

PERSPECTIVE ON AUTONOMOUS TRUCKING



AUTONOMOUS PARTNERSHIP TO FOCUS ON UPTIME

A new strategic partnership between Waymo and Ryder will focus on an overlooked aspect of autonomous truck operations.

Strategic partnerships between autonomous truck developers and trucking industry legacy companies aren't anything new. Usually, however, these long-term, co-development agreements tend to be between tech startups developing autonomous vehicle systems and the OEMs that design and build commercial trucks.

But a new strategic partnership between [Waymo and Ryder System, Inc.](#) in mid-August caught my eye. And that's because the two companies have agreed to focus on an aspect of autonomous truck operation that has been somewhat overlooked thus far — the maintenance side of operating a fleet of autonomous trucks.

The reason I find this agreement fascinating is because I believe that truck fleet maintenance professionals are on the cusp of a whole new frontier when it comes to maintaining self-driving trucks. Obviously, there will be many familiar aspects of autonomous truck maintenance — an oil change will still be an oil change, after all. But once we begin considering the many disruptive challenges driverless trucks will present fleet managers and technicians, the need for new procedures, and maintenance timetables and even totally new maintenance jobs to support these advanced vehicles becomes apparent.

To begin, though, it does stand to reason that autonomous trucks will provide fleets with an inherent advantage from a maintenance point of view. Based on the performance of validation trucks running today, early data indicates that autonomous vehicle systems tend to be much easier on

drivetrains than human drivers. Acceleration and engine torque curves are smoother. And there's generally less shock, jerking and vibration being inflicted on both the drivetrain and chassis as the vehicle runs through the gears getting up to cruising speed.

And once the truck is cruising along the highway, the computers in charge don't get distracted or easily caught off guard by traffic conditions. So, there's not a whole lot of lateral G forces being inflicted on the truck's sudden lane changes, or panic stops which violently shake things around under the hood and on the frame.

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Moreover, the trucks don't run hard. Without human drivers on board, Hours of Service regulations limiting time behind the steering wheel become moot. It seems likely that at some point, the industry will adjust standard shipping times to reflect this new operational reality. But the point here is that autonomous trucks do not have to run at high speeds in order to keep to a timetable. They can comfortably cruise at much safer speeds — I'm



betting the industry will settle on 55 mph — which not only delivers optimal fuel economy, but also vastly reduces stress, strain, wear and tear on the vehicle.

On the other hand, there are some new realities that fleet maintenance specialists like Ryder will have to start figuring out how to manage. Most obviously, there's not going to be a human being onboard the truck to give feedback to technicians on how it's performing.

Automobiles and trucks are vastly complex machines which rely on thousands of mechanical and electronic systems working together in unison to move down the road. And sometimes, human drivers, who spend hours behind the wheel of a particular truck and become acutely attuned to its performance characteristics, can give technicians a lot of insight into its maintenance requirements — even if it's just articulating certain sounds emitting from somewhere deep in the bowels of the vehicle.

Because of this, autonomous trucks will be crammed full of electronic sensors fitted to every component imaginable — from wheel ends to fuel injectors to thermostats. And the data they collect will be sent back to fleets using telematics, so that vehicles can be monitored properly and routed in for repairs when necessary.

But those new sensors and telematics relays represent an entirely new system on trucks that will have to be maintained properly as well. And that's not the only one. Don't forget the array of cameras, lidar and radar sensors and other autonomous systems that will have to be kept in top-notch condition at all times, and the host of new electronic control modules and Wi-Fi or cellular systems that will keep the truck in constant communication with its fleet and the world at large.

And, of course, as I've noted in a previous [NACFE blog](#), procedures for putting human hands and eyeballs on vehicles while they're out on the road will have to be developed as well.

As this news report notes, Waymo and Ryder already are considering these challenges and working on solutions to meet them. It will be interesting to see how fleet maintenance procedures will evolve in the coming years to meet the needs of autonomous trucks.

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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