

## Vehicle Performance Envelope Limits

OICA proposed modification of the vehicle performance envelope limits as a compromise to maintain the largest range of environmentally relevant engine RPM testing while limiting the practical consequences of these limits where they would require capability of the test facility beyond that used to perform the Annex 3 test.

The compromised may be summarized as follows: Given the base vehicle envelope;

- 1. If the lowest gear is limited by speed and not engine RPM, raise vehicle speed until RPM limit achieved, but not to exceed 80 km/hr.**
- 2. If a gear is not used due to the acceleration limit, raise vehicle speed until RPM limit achieved, but not to exceed 80 km/hr.**

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**IS THIS CORRECT?**

### Speed Detail Choices.

**Assumption: RPM and acceleration limits remain in effect for all cases.**

BASE CASE: If second gear achieves RPM limit before or equal to 70 km/hr, all other gears maintain 70 km/hr limit.

1. If second gear achieves RPM limit above 70km/hr but below or equal to 80km/hr, use achieved speed as limit for this gear only. All other gears remain limited to 70 km/hr
2. If second gear achieves RPM limit above 70km/hr but below or equal to 80km/hr, use achieved speed as limit for all gears.
3. If second gear achieves RPM limit above 70km/hr but below or equal to 80km/hr, use achieved speed as limit for this gear only. All other gears vehicle speed limit is 80 km/hr.
4. If the lowest valid gear achieves RPM limit above 70km/hr, the vehicle speed limit is 80 km/hr.

**What is your intention?**

## Acceleration Detail Choices

BASE CASE: If second gear does not achieve acceleration limit, test in lowest gear meeting acceleration limit to 70 km/hr, subject to RPM limit criteria.

1. If second gear is in excess of acceleration limit, third gear shall be tested and if third gear achieves RPM limit before or equal to 70 km/hr, all remaining gears shall be tested to a vehicle speed limit of 70 km/hr.
2. ~~If second gear is in excess of acceleration limit, third gear shall be tested and if third gear achieves RPM limit above 70 km/hr but below or equal to 80 km/hr, use achieved speed as limit for this gear only. All other gears remain limited to 70 km/hr.~~
3. ~~If second gear is in excess of acceleration limit, third gear shall be tested and if third gear achieves RPM limit above 70 km/hr but below or equal to 80 km/hr, use achieved speed as limit for all gears.~~
4. If second gear is in excess of acceleration limit, third gear shall be tested and if third gear achieves RPM limit above 70 km/hr but below or equal to 80 km/hr, use achieved speed as limit for this gear only. All other gears vehicle speed limit is 80 km/hr.
5. If second gear is in excess of acceleration limit, third gear shall be tested and if third gear achieves RPM limit above 70 km/hr, the vehicle speed limit is 80 km/hr.

Acceleration cases are special case of RPM choice. Can do BASE CASE only.

Comment: It would be helpful to define a gear “*i*” that can be used instead of the design prescriptive “second” and “third” gear. Text can then refer to *i*+1, *i*-1, etc.