

TESTIMONY OF

Trooper Jacob Jones

Good morning, Chairman Ruby, and members of the House Transportation Committee. I am here today to provide neutral testimony regarding increasing the speed limit to 80 mph on interstate roadways. I have been a trooper with the North Dakota Highway Patrol for 12 years and I am a member of our crash reconstruction team. As a full-time reconstruction analyst, I have attended numerous trainings pertaining to human causation in crash investigations.

One of the biggest dangers to drivers while behind the wheel is encountering speed variance. Variance in vehicle travel speeds leads to drivers changing lanes, passing, and slowing down. In an ideal world all the vehicles on the roadway would travel at a uniform speed, keeping adequate distance between them. However, the highway is shared by many different users who travel at various speeds due to vehicle types, capabilities, and simply driver preference. Today, I want to talk to you about a specific type of hazard that drivers encounter on highways: closing on a lead vehicle.

Simply put, closing on a lead vehicle involves a faster vehicle approaching a slower vehicle while both are traveling in the same direction. It is not the same as following too closely in a group of vehicles, but rather a faster vehicle encountering a slower vehicle unexpectedly.

While this can happen on lower posted speed limit roads such as 55 mph to 75 mph, at 80 mph there would be more opportunity for speed variance. Approaching a slower vehicle is so dangerous because humans have difficulty discerning the speed of an object ahead of them unless they have more information.

An example of more information would be if there are people standing next to a vehicle roadside or a vehicle is over on the shoulder with its hazard lights on. These cues tell the approaching driver that the vehicle ahead is not moving or is moving slowly. Other cues include flashing lights or brake lights. Without roadside cues such as these, the human eye relies on the rate at which objects grow in the field of vision to determine how fast something is moving toward or away from them.

There is a mathematical equation for radians per second of change that is required to achieve this visual expansion threshold. The easier to understand explanation is that a speed difference of 45 mph to 50 mph becomes a major problem for drivers. Human factors expert Jeffrey Muttart puts this threshold at closing speeds of 35 mph or greater. This lower threshold is likely giving allowance to those 85th percentile drivers who may have longer perception reaction times. At the closing speed of 45 mph and greater, a crash is almost guaranteed: or least a very near miss. At these

closing speeds, the hard emergency stopping distance (or distance to match speed) plus the driver's perception reaction distance exceeds the available distance to eventual impact. Simply stated, by the time your brain tells you that you are in a dangerous situation, it becomes impossible for you to avoid the slower hazard.

Law enforcement officers exceed the speed limit, and you may be thinking, "why aren't they in more crashes because of this?" When a driver, in this argument, a law enforcement officer recognizes the speed variance is a factor, the slower vehicles become a non-immediate hazard that can be dealt with far in advance. The issue is not knowing the speed variance is present.

I will admit that these cases of stopped or slowly moving vehicles in the travel lane are very rare. The probability of a driver encountering a stopped or almost stopped vehicle on a controlled access highway is below one percent. However, according to the Driver's Responses in Emergency Situations 3rd Edition by Jeffrey W. Mottart, crash statistics of these highway rear-end crashes show that 34% involved closing speeds of 30 mph or greater.

While it might seem odd that I am impartial about motorists traveling at higher speeds, it is the controlled access environment and speed variance that concerns me- whether the speed limits change or not. On these types of roadways, drivers are usually expecting to activate the cruise control and don't expect the types of hazards they would be alert for on an uncontrolled access road. I believe that if a bill is being considered about increasing the maximum, a discussion should be had about implementing a minimum speed on the controlled access roadways.

To be clear, I am not recommending banning certain vehicles from driving on the shoulder, I am concerned about ordinary roadway users traveling dangerously slow in the travel lanes of the interstate roadways. Inclement weather aside, drivers should not be traveling that slowly under normal driving conditions. I understand this information may be new to you. Thank you for your time and I will stand for questions.