electric cars. If vehicle owners could select from a variety of sounds, the multitude of sounds may confuse blind pedestrians. A more uniform set of sounds will enable blind travelers to more simply sort out when a hybrid or electric car is within their surroundings. When a car is moving at an accelerated speed on a heavily trafficked road, a blind or visually impaired pedestrian does not have time to think through the mixture of sounds around them. Consequently, a fixed set of sounds will enable blind people to quickly identify if a car is nearby. Additionally, if car manufacturers have the ability to develop their own sounds, the number of emissions will only multiply, developing more sounds for blind and visually impaired pedestrians to learn. As a result, car owners should have few sounds to select from to prevent blind pedestrians from having to memorize a long list of vehicle noises.

Along with this, the sound must be distinguishable from other environmental noises to ensure that the car emission is not confused from another sound. For instance, earlier audible pedestrian

signals (APS) emitted a bird chirping sound. This often is confused for actual birds. Therefore, cars must emit a specific and identifiable sound that alerts blind pedestrians to the presence of a car, not another possible object. The sound must be car-specific, not simply another every day noise. The development by manufacturers and the selection by drivers is more likely to emit less obvious car noises.

With this in mind, the most effective sound for electric cars would be that of known internal combustion engines. Most people are familiar with the traditional car motor heard on streets. When blind or visually impaired persons go through orientation and mobility (O&M) training, they learn to listen for the surge of a car engine. Consequently, the most effective sound that is familiar and distinguishable for blind travelers is that of a typical car engine.

Another variable to be considered is the pitch of the sound that is emitted from the vehicle. Those who experience any kind of hearing loss in addition to blindness often experience loss on either end of the spectrum of sound: they either lose hearing in the higher frequencies or lower frequencies of sound. Therefore, when determining what sound the cars should emit, the sound should fall somewhere within the middle of sound frequencies.

Studies have already been carried out to assess what the most effective and appropriate sounds cars should emit.[i] These studies have included actual blind pedestrians who provided their own input, and should be taken into account when developing the set and uniform sound electric cars should be emitting. Car manufacturers and car owners must then select noise emissions based on such research. In addition, all cars, not just electric cars, are becoming quieter. As a result, such uniform sound emissions should be considered for all cars.

Thank you again for your commitment to mobility for all, and for increasing access to employment through the development and deployment of autonomous vehicles. We look forward to remaining engaged in these vital conversations. Please do not hesitate to contact Claire Stanley, cstanley@acb.org, with any questions.

Sincerely,

Consortium for Citizens with Disabilities Transportation Task Force Co-Chairs

Lee Page
Paralyzed Veterans of America

Claire Stanley
American Council of the Blind

Carol Tyson
Disability Rights Education and Defense Fund

[i] See "Electric Vehicle Detectability by the Vision Impaired: Quantifying Impact of Vehicle Generated Acoustic Signatures on Minimum Detection Distances," by M. Lucas Neurauter, Virginia Tech Transportation Institute, et al, https://www-esv.nhtsa.dot.gov/Proceedings/25/25ESV-000134.pdf.