

ARE SELF-DRIVING TRUCKS THE FUTURE OF FREIGHT?

The fear of robots taking over the workplace has been around for decades and continues to concern Americans. According to the [Pew Research Center](#), 72 percent of US adults were worried about a “future where robots and computers can do many human jobs” as recently as October 2017. In the trucking industry, the concern is that self-driving trucks will put truck drivers out of their jobs. Yet it appears that semi-autonomous trucks have arrived and are fast becoming the future of freight. Will there be roadblocks hampering its arrival?

SEMI-AUTOMATED TRUCKS

When the discussion of self-driving trucks [first emerged in 2015](#), it involved the Freightliner Inspiration. This semi-automated Class 8 tractor truck was tested on the roads of Nevada. While the test runs went well, the public reaction was mixed.

Self-automated trucks were marketed as a safer alternative for freight hauling by reducing user error and road strain on the driver. In addition, the concept of self-driving technology was advertised as a way to increase the quality of life for truckers as it relieves them of some operating duties.

However, those within the trucking industry, particularly truck drivers, voiced concerns that the Freightliner Inspiration would replace their jobs. It is important to note that a semi-automated truck requires a person to be behind the wheel or within reach at all times. It is not fully autonomous or self-driving, but the future of self-driving trucks could potentially include more autonomous technology.

In light of this potential for autonomous technology in trucking, the Federal Motor Carrier Safety Administration hosted the Highly Automated Commercial Vehicles (HACVs) [Listening Session](#) in April 2017. This open forum allowed individuals to voice their concerns and ask questions regarding the future of autonomous technology with the FMCSA leaders. The fact that the FMCSA hosted this listening session shows that the organization is open to the idea of self-driving trucks.

ALL-ELECTRIC SEMIS

In 2017, the transportation industry welcomed a new type of semi, the all-electric Class 8 tractor. Several truck manufacturers have emerged with their own fully electric truck including Tesla, Thor Trucks, and Nikola Motor Company.

In addition to running completely on electricity, it is important to note that these trucks are also implementing the semi-automated technology similar to the Freightliner Inspiration. Within the next two to four years, the trucking industry anticipates that the majority of autonomous semis on the market will be run on electric power.

INFRASTRUCTURE ROADBLOCK

The Tesla Semi and the [Thor Trucks ET-One](#) are both claiming to begin production in 2019. It should be noted that according to [Reuters](#), “Some analysts and trucking executives doubt that Tesla can deliver the Semi in 2019, much less a vast charging infrastructure to support it.”

The infrastructure roadblock of these early entry electric truck manufacturers is how to charge these big rigs. There are 17,370 alternative fueling stations, according to the [US Department of Energy](#). However, these are not equipped to handle the charging needs of the yet-to-be produced all-electric semis.

Other infrastructure concerns will involve how the Department of Transportation will conduct roadside and random inspections. For starters, DOT inspectors will have to be trained on inspecting autonomous trucks and associated technology. This brings up the issue of how to regulate self-driving trucks and their operators.

REGULATORY CONCERNS

As for the self-driving aspect of the autonomous semis, there remains a lack of clarity on how the FMCSA will regulate these trucks. Currently, the FMCSA and its subsidiary organization the Department of Transportation enact commercial truck driver rules and regulations. Yet with the advancement of self-driving trucks, there may need to be a new federal division focused on the tech aspects of autonomous commercial vehicles.

The FMCSA will need to evaluate the existing regulations for commercial drivers and conduct safety testing in order to restructure operating rules. Regarding how this will work, FMCSA Deputy Administrator [Daphne Jefferson said](#), “Our goal is not to impede progress but for us as regulators to try to run alongside development as it moves forward.”

Furthermore, whenever the federal agency defines regulations for commercial drivers, these rules must be enforced across the state level DOT agencies. As we have seen with the electronic logging mandate, states typically have a year to align their state level regulations with federal mandates.

SAFETY ISSUES

The [mission of the FMCSA](#) “is to reduce crashes, injuries and fatalities involving large trucks and buses.” Therefore, any regulations the FMCSA enacts regarding self-driving trucks must ensure commercial drivers and passenger car drivers are safe on public roadways. Yet the operation of self-driving trucks will alter the way that commercial truck drivers do their job and create all-new safety risks that the FMCSA will need to regulate.

For example, one regulation that would be changed in the wake of self-driving trucks is the use of mobile devices. As self-driving trucks evolve into highly autonomous vehicles, drivers will no longer be forced to have both hands on the wheel at all times. Currently the rule is no driver can use a mobile device at any time. Will the FMCSA allow drivers to use cell phones or tablets to make phone calls, email, or watch videos while operating a self-driving truck?

Other safety concerns of self-driving trucks is whether a driver can leave the cabin area to sleep or do tasks besides driving. This will force the FMCSA to amend the current hours of service rules, which state a driver sleeping in a cab is off-duty.

INSURANCE CONCERNS

Another area of change that will take place with autonomous trucks is truck driving insurance. At this time, the US does not have any type of automobile insurance for autonomous vehicles. In order to provide coverage for self-driving truck operators, the insurance industry will have to establish this all-new type of insurance.

This will require extensive safety research and data to be able to set rates and determine how to conduct investigations following accidents. This type of research will have to take place in conjunction with the early adoption of autonomous trucks. As a result, it could take 50 years or longer before trucking insurance is well suited for self-driving trucks. In the meantime, we could see price hikes or gaps in coverage that could have adverse effects on trucking companies, shippers, and consumers.

FUTURE REALITY OF SELF-DRIVING TRUCKS

In the trucking industry, self-driving trucks offer positives and negatives. Semi-autonomous technology is seen as safer for drivers and the general public. The technology is expected to help improve the quality of life for truck drivers by reducing stress and sedentary behavior. Yet the infrastructure, regulation, and insuring of the self-driving truck market is not yet in place. Until these three areas are addressed, the self-driving truck has a way to go to be the way of the future.