

Study of the introduction of roundabouts in Japan

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1. Introduction

Present level intersections include those which still face safety challenges such as the occurrence of collisions between vehicles crossing on intersecting streets and between a vehicle travelling straight through and a vehicle turning right on the same street. There are also signalized intersections where the traffic volume is low, resulting in the smooth flow of traffic being obstructed because drivers needlessly wait for a signal change when no vehicles are crossing the intersection. To counter these problems, America and the countries of Europe are aggressively introducing roundabout intersections. Interest in roundabouts as a type of level intersection where signal control is unnecessary during disasters has appeared in regions which suffered damage by the Great East Japan Earthquake. This report introduces the state of studies of the introduction of roundabouts in Japan.

2. Outline of roundabouts

A roundabout is a type of circular intersection in which priority is given to one-way traffic flowing in a circle, and is a level crossing control method that does not interrupt the circular flow with signals or by requiring a temporary stop. They are being constructed in various regions as shown in Photo 1.



Photo 1. Example of construction (Hitachi City in Ibaraki Prefecture)

3. Past initiatives

The Road Bureau of the Ministry of Land, Infrastructure, Transport and Tourism has formed the

Roundabout Study Committee¹⁾, which held its first meeting in September 2013. The purpose of this committee is to study characteristics of intersections suitable for the construction of a roundabout based on the characteristics of roads and state of traffic in Japan, and to hear expert opinions to study technical challenges to the introduction of roundabouts. In FY2012, in Karuizawa Town in Nagano Prefecture, six unsignalized intersections were converted to roundabout intersections with the support of a public experiment by the Road Bureau. And in FY2013, in Yaizu City in Shizuoka Prefecture and in Moriyama City in Shiga Prefecture, 4 unsignalized intersections were converted to roundabouts with the support of the same public experiment.

Linked to the above trend, the NILIM is conducting research to set suitable conditions and create design methods for roundabouts by, for example performing driving surveys on test roads (Photo 2) and by using traffic flow simulators, in order to prepare design standards.



Photo 2. View of Driving Survey on a Test Track

[Sources]

1) Roundabout Study Committee

<http://www.mlit.go.jp/road/ir/ir-council/roundabout/index.html>