

Don't Let the Future of Trucking Leave Your Practice Behind (Part 2)



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In our last article, we discussed two of the biggest technological developments in trucking already taking place on our nation's streets and highways. Today, this article steps a bit further into the future of trucking, both in this State and across the world.

The Future of Driver Monitoring

There are several products being developed to monitor driver alertness beyond ELDs. For example, BHP, a global resource company, has created a technology called SmartCap, which takes the form of a strip that is placed inside of headwear to measure the wearer's brainwaves and identify patterns of fatigue over time. It then reports to both the driver and supervisory employees to recommend any appropriate intervention.

A company called Seeing Machines, has developed a product called Guardian that uses "face-and-gaze-tracking algorithms" to monitor and measure the driver's eye lids and head movements while also capturing road conditions at the time of any event. The information obtained is transmitted wirelessly, and can even be viewed live on a secure network.

Mercedes Benz plans to roll out a driver vest that would identify when a driver is having a heart attack and warn the driver or stop the truck. Other car makers are testing products to monitor drivers and identify diabetic emergencies.

Coming Soon: Driver Assisted Automation and the "Vehicle to Vehicle Network"

Unlike driverless cars and commercial vehicles, "truck platooning", in a form that includes drivers with limited roles, will hit the roads for real this year. For example, Peloton has predicted that it will begin using truck platooning with an actual commercial customer around midyear in Texas. The program would conduct a 250-300 mile linehaul with pairs of trucks, according to Peloton's market vice president, Rod McLane. [i] Daimler Trucks has already completed extensive testing on semi-truck platooning in Europe, and intends to do more in Japan in 2018. [ii] Volvo Corp and Mercedes Benz also have conducted a large number of successful track platooning test runs in multiple countries including the United States.

What exactly is "truck platooning", you ask? Truck platooning is the electronic linking of trucks driving down the highway. It involves a lead truck which predominantly controls one or more other trucks following it. The trucks are designed to drive very close together, 40 or 50 feet apart, in a high-speed harmony that utilizes a wireless, "vehicle to vehicle" ("V2V") network to synchronize speed, braking, and more. The idea is to reduce air turbulence between the tractor-trailers, thus reducing fuel costs.

For context, in its 2016 report, the North American Council on Freight Efficiency ("NACFE") wrote that testing showed a 4% fuel use reduction compared when two platooning trucks were compared to a pair running separately.^[iii] The testing showed a 7% reduction in fuel use when the trucks were traveling at highway speeds.^[iv] In 2013, the National Renewable Energy Laboratory conducted tests using Peloton's technology and found that vehicles loaded at 65,000 pounds and running at up to 70 miles per hour between 20-75 feet apart saw fuel savings of up to 5.3% for the lead truck, and 9.7% for the trailing truck.^[v] In the world of mass-trucking, 5.3% savings in fuel costs across the board would be game changing.

Of course, fuel costs are only the beginning, the ultimate plan is the reduction of human drivers and the costly things that we humans require, like sleep, restroom breaks, and air conditioning. As the NACFE called it, truck platooning is a "pathway to autonomous vehicles", and it is not hard to see why.^[vi]

Nine state legislatures have approved commercial use of driver-assisted truck platooning - Arkansas, Georgia, Michigan, Nevada, North Carolina, Ohio, South Carolina, Tennessee and Texas. Twenty-three other states allow "reasonable following distance" for commercial trucks, which would permit certain versions of truck platooning that involved drivers in each vehicle. With each passing legislative session, more and more states are adopting or amending laws to become part of this developing technology.

The Role of the V2V Network in Autonomous Trucking

While V2V communications are not necessarily required for an automated vehicle to work, it is required for truck platooning, because the vehicles in the platoon must necessarily be in constant communication with each other for the system to work. But V2V networks, in some form, will likely play a role in how all autonomous vehicles, especially those operating in the midst of urban and local traffic, operate and communicate with each other.

Truck platooning will begin as "driver assistive truck platooning" ("DATP"), which is a type of Level 1 automation (using Society of Automotive Engineers (SAE) levels).^[vii] With DATP, each truck in the platoon has a driver, but the trucks following the leader are in automated mode with the exception of steering. V2V communications ensure that when the lead truck brakes, the trailing truck brakes as well, and in sufficient fashion to maintain appropriate separation within the platoon. The same goes for acceleration, and presumably, alteration of the space between the trucks depending upon the weather, traffic conditions, or even the occasional car "cutting in" between the two trucks. V2V technology allows the trucks to react nearly simultaneously - far faster than human reaction times and communication - which allows for the close trailing distance and decreased drag.

Obviously, maintaining the communication between the vehicles is critical, but we know that loss of signal can - and will - occur. Platooning trucks are therefore equipped for such instances with systems to handle degradation or loss of communications. If a satellite loses contact, the DATP system has a sensing subsystem to maintain spacing until a connection can be re-established. There are other operational systems in place in the event of other failures.

