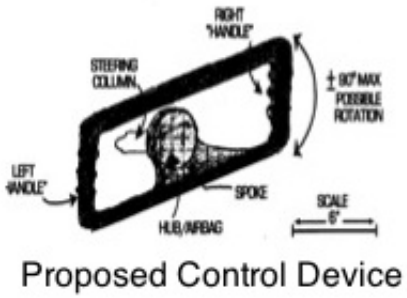
Innovative auto steering device could save lives

September 17 2013



Proposed Control Device

This is a sketch of the proposed control device. Credit: Rene Guerster

It can take up to two and a half turns to steer a modern vehicle. While turning, the driver must release the wheel in the necessary hand-over-hand movement, which is unsafe. In his upcoming HFES 2013 Annual Meeting paper, Rene Guerster, who has been concerned with steering improvement since he was a child, proposes an alternative steering device that could help to prevent hazards such as rear-end collisions and rollovers caused by panic oversteering. He will present his work on October 4 at the Hilton San Diego Bayfront Hotel.

Severe sudden turns are extremely difficult with today's steering systems. Developing what he terms "computer-mediated steering," Guerster believes his proposed technology, already common in engine

controls, would enable steering around a suddenly-appearing obstacle without hand-over-hand fumbling.

Guerster's yoke-like device, currently in the concept stage, requires only a quarter turn in either direction from the straight-ahead position, enabling the driver to keep his or her hands in the same position on the device at all times. A computer would record the degree to which the device is turned, the speed at which it is being turned, and the vehicle speed. It would determine how far the front wheels should be turned and then turn them via an electric motor, whether the driver is parallel parking, performing a gentle lane-change maneuver at high speed, or turning suddenly to avoid a pedestrian.

Guerster says, "The likelihood of intuitive, safe use of this device will be studied in experiments to be conducted in the future. If computer-mediated steering shows benefits, this is easy to engineer into modern vehicles."

Provided by Human Factors and Ergonomics Society