Professional Perspective

Autonomous Vehicles & Expanding Liabilities for Manufacturers & Third Parties

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Bloomberg Law

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In late 2016 and early 2017, state legislatures waded into the uncharted waters of autonomous vehicle legislation, potentially creating a new scope of negligence and product liability litigation. For the first time, vehicle hardware and software became potential "drivers" under traffic and safety laws. Since then, nearly every state has enacted either legislation related to autonomous vehicles or issued executive orders on the topic, with 16 states allowing full autonomous vehicle deployment without a driver present.

Contemporaneously, the technology available for use in these vehicles has become much more sophisticated, resulting in the possibility of truly driverless, autonomous vehicle deployment this decade. In fact, in March 2022 the National Highway Traffic Safety Administration (NHTSA) published new rules allowing for the deployment of such vehicles without steering wheels or gas and brake pedals on America's roadways. Federal Motor Vehicle Safety Standards, 49 C.F.R. § 571 (2022).

As companies continue testing new technologies and states keep courting them to do so, several questions remain: Why are autonomous vehicles so desirable? What technology makes them possible? How is that technology tested in real world settings? And who may be held responsible when accidents occur?

The Anticipated Benefits of Autonomous Vehicles

The most cited benefit of autonomous vehicles is the improvement to highway safety by removing the most likely cause of an accident: a human driver. There are over 5 million car crashes in the U.S. annually, and crash causation studies conducted in part by NHTSA have found that human drivers were a primary cause in 94% of them. Traffic Safety Facts, *Critical Reasons for Crashes Investigated in the National Motor Vehicle Crash Causation Survey* (February 2015).

Driver recognition error—which includes driver inattention, internal and external distractions and inadequate surveillance—was the most frequently assigned cause, accounting for 41% of all accidents. Other primary accident causes involve decision errors such as driving too fast or performing an illegal maneuver (33%); performance errors such as overcompensation or poor directional control (11%); and non-performance errors such as lack of sleep (7%). Fully autonomous vehicles may drastically reduce or eliminate these primary causes.

Autonomous vehicles provide several additional anticipated benefits as well, including:

- increasing the mobility of seniors and individuals with disabilities
- reducing traffic and congestion on roadways
- reducing pollution and emissions
- reducing costs associated with accidents and insurance premiums/costs
- increasing individual productivity and free time

This technology will also allow for truck "platooning," where vehicle-to-vehicle communications and sensors virtually connect two or more trucks together in a convoy, improving safety, increasing energy efficiency, and reducing costs and uncertainties related to transporting goods.

Designing Autonomous Vehicles

The technology needed to create a usable fully or near-fully autonomous vehicle is extensive, and its critical features allow a vehicle to determine object location and communicate with its surroundings in real time. These vehicles may contain at least the following components:

- Global Positioning Systems (GPS)

- Ultrasonic sensors: used for short distance data such as parking assistance and backup warning systems
- Computers containing prebuilt maps to interact with GPS data
- Dedicated short-range communication systems: for vehicle-to-vehicle and vehicle-to-infrastructure communication necessary for vehicles to receive critical data about items such as road conditions, traffic, and accidents
- Inertial navigation systems: used with GPS to improve location accuracy
- Infrared sensors: to detect lane markings, pedestrians, and bicycles, especially in low-light conditions
- Several cameras
- RADAR and LIDAR system: radio waves and light beams used to determine the distance between obstacles.

Center for Sustainable Systems, University of Michigan, 2021, *Autonomous Vehicles Factsheet*, Pub. No. CSS16-18.

This technology allows autonomous vehicles to always know where they are located generally and in relation to other objects and, consequently, receive and instantaneously interpret data about their surroundings. It is made usable in part by the fifth-generation mobile network now provided by telecommunication companies. 5G facilitates faster communication and data transfer over cellular networks than its fourth-generation counterpart, and with it, potential widespread adoption of autonomous vehicles throughout the U.S.

Testing Autonomous Vehicles in Real-Life Situations

Although technology exists to create fully autonomous vehicles, their prevalence on highways will be theoretical until the infrastructure catches up and the vehicles have been extensively tested in every type of weather and driving situation. This testing is already happening in states that experience the full gambit of weather conditions.

For example, in Central Ohio, a 35-mile stretch of highway that connects three cities and is home to 66 automotive-related companies has been dubbed the "Smart Mobility Corridor." Described as a living lab to test and deploy transportation technology, the corridor and its cities have developed infrastructure that includes connected vehicle technology embedded in traffic signals, a 100-gigabyte fiber network, and more than 100 roadside communication units that work together to form an open playground to safely test and deploy technology in real-world scenarios.

The corridor is also home to Ohio's Transportation Research Center, which houses a state-of-the-art, $45 million testing and proving ground facility for driverless, autonomous, and connected vehicle technologies. Waymo, a unit of Google parent company Alphabet Inc. and viewed by many as a leader in autonomous vehicle technology, recently opened a new testing site at the Transportation Research Center to test vehicles in dense, urban areas and in bad weather. These developments place Ohio on the forefront of testing to show autonomous vehicles can work on a grand scale with the proper grid/network infrastructure and technology.

Legislation, Regulations & Case Law

As technology continues to develop, questions remain about accident liability. Currently, most autonomous vehicles are not capable of handling all road conditions; a human driver is required. Thus, many states hold the owners/drivers of autonomous vehicles responsible for following traffic laws. Alabama, for example, passed legislation in 2019 stating the owner/lessee of an automated commercial vehicle is considered the operator of the vehicle for the purpose of assessing compliance with traffic and motor vehicle laws. Ala. Code § 32-9B-4.

