

Research on Characteristic of Special and Serious Traffic Accidents in China

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Abstract: The general situation of special and serious traffic accidents in China is analyzed based on the special and serious traffic accident database. The character of special and serious traffic accident from aspect of spot, road, district and type is analyzed. Special and serious traffic accidents are likely to happen in these provinces such as Guangdong Yunnan Guizhou and Sichuan where there are more mountain areas, and always happen on the class II, III and unclassified highways. Most of the accidents are falling down to roadside and positive collisions. These results provide reference and a basis for the prevention of serious road traffic accidents.

Keywords: Special and Serious Traffic Accident; Mountain Area; Traffic Safety

1 Introduction

Special and serious traffic accidents take place from time to time in China in recent years, which have brought great losses to people's lives and property. More and more attention from the state and society has been focused on the occurrence of special and serious traffic accidents. Requirements of reducing special and serious traffic accidents were proposed by the state and the Ministerial Joint Conference System for National Road Safety^[1], referring to the Eleventh Five-Year Development Plan on Safety Technology^[2].

The Ministry of Science and Technology, the Ministry of Public Security and the Ministry of Transport signed the cooperation agreement on National Road Traffic Scientific Action Plan. The action plan aims at constantly reducing the number of fatalities due to traffic crashes, and further reducing the number of especial severe traffic crashes in several years. The fatality rate approximately reach the level in the middle-developed countries^[3].

Research on the characteristic of special and serious traffic accidents will provide reference for the prevention of these accidents.

2 Overview of special and serious traffic accidents

The number of serious road traffic accidents and casualties in China is declining in recent years, as shown in figure1, while the number is still at high level. According to the Annual Accident Report of PRC, the number of accidents killed three or more in one is 1671 in 2006 and 1472 in 2007, number of death of these accidents is 6611 and 5718^[4-6].

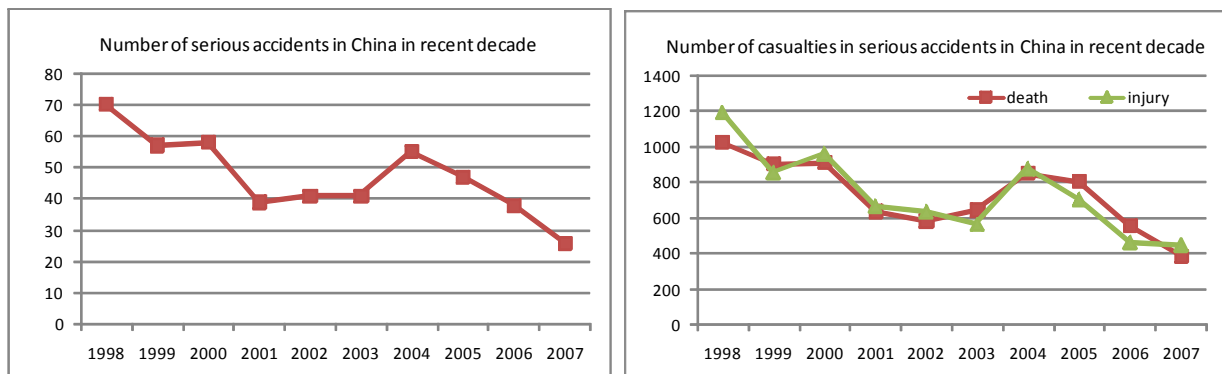


Figure 1 Number of serious accidents and casualties in China in recent decade

3 Character of special and serious traffic accidents

Results below are based on the database of special and serious accidents, in which more than three or more than ten were killed in one accident. These data is from the Annual Accident Report of PRC in recent years.

3.1 Region of the accidents

Number of special and serous accidents that killed three or more in one happened in Guangdong, Sichuan and Yunnan province is much more higher than other provinces, as shown in figure2. The percentage of special and serious accidents number in these three provinces is 7.8%, 5.9% and 6.5% in 2006, percentage of death of these accidents is 7.4%, 5.5%, and 8.5%. The percentage number is 6.3%, 7.6% and 4.9% in 2007, percentage of death is 6.9%, 7.8%, and 4.9%.

