

IWG for ASEP

5th and 6th IWG for ASEP meeting

Meetings

- 1st Meeting : 2016, November – Tianjiin
- 2d Meeting : 2017, February – Geneva
- 3rd Meeting : 2017, May – Brussels
- 4th Meeting : 2017, July – Washington
- 5th Meeting : Japan, 2017, November, 7th am to 9th pm
- 6th Meeting : Geneva (in junction with GRB), 2018, January, 22th pm to 24th am
- 7th Meeting : 2018, March 20th am – 22nd am, China, Changchun
- 8th Meeting : Europe, 2018, July, 10th am -12th am
- 9th Meeting : Geneva (in junction with GRB), 2018, September, 10th pm to 12th am
- 10th Meeting : Japan, 2018, November, 06th am – 08th am

Participants to 5th and 6th Meetings

- Contracting parties : France, China, Japan, Germany, EC, Spain, Russian Federation
- NGOs : OICA, IMMA, CLEPA, ISO

Related documents

- **GRB 64th :**
 - GRB-64-23-(Rev.1) - (Chair) (Revised) draft Terms of Reference of IWG ASEP
 - GRB-64-16 - (France) Information on ASEP
 - GRB-64-04 - (ISO) Proposals to clarify the provisions of Regulation No. 51, Revision 3, Annex 7
- **GRB 65th :**
 - **ECE/TRANS/WP.29/GRB/2017/2** - (IWG on ASEP) Proposal for Supplement 2 to the 03 series of amendments to Regulation No. 51
 - GRB-65-26 (IWG ASEP) - Modifications proposed to ECE/TRANS/WP.29/GRB/2017/2
 - GRB-65-25 (IWG ASEP) - Presentation of ECE/TRANS/WP.29/GRB/2017/2
 - GRB-65-24 (IWG ASEP) - Progress report
- **GRB 66th :**
 - **ECE/TRANS/WP.29/GRB/2017/5** - (IWG on ASEP) Proposal for Supplement 3 to the 03 series of amendments to Regulation No. 51
 - **GRB-66-14** (IWG ASEP) Status report
- **GRB 67th :**
 - **GRB-67-xx** (IWG ASEP) Status report

And all documents in IWG website

Report of discussions and conclusions

Consideration of some technical elements for current procedures

- Following comments from GRB members on **ECE/TRANS/WP.29/GRB/2017/5**, the IWG for ASEP concluded that :
 - geometry, surface and obstacles outside ISO 10844 has a negligible impact for backfire assessment,
 - transitional provision could be needed for “Backfire” (SPL from AA to BB+20m) and “anchor point” (L wot i+1 instead of L wot i).

Report of discussions and conclusions

General consideration of ASEP revision and application

- Some concerns were expressed :
 - What kind of problems, products we want to check and solve with ASEP?
 - What kind of vehicles, what speeds we should focus?
 - Strict test for vehicles subjects to doubts and simple test for "normal" vehicles
 - Need to prohibition or prevention of illegal modification/defeat device
- Some questions are still in discussions
 - Difficulties to define normal or subject to doubts vehicles.
 - Identification of possibilities of illegal manipulations even if impossible to be exhaustive – to be able to find solutions to avoid these situations

Report of discussions and conclusions

General consideration of ASEP revision and application

- Following proposal from ISO about indoor alternative method for UN51.03, IWG for ASEP requests ISO support to develop alternative indoor method(s) for ASEP.

Report of discussions and conclusions

Model concept and test program

The model was presented and discussed :

- Model : $L_{exp} = 10 \times LOG_{10}(10^{0,1 \times L_{Tyre}} + 10^{0,1 \times L_{PT,NL}} + 10^{0,1 \times L_{PT,FL}}) + \text{Margin}$

With :

- L tyre, No Load :

$$L_{TR,NL} = slope_{TR} \times LOG_{10} \left(\frac{V_{test}}{50} \right) + L_{REF,TR}$$

- L propulsion, No load :

$$L_{TR,NL} = slope_{PT,NL} \times LOG_{10} \left(\frac{(n_{test} - n_{shift})}{(n_{wot\ ref} - n_{shift})} \right) + L_{REF,NL}$$

- L propulsion, full load

$$L_{TR,FL} = slope_{PT,FL} \times LOG_{10} \left(\frac{(n_{test} - n_{shift})}{(n_{wot\ ref} - n_{shift})} \right) + L_{REF,FL} + \Delta L_{partial}$$

