

# HIGHWAY SAFETY

## In The Near-Future, Tires Will Be "Intelligent," Expert Says

by Warren Holmes

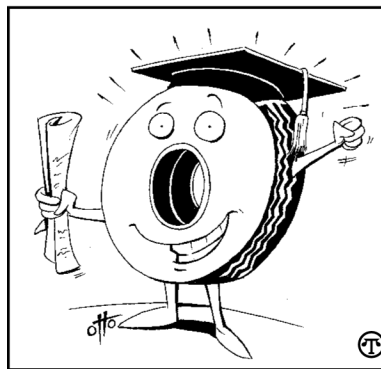
(NAPS)—Andreas Esser knows that more and more American drivers are concerned about the safety and reliability of their tires, with all the attention on the tire industry in recent months. But Mr. Esser and his colleagues at Continental Tire North America (CTNA) are addressing those concerns with new technology that would have been unimaginable even a few short years ago.

"Most people think of tires as nothing more than commodities that enable a vehicle to move," says Mr. Esser, Vice President, Original Equipment Business Unit and Product Development at CTNA, based in Charlotte, North Carolina. "In the very near future, they will think of tires as monitors, sensors and communicators that give them critical, safety-related information." Executives at his company, part of German-based Continental AG, are convinced the tire is one part of the car whose potential has been largely untapped.

### *The Intelligent Tire*

According to Mr. Esser, with technology now available and innovations on the way, the tire of the near future will be "intelligent," able to gauge its environment, identify potential problems and then communicate with the driver. "The tire of the future will be fully integrated into the chassis system of the vehicle, working together with brakes, steering and other components," he says.

Continental engineers have already given the tire a "voice," an electromagnetic mode of communication that conveys important information about acceleration, braking and steering. This "talking tire" is one component of the company's Sidewall Torsion Sensor (SWT) system, which uses magnetized rubber and special sensors to monitor the forces transmitted by a moving tire. The SWT, which has already demonstrated its effectiveness in a prototype car, promises to help drivers achieve better control, detect brake defects and other benefits.



Continental is now working to integrate the SWT into currently available technology developed by Continental-Teves, a leader in brake and chassis engineering: the Electronic Stability Program (ESP), which senses unstable driving conditions and makes corrections automatically. The company anticipates the SWT will be on the market in the U.S. within the next four years.

### *Will the Flat Tire Be a Thing of the Past?*

An "intelligent tire" is also able to minimize the chances of tire failure. The most frequent cause of tire failure—and a contributor to many accidents—is the gradual loss of air that goes unnoticed by the driver. Two different systems from Continental detect slow leaks of this kind and let the driver know about it.

The Tire Pressure Monitoring System (TPMS) does this with pressure sensors, wireless data transmission and an electronic control unit. The Deflation Detection System (DDS), which is currently available in Europe, relies on sensors integrated into Continental's anti-lock brakes system.

With an eye on the future, researchers at Continental are also exploring ways to make the tire even smarter—including a sensor based on changes in the tread pattern, chemicals that allow the tire itself to adapt to driving conditions and other innovations. If you want more information about the latest in tire technology, check out the company's Web site (<http://www.conti-online.com>).