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HOMEPAGE FEATURE

Adding Sounds to the Silence of Electric Cars

BY THE WORLD | JUNE 27, 2011 | [POST A COMMENT](#)

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ELVIN (The Electric Vehicle with Interactive Noise) (Photo: Clark Boyd)

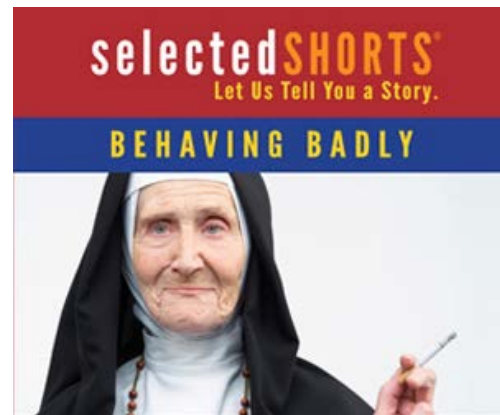
The hum of a finely tuned engine is the source of pride for many car owners. Unless, of course, the car is an electric or hybrid, both of which can be pretty quiet. There are some, in fact, who say that electrics are too quiet, and that they pose a danger to pedestrians, cyclists and the sight impaired. But a group of researchers at Warwick University in Britain is testing a range of new noises that may be coming soon to an electric vehicle near you.

The work is being done by the Warwick Manufacturing Group, which has been working with British car makers for years to fine-tune the sounds of its gas-powered vehicles.

“The sound of a car can have a big impact on what you think is the quality or brand of that car, especially if it is a premium or sports car” said Warwick’s Paul Jennings. “So manufacturers go through a lot of trouble to make sure their cars sound absolutely right.”

But electric vehicles, Jennings said, present challenges that go far beyond just enticing consumers.

“Electric vehicles and hybrids are alarmingly quiet. The concern is that as a road user, as a pedestrian or as a cyclist, we’re just not aware of their presence. And therefore there’s a real danger that there could be an accident.”



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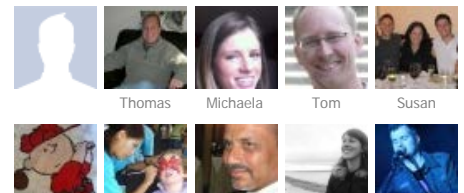
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Paul Jennings with ELVIN (Photo: University of Warwick)

And so Jennings and his team are trying to figure out how to add warning sounds to electric vehicles. They are testing a range of sounds in the lab –

everything from fairly regular “car” noises to UFO sounds straight out of “The Jetsons.”

Then, the sounds are put into a small, green and white experimental delivery truck called ELVIN, or The Electric Vehicle with Interactive Noise. As ELVIN makes his way around campus, the researchers try out different sounds and see which ones are good at alerting people to the vehicle’s presence.

“ELVIN is great for us because it’s an electric vehicle that actually has a day job around campus, so we’re not doing anything artificial,” Jennings said. “He actually goes into and out of car parks, around pedestrian areas, and so actually goes into the scenarios that have been flagged up as potential safety problems.”

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BBC WORLD SERVICE
The Changing World

You Wouldn't Want a World That Sounds Like This

A few miles down the road from Warwick, in the small town of Hitchin, Mark Allman-Ward grabs the wheel and takes off down the open road. He is sitting at a computer, actually, and the wheel he has grabbed is similar to the one used in computer racing games.

Allman-Ward is showing off the speed and sound of the sports car simulator that the company he works for, NoViSim, has created.

The company is helping the team at Warwick University create and test possible sounds for electric vehicles. To do that, NoViSim has re-created the entire town of Hitchin in a computer simulation. You can walk around the town as pedestrian, testing possible situations where pedestrians and electric vehicles might encounter one another.

Allman-Ward demonstrates the difficulty in getting warning sounds just right. His simulated character approaches an intersection and the UFO noise can be heard approaching from behind.

"That noise works fine as a warning," Allman-Ward said, "but listen to this." He has set up the program so that every car has that UFO warning sound, and as they approach the traffic light, all of them begin to beep and boop. "You would not want to live in a world where this happens."

But it begs the question: why not just make cars sound like...cars?

"Because the sound we are used to with the internal combustion engine is actually a very rich and complex sound," Allman-Ward said. "The more rich and complex a sound you try and create, the more expensive the more hardware is in order to create it."

A New Leaf

But something has to be done. The United States has already passed legislation requiring electric vehicles to make noise when traveling at slower speeds, and now Europe is turning its eye, or rather ear, to the problem as well.

