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June 3, 2019

FMCSA
Washington, DC

Reference: Docket Number FMCSA-2018-0037 Autonomous Vehicles

Dear Sir or Madam:

Based on the issues associated with existing autonomous vehicles, i.e. Tesla vehicles have collided with stationary emergency response vehicles, Tesla vehicles systems have resulted in the demise of at least two owners using its auto-drive system, Uber's self-drive vehicle killed a pedestrian in Arizona, Uber suspended its autonomous fleets several times due to accidents associated with autonomous vehicles, etc. I believe the US Department of Transportation needs to conduct more research. Some corporations are already abandoning "platooning" of trucks in pursuit of highly automated systems: https://cmte.ieee.org/futuredirections/2019/01/16/platooning-does-not-seem-a-viable-business/

It is important to consider that autonomous vehicles will be cost prohibitive and used only by large mega carriers with large equipment budgets. I suspect that approximately 60% of the carriers with an active US DOT number have fewer than 50 trucks in their fleets indicating that non-autonomous trucks will be prevalent for decades if not scores of years. The very nature of trucking in its cutthroat competition of providing the most economical transportation of freight suggest there could be safety issues as the autonomous systems require repair. I suspect that fleets will retain a reserve fleet of non-autonomous vehicles to assure they meet their customers "Just-In-Time" (JIT) delivery needs when autonomous vehicles develop problems. Due to the highly technical nature of the autonomous vehicles system debugging will be troublesome and most likely will effect entire fleets as software bugs are worked out by IT technicians. The Navy has seen the issues with its warships as ships are sitting dead in the water https://gcn.com/Articles/1998/07/13/Software-glitches-leave-Navy-Smart-Ship-dead-in-the-water.aspx or as new equipment is developed new problems emerge https://www.military.com/daily-news/2019/02/20/navys-maintenance-boss-defends-new-supercarrier-despite-tech-bugs.html. Technology can be great; however, it takes years to perfect the technology. The Navy has had issues with collisions at sea with freighters causing the Navy to develop new policies https://www.washingtontimes.com/news/2018/nov/23/deadly-collisions-prompt-new-sleep-policy-on-navy-/ . The similarities between ocean and highway navigation aren't far apart, i.e. larger vessels requires more space to operate and stop.

If the FMCSA is going to allow the autonomous vehicles to progress into the higher level of unmanned vehicles they should require that either the autonomous vehicles and/or all vehicles be

equipped with camera systems to capture the inevitable crashes caused by either human or autonomous vehicle error. The legal issues could create a new financial strain on the trucking industry.

Other issues pertain to cargo securement. With autonomous vehicles who will be responsible for cargo securement? Part §392.9 requires a driver to check the cargo securement several times during a trip. The CVSA is making inquiries on how they can site shippers for cargo securement in sealed trailers. Cargo securement in Part §392 and §393, fueling and driver vehicle inspections in Part §396 are several of areas of the FMCSR that will have to be modified to address driverless autonomous vehicles.

The FMCSR on autonomous vehicles will impact primarily interstate commerce; however, due to the HMR there maybe issues of conflict as Part §177 references the FMCSR. Who will be responsible for safely connecting fuel trucks and other HM cargo tanks to local gas stations, tank farms and chemical facilities? The removal of the driver causes some shifting in the responsible party.

Will Part §387 increase financial responsibility to account for the instances "**WHEN**" not if the autonomous systems fail?

Who will be answerable to law enforcement agencies per Part §392.2 when an autonomous vehicle is on an unauthorized route or speeding based on weather or speeding in general or failing to stop for a stop sign? https://www.theatlantic.com/technology/archive/2018/12/7-arguments-against-the-autonomous-vehicle-utopia/578638/ It has already been suggested the autonomous vehicles are prone to hacking; therefore, without strict encryption standards and electro-magnetic enclosures the systems are susceptible to electromagnetic pulses potentially wreaking havoc on the systems. What safeguards will be mandated to assure the autonomous vehicle can be shut down if it is hacked or the system crashes?

The FMCSA or US DOT does not have the technical expertise to review the software applications nor the firmware that will be used to interface the autonomous vehicles with the guidance systems; therefore, the FMCSA/US DOT will have to entrust that the designers know what they're doing. With so many designers the potential problems are endless, similar to the issues we are seeing in the self-certified ELD manufacturers.

In my humble opinion the trucking industry and autonomous vehicles are not ready and will not be ready in the foreseeable future to be set free on our highways to roam freely. The limited success thus far has been under close supervision and in limited markets. I hope that the FMCSA considers all of the issues listed and assures that the trucking industry is up for the added challenges associated with autonomous vehicles.

Respectfully Submitted:

Michael Millard
President/CSO