



Texas Companies are Using Various Technologies to Improve Safety, Reduce Costs, and Cut Environmental Pollution

by Donnie Apodaca

Due to the recent CSA initiatives, day-to-day carrier liability, cost-savings, and environmental concerns, technology use within the trucking industry has taken on a new importance. However, not all carriers are familiar with the new technologies and the benefits that they can provide.

Driving Simulators: Many commercial carriers have recently begun using driving simulators as a tool to train drivers. Simply put, driving simulators are realistic video games which allow a driver to train in a variety of typical driving scenarios, including high volume traffic and extreme weather conditions. According to David Ainsworth, Sr., President of Ainsworth Trucking, driving simulators are extremely helpful for “polishing experienced drivers that may have gotten lax on their day-to-day functions” as well as training newly licensed drivers from “ground-zero.” Ainsworth saw improvements in driver safety within 60 days of installing a driving simulator.

Onboard Safety Systems: Onboard safety systems are used to assist and monitor drivers while en route. Electronic onboard recorders (EOBRs) are extremely helpful in monitoring driving hours to ensure compliance with hours-of-service regulations. Ainsworth believes that the value and popularity of EOBRs are due to its ability, among others, to “reduce and eliminate DOT violations, improve safety

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ratings, reduce maintenance costs with real time data, provide better customer service, and identify driver performance.”

Forward Collision Warning Systems (FCWS) are commonly used to help prevent rear-end collisions. The system warns drivers when their vehicles get too close to preceding vehicles. According to government studies, FCWS can prevent between 21% and 44% rear-end collisions a year. Costs savings can be significant as rear-end collision costs can range between \$122,650 for property damage-only accidents to \$1,056,221 for a fatal rear-end collision.

A third type of onboard system, Lane Departure Warning Systems (LDWS), warns drivers when the vehicle departs from the lane without using a turn signal. LDWS are presumed to prevent 23% to 53% of single and multi-car collisions that result from lane divergence, such as sideswipes and head-on collisions. Similar to FCWS, average cost associated with lane divergence collisions range between \$100,000 and \$1 million.

Roll Stability Control Systems (RSC) help prevent truck rollovers by initiating the vehicle’s brakes while reducing the vehicle’s throttle once the system’s sensors detect a high rollover risk. The studies show that the system will prevent between 37% and 53% of rollovers a year and cost-savings per crash will range anywhere between \$196,958 for property damage only accidents and \$1,143,018 for fatal accidents.

However, despite the significant benefits from the various onboard systems, it looks like Texas trucking companies use them to varying degrees. For instance, the Texas Trucking Alliance’s 2012 Texas Trucking Industry Study revealed that 15% of Texas carriers have purchased electronic onboard recording devices in the last year, but only 4% require their drivers to use EOBRs.

GPS AND TexPROS: GPS and TexPROS are also heavily relied on technologies which help companies ensure on-time delivery and route management. TexPROS has been seen as a huge success of the Texas Department of Transportation. It is a system for Texas-only travel which provides access to a prompt permitting process as well as its mapping system. The mapping system is unrivaled as it is specifically

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made for commercial Texas travel and provides route management that takes into account load-size road restrictions by indicating which roads commercial carriers cannot travel because they are too big or heavy.

“Green” and Cost-Effective Technology: Recently, environmental and energy issues have become a matter of public awareness because of the debate over climate change and rising oil prices. Interest in natural gas engines has risen because it not only is a clean energy alternative to oil, but it also costs significantly less than oil. According to Ainsworth, there is a new natural gas conversion kit called ZHRO (pronounced zero) currently being developed by a Phoenix-based company that is scheduled to be available in early-2013. Ainsworth believes that this technology will be an industry “game changer” due to its ability use both natural gas and diesel fuel, reduce engine heat, and operate with no loss of power—all while benefitting a company’s bottom-line. The payback period on these conversion kits is estimated to be between 14 and 16 months.

Also, idle reduction systems serve to cut expenses and emissions by allowing truck cabs to operate—i.e., A/C and radio functionality—while the engine is turned off. These systems reduce engine wear, unnecessary oil expenses, and emissions. A 2007 study estimated that over 3 billion gallons of oil is wasted per year due to idling. Moreover, the study revealed that one hour of idling is equivalent to 8-10 minutes of driving-time wear on the engine.

Lastly, both low rolling resistant tires and aerodynamic trailers seek to cut fuel costs by reducing drag and friction while the vehicle is en route. Aerodynamic trailer technologies seek to reduce drag which decreases the amount energy used to move a vehicle. Similarly, low rolling resistant tires seek to cut oil use and emissions by decreasing friction between the rubber and the road.

The Future: Advances in technology are expected to continue to help achieve greater efficiency, lower emissions, and increased safety. In discussing the costs and benefits of the developing technologies, John Esparza, TMTA President, noted that “companies who do implement this technology

say it's well worth it." Esparza added that he has "yet to hear of a company that has taken EOBRs out, once they are installed and in use." He noted that voluntary installation of the technologies may be a thing of the past as future federal "EOBR mandates are on the horizon." Additionally, some states and local governments already require installation of many of these systems. In any event, even if the technology is not required by law, each carrier may want to assess its own safety programs and budgets to determine whether a new technology can provide a competitive advantage and increased safety performance.

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