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Working Party on Road Traffic Safety
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**REVISION OF THE CONSOLIDATED RESOLUTIONS ON ROAD TRAFFIC (R.E.1) AND ON
ROAD SIGNS AND SIGNALS (R.E.2)**

Note by the secretariat

At the thirty-first session of the Working Party, the delegates of Israel and Denmark offered to prepare a proposal that would summarize the provisions of the Guidelines on speed control humps (TRANS/SC.1/WP.1/1998/4) into general principles to be introduced into R.E.1 (TRANS/WP.1/62, para. 30).

The secretariat reproduces below the proposal of the delegates of Israel and Denmark which they suggest could be placed in chapter 5, "Road installations" in the new structure of R.E.1 as approved by the Working Party in TRANS/SC.1/WP.1/1998/2.

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Speed control humps

A speed control hump is one of the means to influence speed. Like most other measures, speed control humps have positive effects, but may sometimes have negative consequences. If properly used the positive effects dominate by far. It is recommended to consider the following before using speed control humps.

A. Effects

Properly designed speed control humps produce a very significant reduction in speed. As such they are a very effective accident reducing measure. Several humps properly laid-out in residential areas keep speed down and in that way improve both safety and the quality of life in the area.

Improper speed control humps may on the other hand pose a hazard, for instance if the driver is not aware of a hump or if the hump is not constructed in a proper way.

Speed control humps may also cause unintended inconvenience for bus traffic and two-wheeled vehicles. However, properly designed speed control humps reduce speed - immediately, permanently and fairly.

B. Design

The shape and dimensions of the speed control hump must be adjusted to the intended speed. A 4 m long circular hump 10 cm high is normally regarded as suitable for the speed 30 km/h. Humps may be designed with a flat top. Independent of the shape the approach angle to the hump should not be steeper than 1:10. Longer humps may be used depending on the intended speed. Short humps are often not effective.

To reduce problems for buses humps may be designed taking the wider wheelbase of these vehicles into account. This leads to a reduced vertical deflection to the bus compared to private cars.

Independent of the shape of the hump the peak value of the vertical acceleration to the driver should not exceed 1G, for health reasons. Lower values are recommended (0.5G to 0.7G).

Care should be taken in constructing humps to secure the right dimensions.

C. Signing and marking

Drivers must have the possibility to adjust their speed to a hump in advance. The first hump on a road section should have advance warning signs, and the precise location of the hump should be indicated by markings on the road surface. Where snow could cover the hump a vertical sign or a bollard is recommended at the hump as well.

In a "30 km/h zone" or similar, where humps are placed within a short distance to secure the low speed, advance warning signs and road markings may not be needed at the humps within the area.
