Land Rover to demonstrate pioneering see-through trailer research at Burghley Horse Trials

September 2 2015

Land Rover is developing a see-through trailer concept that would completely remove the blind spot created when towing a caravan or trailer. This transparent view would allow the driver to clearly see vehicles coming up behind and help driver confidence by improving visibility whilst manoeuvring.

The prototype 'Transparent Trailer' system combines the video feed from the vehicle's existing surround camera system - which includes the

reversing camera and a camera on each wing mirror - with a video from a digital wireless camera that is placed on the rear of the trailer or caravan. The video feeds are then combined to create the live video images that make the trailer behind appear see-through. When the trailer is coupled to the towing car, the live video feed would automatically appear in the rear view mirror inside the vehicle.

Dr Wolfgang Epple, Director of Research and Technology, Jaguar Land Rover, said: "When you are overtaking it is instinctive to check your mirrors, but if you are towing your vision is often restricted with large blind spots. Our Transparent Trailer project is researching how we could offer a view out of the vehicle unrestricted by your trailer, no matter what its size or shape. Our prototype system offers a very high quality video image with no distortion of other cars or obstructions. This means the driver would have exactly the right information to make safe and effective decisions when driving or manoeuvring,making towing safer and less stressful."

When reversing, the driver would also be able to view the camera feed from the back of the caravan or trailer through the infotainment screen, with guidance lines calibrated to help reverse both car and trailer.

Cargo Sense is an innovative idea for an in-car trailer monitoring system designed to optimise cargo loading for safer towing. The prototype system combines a remote video camera inside the trailer and a mat of pressure sensors on the floor, that both link wirelessly to the towing vehicle.

As well as helping customers load cargo evenly and uniformly, the pressure sensitive mat would detect if your load of boxes, antique furniture, a classic car or even a valuable horse is moving around the trailer in an unexpected or abnormal way whilst travelling.

The system would send a 'Check Cargo' warning to the dashboard to alert the driver to an issue with the cargo, or a horse, before it becomes serious. Live video footage from the camera inside the trailer could then be made available through the infotainment screen in the vehicle. A passenger would be able to view the footage whilst the vehicle is in motion. Alternatively, the driver could view the video while stationary to assess the situation in the trailer from the safety of the driver's seat.

Dr Epple added: "Many of our customers tow valuable cargoes for business and pleasure, so we are researching a range of technologies that would enhance the towing experience and make it safer - for the driver and even their horses. A permanent video feed through to the dashboard from the trailer has the potential to distract the driver from the road ahead. Instead we are developing a more intelligent system that is able to detect a problem with the horse in the trailer and warn the driver. The video is then available for owners to view the inside of the trailer and support a decision to pull over and check the horse."

The Cargo Sense app allows the driver to check the status of both trailer and load remotely when the owner is away from the trailer. If a horse owner is away from the horse trailer whilst walking the course at an equestrian event for example, the system could automatically alert the owner via SMS if the horse is distressed, if the temperature inside has exceeded safe levels, or if the trailer is being tampered with.

Thousands of horses travel to equestrian events all over the world every year. Finding safer ways to transport them would reduce the potential for road accidents during the journey and injuries to horse and handler when they reach their destination. Serious accidents have been caused by a horse falling over inside the trailer or making the trailer sway excessively, or even forcing themselves out of the trailer doors.

Animal physiologist Dr Emma Punt will work with the British Animal

Rescue and Trauma Care Association (BARTA) and the Royal Veterinary College on a research project to better understand horse stress and distress during travel and to see how Jaguar Land Rover's Cargo Sense technology could be used to indicate horse distress.

As well as testing a range of devices that measure the animal's physical wellbeing inside a trailer, Dr Punt will validate how a pressure sensor mat could identify and locate hoof pressure to highlight if the horse has moved unexpectedly.

Dr Punt said: "Whether it is to help prevent road accidents and injuries to horse and handler, or even to simply ensure your horse arrives at its destination stress free, I'm sure every owner would like to learn how to reduce stress for their horse during travel.

"Gaining a better understanding of the environment inside the trailer, and the horse's reaction to it, would make the animal more comfortable during travel and ensure the horse is capable of performing to the best of its ability, whether it's at a local competition, or a major international event like the Land Rover Burghley Horse Trials."

Provided by Jaguar Land Rover