



AUTONOMOUS TRUCKS AND LAW ENFORCEMENT

Driverless trucks won't just stop for fuel and maintenance. There will be times they will need to respond to the directions of law enforcement officers and emergency response personnel. But how?

The inherent beauty of autonomous trucks from a fleet perspective is that they'll almost constantly be at work, roaming the roads and hauling freight. In theory, they'll only stop long enough to take on another load of fuel or have maintenance performed. Vehicles, both tractors and trailers, will leave depots having been fully inspected either by a machine or a human or both. The expectation is that the vehicles can arrive at their destinations without any significant interference, or what are referred to as edge cases.

But that's not how the real world works. There are many edge cases. There will be times when accidents, weather or some sort of disaster will take place in proximity to where an autonomous truck is operating. It could be something as simple as a fender-bender on a crowded stretch of road, with a police officer diverting traffic around the stalled vehicles. Or it could be something much more dramatic — a mudslide, high winds, flooded underpass, dust storm, rockslide or a massive wildfire consuming everything in its path on a remote stretch of mountain highway.

In those instances, a human driver would know instinctively how to react; steer the truck as the police officer is directing, or, in other instances, turn the truck around and get the hell away from the wildfire as quickly as possible. (In the case of autonomous passenger cars, remember that in the vast majority of instances, there will be human passengers in the vehicle who would be able to take control of the car to deal with these situations. But the assumption here is that eventually, autonomous trucks will routinely operate without any humans onboard at all.)

But will autonomous trucks be able to deal with these emergencies? And what about more mundane encounters with law enforcement — a DOT officer

wishing to pull a driverless truck over because of a safety violation or for a random roadside inspection?

Unsurprisingly, there is a lot of discussion about these issues among the trucking industry, OEMs, tech developers and law enforcement groups today, trying to get ahead of these problems before the widescale deployment of autonomous trucks.

A prime example is the National Institute of Justice (NIJ), a national law enforcement policy and advocacy group, which in 2019 convened a panel of experts with a five-year goal of addressing many of what it calls "law enforcement interface" issues with autonomous trucks and seeking solutions to them.

“ Accidents, weather or some sort of disaster will take place in proximity to where an autonomous truck is operating, but will autonomous trucks be able to deal with these emergencies? ”

The panel identified 17 “high priority” needs that it says need to be addressed to ensure the safe deployment of autonomous trucks and their ability to deal with law enforcement officials and emergency situations.

These issues include:

- Research on systems to enable law enforcement to identify a vehicle's authorization to run in automated mode.



- Research on technology that enables law enforcement to communicate with vehicles in automated mode.
- Workshops or ride-alongs to educate law enforcement and other agency staff on how driverless vehicles function.
- Surveys to identify the most useful data the autonomous vehicle industry can make available to law enforcement for investigations of crashes and other incidents.
- Model training and guidelines for interacting with autonomous vehicles running in automated mode.
- Development of descriptions of standard behaviors (such as pulling off the road in a safe spot) that law enforcement will expect autonomous vehicles to perform across the United States.

Perhaps the single biggest issue identified by the NIJ panel was the need to establish quick, easy and reliable means of allowing law enforcement officials to communicate with an autonomous truck in emergency, saying, “For law enforcement, the importance of being able to interface with autonomous vehicles is self-evident. One identified key need is a means of determining, first, whether any vehicle on the road is operating autonomously and, if so, at what level of autonomy. Determining the presence and level of engagement of a human driver will inform important law enforcement decisions, such as the procedures for making a traffic stop and potential culpability for driving behavior. Participants advocated for research on developing a standard

electronic means for law enforcement to communicate securely with autonomous vehicles on the road.”

To accomplish these goals, the panel stressed, “[T]he need for proactive problem solving with law enforcement, autonomous vehicle manufacturers and operators, and communities all working together. Law enforcement would benefit from having a better understanding of autonomous vehicle capabilities, and manufacturers would benefit from insights on the law enforcement implications of autonomous vehicles operating in communities.”

Taking direction from an officer directing traffic at an accident scene is something human drivers do every day — and don’t think much about doing so. But finding a safe, efficient and reliable way of allowing communication with autonomous trucks and directing those vehicles is just one more example of how many new procedures and operational parameters will have to be considered and established before autonomous trucks can safely drive on public roadways.

About the Author: Jack Roberts is a transportation journalist who has been covering North American commercial vehicles for 25 years and has developed a reputation as a leading authority/futurist concentrating on new trucking technology, including autonomous vehicles, battery-electric trucks and emerging blockchain technology.



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