This liability also extends to situations when a driverless vehicle runs away from police after being pulled over, which occurred in San Francisco last month. But what happens if the human driver becomes unnecessary or even an impediment?

Federal regulations anticipate this type of fully autonomous world already. On March 11, 2022, the Department of Transportation, through NHTSA, issued its first rule pertaining to occupant protection in autonomous vehicle. The rule emphasizes that autonomous vehicles will be held to the same strict standards of occupant safety as traditional vehicles—the Federal Motor Vehicle Safety Standards—while removing terminology related to components that may not be present in autonomous vehicles such as steering wheels and driver's seats.

Transportation Secretary Pete Buttigieg said this "first-of-its-kind" rule was just the beginning, proclaiming that "[t]hrough the 2020s, an important part of USDOT's safety mission will be to ensure safety standards keep pace with the development of automated driving and driver assistance systems."

While statutes and regulations will always influence the development of autonomous vehicles, it is likely that technology will outpace them, and thus courts must address liability for accidents. Numerous lawsuits have been filed alleging several theories of liability against vehicles that have collided with objects while in some version of "self-drive" mode. In the anticipated new world of "robot" drivers, important liability questions must be answered.

Case Law Development

General Negligence

One common claim in auto accident lawsuits is driver negligence. However, with autonomous vehicles, negligence will transfer from humans to manufacturers and third parties. For example, in a negligence claim, a jury must decide whether the driver breached the duty of reasonable care. In essence, the question is whether the driver acted in a conscientious manner to avoid injuries to others. Jurors can employ their own experience in analyzing facts and reaching decisions on whether a human driver acted reasonably in a situation. However, jurors may have difficulty determining whether hardware and software acted reasonably.

Assume a person is jaywalking at night and hit by an autonomous vehicle traveling under the speed limit and not violating any other traffic laws. The autonomous vehicle's capabilities are far superior to those of a human being driving at night. While the human eye can see about 250 feet at night and headlights can illuminate an area 350 feet ahead of a vehicle, LIDAR can detect objects up to 820 feet ahead, even in low or no light, and in 360 degrees. Moreover, autonomous vehicles do not get distracted, sleepy, or disoriented.

A jury will have to decide the level of care that an autonomous vehicle is expected to employ on the road. While the jury may find a human was reasonable in failing to see a jaywalker at night, it may feel differently about autonomous vehicles that are promoted as smarter, more reliable, and safer. A new standard of care will be developed through the courts as autonomous vehicles are adopted on a mass scale.

Product Liability Against Automotive Manufacturers

Most lawsuits will involve product liability claims against automotive manufacturers as autonomous vehicles include more components and features than traditional vehicles. Every sensor and camera will be scrutinized, along with the vehicle's electronics, navigation, and various automated parts.

There will also be arguments about additional technology that has not been incorporated into an autonomous vehicle, even where that technology does not exist or is not yet mature. Indeed, plaintiffs have already begun to allege that certain first-generation autonomous vehicles are defective because they lack an infrared attention tracking system that monitors when a driver's gaze wanders from the road and their hands move from the steering wheel. Further, vehicle warnings and instructions are potentially fertile ground for analysis. Manufacturer warnings and instructions about the capabilities of their vehicles will need to be clear and conspicuous.

Third Party Claims

Several entities that do not manufacture autonomous vehicles are also exposed to increased personal injury liability. For example, telecommunication companies are building the infrastructure necessary to connect autonomous vehicles to the world around them on a nationwide 5G network. This network will allow "vehicle-to-everything" cellular communications, which can enable a vehicle to seamlessly communicate with the cellular network, other vehicles, roadside infrastructure, and even pedestrians in real time. But these companies may face liability if a network goes down, or, as has been reported, the network is not as fast as once thought. If all the components on an autonomous vehicle are working, but an accident occurs due to slow communication on the cellular network, telecommunication companies may be on the hook.

Similarly, municipalities may be exposed to increased liability because of their "smart cities." Generally, smart cities use connected technology and data to improve the efficiency of city services, including mobility, and enhance overall quality of life. These municipalities will be responsible for installing the infrastructure that makes automated vehicles possible, including reflective and machine-readable lane markers, roadside sensors on sidewalks and curbs to allow vehicles to track their surroundings and potential dangers, and smart signage, such as speed limits, that includes embedded codes autonomous vehicles can read. Any malfunction of the technology in this infrastructure could contribute to accidents, and municipalities may be at fault. However, municipality fault will intersect with municipal immunity statutes, potentially foreclosing recovery for certain accidents.

Gig economy companies may also see increased exposure to liability. Ride sharing companies plan to use autonomous vehicles to drive down overall costs. Companies like Uber are expanding their autonomous vehicle fleets by partnering with global driverless technology companies like Motional. In 2022, Uber Eats will officially begin delivering meals in Santa Monica, California, with Motional's all-electric robotaxi. While unquestionably a potential boon for the company's bottom line, the use of automated vehicles may expose gig economy companies to substantial litigation.

Conclusion

Autonomous vehicle statues, regulations and case law are still in their infancy, and it is difficult to predict how they will develop over the next five to 10 years. We will see many more driverless vehicles on our roads, however, and the law must play catch-up as the technology is adopted widely.