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Teens, Trucks, and Advanced Driver Assistance Systems in 2022 and Beyond

I. Introduction to Issues

The Federal Motor Carrier Safety Administration's Apprenticeship Pilot Program

Traditionally by law, Commercial Driver's License (CDL) holders under the age of 21 are not allowed to operate across state lines. In 2022, faced with truck driver shortages that strained supply lines across the nation, a new infrastructure law was passed that directed the Federal Motor Carrier Safety Administration (FMCSA) to develop an apprenticeship pilot program that would allow drivers aged 18-20 to operate interstate commerce under very specific conditions. These conditions include that the apprentice drives a commercial motor vehicle with an active braking collision mitigation system, a forward-facing video event capture system; and a governed speed of 65 miles per hour at the pedal and under adaptive cruise control. For two probationary periods of 120 and 280 hours, the driver must also be accompanied in the commercial motor vehicle by an experienced driver over the age of 26. Given the presence of these younger drivers on the roadway across the country, and the proliferation of this technology in commercial motor vehicles, new risks are presented that all legal and claims professionals should be aware of in order to assess claims in 2022 and beyond.

II. Science of Human Factors & Driver Behavior

Basics of Human Vision, Attention, & Decision-Making

Human Factors is the scientific study of the capabilities and limitations of people as they interact with products and their environment. The field is rooted in behavioral sciences and draws form aspects of many fields, including psychology, physics and engineering. The field has origins in the Air Force during World War II, with the study of how pilots interacted with the alarms and controls of their airplanes. The field has greatly expanded and several national organizations recognize and utilize Human Factors, including the National Highway Traffic Safety Administration (NHTSA).

Human factors research has characterized how humans engage in the driving task and what specific components it can be broken down into. Specifically, visual information is a key source for drivers to be aware of hazards in their environment. Alert and attentive drivers tend to glance at multiple locations both inside and outside of the vehicle to maintain their position in the roadway, monitor speed, maintain distance from other drivers, and monitor for potential hazards. If a hazard is present such as a quickly slowing vehicle, the driver can decide to brake, steer, or both. The speed at which a driver reacts to such hazards is referred to as perception-reaction time (PRT). PRT includes detection, identification, decision, and response execution.

Age-Related Changes in Crash Risk

According to the National Highway Traffic Safety Administration (NHTSA), teen drivers have a higher rate of fatal crashes relative to adult drivers. This is due to several factors including immaturity, lack of skills, speeding, lack of experience, and distractions. While many of these reasons drive the FMCSA's decision to require ADAS technologies in the trucks driven by 18- to 20-year-olds, much of the research on driver responses to ADAS are with adults. Therefore it remains unclear whether such mitigations will be effective in reducing crash risk, and as a result the FMCSA plans to analyze the safety data of these drivers over time.

III. Introduction to Advanced Driver Assistance Systems

Common ADAS Systems

Advanced Driver Assistance Systems (ADAS) are becoming increasingly ubiquitous and are more commonly available as standard on new vehicles – both light- and heavy-duty. These technologies are designed to provide support to the driver under various circumstances including both emergency and non-emergency situations. Examples of ADAS technologies include but are not limited to:

- Forward Collision Warning (FCW)
- Automatic Emergency Braking (AEB)
- Lane Departure Warning (ADW)
- Lane Keeping Assist (LKA)
- Blind Spot Monitoring (BSM)
- Adaptive Cruise Control (ACC)

While different manufacturers have different names for and versions of these technologies, they typically rely on a combination of input from vehicle sensors including radar, cameras and LIDAR (where available) to detect and react to the changing driving environment.

Levels of Automation

ADAS are not to be confused with automated vehicles. Levels of vehicle assistive systems and automation can be described by SAEs J3016 Levels of Automation definitions. This set of standard descriptions identifies different categories of vehicle technology and also specifies which require driver oversight and which represent full vehicle automation, even when conditional. Specifically, with respect to ADAS, J3016 identifies that the technology commonly grouped under this category falls under Levels 0 through 2, all of which require that the driver remain attentive and in control of the vehicle. Levels 3 through 5 describe full automation and differ only in what conditions the vehicle can fully drive itself without driver oversight or intervention.

