



SAFETY SPEAK!

Road and Traffic Safety Newsletter

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From the Editor's Desk...

This issue covers some interesting road safety topics, from innovative traffic signal designs to a discussion of how changing habits (such as learning to queue patiently) and highway infrastructure (to make this easier) can lead to improved road safety.

The issue also highlights several recent and ongoing JPRI projects, from our involvement in a baseline data collection project for the International Road Assessment Program (iRAP) to a safety awareness presentation to employees of a local engineering firm. The iRAP project, in particular, is significant since it addresses a core tenet of JPRI's philosophy, namely that road infrastructure and vehicle design have to be dealt with together in order to ensure safer roads in developing countries. I am proud of the JPRI team for their enthusiasm and their dedication to making a difference in India, and even prouder that their hard work is beginning to attract wide recognition.

As we continue to expand the capabilities of our team and to tackle increasingly comprehensive road safety projects, I want to thank you, too, for your interest, comments and contributions over the years. I also hope you will attend our conference on **Scientific Crash Investigation and Data Collection for Influencing Road Safety Policies**, to be held in Coimbatore, June 20-22.

This is an exciting time for India, with an unprecedented focus on roads and safety, and we are pleased to be a part of the conversation. Even more, we are pleased to extend the invitation to you to join in as well. You are an exceedingly interested and involved readership, and your comments and suggestions are always welcome and often helpful. Please, stay in touch!

-Jeya

- 594 -

Number of accident vehicles investigated to date by JP Research India as part of our India traffic studies

Rules You Should Know...

Rules of the Road Regulations, 1989

Here are two rules that both make the same point: DO NOT pass to the left! The first one says this pretty directly. The second provides the only exception to this rule, and does so in such absolutely incomprehensible language that you would be best advised to assume there is no exception ...

Rule 4. Passing to the Right

Except as provided in regulation 5, the driver of a motor vehicle shall pass to the right all traffic proceeding in the same direction as himself.

Rule 5. Passing to the Left

The driver of a motor vehicle, the driver of which having indicated an intention to turn to the right has drawn to the centre of the road and may pass on either side, a tram car or other vehicle running on fixed rails whether travelling in the same direction as himself or otherwise provided that in no case shall he pass a tram car at a time or in a manner likely to cause danger or inconvenience to other users of the road including persons leaving or about to enter tram cars.

STOP! GO! Keeping Traffic Moving Safely

USING SHAPES TO SOLVE A VISUAL PROBLEM

Color blindness is a condition wherein a person cannot make out the differences between some or all colors. And why does that concern traffic safety experts? Because the most common form of color blindness (affecting over 40% of the population) is the inability to distinguish between red and green, the colors universally used for stop and go on traffic signals.

TOP MEANS “STOP!”

When traffic lights are always presented in the same manner (e.g., vertically, with red at the top and green at the bottom), most people can memorize the placement even if they can't actually see the colors. But other arrangements, such as when lights are turned horizontally over an intersection, can create confusion and jeopardize safety.



A traffic signal as seen by most people [*top*] and by someone with red/green color blindness [*middle*] and by someone with *total* color blindness [*bottom*]

In India there are 13 million people who have some level of color blindness. Thus, the problem of how to standardize traffic signals so that they are effective for these drivers is not inconsequential.

Currently, most traffic signals use round lights in a straight line, but a number of Canadian provinces have started using horizontal traffic lights with specific shapes: Red = square (left side of light), yellow = diamond (middle), and green = round (right side of light). Unfortunately, since there are not yet international standards for the use of shapes, other configurations also exist. For the shape-based signal design shown at top, the *green* light (not red) is square. Clearly, having the same shape mean **Stop** in one country and **Go** in another could cause problems!



Various new signal designs are being tried around the world, from distinct shapes ...

OTHER SIGNAL CHALLENGES

To help all drivers (not just those who are color-vision challenged), traffic signal designers are also trying distinctive placement of two red lights to alert drivers in unusual situations (such as dangerous intersections). Of course, when red lights are at *both* ends of a horizontal display, one had better never burn out or these could be misread, too.

At present, there are no initiatives underway in India to make traffic signals friendlier for those who are color blind, but thanks to a growing awareness of this problem, that day is likely coming soon. When it does, we expect India will look to other nations to see what seems to work best, learn the nuances and then devise a method to meet its own unique traffic needs—one perhaps that can be used as a prototype for other developing countries.



... to attention-grabbing “double red” configurations (which can be positioned together or on both ends of a horizontal display).

