Influence Regularity of Fog on Expressway in China

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The impact of weather on traffic safety is becoming increasingly serious in China. Meteorological departments are difficult to forecast the sudden fog timely and accurately. Transportation departments’ ability to supervise fog needs to be strengthened. Police departments need to improve their control measures in foggy weather.
Cause serious accidents
FOG OVERVIEW
EXPRESSWAY ORDERING
AFFECTED BY FOG

(annual average fog days ≥ 50)
TIME DISTRIBUTION OF EXPRESSWAY INTERRUPTION

the time period from September 1st to November 26th in 2007
Qingyin: the green horizontal line
It is over 1610 km from Qingdao in Shandong Province via Hebei, Shanxi, Shaanxi to Yinchuan in Ningxia Hui Autonomous Region.

Jinghu: the green vertical line
It is over 1262 km from Beijing via Tianjin, Hebei, Shandong, Jiangsu to Shanghai.
1. Mensal influence times of fog on Qingyin expressway

Mensal average fog days on Qingyin expressway in the past two years
2. Regions state of Qingyin expressway affected by fog

Percentage of different provinces affected by fog on Qingyin expressway in the past two years.
3. Fog affecting trend of Qingyin expressway

Trend of fog affecting Qingyin expressway in the past two years
1. Mensal influence times of fog on Jinghu expressway

Mensal average fog days on Jinghu expressway in the past two years
2. Regions state of Jinghu expressway affected by fog

Percentage of different provinces affected by fog on Jinghu expressway in the past two years.
3. Fog affecting trend of Jinghu expressway

Trend of fog affecting Jinghu expressway in the past two years
CONCLUSIONS

Time rules

- The foggy weather occurs concentratedly from October to January of the next year;
- The expressways are affected least in August;
- Expressway interruption that is caused by fog happens mainly from 9 p.m. to 3 a.m. of the next day.
CONCLUSIONS

Space rules

- In China, Shandong and Hebei provinces are most seriously affected by fog;
- In the national expressway network, Jinghu, Qingyin, Jingzhu, Jingkun and Jingfu expressways are most frequently affected by fog;
- As far as Qingyin expressway concerned, Qingdao and Jinan-Shijiazhuang sections were most seriously affected by fog;
- As far as Jinghu expressway concerned, Tianjin-Jinan section was most seriously affected by fog.
More work needs to be done

- Data need to be enriched;
- Road State information management system need to be improved constantly;
- Transportation and Meteorological departments need to strengthen cooperation;
- To communicate with correlative experts and learn from all the advanced experience of all the other countries in the world.
Thank you for your attention!