With respect to Levels 0 through 2 (i.e., the ADAS levels), SAE J3016 describes systems that effect or influence either longitudinal (e.g., AEB, FCW, ACC), lateral (e.g., LDW, LKA, BSM) or both lateral and longitudinal control (e.g., ACC+LKA). These combination systems are often described as Level 2 systems and include manufacturer specific names like Autopilot, Pilot Assist, and SuperCruise.

Consumer Understanding & Acceptance

As with any new technology, there can be a learning curve for the end users as they first encounter the systems and learn what they can, and more importantly what they cannot do. In addition to providing thorough descriptions in vehicle collateral material (e.g., owner's manual) both manufacturers as well as industry and research groups have resources to help educate the public about the appropriate use and the capabilities and limitations of these technologies. As an example, the website MyCarDoesWhat.org is a not-for-profit resource providing descriptions and demonstrations of various ADAS and vehicle automation technologies.

IV. Claims Related to ADAS

Claim Types

With the increased availability of ADAS technology, there has followed an increase in claims naming ADAS as an alleged contributor in various crashes and incidents. To date we have primarily seen two types of claims mentioning ADAS technology:

- Failure to equip
- Failure to perform

Failure to equip describes claims that a vehicle without a certain ADAS technology or technologies would have been able to avoid or mitigate an incident had the technology been included.

Failure to perform describes claims that the ADAS technology or technologies that were equipped on a vehicle involved in an incident did not perform either well enough or as they should have and that if not for this sub-optimal performance the incident would have been avoided.

Interestingly, while at first glance it may seem that these types of claims would solely be in the products liability setting, we have seen an increased instance of such claims in insurance defense matters as well. Specifically, allegations that a given motor carrier was responsible for either selecting vehicles with ADAS or had the opportunity to equip its vehicles with after market or 3rd party ADAS.

V. Roadmap for Assessing and Defending ADAS Claims

Evaluate Claim that Technology Could be Expected on Vehicle

Certainly, *Failure to equip* and *Failure to perform* claims are not new in the motor vehicle litigation space. However, there are many unique features with respect to ADAS technology that must be considered when evaluating and litigating cases involving ADAS claims. This evaluation starts with the regulatory climate and continues through the specific incident involved.

Firstly, an evaluation should be made as to whether or not it would be reasonable to expect that a given technology would be on a vehicle. Often claims will suggest that because a technology (e.g., FCW) was available on some vehicle in a given time frame that it therefore could have been equipped on any vehicle in the same time frame. To address this aspect of the claim, it is important to describe the state of technology development and deployment on motor vehicles as well as the activities of automotive standards bodies and the federal government during the time period at issue. That a technology exists is insufficient to then claim that it reasonably could be on any vehicle.

Identify the Specific Technology

Secondly, the specific technology that is claimed must be identified. It is not enough for a claim to state that a vehicle should have had FCW or AEB. As previously described, each manufacturer will have systems with different capabilities and limitations, and even within manufacturers, there may be different versions of ADAS that might be available. Without specification of a specific technology, it would be overly burdensome and voluminous to attempt to understand and respond to such a claim.

Evaluate Specific Technology in Incident

Thirdly, the identified technology that either was equipped or that the claim suggests should have been equipped must be evaluated in light of the specific incident. ADAS are new and developing technologies and, as described in owner's manuals and other resources, are not designed to replace an alert and attentive driver and are not designed to prevent or even mitigate each and every incident. Often claims lack specificity or exaggerate the capabilities of these technologies and also ignore the role of the driver or other road users.

Technology-Agnostic Cause

Finally, an evaluation should be conducted agnostic of the technology to help identify the likely causes of the incident and whether or not it would have been preventable or able to be mitigated by reasonable behavior.