



## AUTONOMOUS TRUCKS AND THE AUTHORITIES

*Autonomous start-up developer Embark says its self-driving trucks can interact safely and reasonably with human law enforcement officers.*

**W**hen I talk to industry groups about autonomous trucks, I almost always get asked about how these vehicles — with no humans onboard — will interact with law enforcement officers hundreds or even thousands of miles away from its base.

It's an important question. And one that once again highlights just how many sweeping changes to many different aspects of our society will need to be made when these trucks begin running routes and making their owners money.

Based on my recent visits with various autonomous developers, I think the first thing we need to do is cast off the idea of a robot truck being all alone out on the road without any human contact or support backing it up.

When autonomous trucking technology burst onto the scene almost a decade ago, there was a natural inclination among people to assume that when the technology matured, these would sort of be “fire and forget it” vehicles — to borrow a term from the military. The presumption was that once these trucks left the fleet yard, they'd be pretty much on their own until they reached their final destination.

We now know that's not going to be the case. Every single autonomous tech developer I've visited has an active “Mission Control” center, with logistics managers actively monitoring the progress of trucks as they make autonomous daily test runs. And, frankly, I don't see that changing in our lifetimes, no matter how good autonomous vehicle technology eventually gets.

Interaction with law enforcement agencies is a perfect example of why. Taking commands from law officers is an almost-daily occurrence for drivers. And these interactions range from simply moving to the far-right lane to allow emergency vehicles to pass by, to slowing down, stopping and taking alternate routes around an accident or some kind of disaster. These are the sort of things that human drivers can easily handle. Things get a lot trickier for a self-driving truck, though. They're going to need some help — be it active human intervention from a “Mission Control Specialist”

hundreds of miles away, or some basic protocols that allow law enforcement officers to manage the truck if that human is offline or out of contact for some reason.

Working with law enforcement is a priority for every autonomous truck developer. And early last month, Embark Trucks announced the completion of a public demonstration of its emergency vehicle interaction capability to showcase how those efforts are bearing fruit.

Embark has been working closely with the Texas Department of Public Safety and the Travis County Sheriff's Office to develop the capability for Embark-powered trucks to identify and stop for law enforcement vehicles in situations such as traffic stops, and built communication protocols and standard operating procedures between autonomous trucks and law enforcement officers.

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Embark says this is the first-ever public demonstration of an autonomous truck being pulled over by law enforcement and participating in a routine traffic stop on a public highway.

(Video of the demonstration can be seen on Embark's YouTube channel [here.](#))

According to Embark, its engineering team built the technical functionality for the capability and then “trained” its



***Embark recently demonstrated the ability of its autonomous vehicle control system to interact safely and meaningfully with law enforcement officials. (Photo courtesy of Embark)***

autonomous trucks to identify emergency vehicles via lights and other cues, and then to respond accordingly by pulling over safely onto highway shoulders.

Embark says it also has developed an interaction procedure with input from law enforcement that can enable any law enforcement officer to safely stop, approach, and receive information from an autonomous truck intuitively and without any additional equipment. When commercially deployed, this effort may include outfitting Embark trucks with clear visual cues and information to signal to law enforcement and other first responders that an Embark-powered truck is an autonomous vehicle and has come to a safe stop with no risk of restarting unexpectedly.

Embark said the externally accessible lockboxes it puts on its trucks, containing information such as registration and bills of lading, as well as a toll-free number to contact an Embark Guardian support technician, are also included in the company's plans to assist law enforcement officers as they perform roadside traffic stops.

"The ability to engage safely in emergency vehicle interactions is necessary to operate an autonomous vehicle on public roads," said Emily Warren, head of public policy, Embark Trucks. "Law enforcement always needs to be able to

stop a commercial vehicle – autonomous or not – to ensure compliance with the law. This capability was designed to work seamlessly within existing law enforcement workflows, without requiring new training or technology investment by first responders."

While this is certainly a promising development, more work will need to be done to ensure safe interactions between autonomous vehicles and law enforcement officers, including standardized procedures, access protocols and communication standards. But Embark's latest efforts are another sign of just how much careful work and due diligence autonomous developers are putting into their designs and their functionality in everyday situations before releasing them onto 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.



***The North American Council for Freight Efficiency (NACFE) works to drive the development and adoption of efficiency enhancing, environmentally beneficial, and cost-effective technologies, services, and operational practices in the movement of goods across North America. NACFE provides independent, unbiased research, including Confidence Reports on available technologies and Guidance Reports on emerging ones, which highlight the benefits and consequences of each, and deliver decision-making tools for fleets, manufacturers, and others. NACFE partners with Rocky Mountain Institute (RMI) on a variety of projects including the Run on Less fuel efficiency demonstration series, electric trucks, emissions reductions, and low-carbon supply chains. [www.nacfe.org](http://www.nacfe.org)***

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