

Japanese comment on the TRANS/WP29/GRRF/2003/15

Transmitted by the Expert from Japan

Regarding the proposal TRANS/WP29/GRRF/2003/15 (referring to specifications concerning vehicle roll angle), we think it necessary to give more consideration about the relationship between vehicle stability and the roll angle for the following reasons;

- 1) Despite many studies on vehicle stability, a direct relationship between vehicle roll angle and stability has not been established, because vehicle stability is not determined only by the roll angle but also by the other basic vehicle specifications and human factors.

- 2) The attached figure shows an example about roll over angle and roll angle of the vehicle, based on the ECE R111 calculation method. The base point is the result of typical 3kL tank truck and it shows that the calculation result is accurately reflected in the actual measuring result. Point "A" is the result with 30% roll stiffness reduction from base geometry and its roll over angle is reduced from 29 ° to 27.7 ° . The roll angle is increased from 6.4 ° to 9.4 ° and with this roll stiffness, the roll angle is 7.6 ° at an inclination angle of 23 ° which is the stability criteria (point "B"). Point "C" is the result with a 30% increase in centre of gravity height. Roll over angle is reduced from 29 ° to 23.2 ° and the roll angle is increased from 6.4 ° to 7 ° at an inclination angle of 23 ° . Observing 2003/15, "A", which has much better static stability than "C", would not comply with the proposal. On the other hand C would comply.

Therefore we are afraid that 2003/15 and the original ECE111 would be contradictory.

	Roll angle at inclination angle of 23 °	Roll over angle	Compliance with proposal of 2003/15
Vehicle B	7.6 °	27.7 °	No
Vehicle C	7.0 °	23.2 °	Yes

Relationship between Roll Over Angle and Roll Angle

