

## Truck right-turn assistant can save lives

by Christoph Hammerschmidt

**AUTOMOTIVE ELECTRONICS:** *Over 50 bicyclists and pedestrians in Germany lose their lives each year in collisions with right-turning trucks. This is reason that auto and automotive manufacturers have for a long time worked on electronic assistants. The technology is there, but up to now, there is no such assistant in series vehicles. The buyers of big trucks are reluctant to accept the higher costs.*

The 47-year-old bicyclist was doing everything right as she was under way the 24<sup>th</sup> of May 2012 in Mindelheim. In spite of this she was the victim of a severe accident: she rode straight ahead, but a delivery truck wanted to turn right, and the driver didn't see her. In the collision she fell under the wheels and was run over. Luckily the truck caught her "only" in the legs. With severe injuries she had to be flown by helicopter to a hospital.

She survived the accident—in contrast to 50 other cyclists annually in Germany. For them this confrontation ends fatally. Right-turning trucks represent one of the most dangerous accident situations for cyclists and pedestrians on the one hand and for trucks on the other.

The problem: visibility out of the truck cab is sharply reduced. Cyclists, pedestrians, and above all children are easy for the truck driver to miss—with severe consequences for life and health.

Indeed the truck driver who is turning has an entire armada of mirrors available to look over the "dead angle", but they do almost nothing to reduce the number of injuries. The mirrors aren't all a truck driver needs to monitor in a right turn: he/she needs to watch over the entire turning radius of the truck, beware of the on-coming traffic, etc. Thus can a glance in the mirror be much shorter than it needs to be.

In the industry and trade organizations possible solutions to this problem are being fervently discussed. Many safety experts demand the introduction of turning assistants for trucks. The electronic helpers with their sensors would look over the dead angle at the side and the area just in front of the truck and warn the driver with acoustic or haptic signals if there is the danger of a collision.



**Dangerous situation:** Right-turning trucks represent one of the most accident-prone situations for collisions with bicyclists and pedestrians.

“It would be really helpful to have an assistant that would warn the truck driver if there is a person in the dead angle,” says ADAC (German AAA) traffic safety expert Hubert Paulus.

Engineers and safety experts have worked for years on the development of such driver-assistance systems. The truck manufacturer MAN has had for some time its “Ultrasoic Guard System”. This system recognizes that there is someone in the danger zone and signals this to the driver. After the ADAC was convinced that the system worked well, the Association awarded the manufacturer its Yellow Angel award for innovation.

Competitor Daimler has also developed a similar assistant. A little over a year ago the company demonstrated its accident prevention system to the ADFC bicycle club. They were enthused.. The device showed that the automobile industry is technically further along than the lawmakers, explained the ADFC head Ulrich Syberg.

But none of these developments has found its way into production trucks. Journalists who investigate this see press offices of the companies running for cover. “We do not speak about current research projects,” says Claws Tohsche, spokesman for Daimler Sparte Trucks.

Truck and truck-component manufacturers from Bosch to Wabco say the same thing. They are working on it, but the technology is widely not yet ready.

Continental, on the other hand, speaks of success with a sensor array built into its lane-changing assistant. Radar paints the surroundings of the vehicle and figures out also the trajectories of pedestrians and bicyclists that are sensed.

But the normal lane-changing assistants and dead-angle sensors can only recognize a bike rider or pedestrian if he/she is in motion. "As soon as the pedestrian stands still, the sensors can't distinguish him/her from a trash can," says an insider.

Continental's new "Top View" technology could have more potential. More cameras record the surroundings of the vehicle, and a computer creates a synthetic bird's eye view of this. All participants in traffic flow, not just cyclists and pedestrians, are thus seen. "Thus the driver sees everything going on around the vehicle," explains Continental spokesman Frederick Wilde. "The technology is ideal for use, for example, on a school bus with children running all around it."

The industry is also working further on the ideal technologies to use for such turning-assistant systems. But apparently they are doing this with the hand brake on. "The technology would be there, but the market hasn't yet decided whether or not this makes sense," is an assessment often heard said off the record.

In clear text: truck buyers are not ready to pay money for this type of accessory. Thus incentives must be offered, for instance in the form of insurance rebates, suggests the ADAC's Paulus.

In the middle run the pressure to arrive at a solution will increase, Paulus prophesizes. With the high number of Pedelecs (electric-assisted bicycles) being sold, it is to be assumed that more and more older people will be on the road with this electric boost. "That means we should expect increasing accident rates," warns the traffic safety expert.

#### **Fewer accidents, fewer fatalities through driver-assistance technology**

- In 2010, according to the Federal Statistics Office, there were 73 bicyclists, 67 riders on "motorized two-wheelers", and 75 pedestrians killed in collisions with trucks. One of the most dangerous situations: right-turning trucks.
- The Insurance Accident Research Institute has investigated what effect the inclusion of a turning assistant could have on reducing the likelihood of accidents between right-turning trucks and pedestrians and bicyclists.
- The results of the study demand attention. Trucks with driver-assistance systems have accident rates reduced by just 4.4%. But for the dangerous turning scenarios, 43% of the accidents with pedestrians and bicyclists wouldn't even happen, if the truck was outfitted with an assistant. The experts with the insurance industry estimate 31% fewer fatalities and 43% fewer severe injuries.