It is not hard to see that V2V communication will be an important part of future autonomous cars. Any system which fills our cities and highways with driverless vehicles necessarily involves a method by which those vehicles communicate. Using a V2V network, likely along with a V2I (Vehicle to Infrastructure) network, the hope is that automated vehicles can reduce accidents, increase efficiency of traffic flow, and generally make life a bit easier and better for all of us. As long as the data transmitted is sufficiently secure.

The implications of this new technology, from its impact on labor and employment, to regulation, to insurance, litigation and cyber security, is limitless. But any understanding of how to adapt your practice for truck platooning and the V2V or V2I networks that will soon be commonplace would be shortsighted without also looking a bit further into the future of autonomous trucking.

Sooner than You Think: Self-Driving Trucks Coming to a Highway Near You

Actually, self-driving trucks are making deliveries right now. That's right, driverless trucking technology is not on the distant horizon; it is already here. Autonomous trucks (currently with a human driver to get them on and off the interstate) have been carrying Frigidaire refrigerators from Texas to California since last year.^[viii] The same companies that are developing the V2V network and truck platooning technology discussed above are also experimenting with driverless technology for both long haul trucking and commercial transportation in more urban settings. For example, Volvo is currently developing and testing autonomous sanitation trucks in Switzerland designed to navigate city streets.^[ix] Waymo has been testing self-driving trucks in California, Arizona and Atlanta in a partnership with Alphabet and Google.^[x] Others, include Uber^[xi], Embark (whose self-driving truck has successfully completed a 2,400 mile cross country haul),^[xii] and more.

The only thing restraining this autonomous trucking future from becoming the autonomous trucking present is the absence of full statutory blessing and regulation. Currently, there is no pending legislation, either in the Arkansas legislature or Congress, relating to the use of autonomous vehicles on regular basis.^[xiii] But make no mistake, more regulation is coming. And when it does, the autonomous trucks will have already been designed, built and field tested, both in the United States and in other countries. There will be little, if any, lag time between the passing of autonomous commercial vehicle legislation and the reality of hundreds of autonomous trucks and truck platoons travelling our highways and city streets.

The new opportunities and responsibilities for a variety of attorneys in Arkansas that will develop from these changes are so numerous that the ultimate legal impact is difficult to quantify. When more regulation arrives, trucking companies, their employees, and the manufacturers, miners, refiners, farmers, distributors and vendors that rely upon them, will need to prepare for, respond to and implement policies to comply. The battle between the various vested lobbying interests will be epic. The insurance coverage issues related to multiple categories of autonomous commercial vehicles will have to be written, implemented, and developed through our court system. The privacy issues for employer, employee and customer will need to be argued, regulated, enforced, interpreted and litigated. An entire new area of employee will have to be designed, trained, supervised, compensated and regulated in order to supervise, secure and manage both the autonomous fleets and the data they collect, utilize and disseminate. A new and controversial cache of evidence regarding trucks, including their movements, speed, and reaction times will begin to flood into personal injury litigation, worker's compensation disputes, and criminal cases. And of course, the risk of cyber breaches, hackers and terrorists obtaining sensitive intellectual property and financial, tracking and logistical data from trucking companies, or worse, control over the movements of the trucks themselves, must be regulated, prevented, and responded to, both with legal consultation, litigation and yet more government regulation.

The fascinating future of trucking in Arkansas and the United States is coming, and the legal profession needs to get up to speed before the industry passes it by.

^[i] <http://www.ttnews.com/articles/peloton-promises-commercial-platooning-2018> (last visited May 15, 2018)

^[ii] <http://media.daimler.com/marsMediaSite/en/instance/ko/Daimler-now-testing-platooning-technology-for-more-truck-efficiency-also-in-Japan.xhtml?oid=32920883> (last visited May 15, 2018)

^[iii] Matteo Muratori, Jacob Holden, Michael Lammert, Adam Duran, Stanelly Young and Jeffrey Gonder, Potentials for Platooning in U.S. Highway Freight Transport, SAE International Journal of Commercial Vehicles 10(1), 2017.

^[iv] Id.

^[v] Id.

[vi] Id.

[vii] Society of Automotive Engineers (J3016) Autonomy Levels.

[viii] <https://www.wired.com/story/embark-self-driving-truck-deliveries/> (last visited May 15, 2018).

[ix] <http://money.cnn.com/2017/05/18/technology/volvo-garbage-truck/index.html> (last visited May 15, 2018).

[x] <https://www.fastcompany.com/40542125/waymo-is-testing-self-driving-trucks-in-atlanta> (last visited May 15, 2018).

[xi] <https://ihsmarkit.com/research-analysis/Uber-Waymo-Starsky-Robotics-confirm-self-driving-truck-tests.html> (last visited May 15, 2018).

[xii] <https://techcrunch.com/2018/02/06/embarks-self-driving-truck-drove-2400-miles-across-the-u-s/> (last visited May 15, 2018).

[xiii] In Congress, the Self Driving Act (H.R. 3388 – 115th Congress) passed by the House of Representatives is currently stuck in the Senate. The Senate’s AV START Act (S.1885 – 115th Congress) is similarly stalled. However, neither of those bills is intended to address commercial vehicles.

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