

ASEP measurements NL

Feb 2007

Issued by the Netherlands

Vehicle 1

- PMR: 65 kW/t
- S: 6000 /min
- Gearbox: 5 speed manual
- Fuel: petrol
- Selection criterion: flap in exhaust (home made device)

Measurement results:

R51.02 (excl 1 dB subtraction): 78.8 dB(A)

L_{tyre} @ 50 km/h: 71.0 dB(A) (MTD=0,55)

Annex 3 (3rd gear only): 72.7 dB(A)

L_{wot,i}: 73.4 dB(A)

$L_{wot,i} - L_{tyre(50)} < 3 \text{ dB(A)}$

ASEP Evaluation Vehicle 1

D proposal

- Vehicle exceeds limit curve

D/F proposal:

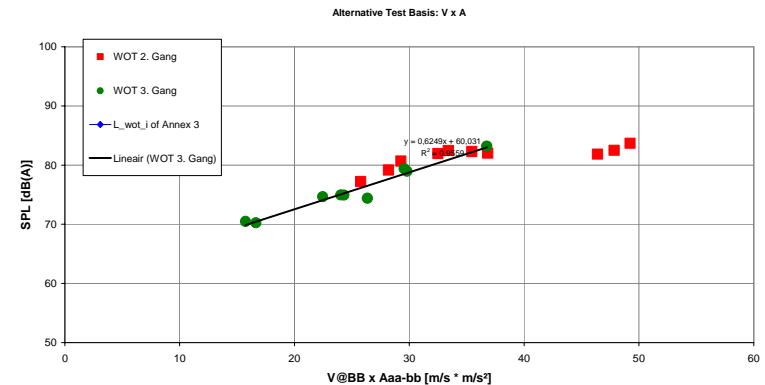
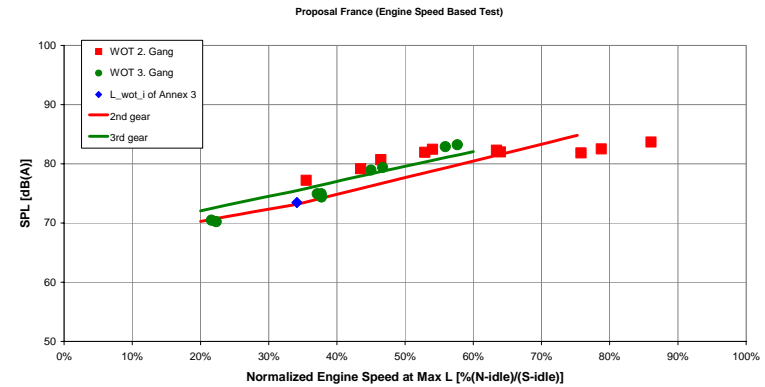
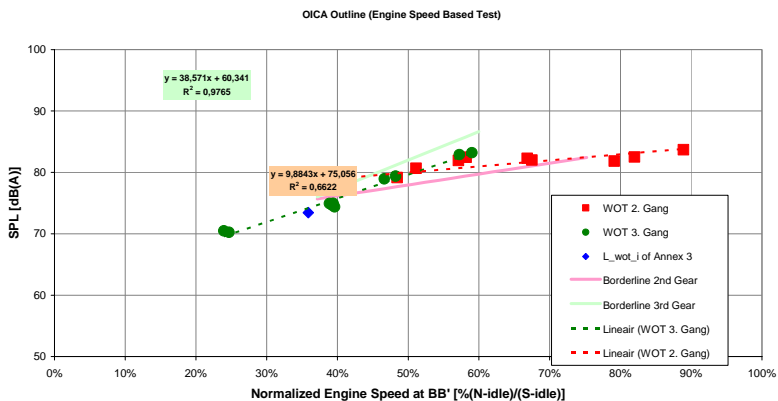
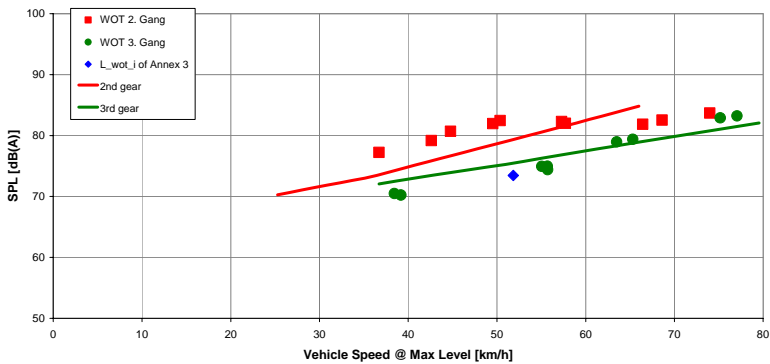
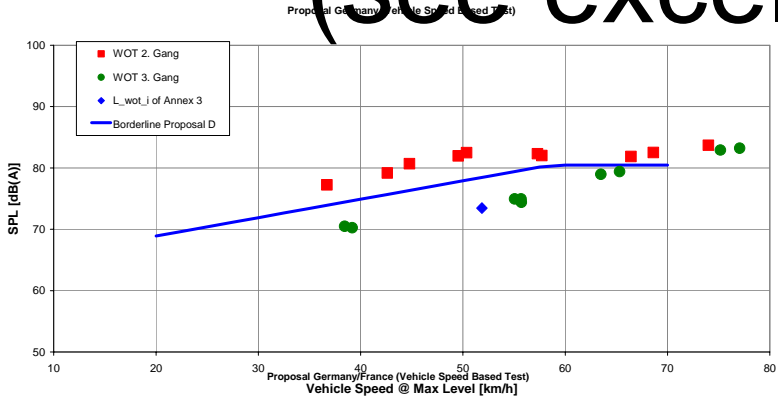
- $L_{wot,i} - L_{tyre(50)} < 3 \text{ dB(A)} \rightarrow$ in principle no analysis possible:
- Forced calculation of proposal is mathematically possible:
 $L_{tyre(vBB)} < L_{wot,i}$
- Vehicle exceeds limit curve

