



Future vision: Camera monitor systems could make bulky truck mirrors obsolete

U.S. waiver helps Stoneridge grow base while Bosch is first mover in Europe

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Stoneridge Inc. CEO Jon DeGaynor and vice president of business development Stephen Fox with one of Stoneridge's MirrorEye Camera Monitoring Systems. (Photo: Alan Adler/FreightWaves)

Camera monitoring systems replacing bulky exterior mirrors on Class 8 trucks reflect the future of improved vision around the vehicle.

Drivers trained to rely on exterior mirrors for safety adjust quickly to watching digital feeds instead of checking physical mirrors for potential hazards.

It usually takes 30 minutes to three hours for drivers to get used to the system, said Ray Kirkland, who leads training for the [Stoneridge Inc.](#) (NYSE: SRI) MirrorEye Camera Monitor System, or CMS. The MirrorEye system has five cameras, sensors and three digital displays. The output from the cameras is transmitted to a pair of 12.2-inch high vertical monitors attached to the A-pillars that frame the windshield. A 7-inch display mounts high in the center of the cab.

Stoneridge claims a 25% greater field of view and elimination of common blind spots. MirrorEye also may help reduce drivers' fatigue because they move their heads less often when compared to monitoring conventional mirrors.

Stoneridge received a five-year exemption from the Federal Motor Carrier Safety Administration (FMCSA) in December 2018 to retrofit existing trucks and remove the 50-square-inch side mirrors. The safety agency said the CMS would meet or exceed current regulations.

So far, Stoneridge's \$5,000 system is on about 100 trucks in 16 fleets that have 170,000 power units, according to Stephen Fox, Stoneridge vice president of business development.

"We've got about 5 million miles on fleet trials," Fox told FreightWaves.

Stoneridge has contracts with two truck manufacturers to install the systems as original equipment as soon as 2023. That is disallowed under federal safety standards, but the rules could change, Stoneridge CEO Jon DeGaynor said in an interview.

The National Highway Traffic Safety Administration (NHTSA) is taking public comment on whether to allow cameras [to replace both rearview and side view mirrors on trucks.](#)

“Part of the reason we’re not rushing to have thousands of trucks on the road is to make sure it’s robust for all seasons, all situations (and) that it is user-friendly for the driver,” DeGaynor said. “We’re more interested in driver feedback than we are in rolling out new features immediately.”

Stoneridge’s Class 8 demonstration trucks show up at many industry events. It is a fixture at American Trucking Associations’ (ATA) events and will be on display at the North American Commercial Vehicle show that runs October 28-31 in Atlanta.

The ATA supported Stoneridge’s petition for its FMCSA waiver, which is exclusive to the Novi, Michigan-based electrical components supplier. Testimonies from MirrorEye pilot users [J.B. Hunt](#) Transport Services Inc. ([NASDAQ: JBHT](#)), Maverick Transportation and [Schneider National](#) ([NYSE: SADR](#)) also helped, Fox said.

The MirrorEye CMS is a [2020 finalist](#) for an Automotive News PACE Award for innovative technology.

European competition

The European Union is ahead of the United States in allowing production CMS systems. German auto supplier Robert Bosch GmbH provides its Digital Vision System for the [Mercedes-Benz Actros](#) heavy-duty model that went on sale at mid-year.

Bosch partners with Mekra Lang, a developer of traditional mirror systems.

“They have experience in field of view and mechanical integration,” Dirk Paetzold, Bosch head of Commercial Vehicles Car Multimedia, told FreightWaves. “Bosch’s expertise is in electronics.”

The Actros is not mirrorless, however. Side mirrors and a small mirror on the top of the roof remain. Future generations of the Digital Vision System could eliminate those.

“Feedback is really good,” Paetzold said. “Drivers are overwhelmed by the improvement of direct vision and indirect vision and reducing blind spots.”

Bosch is supplying the Digital Vision System to [Nikola Motors](#) for its Class 8 hydrogen-powered fuel cell electric trucks for the U.S. and Europe, which are expected in late 2022.

Fuel efficiency

The Actros claims a 1.3% improvement in fuel efficiency absent the aerodynamic drag of side mirrors. Stoneridge said its closed-course testing shows a fuel-efficiency gain exceeding 2%. Some manufacturers question the claim.

Even with a lower speed limit of 80 kilometers per hour (49.7 mph) in Europe, DeGaynor said European manufacturers are taking the mirrors off their trucks to squeeze out more miles per liter of diesel.

Fox said one large fleet that works with Stoneridge is running its own fuel economy tests as part of calculating its return on investment.

“We’ve done aerodynamic work and we’ve done stuff in a wind tunnel,” DeGaynor said. “They can question it, but it is what it is.”

Future state

A Camera Mirror System needs to be more than a digital upgrade of an analog device, DeGaynor said.

Stoneridge planned to provide more details at the NACV, but the company’s tachographs, electronic logging devices (ELDs) and other components could lead to a holistic system that includes vehicle tracking, what is happening around the truck and what the driver is looking at.

“There’s a lot of power in there and when we talk about a platform, that’s what I’m talking about,” DeGaynor said. The competition is “the guys that are providing an integrated technology solution that helps the (manufacturers) make their vehicles safer and more efficient.”

Getting the information from a CMS to the internet cloud and back to a fleet operator is an important step, said Jim Angel, vice president of Video Intelligence Solutions for software as a service (SaaS) provider [Trimble Inc. \(NASDAQ: TRMB\)](#).

“I love what they are doing in the cab,” Angel said of Stoneridge. “But I think you need to make that information usable, and that should be part of the thought process now.”

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