



UN-Regulation R41.04 ASEP case

provisions concerning the approval of motorcycles with regard to noise

IWG ASEP
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Remark: The purpose of this presentation is merely informative

01_ Presentation Scope

02_ Case 1 – Out of ASEP control range

This presentation is focused on a real case when performing ASEP tests, where doubtful interpretations have arisen when carry out ASEP tests on high performance motorcycles.

The purpose of sharing doubtful ASEP cases is to achieve a common interpretation, so it can be followed same adopted procedures when carry out UN-Regulation 41.04 approval tests.

UN Regulation 41.04 supplement 6:

- **ANNEX VII:** Additional Sound Emission Provisions (ASEP)

01_ Presentation scope

02_ Case 1 – Out of ASEP control range

Problem:

Vehicle out of ASEP control range when testing condition ii) to item 3.2.2 to Annex 7 to R41.

Condition ii) item 3.2.2:

$V_{BB'}$ shall be:

- $n_{BB'} = 3.4 * PMR^{-0.33} * (S - n_{idle}) + n_{idle}$ for $PMR > 66$ and,
- shall not exceed 80 km/h, and

The selected gear shall be 2nd. If 3rd gear satisfies the requirements of $n_{BB'}$ and $V_{BB'}$, 3rd gear shall be used. If 4th gear satisfies the requirements of $n_{BB'}$ and $V_{BB'}$, 4th gear shall be used.

Vehicle specification:

- Vehicle category: L3
- PMR: 362
- S: 9500 rpm
- n_{idle} : 1350 rpm
- $n_{AA'}$: 2165 rpm
- $n_{BB'}$: 5315 rpm

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Vehicle specification:

- PMR: 362
- S: 9500 rpm
- n_{idle} : 1350 rpm
- $n_{AA'}$: 2165 rpm
- $n_{BB'}$: 5315 rpm

Vehicle verification:

- $V_{BB'}$ @ 5315rpm is:
 - in 2nd gear: 68 km/h **OK✓ (less than 80km/h) SELECTED GEAR**
 - in 3rd gear: 88 km/h **NOK × (more than 80km/h)**

Vehicle specification:

- S: 9500 rpm
- n_{idle} : 1350 rpm
- $n_{AA'}$: 2165 rpm
- $n_{BB'}$: 5315 rpm

Test conditions:

- In 2nd gear $V_{BB'}$ @5315rpm = 68 km/h **OK✓**
- Entrance speed at AA' shall 25 km/h to comply with $V_{BB'}$ of 68km/h
- In 2nd gear $V_{AA'}$ = 25 km/h **OK✓**
- In 2nd gear $n_{AA'}$ @25km/h = 2000 rpm (less than 2165 rpm) **NOK ✗**



ASEP control range on item 2.5 to Annex 7 to R41.04 states:

The requirements of this **annex** apply to any vehicle operation with the following restrictions:

(a) $v_{AA'}$ shall be at least 20 km/h

(b) $v_{BB'}$ shall not exceed 80 km/h

(c) $n_{AA'}$ shall be at least $0.1 * (S - n_{idle}) + n_{idle}$ (our case 2165 rpm)

(d) $n_{BB'}$ shall not exceed

$$3.4 * PMR^{-0.33} * (S - n_{idle}) + n_{idle} \text{ for } PMR > 66$$

Question: How should be considered performance of ASEP test when vehicles faces this possibility?

- In 2nd gear $V_{BB'}$ @5315rpm = 68 km/h **OK✓**
- Entrance speed at AA' shall 25 km/h to comply with $V_{BB'}$ of 68km/h
- In 2nd gear $V_{AA'}$ = 25 km/h **OK✓**
- In 2nd gear $n_{AA'}$ @25km/h = 2000 rpm (less than 2165 rpm) **NOK ✗**



Out of ASEP control range

The requirements of this **annex** apply to any vehicle operation with the following restrictions:

(a) $v_{AA'}$ shall be at least 20 km/h

(b) $v_{BB'}$ shall not exceed 80 km/h

(c) $n_{AA'}$ shall be at least $0.1 * (S - \text{nidle}) + \text{nidle}$ (our case 2165 rpm)

(d) $n_{BB'}$ shall not exceed

$3.4 * PMR - 0.33 * (S - \text{nidle}) + \text{nidle}$ for $PMR > 66$

Thank you very much for your kind attention

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