OICA concept:

- Vehicle exceeds limit curve

Results Vehicle 1

(see excel sheet for details)



Vehicle 2

- PMR: 59 kW/t
- S: 6000 /min
- Gearbox: 5 speed manual
- Fuel: petrol
- Selection criterion: expected low engine noise

Measurement results:

R51.02 (excl 1 dB subtraction): 74.9 dB(A)

L_{tyre} @ 50 km/h: 71.6 dB(A)

Annex 3 (3rd gear only): 71.9 dB(A)

$L_{\text{wot},i}$: 71.8 dB(A)

$L_{\text{wot},i} - L_{\text{tyre}}(50) < 3 \text{ dB(A)}$

$L_{\text{tyre(vBB)}} > L_{\text{wot},i}$

ASEP Evaluation Vehicle 2

D proposal:

- Vehicle exceeds limit curve at “speed independent ceiling”, but this happens at $n > n_{\max,D}$

D/F proposal:

- $L_{wot,i} - L_{tyre(50)} < 3 \text{ dB(A)} \rightarrow$ In principle no analysis possible
- Forced calculation of proposal NOT possible:
 $L_{tyre(vBB)} > L_{wot,i}$

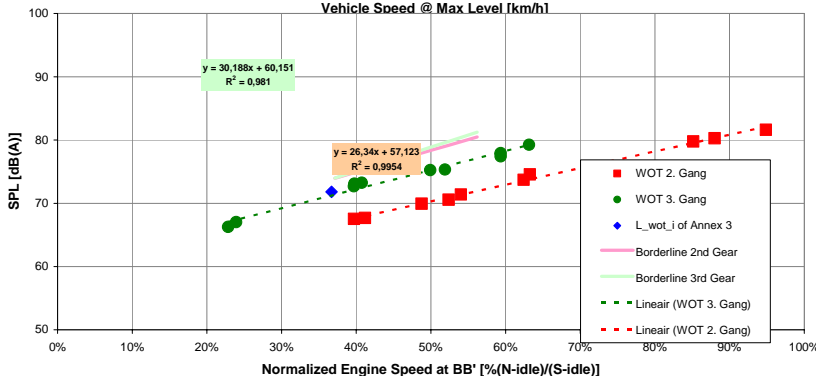
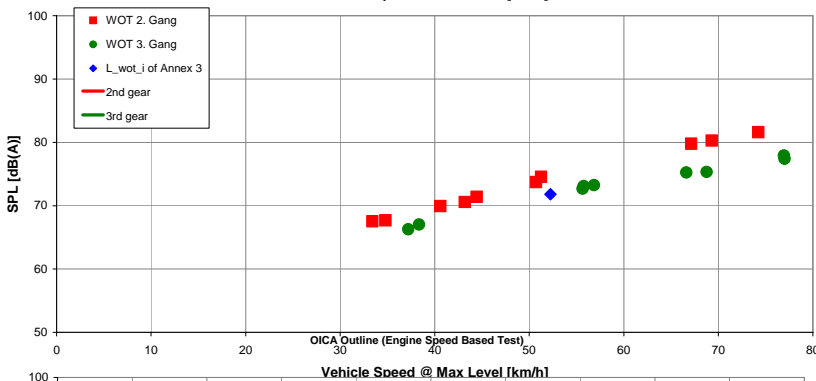
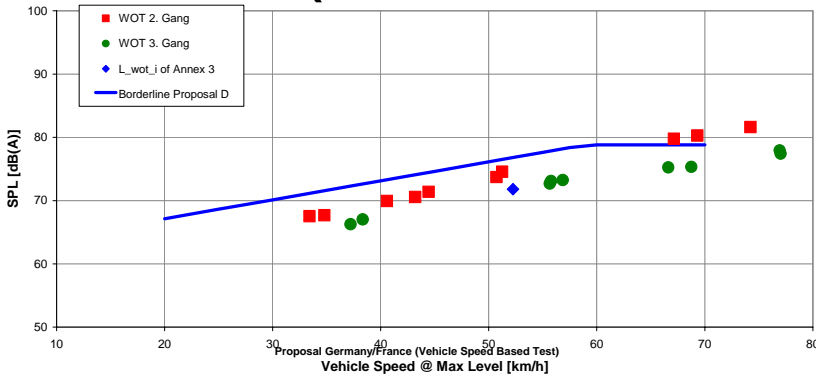
Oica concept