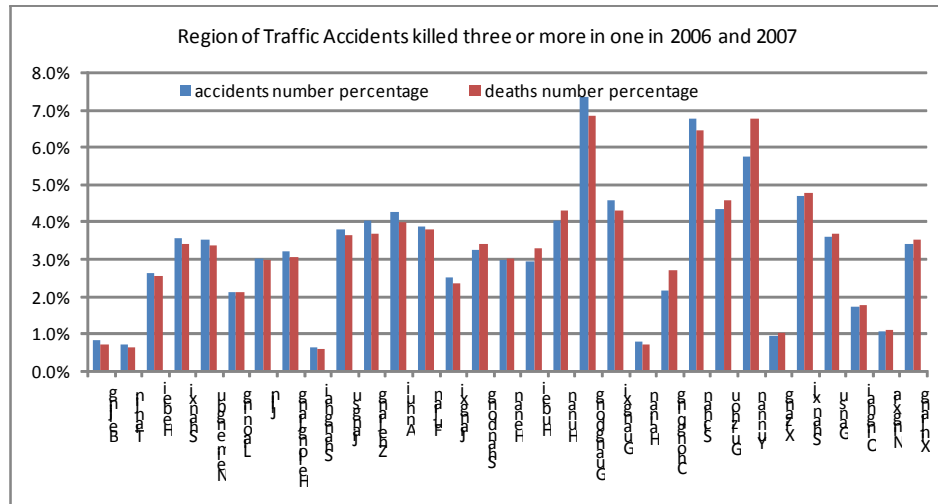
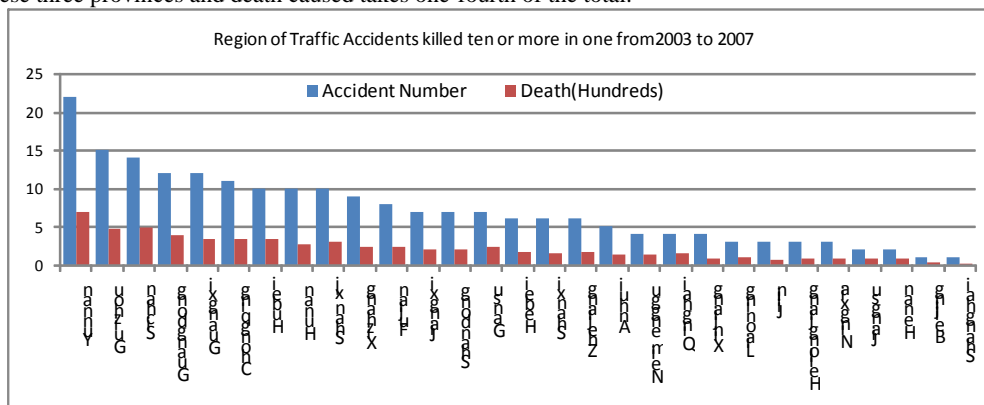


Figure 2 Region of Traffic Accidents killed three or more in one in 2006 and 2007

The distribution of special traffic accidents that killed ten or more in one is shown in figure3. These special accidents mainly happened in Yunnan, Guizhou, Sichuan, Guangxi and Chongqing provinces, which are mainly mountain areas. From 2003 to 2007, 22 special accidents happened in Yunnan Province, 15 in Guizhou Province and 14 in Sichuan Province, by percent of 10.6, 7.3 and 6.8. The number of death in these special accidents is 695, 474 and 489, by percent of 11.0, 7.5 and 7.8. The number of special accident happened in these three provinces and death caused takes one-fourth of the total.



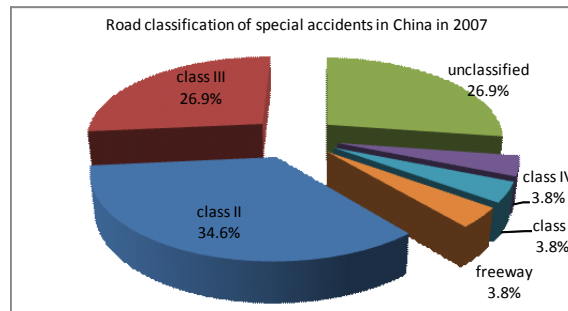


Figure 5 Road classification of special traffic accidents in China in 2007

3.4 Type of accidents

Half of the 2007 special accidents in mountain area are falling to roadside, 22.2% are falling to water, 11.1% are positive collision, 11.1% are rolling over, as shown in figure6. In these mountain special accidents, about 22.2% are related with bad weather such as rain, snow and ice. 5.6% were caused by landslides. 38.9% happened in curved or continues downgrade segments.

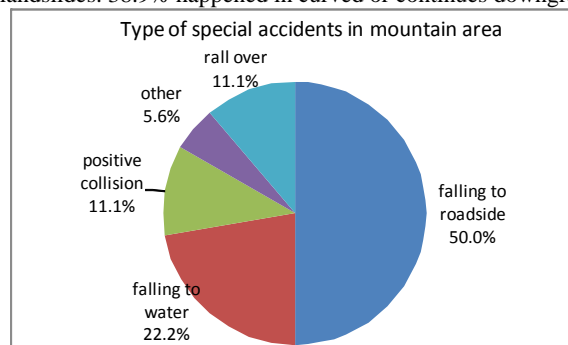


Figure 6 Type of special accidents in mountain area in China in 2007

4 Conclusion

The character of special and serious accidents in China can be concluded as follows,

1. More special and serious accidents happen in these provinces where there are more mountain areas, such as Guangdong, Yunnan, Guizhou and Sichuan.
2. Most of the special and serious accidents happen on class II, III and unclassified highways, which are in poor situation and,
3. Most of the accidents are falling to roadside or water and positive collision.

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