



Road & Traffic Safety Quarterly Newsletter

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From the editor's desk...

It has been a while since our last newsletter. We decided to wait until we completed all the formalities to establish a JP Research presence in India. We are very pleased to report that JP Research is now an officially registered Indian company (registered in Pune, India). Its goal is to focus on auto safety research in India and to promote safety research through accident data collection/investigation and training; and to offer educational seminars regarding current topics on automotive safety. As a first step, we have hired Mr. Mohammed Rehan, an automotive engineer with a post-graduate degree from Chalmers University, Sweden. He brings valuable research and work experience from Europe, having performed projects for SAAB and other European companies. It is with great pleasure that I introduce to you Mr. Rehan, whose strong technical background and passion for research will help us address traffic safety issues that warrant attention in India.

In the U.S., NHTSA is currently focusing on side airbags, roof strength, integrated seat belts, pretensioners and Electronic Stability Control (ESC) to prevent rollovers and injuries in rollovers. Hence, we decided to cover these topics in the next few newsletters. NHTSA is likely to finalize a notice for proposed rulemaking by the end of summer. One of the most important safety features in reducing injuries in rollovers or side impacts is side airbags. The design/effectiveness of different types of side airbags in reducing head injuries to belted/unbelted occupants has been debated by the U.S. safety community using field data and crash tests. This issue of *SafetySpeak* provides an introduction to this topic.

We intend to release the *SafetySpeak* newsletter on a quarterly basis, and we would appreciate your input on all matters and issues of interest to you. We look forward to a continuing relationship to enhance automotive safety research in India.

—Jeya Padmanaban, President, JP Research, Inc.

SIDE AIRBAGS – Minimizing Injury Risks and Saving Lives



SIDE AIRBAGS are an inflatable design counter-measure intended to protect vehicle occupants from side impacts in road accidents. Initially these were restricted to high-end, luxury cars. However, with the success of front airbags in reducing fatalities in crashes, and the introduction of regulations to improve side safety features, manufacturers in North America and Europe are increasingly equipping their products with side airbags.

Types

There are three general types of side airbags:

- Thorax-Only airbags –
Door/Seat mounted:
Provide torso protection
- Head-Only airbags –
Roof/Rail mounted curtains or tubes:
Provide head protection
- Head & Thorax Protection –
Seat mounted; either a combination or
two separate airbags.

Side Impacts

Side impacts are the second most common crash type, after frontal crashes, and often result in serious injury or fatality. Surveys of accident databases show that side impacts account for 30% of total fatalities caused by road accidents in the United States and 43% of all car crash fatalities in Canada. Side impact collisions can be extremely dangerous since the protection provided by the side structure is not appropriate to sustain a severe collision and there is not much space between an occupant and the vehicle's interior to act as a buffer against a striking or side-struck object.

The body regions most likely to be affected in a side impact crash are the head and chest, with an estimated 75% of the severe injuries in such crashes related to the head. Collision with poles

and trees can cause an increase in the risk of head injuries due to intrusion.

After the introduction of airbags, substantial reduction in serious injuries and fatalities was recorded by many transport agencies and research institutes. Side airbags, however, have been found to cause unintentional injuries due to their aggressive deployment. Occupants who are not properly restrained, or are very close to the airbag deployment path, have sustained injury severity level AIS 2 and AIS 3 deployment-related injuries.

Risks to Children

“Out of position” is a term used mainly to refer to children who are not properly restrained or centered on the seats and, thus, vulnerable to airbag deployment-induced injuries. Research in this area shows that side airbags can cause serious neck and chest injuries to out-of-position occupants. With this in mind, manufacturers are beginning to offer multi-stage deployment to reduce aggressiveness of the airbag suppression system. These multi-stage suppression systems include both height and head position sensors that send signals to the dashboard at the front if an out-of-position occupant is detected.

Research and Development

Significant research is underway to determine the effectiveness of side airbags in reducing injury levels in accidents. Research is ongoing to investigate the injury severity to upper extremities, head (brain injuries), and chest. A technical work group (TWG) has been formed, consisting of representatives from auto companies, the safety community, and the National Highway Traffic Safety Administration. The TWG has recommended testing positions for children for manufacturers to follow when designing side airbags. This effort has resulted in a common platform for research inputs and the development of safer side airbags.

ARE YOU A SAFE DRIVER?

Check your safety score –

Answer a questionnaire listed on the Western India Automobile Association website:

<http://www.wiaaindia.com/safequiz.asp>

United Nations Global Road Safety Week

The Road Safety Division of the World Health Organization is sponsoring a Global Road Safety Week around the world, April 23 through 29, 2007. The week will focus on the safety of young road users. Participating governments, in collaboration with non-governmental organizations and foundations working to make the roads safer, will conduct this awareness program. Many global, regional, and national activities are planned. Below are the events to be conducted in India.

- **Stay Alive on the Street:**
23rd April 2007 – St. James Hospital Campus, Chalakudy, Kerala
- **Transcon Road Safety Day:**
25th April 2007 – Mumbai, India
- **Sensitising and Motivating Adolescent School Children in the Sphere of Prevention of Road Accidents:**
28th April 2007 – Amar Jyoti Research and Rehabilitation Center, Delhi, India

“Provide Helmets to Riders with Each Motorcycle Sold” U.S. DOT urges manufacturers

With a stated commitment to increase helmet use (which has seen a decline) and reduce traffic fatalities (which have been on the rise) for the highly vulnerable drivers and passengers of two-wheel motorized vehicles, the U.S. Secretary of the Department of Transportation urges manufacturers to provide free or discounted helmets and training with each motorcycle purchase. This move underscores the U.S. government's interest in making America's roads safer for motorcyclists and those who share the roads.

