

Research on the Current Situation of Road Traffic Safety in the United States

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Abstract: Although the United States road traffic intelligent level is very high, but the indicators of its safety accidents are far superior to china. This is mainly because the United States has long been the beginning of research on road traffic safety, the level of its research is also higher and the combination of theory and application. In order to fully understand the status of the road traffic safety research, combining with the data analysis of the road traffic safety situation and trend of the United States, and summarizes the frame model of the road traffic safety, and then introduces the main research fields of the road traffic safety and practical results.

Keywords: The United States; Road traffic safety; Status quo

1. Introduction

Americans generally hold a driver's license. In 2007, the number of drivers in the United States was 206 million, which accounted for 68% of the total population of the country. The number of motor vehicles in the United States has been the world's most, and in recent years the number has continued to increase. At present, the vehicle has nearly 260 million vehicles, which increased by about 50 million compared to 1998. In addition, Americans are also frequently used motor vehicles. Data show that the average daily travel number of more than 1 billion people.

So many of the number of motor vehicles and the use of the road traffic safety situation will inevitably lead to heavy pressure. Prior to the mid 1960s, the United States road traffic safety situation in the world has been in the best condition. This is mainly because the United States has long been the beginning of research on road traffic safety. The United States was established in 1930 by the American Association of traffic engineers is the world's first transportation research institutions. One of the main objectives of the association is to protect the safety of road traffic in the United states. Sweden, Australia and other developed countries on the importance of road traffic safety and funding efforts are greater than the United States, so that the United States road traffic safety situation began to decline. In order to speed up the improvement of road traffic safety situation, the United States began a substantial increase in the field of road traffic safety research in the late 1990s. The United States through the national highway traffic safety administration, transportation research board, and other specialized government agencies or industry associations to implement a variety of road traffic safety research projects. So in recent years, the United States ranked first in the world of road traffic safety. Thus, the

U.S. road traffic safety situation is significantly improved.

2. Research Framework Model of Road Traffic Safety

In general, reducing the risk of accident, reducing the severity of the accident is the 2 core objectives of road traffic safety research. And these two goals are applicable to different stages of traffic accident. For the first phase of the accident, the purpose of traffic safety research is to reduce the risk of accidents, and even to avoid the occurrence of accidents. And for the accident occurred and the stage after the accident, the purpose of road traffic safety research is focused on reducing the accident loss and personnel injury degree.

There are many risk factors in road traffic system. The main factors that affect the accident are people, vehicles and road environment. The factors that affect the severity of the accident include not only people, vehicles and road conditions, but also the first aid after the accident. The core idea of the road traffic safety research is to identify the factors that affect the risk in different stages, so as to put forward the measures to improve the safety. At present, the United States road traffic safety research scope is very extensive, which involves a variety of important risk factors.

3. American Road Safety Program

In order to effectively reduce the road traffic accident mortality, and improve the road traffic safety situation, the United States to develop a series of road traffic safety related planning. Including: National Security Council national security record project implementation, roadside safety improvement planning of T RB in the implementation of the national joint highway research program, and emergency medical services strategic plan

etc.. On the basis of the above special safety plan, the U.S. Transportation Safety Management Committee in 1997 to convene the national traffic safety experts to develop a comprehensive strategic road safety plan. SHSP covers all the relevant elements of road traffic safety, including drivers, other traffic participants, motor vehicles, highways, emergency medical services and management. The goal of the project is to reduce the accident death rate.

In the driver, the young driver the most security risks. In 2003 data, for example, a total of 15 young drivers between the ages of 16-20 years old died of road traffic accidents. In order to improve the safety of young drivers, the United States must fully establish a sound driver's license issuance system. In addition, the state also need to ensure that the driver's driving on the road to hold a valid driver's license and has sufficient driving ability is also an important traffic safety improvement measures. Data based on FARS show that about 20% of the deaths and driving without a license. At the same time, how to protect the driver's driving ability of the elderly has become a key issue. To this end, WA FH also specifically published the road design manual for the elderly driver.

In the driving behavior, the control of aggressive driving has been a hot spot in the field of traffic safety in the United states. It is estimated that more than 50% of the deaths are related to aggressive driving behavior. Drunk driving is also a major cause of the accident, and drunk driving is very easy to lead to aggressive driving behavior. According to statistics, in 2003 due to the death of the traffic accident of 42643 people in the blood alcohol concentration of more than 15630 to reach 0.08% people. One of the important factors of road traffic safety is threatened or distracted driving fatigue. So how to keep the driver in the driving process is also an important research topic. In addition, improving the driver's overall safety awareness is also an important topic, which mainly include improving the safety of driving awareness, such as speeding, non-compliance with traffic rules and drunk driving, etc..

