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## Safety Alert Seat Feeling Good GM Vibrations

By Automotive IT News

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By Lynn Walford

It's getting harder to alert a driver to danger because so many senses are being bombarded at once in cars. However, the engineers at GM invented a patented solution that cuts through the audio and visual sensory overloads with gentle seat vibrations called the Safety Alert Seat with directional tactile sensations.

"Drivers receive a lot of information from the visual channel, and there is continual clutter in the audio channel, when we use the the sense of touch it does not overload to the driver," said Ray Kiefer, Advanced Technology Specialist, Active Safety Development at GM, who noted it has the effect of someone in the back seat tapping you on the shoulder.

### Safety Alert Seat History Goes Back to the Days of Pagers

The Safety Alert Seat concept started over eight years ago, when GM engineers attached 64 beeper motors to a seat cushion to test the best locations for which a vibration would alert the driver. At first it was considered a novel idea, until people experienced the seat and then realized how well it worked noted Kiefer. GM research showed that the seat may direct driver attention to the location of a crash threat more quickly and accurately than beeping alerts.

After testing under many conditions the Safety Alert Seat vibration motors are now positioned on the left and right bolster of the seat, which some may define as the upper thigh or hip areas depending upon the size of the driver. The vibration is not startling but gentle and described as feeling like a vibrating cell phone when it goes off in your pocket. If a driver begins departing into the left lane, the left side of the seat vibrates with three pulses. If the driver veers off to the right the right side of the seat bolster vibrates with three pulse. In the case of a front collision warning both sides of the seat vibrate.

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Image: Cadillac

#### **Safety Alert Seats for Many Safety Features**

The Safety Alert Seat works with other GM safety functions. In conjunction with the rear camera, the seat will warn of rear cross traffic that is highlighted on the camera screen. If a car is approaching from the left the left side vibrates or vice versa. Typical scenarios for which this is helpful are backing out of driveway or backing out of a parking space at a busy mall.

Many people can not twist their head all the way around to see clearly what is behind them on both sides of the vehicle. The camera along with the seat vibrations make it very clear what is coming from behind the driver.

The Safety Alert Seat will also vibrate during front or rear parking assist if sensors detect that you are getting too close to other cars or objects.

Drivers with Safety Alert Seats like the privacy of a vibration, noted Kiefer. When the alert is felt by the driver the passengers are not aware that the driver has been alerted.

#### What Kinds of Drivers Need Safety Alert Seats?

The seat was tested so that the motor will work in many climates and for drivers of all sizes. The system has been welcomed by older drivers, deaf drivers, drivers who are hard of hearing, long haul drivers who need reminders, and drivers who are prone to distractions.

Kiefer noted that since the invention of the rear vision camera, police have noticed as much as a 50% decrease in rear collisions. There is hope that even more collisions will be prevented with the Safety Alert Seat.

The Safety Alert Seat was first launched in 2013 on limited Cadillac models( XTS, ATS, SRX) and is now available on the Cadillac ELR/Escalade, Buick LaCrosse, Chevrolet (Silverado, Suburban, Tahoe) and GMC Sierra/Yukon.

When asked why the Safety Alert Seat has worked for so well, Kiefer said "It's really simple and intuitive."



Image: Cadillac



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