Article by Arjun P

The “Queue” Culture

WILL LEARNING TO QUEUE MAKE US BETTER DRIVERS?

Can India Learn to Queue?



Part of the UK’s plan to ensure that immigrants understand the UK way of life is to teach them how to queue.

According to *The Telegraph* : “Foreigners applying to settle in the UK will have to learn about the revered British practice of forming an orderly line for everything from buses to sandwiches. While the idea may sound like a joke, ministers insist they are entirely serious and want to indoctrinate migrants more effectively into the British way of life.”

Phil Woolas, the immigration minister, said: “The simple act of taking one’s turn is one of the things that hold our country together. It is very important that newcomers take their place in queues whether it is for a bus or a cup of tea. It is central to the British sense of fair play and it is also better for everyone. Huge resentment is caused when people push in.”

Source:
<http://www.telegraph.co.uk/news/uknews/immigration/7230274/Immigrants-to-be-taught-how-to-queue.html>

Article by Ravishankar Rajaraman

We come across queues often in our daily lives, from standing at the bus stop to driving through tollgates. But although queuing is acknowledged to be a fair method of taking one’s turn, adherence to the concept needs a lot of work in India. A queue may seem a simple thing, and one easily dismissed; however, good queuing not only ensures an orderly society, but can extend to road safety through better road manners for merging lanes, crossing bridges, and dealing with the frustrations of traffic snarls.

What Makes an Effective Queue?

Many temples in India are visited by millions of people each day, making them a great place to research how infrastructure can effectively promote and encourage the art of queuing. Exhaustive research at local temples has identified three simple but effective factors for ensuring an orderly queue.

Effective Fencing

Fencing, such as metal barricades, ropes or other devices that channel the flow of people, is an important requirement for maintaining a queue. The width of the channel also determines how effectively it is followed. If too wide, the channel will allow formation of multiple queues that will eventually become muddled.

Comfort and Convenience

Queuing often requires people to stand and wait. This is not necessarily an interesting experience and soon people get bored, start sweating and even feel discomfort. A little comfort in the form of overhead fans, coolers or air conditioning can go a long way in keeping people cool (literally and figuratively) in queues. On roadways, this could be achieved through providing shade. In addition, locating seating nearby (as in bus stations) allows tired souls to rest when the queue is not moving. Likewise, at places such as ferry crossings, “break” areas could give vehicle passengers a chance to get out and move around when lines can’t move for long periods.

Information (“How Long Will it Take?”)

Most people have seen others walk to the front of a train station or theatre ticket line to find out what is taking so long. If a person joins the queue directly at the ticket window, other people can get angry, feeling that they are being treated unfairly and may even start to dissolve the queue in their concern and frustration. Providing information through panels (such as at airports) to show what is going on and how long it going to take would help to keep people in the queue and thereby increase the speed at which it can move. On roads, this extends to announcing lane closures, so that vehicles can make orderly adjustments long before coming upon an obstacle.

Changing the Culture

Human behavior cannot be expected to change unless our infrastructure is designed to encourage the desired behavior. It is particularly important to promote the idea of waiting for one’s turn when it comes to traffic, since vehicles that push ahead could cause a crash. But before people learn to queue politely on the roads, they might need a little practice. And before our civil engineers lay out new roads, they might want to visit some places, such as the Shirdi Sai Baba temple near Nashik, Maharashtra, that offer good examples of how to keep people happily queued.

If you have any comments, suggestions or wish to share some examples of good queuing, please email us. Happy Queuing!

Settled and Busy: Growing Our Staff *and* Our Reputation

The Coimbatore Office — One Year Later

In 2010, JP Research India spent many long months looking for the perfect place in Coimbatore for our new offices. After a lot of searching and researching, we found it, and by April 2011, we were moved in and getting to work. And now? Just one year later, and it feels like home.

A main office that is large enough to support current and future technical workloads, while still offering great access for our traffic studies, is undoubtedly one of the key factors contributing to the company's successes over this past year. There is no denying the opportunities for expansion that the new office has made possible, but even more critical is the staff we hired to fill it.

HIRING THE BEST, AND TRAINING THEM FOR THE WORST

One of the first challenges we faced last year was to expand our workforce. After the first RASSI* consortium meeting in May 2011, JPRI began the difficult tasks of finding just the right engineers to fit the company's needs, and then training them on how to collect data in accordance with international accident reporting and reconstruction standards. In addition to JPRI managers, other notable experts in the fields of accident investigation and reconstruction, such as consortium member Robert Bosch GmbH, have taken part in training and preparing the new hires for seamless transition into JPRI and consortium projects.