- Anchor point : L_{wot} and L_{crs} from the lower or single gear, the acceleration (actually PP-BB), the vehicle speed v_{BB} , the engine speed n_{BB}

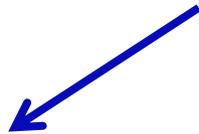
Annex 3 - Parameter		
a_{ref}	1,22	m/s ²
$a_{wot,ref}$	1,89	m/s ²
$a_{wot,ref}$	1,78	m/s ²
N_{ref}	2883	1/min
$L_{wot,ref}$	72,1	dB(A)
$L_{wot,ref}$	68,2	dB(A)

Report of discussions and conclusions

Model concept and test program

- Prediction model for tyre rolling sound was presented and discussed

$$L_{TR,NL} = slope_{TR} \times LOG_{10} \left(V_{test} / 50 \right) + L_{REF,TR}$$



[ASEP-05-17 \(OICA\) 2017-11-06
IWG DATABASE TYRE ROLLING
SOUND_PUBLIC.xlsx](#)



$$L_{REF,TR} = 10 \times LOG_{10} (x\% \times 10^{(L_{CRS\ REP} / 10)})$$

to define typical slopes

Tyre Model		
Vref,tyre	50	km/h
Slice Tyre	90	%
Lref,tyre	67,7	dB(A)
Slope < 50 km/h	20	dB/log(v)
Slope > 50 km/h	40	dB/log(v)

Report of discussions and conclusions

Model concept and test program

- Prediction model for PWT (no load) was presented and discussed

$$L_{TR,NL} = \text{slope}_{PT,NL} \times \text{LOG}_{10} \left(\frac{(n_{test} - n_{shift})}{(n_{wot\ ref} - n_{shift})} \right) + L_{REF,NL}$$

[ASEP-05-16 \(OICA\) 2017-11-06](#)
[IWG DATABASE](#)
[STATIONARY PUBLIC.xlsx](#)

to define typical slopes
and shift

$$L_{REF,TR} = 10 \times \text{LOG}_{10}((100 - x\%) \times 10^{(L_{CRS\ REP}/10)})$$

P/T - Model NO LOAD		
Nref	2883	1/min
Slice PT	10	%
Lref.pt_nl	57,6	dB(A)
Slope < Nref	60	dB/Log(n)
Slope > Nref	150	dB/Log(n)
Compression	5000	rpm

Report of discussions and conclusions

Model concept and test program

- Prediction model for PWT (full load) was not presented and discussed

$$L_{TR,FL} = slope_{PT,FL} \times LOG_{10} \left(\frac{(n_{test} - n_{shift})}{(n_{wot\ ref} - n_{shift})} \right) + L_{REF,FL} + \Delta L_{Partial}$$

PIT - Model LOAD		
Dynamic Factor	30	
Max Perf.	17,1	dB(A)
Lref.pt_1	52,7	dB(A)
Slope < Nref	60	dB/Log(n)
Slope > Nref	110	dB/Log(n)
Compression	5000	rpm

Report of discussions and conclusions

Model concept and test program

- The test program was decided to :
 - create a data pool which can be used to investigate the impact of the ASEP revision on current vehicle technology
 - deliver data to support the validation of design parameter for the ASEP assessment model
- Test program and excel file for datas was reviewed following preliminary tests (done by Japan, France and OICA) :
[ASEP-05-13 \(OICA\) 2017-11-09 IWG DATA ENTRY SHEET - WITH EXAMPLE.xlsx](#)
- The group requests GRB members to deliver data.

To be done on this 6th meeting

- Exchange of information on national and international requirements
 - ISO Indoor
 - L category
- Current procedures : Consideration of some technical elements for current procedures
 - Transitional Provisions of the Document
ECE/TRANS/WP.29/GRB/2017/05 (backfire and anchor point)

To be done on this 6th meeting

- Model concept analysis :
 - Review of test program and data collection
 - Vehicle sound model :
 - formulas and table of symbols
 - x% evaluation
 - Prediction model for PWT (full load)
 - Application to EV and HEV
 - Testing methods (Partial throttle, high and low speed, indoor, ...)

To be done on this 6th meeting

- General consideration of ASEP revision and application
 - What vehicles can be excluded?
 - What does 'normal', 'silent' vehicles mean?
 - What are all possibilities of illegal manipulations (even if impossible to be exhaustive) to be able to find solutions to avoid these situations?
- Follow up of project and milestones
 - Status report for GRB (based on this presentation)
- To establish Next meeting(s) arrangements