Technical Note on Recent Developments in Road Safety

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ABSTRACT: The main objective of the paper is to bring a short overview of road safety activities discussed during the 2014 Transportation Research Board Annual Meeting in Washington, D.C. Basic information about the issue of road safety and the list of the committees with short comments will be followed by information about actual topics discussed on the committees' meetings and sessions. The last part of this technical notes deals with the research priorities identified in the TRB 2014 meeting.

KEY WORDS: TRB, road safety, priorities, safety management, strategy.

1 ROAD SAFETY RESEARCH AT TRB

The 93rd TRB Annual Meeting in Washington, D.C. was held at the beginning of this year. The Transportation Research Board of the National Academies meeting is considered to be the largest world conference on transport. This year the annual meeting brought together almost 12 000 professionals from the transport field, 2 500 of them arriving from different continents. The programme of the meeting offered more than 4 500 presentations in nearly 800 sessions and workshops focused on a wide range of transport related issues.

The issue of safety (road safety) can be considered as one of the pillars issues of TRB activities. With more than 200 committees, almost every transport mode and topic is represented in the standing committee structure. The Standing Committees are divided by topic as follows:

- Design and Construction;
- Operation and Preservation;
- Planning and Environment;
- Policy and Organization;
- Safety, System components, and Users.

Safety is a multidisciplinary issue which should also be reflected in other committees and subcommittees. Approximately 82 committees have safety directly in the name of the committee, and approximately 20 committees are related to the issue of road safety. Some of the road safety oriented committees with description of their scope will be shortly mentioned in the following text.

Standing Committee on Transportation Safety Management
The mission of the TRB Committee on Transportation Safety Management is to promote and support research to advance road safety by focusing on cross-cultural, multidisciplinary safety management system improvements throughout the safety decision-making culture. The areas of concern include: 1) the advancement of safety management systems, 2) research and technology to improve safety, and 3) models of safety delivery systems.

The goal is to proactively manage the transport safety research process and stimulate and disseminate exemplary research to promote transparent and accountable cross-cultural multidisciplinary transport. At the moment, it consists of the following subcommittees:

- Toward Zero Deaths;
- Global Road Safety;
- School Transportation;
- EMS Safety;
- Transportation Safety Planning;
- Roadway Safety Culture;
- Rural Road Safety.

Among other relevant committee can be count also:

- **Standing Committee on Roadside Safety Design;**
- **Standing Committee on Transportation Safety IDEA Program Committee;**
- **Standing Committee on Traffic Law Enforcement;**
- **Standing Committee on Truck and Bus Safety.**

The commercial programmes, sponsored by different commercial sponsors are also provided under TRB. As an example from the road safety oriented programme, the following programme can be mentioned.

Commercial Truck and Bus Safety Synthesis Program

Linkage and close cooperation among the committees are also arranged on the basis of the section system, e.g. **Safety and Systems Users Group** (AN000).

The Safety Section is part of the System Users Group. It consists of nine committees and two task forces that propose research, share research findings, sponsor special activities, and provide a forum for transportation professionals to discuss today's and tomorrow's safety-related transport issues. The chairs of each of these committees are members of the Safety Section Executive Board, who along with the section chair, provide general oversight of the activities within the Section (https://www.mytrb.org/CommitteeDetails.aspx?CMTID=3204).

2 RECENT THEME IN ROAD TRAFFIC SAFETY AND MANAGEMENT

A number of research topics and the current topics of different subcommittees identified as potential future research topics were discussed at the 2014 TRB Annual Meeting.

One of the main topics mentioned on the meeting of **Transportation Safety Management Committee** (Robert E. Hull, Utah Department of Transportation, presiding Jake Kononov), was how to continue with planning using AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS). It was discovered that the process now is too standardized and fails to react sufficiently to safety demand. Some of the important issues were defined for the following work of the subcommittees:

- Are reconstruction and new construction the same?
- Does the concept of design speed apply in all contexts?
- Are there important interactive effects of geometric elements on safety performance?
- How well do our design models and standards reflect knowledge of safety performance?
- Do any of our design standard models (nominal safety) require revision?

Very important information, especially for European partners involved in PIARC activities, is the decision of TRB to closely cooperate with PIARC Technical committee 3.1 National Road Safety Policies and Programmes, and generally all relevant TC of PIARC.