4. Road Traffic Safety Improvement Measures in the United States

In order to effectively apply the research results of SHSP to the practice, the NCHRP has published the 500th and 501 research reports. The report details the basic data, strategies, improvement measures and supporting materials for the 22 research projects. At present, the improvement of road traffic safety mainly through the 4 major ways, namely, engineering, education, law enforcement and first aid. Since the 4 words of the English first letter are "E", so this project is also known as the 4E scientific strategy. This concept is the world's transportation experts in order to prevent and

reduce traffic accidents, after years of research and practice and summed up the results. 4E details of the specific contents are as follows: engineering project. Refers to the construction of traffic engineering, and its main research contents in three aspects. The laws and characteristics of the movement of vehicles on the road, road and other basic facilities, such as safety design and traffic management and control, safety assistant driving, passenger protection, pedestrian protection and other vehicle safety design.

Education. Mainly refers to the school and the society as the main traffic safety education. In the United States, education mainly includes driver's license system, driver's training, driver's education program, etc..

Law enforcement. The traffic management department shall, in accordance with the relevant traffic regulations, manage the traffic participants. American traffic laws and regulations, including road traffic law, traffic safety measures basic law, road law, road transport law, etc..

5. Main Research Institute of Road Traffic safety in the United States

Colleges and universities is an important force to promote the progress of American Transportation Science and technology. In order to promote the technical innovation in the field of transportation and ensure the sustainable development of the transportation industry, the United States has developed a plan of the University transportation center plan. The plan was first approved in 1987 by the U.S. Congress approved the road traffic and subsidy act. The Act allows the selection of universities in the 10 standard federal regions to support the establishment of a transportation center. In 1991 and 1998 approved by the United States, "the efficiency of road transport coordination" and "twenty-first Century transport fair act" and were allowed to build 4 national and 23 other levels of transportation center. Subsequently, in 2005 and approved the "safe, responsible, flexible and efficient traffic Equality Act", the bill will be funded by the project to expand the scope of the 60 University Transportation center.

It is clear that the results of both basic research and application research should be based on peer experts or other experts in the field of transportation, in order to improve the level of knowledge of the entire transportation industry. And, by taking the course work and the practice learning as the main form of the multidisciplinary education plan, the traffic theme of the center is enhanced. In addition, the bill also requires research results need to be practical, which can be directly operated by the user or the implementation of. The project is now under the United States Department of transportation research and Innovation Technology Management Bureau is responsible for the implementation of management.

Among all kinds of vehicles, the safety of vehicles is the key point of the research. University of Tennessee at Knoxville in heavy truck Research Center created by the vehicle aided design of advanced technology to improve the safety of the truck. At the same time, the University also studies how to adjust the traffic control strategy to ensure the safety of the operation of the truck. In addition, the research topic of the University of Nebraska transportation center is also around the truck safety, its main research includes the analysis of other traffic participants and construction area and other factors on the impact of the truck accident. South University of Florida is focusing on the use of advanced technology to reduce the risk of public transport vehicle accident. Such as the use of camera based vehicle system to reduce the risk of side impact of public transport vehicles and so on.

Road environmental factors may also be the risk of traffic accidents. Kansas State University focuses on how to use the traffic management and control measures to improve the traffic safety of the ring plane intersection. Cliff Lanzhou Prefectural University is mainly through the driving simulation experiment to study how to use traffic management measures to ensure the safety of roadside construction area. The University of Alaska is committed to exploring the solution to the problem of safety and emergency preparedness in this environment because it is cold and has a unique culture.

6. Conclusions

Although the degree of mobility of road traffic in the United States is still increasing year by year, but its security situation is continuing to improve. This is mainly due to a series of measures taken by the United States, including the development of strategic road safety plan, supported by many universities, released a series of engineering, education, law enforcement and emergency guidelines, standards and analysis software. In order to change the situation of China's road traffic safety situation is poor, we should learn from the United States in road traffic safety research and practice experience. Our country should continue to increase investment in basic research from the height of legislation, and pay attention to the transformation of research results.

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