

## **JAPAN'S VIEWS ON IMPROVING DIRECT AND INDIRECT VISIBILITIES**

Transmitted by the expert from Japan

In order to improve driver's visibility for safety, direct and indirect visibility must be properly balanced. WP29/GRSG/2002/10, however, proposes to enlarge the requirement of indirect visibility only, which may adversely affect direct visibility, particularly under the current road traffic situation in Japan.

On the other hand, there is a safety concern with regard to the close-proximity field of vision for the vehicles of categories M, and N not exceeding 7.5 tons, because there is no consideration for the safety for the pedestrians of that area.

As Japan considers that these matters need to be improved, we would like to raise specific issues for the future discussion as follows. (Japan had pointed out these matters in the Informal Documents No. 15 and No. 18 at the 83<sup>rd</sup> session of GRSG.) Especially, we support that more comparative studies and needed for various requirements for indirect visibility, in order to harmonize the current ECE regulation with Japanese regulation.

### **[Common issues for all categories of vehicles]**

1. While Japan's Safety Regulations require the radius of curvature of rear-view main (Class II and Class III) mirrors to be at least 600R, WP29/GRSG/2002/10 requires 1,200R or more. If 1,200R is adopted in Japan, rear-view mirrors must be enlarged to ensure the same range of visibility, which could worsen the driver's direct field of view.
2. For rear-view main (Class II and Class III) mirrors, WP29/GRSG/2002/10 requires that the road must be visible to the driver over a width of 1m starting from a point 4m behind the driver's ocular points. To check for sideward traffic, it's enough if you can see vehicles, pedestrians, and bicycles passing by the vehicle. In that sense, it must be enough if you can recognize a certain height (about 500mm) of objects. Requirements for the road visibility lead to enlarging the surface of mirror unnecessarily, and consequently it may reduce direct visibility.
3. The surveillance mirror can contribute to safety enhancement by expanding the driver's field of vision. In this case, we think the mirror need to comply with the requirement in para. 6.1.3 and 15.2.2.6 on WP29/GRSG/2002/10. Thus the use of the surveillance mirror should not be restricted by requirements for installation height as well.

## **[Large Vehicles]**

The safety concerns summarized below can be anticipated in Japan, when adopting the proposed requirements for Category N vehicles exceeding 7.5 tons.

WP29/GRSG/2002/10 requires a Class IV exterior rear-view mirror to be fitted on the driver's side to acquire a view of rear lateral field. However, it may present another safety problems since this mirror substantially obstructs the driver's direct field of vision (It may hinder the driver to see pedestrians while turning, for example.) Japan's basic belief is that a sufficient view of rear lateral field on the driver's side can be assured by glancing sideways.

The results of JARI experiments indicate that the mirror systems, complying with WP29/GRSG/2002/10, can obstruct the driver's direct field of vision, particularly when making a right turn.

## **[Passenger cars, Small trucks]**

As there is no mandatory amount of close-proximity field of vision in the requirements of WP29/GRSG/2002/10 for Category M vehicles and Category N vehicles not exceeding 7.5 tons, it may cause safety problems concerning the driver's close-proximity field of vision.