For more on this story, see:
<http://www.dot.gov/affairs/dot1907.htm>

Safety NEWS

Time is running out for Delhi Traffic – Delhi traffic, in all sectors, is seeing the fastest growth in the nation. The number of vehicles in Delhi (2.7 million as of 2005) is approximately equal to the number of vehicles in the other three major Indian metro areas together. However, road infrastructure and traffic safety enforcement have not kept pace with the phenomenal increase in vehicles using the roads.

A February 2007 survey of driver behavior and traffic management, conducted by the Institute of Road Traffic Education, observed 47,963 vehicles from a fixed spot and followed 658 vehicles for three kilometers. Its findings? “As many as 138 million violations are committed every day,” primarily involving speeding and signal jumping at speeds between 80-100 kmph. Also, many vehicles are overloaded and/or in poor condition, lacking such basic features as brake lights and wipers.

Mr. Raman Patel, director of the ITS centre at the Polytechnic University in Brooklyn, New York, notes: “Time is running out for the capital ... it is time to focus on safety records and ensure good traffic management. For example waiting passengers at bus stops occupy one whole lane, which is unsafe and also obstructs the traffic”.

For more on Delhi traffic, see:

<http://cities.expressindia.com/fullstory.php?newsid=231096>

2007 Poll Reveals Washington Drivers Want Stronger Laws to Limit cell Phone Usage While Driving –

A full 85 percent of the 600 drivers surveyed in this Pacific Northwest state believe that using a cell phone while driving should be illegal, or legal only with a headset or other hands-free device. Two-thirds of those polled think it should be a *primary* offence and called for stringent actions against the violators. Talking while driving engages one hand and hinders the driver from using the indicators, shifting gears, or turning on wiper blades. Add in the fact that the talker's concentration is diverted, and accident risk gets very high.

It would be interesting to see the response of Indian drivers to a survey like this...

For more on this story, see:

<http://www.insurancejournal.com/news/west/2007/04/11/78642.htm>

JP Research India Seminar

In answer to the great response and interest JP Research, Inc. and 5th Generation Technologies received for last summer's **Road Safety Seminar** at GRT Temple Bay, JP Research will be presenting a follow-on series of courses. The 2007 JP Research India Seminar is planned for Fall 2007 and will be directed by JPR's President, Jeya Padmanaban. Stay tuned for details!

Making Indian Roads Safer

Institute of Road Traffic Education –

The IRTE is a non-profit organization that, since its establishment in 1991, has been working hard to make India's roads safer for all users. Its membership includes doctors, educators, policemen, engineers, automobile experts, and journalists.

IRTE is active in traffic enforcement, collision investigation and analysis, driver training and testing systems, and road safety education. The Centre for Analysis and Research in Road Safety (CARRS) is its research and development wing and operates through three cells: AIRS (Audit in Road Safety), TEC (Traffic Engineering Cell), and CIRC (Collision Investigation & Research Cell).



CRASH LAB

CRASH LAB – CIRC has a mobile laboratory known as CRASH LAB, a customized and technically-equipped Chevrolet Travera Diesel Multi-Use Vehicle. It is used to gather such relevant data as measurement of road gradients and cambers, crash vehicle data, post-collision position of vehicles, etc., at the crash site.



IRTE won the Indian government's National Road Safety award for 2000-2001. The prestigious Prince Michael International Road Safety Award was also conferred upon it in 2001. In addition, IRTE president Mr. Rohit Baluja became the first recipient of the Royal Society for Prevention of Accidents' distinguished service award for road safety.

Upcoming National & International Conferences

- **Young Driver Safety – International Conference**
May 3, 2007. Royal College of Surgeons, London, UK
www.driveandstayalive.com/
- **Road Safety Summit: "Global Road Safety from a Public Health & Environmental Perspective"**
September 3-5, 2007.
Tylösand, Sweden
<http://www.trafficmedicine.org/content/view/46/>
- **2007 International Research Council on Biomechanics of Injury Conference**
September 19-21, 2007.
Maastricht, The Netherlands
www.ircobi.org
- **2nd International Road Federation Regional Conference on "Road Safety – Design, Construction and Operations of Roads"**
October 5-6, 2007.
India Habitat Centre, New Delhi
www.irfnet.org
- **14th World Congress on Intelligent Transport Systems**
October 9-13, 2007.
Beijing, China
www.itsworldcongress.cn
- **51st Annual Association for the Advancement of Automotive Medicine (AAAM) Conference**
October 15-16, 2007.
Melbourne, Australia
www.aaam.org

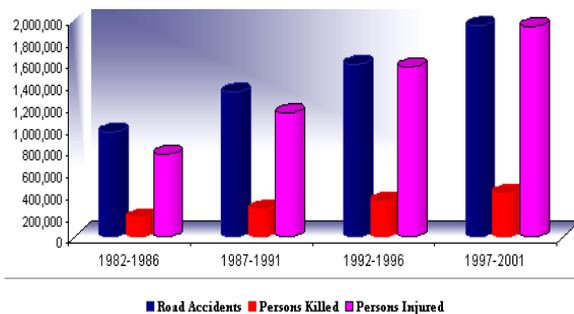


Bangalore Traffic

(from <http://www.vasanth.in>)

Crash Facts

- India accounts for about 10 percent of road accidents fatalities worldwide.
- 1.2 million people die every year in road accidents.
- India sees 3 times more accidents than the developed world.



Source: Road Safety Cell, M/O Road Transport & Highways.

Contact Us

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