The main topic of the **Traffic Law Enforcement Committee** (Keith D. Williams, Federal Highway Administration, presiding) is a legal responsibility of special vehicles (Segway, etc.) and legal responsibility of driver, vehicle (car producer) with a different automatic driving assistant system.

Actual topic in the Czech Republic was also discussed on the session **Speed Monitoring, Traffic Calming, and GIS Applications for Law Enforcement Agencies, Researchers, and Engineers**. The following presentations should be mentioned, i.e. *Methodological Approach to Spatiotemporal Optimization of Rural Freeway Enforcement in Florida* (Carrick et al., 2014).

The presentation *Threshold Effects of Speed Monitoring Devices on Driver Speeding Behavior* (De Leonardis et al., 2014), also brings some knowledge on the current issue.

In the **Transportation Safety Planning Subcommittee** (Edward Ronald Stollof, Institute of Transportation Engineers, presiding), and *MPO Safety Initiatives (A New Jersey Perspective)* (Kaplan & Marandino, 2014), the authors found out that aggressive driving was a contributing factor for 50% of annual traffic fatalities in the Delaware Valley on average, (data collected from 2008 to 2010). Other crucial information is that seven factor contribute to 95% of regional fatalities in New Jersey.

Saving the World: Overview of Road Safety Initiatives Around the Globe (Jennifer Harper Ogle, Clemson University, presiding). *Transferability of New Highway Safety Manual Freeway Model to Italian Motorway Network* (La Torre et al., 2014). The main message of this session is to deal with the relevance of Prediction Road Accident Models. Safety prediction methodology and analysis tool for freeway and interchanges will be incorporated in to the HSM.

Analytical Models for Safe and Sustainable Transport (Qin, X., 2014), *Data Mining and Complex Network Algorithms for Traffic Accident Analysis* (Lin et al., 2014). And also next interesting presentation should be mentioned, *Comparison of Sichel and Negative Binomial Models in Hotspot Identification* (Wu et al., 2014).

The above mentioned topics are also relevant for European countries, as they are also discussed at meetings and workshops of FEHRL, FERSI, ECTRI, ETSC and TRA conference, etc. The summary of a new research topic is generally presented on the web sites of each committee or in feature papers, e.g. Overview of Truck & Bus, Safety Research Needs.

Transportation Research Board (TRB), Truck & Bus Safety Committee (ANB70), April 3, 2014. The recommended topics are sent to the main council meeting after committee voting. The process of discussion, drafting proposal, committee decision, final approval, financing and implementation can be followed on the TRB web site http://rns.trb.org/. An example of one of the proposed projects can be seen in the above mentioned sites in Subject Category: Safety and Human Factors: Determining and Communicating Reliability of Crash Prediction Models, Committee: AFB10, Geometric Design, Date Posted: 9 January 2014, Date Modified: 28 January 2014.

3 CONCLUSION

The 93rd Transportation Research Board Annual Meeting was a very well organized conference on a high professional level with unique opportunity to meet professionals from almost all the world, share new pieces of knowledge, make new contacts and partners, and discuss new projects and activities.

A similar activity as TRB – TRA (Transport Research Arena) can be mentioned at the European level. It started in 2006 in Gothenburg and it is held regularly every two years. TRA has gradually become a major conference on transport in Europe. The first

conferences were exclusively focused on road transport; the last events already cover all transport modes and transport related issues. TRA is supported by the European Commission, the Conference of European Road Directors, and by three European Technology Platforms: the European Road Transport Research Advisory Council (ERTRAC), the European Rail Research Advisory Council (ERRAC), and the WATERBORNE.

The International Transport Forum (ITF) is an inter-governmental organisation within the OECD (Organisation for Economic Co-operation and Development) system. It acts as a think tank for global transport policy issues and organises an annual summit of transport ministers. Before 2007, the International Transport Forum existed for over 50 years as the European Conference of Ministers of Transport (http://en.wikipedia.org/wiki/International_Transport_Forum).

From the point of view of the Czech Republic we can consider the international research cooperation in the field of road safety sufficient, also thanks to Centrum dopravního výzkumu activities in the TRB, FERSI, ECTRI, FEHRL, HUMANIST, ETSC etc. Although the Czech Republic is still facing challenges in road safety issues, comparing to Central European countries or more developed countries in the world, we are still missing a system for systematic financing of applied research in the field of transport and especially in road safety.

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