- Vehicle remains below “borderline”

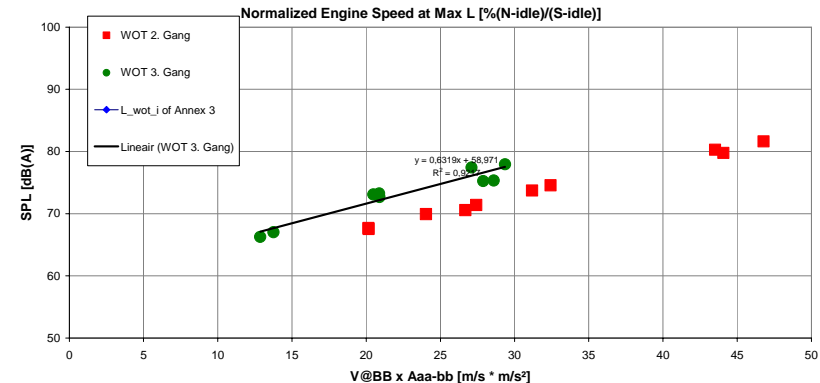
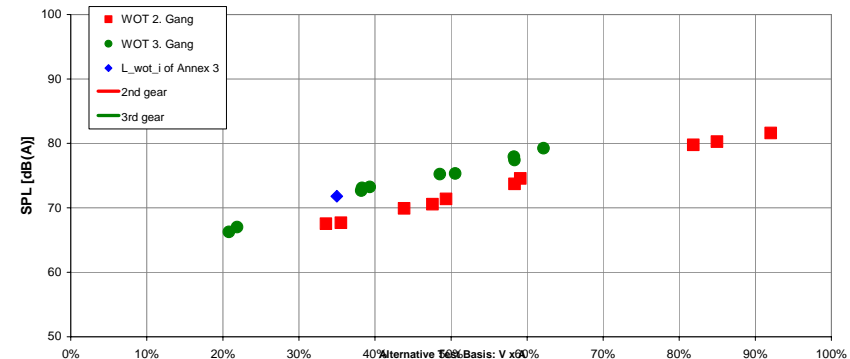
Results Vehicle 2

(see excel sheet for details)

Proposal Germany (Vehicle Speed Based Test)



Proposal France (Engine Speed Based Test)



Conclusion

- The exhaust system with flap is detected by all the ASEP proposals; including R51.02
- The D/F proposal demands tyre noise to be $<50\%$ of $L_{wot,i}$. This is too restrictive for the vehicles we have tested. A proposal to improve the D/F proposal will be presented in this meeting
- The high tyre noise levels of these vehicles are likely to be caused by the relatively high texture level of the ISO track we used ($MTD = 0,55 \text{ mm}$). The current regulation does not have an upper limit on texture. Therefore this kind of texture is likely to be found on other (older) test tracks, giving similar problems with the D/F proposal.