

Comment from Gary Dirlam, P.E.

Removing Regulatory Barriers for Vehicles With Automated Drivers:

1. Whether federal safety regulations require a human driver.

While Federal regulations may be changed to define driver as a computer system and sensors, NHTSA should check if the USA is a signatory of Geneva Convention (1920's or 30's) that requires a driver behind the wheel of a vehicle. A driverless bus test in Greece used remotely located person who was qualified driver, to monitor multiple buses. This satisfied the requirements of the Geneva Convention.

2. Commercial driver license endorsements

Persons who supervise autonomous vehicles should be qualified CDL holders with appropriate endorsements. To truly understand the proper operations of the vehicle even remotely, one must have hands on training and experience in varied conditions. There are many similarities with what Rail Road, Aviation, Maritime and Motor Carrier are about to experience, so there should be considerable interaction between all 4 in arriving at the appropriate rules. I would surmise there are basic tenets that would apply to all Transportation Sectors.

3. Hours-of-service rules

As more driver assist, automation becomes available, hours of service should be revised. As tractors become electrified and automation becomes more prevalent, time charging the tractor should be counted as a fractional rest time. This is to provide incentive for electrification and recognition that driver fatigue is lesson via driver assist, automation. Encouragement of both via improvements on the efficiency of operations giving a higher rate of return on investment is in the interest of Public Safety, Health and the planet.

4. Medical qualifications for human operators

No comments.

5. Distracted driving and monitoring

As driver assist becomes more prevalent, it has been proven by WWII British research that the human will become complacent and distracted if not engaged. From personal experience using Tesla Model 3 Auto Pilot (driver assist), it is a struggle to stay engaged in the driving activity when there are 8 cameras, 12 sensors and 1 radar performing the same functions with constant vigilance. So, monitoring systems are vital to maintain Driver engagement. Certain sections of Interstate design highways should be designated as not needing driver engagement with certain levels of Driver assist, automation being installed on the vehicle. In these instances, drivers could reasonably dose / rest while the tractor is driving on automation. Such sections would be long in distance, generally flat to mild rolling, rural spacing of interchanges, and most likely lower ADT non-commercial vehicles. High ADT commercial vehicles should not count against denoting such a section as the greater danger lies in the non-commercial driver. Signs would denote limits of said autonomous sections.

6. Safe driving and drug and alcohol testing

CDL holders who monitor autonomous vehicles should have a good, safe driving record.

7. Inspection, repair and maintenance

As a return on investment for electrification, autonomous and Various levels of driver assist automation, these vehicles should not have to stop at random inspection points. They should be given cursory reviews after weighting and spot checked for obvious issues. Inspection staff at state and Federal levels need to be thoroughly trained as to benefits to society and Transportation system by providing this lower scrutiny to encourage adoption of these high cost technologies. Owners' investment need greater payback via less down time and more uptime.

8. Roadside inspections

As detailed in 7. above, electric/autonomous/vehicles with lane departure assist and stopping assist technology would be exempt from Roadside inspections. Such units would still be subject to Port of entry/weight station limited inspections.

9. Cybersecurity

This is extremely serious issue that needs to be dealt with in the design stage and steps need to be in place that protect the critical systems from hacking.

10. Confidentiality of shared information

Cybersecurity needs require the non-public disclosure of proprietary information. If staff need such information in order to make a final determination, that should first be approved at a significant level in the US DOT plus information is non-public and given a secret classification.

11. Metrics for determining if the Autonomous system is safe.

The overall metric for approving an autonomous system is the Crash data. Does the autonomous driving system have less fatal crashes per 100 million Vehicle Miles Traveled (mVMT) and less injury crashes in A/B injuries per mVMT would be the appropriate criteria. Saving lives and preventing injuries is the ultimate goal. Could there be fatal crashes with autonomous vehicles, sadly that might be the case. Lower deaths and injuries is overall goal, Vision Zero.