

To Whom It May Concern:

We are writing to share comments about the recently released Federal Automated Vehicles Policy.

We are writing as private citizens with an important personal concern about this topic. On May 10, 2014, our 16-year-old daughter was in her car, properly stopped at a red light behind another vehicle. A brand new Mercedes GL450 was coming down that neighborhood street on a test drive. The salesman from RBM of Atlanta, Inc. (a highly respected local dealership) was in the passenger seat explaining to his customer about the automated braking component of the adaptive cruise control system (Distronic Plus). He had the customer set the cruise control at 40 mph in a 35 mph speed zone and told her not to touch the brakes – that the system would stop the car better than she could.

As they approached the intersection, he insisted that the customer not hit the brakes and to let the system stop the car. Their SUV slammed into our daughter's car at approximately 40 miles per hour, propelling her vehicle into the car stopped ahead of hers and then both of those vehicles into the active intersection. Fortunately, her airbags deployed and her seatbelt restrained her, allowing our daughter to walk away from the crash. She suffered a serious concussion, requiring weeks of isolation and months of therapy to regain her health. We were of course very thankful, though, because had the crash occurred even a few seconds before or after, the cars could also have been struck by crossing traffic with tragic results.

We are very aware of the wonderful potential safety benefits that increasingly automated features can bring to our roadways, and look forward to a future of more secure automotive travel. However, as our experience shows, this current situation of various manufacturers bringing a variety of different features to market can cause a lot of confusion. We were interested to read the guidance you released, especially since it explicitly is intended to apply to the spectrum of vehicle automation, including the Level 1 features such as the adaptive cruise control involved in our crash. We have since learned that the system is designed to track vehicles traveling directly in front of it, and will brake in response to a decrease in speed in cars it is following. However, as our crash showed, that system neither senses nor stops for stationary objects, such as a car stopped at a red light.

We sincerely hope the comments below will be useful as you work to help prevent future crashes like the one that injured our daughter.

As further explained below, our comments include:

- 1 - Consumer and salesforce education is critical
- 2 - Voluntary reporting of crashes may not be sufficient
- 3 - Current data collection seems inadequate to capture cases where driver complacency or misunderstanding of a feature is at fault
- 4 - Clear indicators of what systems are functioning would be useful
- 5 - Consumers need clear indications of the intended domain of automated features

1 - Consumer and salesforce education is critical.

We are fully supportive of the guidance's section on Consumer Education and Training. Specifically, section 7 states:

Entities should ensure that their staff, including but not limited to their marketing and sales forces, understand the technology and can educate and train dealers, distributors and end consumers. Consumer education should cover topics such as an HAV system's intent, operational parameters, capabilities and limitations, engagement/disengagement methods, HMI, emergency fall back scenarios, operational boundary responsibilities, and potential mechanisms that could change function behavior in service.

This is a critical factor in our crash. The salesperson demonstrating the automated feature in the car did not understand the technology, despite the dealership's contention that he was adequately trained. He had worked previously for multiple Mercedes dealerships and was designated as a "Mercedes-Benz Master Certified" salesman. He apparently believed that the adaptive cruise control was actually a fully-automated braking system that could sense all conditions where braking was necessary. He initially insisted that the crash was actually the driver's fault because she must have inadvertently tapped the brakes and disengaged the system.

The system's limitation are mentioned in the owner's manual, and there are representative diagrams marked with warnings against the type of driver behavior involved in our crash. Clearly that was inadequate.

It is possible that ours was just a case of a confused salesman, however, we are concerned that may not be reality. First of all, ours was a career salesman with many years of service selling vehicles from this manufacturer. It is astounding to us that he could have passed his training and been put in the position to demonstrate the system he did not understand. From our experience trying to understand what happened to our daughter, the array of features and functionality available to consumers is overwhelming, and it would be very hard for the average buyer to know the nuances of how the different systems work. In a recent conversation with an academic working in this area, we were told of a test drive he conducted where he was testing a different manufacturer's autonomous braking system. In that case he narrowly avoided a crash when he realized that the system was not engaged. Neither he nor the salesman were aware that the default setting for that feature in that vehicle was the "off" position. Moreover, as we pointed out above, it's hard to get data about specifically when faulty human-machine interaction with functioning systems was a factor in a crash (or in the case of the academic, a near-crash). So, it's impossible to say how often this type of crash occurs.