Of course, no matter how well trained people are, nothing can really prepare them for their first onsite crash investigation. Our accident investigators are trained to work with the police to gather valuable details at the crash scene without becoming road casualties themselves, but it can be a delicate undertaking.



Celebrations for the very productive first year in our new office spilled over into the reception area.

All settled in and hard at work (after we have a little cake, that is) . . .

* For more on the Road Accident Sampling System – India (RASSI) team and goals, see next story and check out **SafetySpeak!** Vol. 6, No. 2.



HITTING THE ROADS (WITHOUT THE ROADS HITTING BACK)

A major concern in gathering data at a crash scene is to ensure that all parties — from the crash investigators to the police, onlookers, and emergency responders — are safe on the roadways. Unfortunately, many crash details that need recording (such as tire marks and evidence of impact) can't be moved to the shoulders. To limit the risks, our researchers wear safety vests at all times when at a crash site, and the company has provided safety gear to police responder units working with us in the Coimbatore area. We also have developed workable strategies for collecting the data we need without getting in the way of police and emergency medical personnel. Collecting meaningful, detailed, crash data in a consistent format is very important, but never more important than doing all we can to assure on-road safety for our investigators and all around them.

It has taken a lot of work and care, but now, on the one year anniversary of the Coimbatore office, the JPRI team is well seasoned, our crash data projects are expanding, and our office is not only up, but definitely **running**. It has been a good year!

Updates on iRAP and RASSI

WORLD BANK FUNDED IRAP PROJECT

As noted in the last issue of *SafetySpeak!*, JPRI has been taking part in the International Road Assessment Program's (iRAP's) four states project, funded by the World Bank. JPRI commenced its iRAP work in the state of Karnataka on State Highways 17 and 20 (SH17 and SH20) in October, and completed the Karnataka phase by the end of December. The second phase of the project took place in the state of Gujarat. JPRI started this phase in December 2011, and it was completed by January 2012.

For the iRAP project, JPRI researchers collected police data for the previous three years to ascertain what types of accidents were specific to the study sites. Next, to document the type of vehicles currently travelling on the respective stretches and to know the average speeds people are driving, researchers made onsite vehicle counts and recorded speeds along these stretches (*see SafetySpeak! Vol. 6, No. 2*). Finally, to correlate the police data with the speed and volume data, researchers made on-site investigations of accidents that occurred in the study areas.

The data documented from all the study sites was analyzed and the findings were presented in the JPRI reports*, Karnataka and Gujarat, in late March 2012. The report also made recommendations for solving some of the safety issues the study had identified. In addition, Swastik Narayan, JPRI's manager on the project, attended a workshop on road safety organized by iRAP at Bangkok Thailand, in March 2012, and along with engineer Varun K presented results from the Karnataka phase at KSHIP (Karnataka State Highway Improvement Project) offices in Bangalore in April.

In addition to iRAP and KSHIP personnel, the audience for the well-received KSHIP presentation included several engineers from the Highway department and several more from an infrastructure design consulting firm in Bangalore. It is hoped that such direct exposure of local highway and design engineers to the project's traffic and crash survey findings, particularly on the contribution of infrastructure to injury and fatality, will result in faster adaptation of changes that could save many lives.



On-site crash investigation by trained traffic safety researchers can offer detailed clues as to cause. Here a JPRI team gathers accident data even before the crash is cleared off the roadway.

Data is collected according to strict protocols to allow for consistent entry into a database for

* To download the JPRI reports for iRAP [click here](#)

RASSI CONSORTIUM NEWS



A presentation at the 2nd RASSI Consortium meeting in March 2012.

One of the key events the Coimbatore office organized last year was the first meeting of a new consortium of some of the major figures in the auto industry, including Robert Bosch GmbH, Nissan, Mercedes-Benz, and Toyota TCRD. These companies have come together to support development of a detailed database of traffic accidents that have occurred on Indian roadways.

The Road Accident Sampling System – India (RASSI) database is now well underway. As of this publication date, JPRI has investigated and uploaded 215 cases (involving 364 vehicles) into the RASSI database, and work is in progress to add many more.

JPRI'S SAFETY AWARENESS INITIATIVE

Under our Safety Awareness program, JPRI staff recently gave a two- and four-wheeler safety presentation to the staff of a local engineering company. Because so many of his employees ride two-wheelers, the company director asked that the presentation particularly emphasize road safety issues specific to two wheelers. The presentation was made onsite, and the director was pleased with the result as well as with the overall initiative. If you are interested in supporting this effort, contact JPRI.

