

EIGHT NEW TECHNOLOGIES IMPROVE TRUCKING SAFETY

BY LOUIS BIRON



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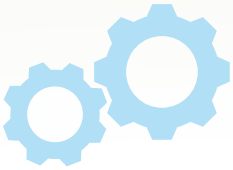
By now most everyone is used to the rapid progress of technology and especially any technology relying mainly on electronics. Think of that flip phone that you used to swear by a few years ago. Because transportation equipment has until recently been based on mechanical systems, progress and improvements have been much slower. Now that electronics are spreading like wildfire inside cars and trucks, the pace of change is accelerating significantly. Here are eight technologies that are either already on the market or on the horizon that will significantly improve road safety.

It should be pretty obvious that a brand new truck should be safer than a 15-year-old patched-up one, but let's look at some different aspects of why:



1. ELECTRONIC RECORD-KEEPING AND PREDICTIVE MAINTENANCE SOFTWARE:

will not only help ensure that all maintenance is done in time, but also predict problems before they occur. For example, tracking of a driver's gear changing pattern can be analyzed to adjust the maintenance schedule so that there is less risk of a roadside breakdown. Even better, the driving analysis can be used to teach the driver how to better shift gears and reduce fuel consumption and maintenance need.



2. AUTOMATIC GEAR-SHIFTING:

Pushing it further, a truck can now shift its gears automatically based on electronic maps and traffic conditions. This can significantly reduce wear and tear on the trucks as well as have a considerable impact on fuel consumption.



3. ASSISTED DRIVING:

The major truck (and car) manufacturers are all developing assisted driver technologies that could significantly reduce the number of accidents, driver stress, and also, interestingly, fuel consumption. Tests have been run where a lead tractor/driver takes active driving duties, while a chain of other rigs automatically follow the lead truck at an optimum distance for safety but also close enough to gain from being in the slipstream of the leading truck. This significantly reduces the drag on the followers and increases their miles per gallon.



4. FUEL MILEAGE:

It feels like fuel consumption has been stuck at around 6 to 7 miles per gallon (18 wheels) forever. Combining several new technologies including some discussed here Daimler just produced a prototype rig achieving 12 MPG (yes, I did a double take when I read this). Although this is not yet a street-legal, production-ready rig, it is tantalizing to think of the impact such an improvement in fuel consumption could have on our industry's impact on the environment. If you consume half the fuel for a given run, there will be less pollution, and everyone will be safer.



5. RADAR TECHNOLOGY:

As now found in newer cars, a 360 degree radar/camera scan of the rig is now available. This can significantly reduce the risk of running over something or someone. Volvo is testing a version where the truck will take over the steering and brakes if the driver fails to heed to the radar's warnings.



6. ELECTRONIC LOGS:

We cannot forget those dreaded electronic logs. The theory is pretty simple, if the logs can't be tampered with, it should significantly reduce the risk of having an overly-tired driver behind the wheel. In practice, we don't really know how tamper-proof they will really be, but any significant reduction in the percentage of tired drivers on the road should have an impact on overall accident rates.



7. CONESTOGA TRAILERS OR LACK THEREOF:

(a pet peeve of mine): As a former owner of a flatbed trucking company, I have personal and direct experience of trying to put an 8-foot tarp over a load in the rain, just to make things interesting. By the time you succeed in climbing on top of an 8-foot load of shaky lumber on top of a 5-foot high truck, you are already stressed out. Then you get a dispatcher calling you on the phone asking why the truck has not left yet. It is one of the most dangerous things I have done in my working life ... even more dangerous than driving a pickup truck on icy roads in northern Canada. Technology has a simple solution for this, the Conestoga trailer which automatically covers the load with an accordion like cover on rails on the side of the trailer. Unfortunately, the market will not pay for the extra cost of the trailer, so drivers are still at risk.

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8. AUTOMATED DRIVING: The next big thing will be driverless trucks. The question is not if, but when. Safety and economics will be pushing hard for this one. Let's look at safety first:

• **Safety:** For years I used to think that driverless cars/trucks would not happen because the lawyers would go after the manufacturers whenever there would be an accident. But I now realize that it is the insurance companies that will have the last word. From an insurance point of view, they give better rates to the better drivers. So once the Robo-Driver (or whatever it ends up being called) becomes a better/safer driver than the human kind, the insurance rates will start going down for them and put humans at a disadvantage. To quote Tesla's Founder, Elon Musk, who plans to launch its Robo-Driver for the highway this summer, he sees a point where human drivers will be illegal because they will be considered too dangerous.

• **Economics:** This one is pretty obvious. You buy a tractor/trailer combo \$125k-\$150k. Then you pay a driver \$30-50k a year, and all you get for it is 8-10 hours a day of driving 5 days a week for a total of 50 hours. A week has 24x7 or 168 hours. In most cases your rig is idle 100 hours a week because the driver can't drive it. In comes Robo-Driver who never sleeps and is not limited by logs and now all of a sudden you can run a load from New York to Los Angeles in 2.5 days. Once the Robo-Driver is certified the economic pressure in favor of it will be unstoppable.

So the gradual but rapid integration of electronic and mechanical systems in the trucking industry is now opening the doors for significant improvements in safety that we could only dream about just a few years ago. Many of these improvements even offer a reduction in pollution through increased fuel efficiency. There will be many accompanying benefits for society as a whole. Unfortunately in the long run the driver will likely be seen as the weak link in the chain and be forced to find another occupation. ■



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