Drive Safer in the Dark with Night Vision Safety Technology from Autoliv

If you've ever driven on a poorly lit road after twilight, you know how hard it can be to see either animals or pedestrians in the dark.

Collisions with pedestrians are a major cause of death, with more than 100,000 people killed each year worldwide. In fact, the National Highway Traffic Association says that the risk for fatal pedestrian accidents is almost four times greater at night than during the day, and each year more than 4,000 pedestrians are killed at night, just in the United States.

If you've ever seen a fox, deer, or other nocturnal animal flash across your headlights on a desolate road, then you also know how scary -- and potentially dangerous -- poor night visibility can be.

Every year, deer-vehicle collisions cost an estimated $3.5 billion in the U.S. and cause more than 25,000 driver injuries. In Europe, the costs are estimated to exceed a billion Euros annually.

Autoliv's third-generation night vision system with animal detection can help drivers avoid these collisions –- reducing death and injury as well as costly vehicle repairs. In fact, the company claims its safety technologies save as many as 25,000 lives each year, and can prevent ten times that many injuries. (Not to mention eliminating the emotional trauma that comes with such collisions.)

These systems work using Far Infrared imaging (much like the optics used in military-issue night-vision goggles) that scans the road for pedestrians and other moving objects up to four times beyond the headlight range. The infrared camera registers people and animals based on their body heat and movements, then alerts the driver and displays their enhanced images on a screen positioned in either the dash, instrument cluster, or heads-up display (depending on how the manufacturer implements the display). It even works to identify objects that may be hidden by fog or smoke. The systems typically alert the driver to moving people and animals --even bicyclists -- along the road edges, hidden among tree lines along the road path, and in front of the vehicle about 100 to 150 yards ahead of the vehicle, and depending on the speed of travel, give the driver up to 10 seconds to react

It's very scientific and can seem complicated, so if you're the curious type, we recommend additional reading the detailed explanation of how it works at HowStuffWorks.

In Europe, some of these systems will also illuminate a path to the feet of the moving object to help the driver locate it in the dark. (Unfortunately, United States safety regulations do not allow such a system in American vehicles… YET. Autoliv is cooperating with NHTSA to include the strobe in future systems.)

Earlier this year, I had the opportunity to meet with Autoliv Night Vision General Manager Richard Seoane and Managing Director Stuart Klapper of the largest automotive safety company in the world, at their offices in Santa Barbara, California. The pair described years of research in numerous parts of the world -- even including animal sanctuaries -- during which more than 200 engineers and scientists joined to study animal shapes and behaviors to develop a product that will work for many different species around the world.

"Pedestrians are a lot easier to detect because they're more predictable," said Klapper. "There are so many different types of sizes and shapes of animals, and they all act differently," Klapper explained. Plus, animals don't exactly comply with testing protocol: Their research had to detect animals hiding behind rocks and bushes, not just walking alongside the road.

After that, they gave me a chance to drive a specially equipped BMW at night, so that we could see how the system works in real life. First we tested it using a deer decoy hidden in their parking lot; then we took it out on the dark roads around Santa Barbara. It was amazing to see bodies walking in traffic, and even bicyclists in the roadway, highlighted on the car's display screen.

At one point, Klapper even ran back and forth across the street in front of the car -- a dark residential neighborhood street -- to demonstrate how the system works, and to prove his confidence in how WELL it works. I must say, even on a planned route with a willing participant, intentionally driving a car straight at a person without hitting the brakes is really hard to do. Don't try this at home, folks! But his willingness to step in front of the moving car in the cark shows it is impressive technology that definitely contributes additional safety assistance to the driver under conditions of poor visibility and darkness.