However, we think it's important to note that there may be an incentive for manufacturers and dealers to hype these new autonomous car features. Indeed, Mercedes recently released an ad that blatantly misrepresented the automation level of its E Class car, showing it as a "self-driving car". Only when consumer organizations protested, pointing out that the ad was confusing and could lead to drivers overestimating the capabilities of the systems, did Mercedes pull the ad. It's possible that this same overconfidence and pressure to appear on the cutting edge of this

new technology filters down to the dealers and salespeople, leading them to believe their product does things it was never designed to do.

Before testing the system on public roads, the salesman should have known and made clear to his customer the limitations and parameters for its use. Perhaps it would be appropriate to have a checklist or some type of printed material on new vehicles and test cars that offer Level 1 and Level 2 systems, alerting unfamiliar drivers to their limitations.

2 - Voluntary reporting of crashes may not be sufficient.

We noted that Section 1 requests that manufacturers voluntarily provide reports regarding how the guidance has been followed. In the case of our crash, we specifically requested that the dealership inform the manufacturer, other dealerships selling cars with similar systems and also report the incident to the NHTSA and the relevant authorities. As private citizens completely uninvolved in the automotive industry, we were hopeful that they would be in touch with the right contacts to ensure this potentially life-saving information got to the appropriate interested parties. Despite numerous repeated requests to inform us if the dealership had taken any steps, we have been repeatedly rebuffed for over two years. Our experience does not make us optimistic that a voluntary reporting system would be effective.

3 - Current data collection seems inadequate to capture cases where driver complacency or misunderstanding of a feature is at fault.

On the topic of data recording, the guidance states:

"Vehicles should record, at a minimum, all information relevant to the event and the performance of the system, so that the circumstances of the event can be reconstructed. This data should also contain information relating to the status of the HAV system and if the HAV system or the human driver was in control of the vehicle at the time."

While that makes sense for more fully autonomous vehicles, it is harder to capture critical data about cases like ours involving a less automated vehicle and the public's misunderstanding of their features. We have spoken with a few academics who seem to confirm that there is not a centralized database for these events, but perhaps working with traffic officials or insurance companies to actively and systematically capture this information could be helpful.

4 - Clear indicators of what systems are functioning would be useful.

The guidance discusses the Human Machine Interface and says:

"At a minimum, indicators should be capable of informing the human operator or occupant that the HAV system is:

1.Functioning properly;

2.Currently engaged in automated driving mode;

3.Currently “unavailable” for automated driving”

While this targets more fully automated driving systems, this type of clear indication might have been helpful in the case of our crash. The salesperson believed the system would cause the car to brake, but it appears that at the time of the crash it was not tracking or sensing any other vehicle and thus did not stop. Perhaps more clearly obvious indicators would be helpful, even for lower levels of automation.

5 - Consumers need clear indications of the intended domain of automated features.

Section G of the Guidance, which references lower levels of automation like the one involved in our crash, is of course of particular relevance. We were pleased to see the focus on the potential for driver complacency with Level 2 systems, and the idea that countermeasures should be developed.

Since our crash involved adaptive cruise control, which we believe is a Level 1 system (though could be considered Level 2 if combined with other safety systems) the guidance about those systems was most relevant:

While such systems may not be able to fully confine the system’s use to its IODD (Intended Operations Design Domain) due to the drivers’ expected role as part of the system, manufacturers and other entities should use available means to communicate, monitor, and limit uses of the automated vehicle systems when there is a reasonable expectation (or risk) of systems being used outside of their IODD or of drivers not performing the safety assurance role expected of them.

In our case, a cruise control system, which presumably should only be used on the highway, was used on a neighborhood surface street. Perhaps there are ways to automate the system to prevent its use there.

Thank you for your attention to these comments. We are grateful that our daughter has recovered, and hopeful that you can use the insights from our experience to create an even safer environment for the rollout of these new features.