Some manufacturers, like Nissan, are already a step ahead. The company's all-electric Leaf comes with sounds for both forward and reverse at low speeds.

"It's kind of like a high-pitched whining sound that's annoying," said Seattle resident and Leaf owner Rob Greenlee. "It's not the kind of sound you expect from a car, and I'm constantly seeing people turn around and look at me with a blank stare on their face and say, what is that?"



Paul Jennings and Mark Allman-Ward (Photo: University of Warwick)

Greenlee said he understands the need for warning noises, but that one of the primary reasons he bought the car is precisely because it runs quietly.

"I think we all had this perception that we like the roaring sound of that gas engine. I went through that phase too, when I was back in high school. I had that Plymouth Barracuda with the cherry bombs coming out from behind the car that made all kinds of noise," he said. "But I think as I've gotten older I've gotten a little more sensitive to sound, and it's just cooler to be completely silent."

Ring Tones for Cars

Clotaire Rapaille, who has been consulting for the automotive industry for decades, does not buy it.

"What people say is that they want a car that doesn't make noise, but I don't believe what they say. I love my car, and my car is like a personality for me. Give me a sound that reflects this personality, a sound that is a signature."

"Think of all the possibilities that are suddenly open," Rapaille said. "We have different ring tones for different cell phones; we can have different sounds for different kinds of cars."

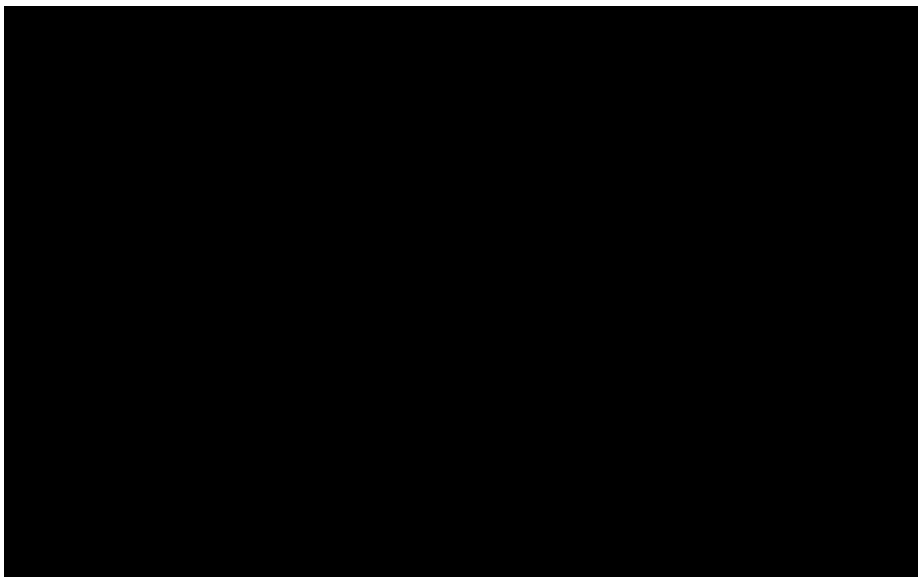
Paul Jennings of Warwick University worries, though, that personalization could be taken too far. Warning sounds, he said, may not work as effectively if every driver has his or her own.

Then again, he said, allowing cars to be completely silent would not be safe either.

"We're in a transitional period right now, where we're still mainly used to cars making a sound," Jennings says. "We really want to encourage the introduction of these electric vehicles, and the last thing we want to do is put a barrier in for their safe implementation."

Rest assured, say the sound experts, that one way or the other, the cost of adding noises to electric vehicles will end up in the sticker price.

The Sounds of the Chevrolet Volt



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DISCUSSION

8 COMMENTS FOR "ADDING SOUNDS TO THE SILENCE OF ELECTRIC CARS"

The sound should be something like that of ocean waves, not too loud but just loud enough so that it is audible, and perhaps around coastlines it can be a bit louder or have a rhythm to it, so that it doesn't blend in too much with the ocean sound, and people can tell it's a car and not the ocean making the sound.



Josephine Capshaw

POSTED BY [JOSEPHINE CAPSHAW](#) | JUNE 27, 2011, 3:42 PM

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I was astounded to hear this story. What a bone-headed idea, to add noise pollution to electric cars. I understand that inattentive people can walk into the path of oncoming cars, but must we always play to lowest common denominator? BTW, at various times in this country, we have had electric buses, which were virtually (and mercifully silent. To the best of my knowledge, nobody insisted on adding noisemakers to them, and no cry went up that they were unsafe.



POSTED BY [PAUL BONILLA](#) | JUNE 27, 2011, 5:20 PM