

Road Marking Design Know-how

KANEKO Masahiro, Head MINOSHIMA Osamu, Researcher
 Advanced Road Design and Safety Division, Road Department

(Key words) Traffic safety measures, accident analysis, road markings

1. Introduction

Traffic safety measure projects often adopt road marking measures, which can be installed cheaply and take effect immediately (this research examines road marking and colored paving intended to prevent rear-end collisions, intersection collisions). But because design concepts for road markings have not yet been organized, they are often designed based on the experience of road managers. The NILIM has collected examples of road marking measures and analyzed their accident reduction effectiveness to create an inventory of know-how which can be applied to design road markings.

2. Analysis of cases of measures

Figure 1. shows typical road marking patterns, which road managers selectively install according to the situation at each location. There are also cases where road managers have designed innovative road markings and combined them with colored pavement. This research involved collecting and classifying road traffic conditions and accident reduction effectiveness and carrying out interviews with road managers and identify the design know-how applied to each case.

Figure 2. is an example: markings installed on an approach to an intersection to prevent rear-end collisions. In this case, 1.25 rear end collisions/year (4-year average) occurred before this measure was taken, but none occurred during the 2 years after it was taken. At the design stage, the planners studied the road marking installation point considering the accident's point, the intersection congestion length (length of congestion of cars waiting for the

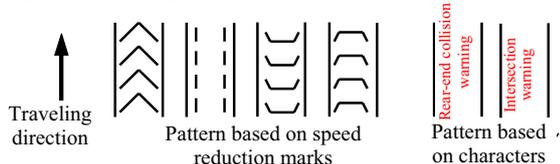


Figure 1. Typical Road Marking Patterns

intersection signal), and the car braking distance. The “rear-end collision warnings”, which show the content of the risk, are placed in advance of the accident’s point and “speed reduction marks (dotted lines)” are installed further on to urge drivers to slow down.

3. Conclusion

The following design know-how has been abstracted

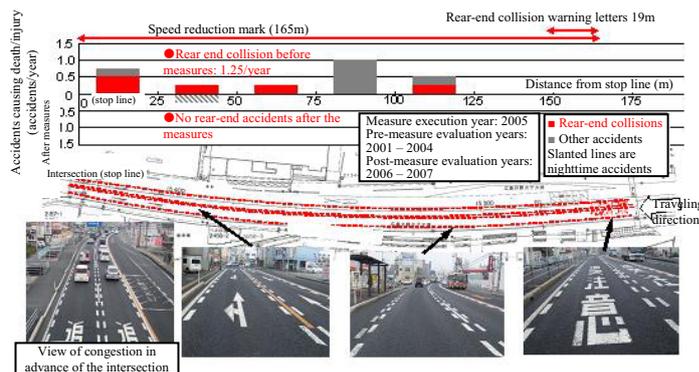


Figure 2. Highly Effective Cases

by a detailed survey of cases in various regions.

- In many cases, characters are marked on the road surface to clearly inform drivers of what they should be careful of. At locations where it is difficult for drivers to notice danger, dangerous locations are emphasized by speed reduction marks.
- Road markings are often placed in front of the accident’s point or intersection congestion length considering the braking stopping distance etc. of cars.
- There are cases where the road markings are difficult to see because of cars ahead on sections with heavy traffic, so the study included the joint use of signboards which are relatively easy to see, even during congestion.

Plans for the future include the verification from many aspects of the design know-how which has been abstracted accompanied by the clarification of conditions for application of each type of know-how, and the provision of the information for road managers.

[Reference:] Web site of the Advanced Road Design and Safety Division (giving access to related reports)
<http://www.nilim.go.jp/lab/gdg/index.htm>