

Transmitted by the experts of IWG ASEP

Informal document **GRB-67-xx**
(67th GRB, 23-25 January 2018,
agenda item xx)

IWG for ASEP

Report to GRB 67th

from the 5th and 6th IWG for ASEP sessions

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 (*Brussels EC to be confirmed*), 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 Sessions

- Contracting parties : France, China, Japan, Germany, EC, Russian Federation
- NGOs : OICA, IMMMA, 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 Transitional provisions for R51-03.3**
 - **GRB-67-xx** (IWG ASEP) Status report

And all documents in UNECE IWG ASEP website 4

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 provisions are needed for Sound Enhancement, “Backfire” (SPL from AA to BB+20m) and “anchor point” (L wot i+1 instead of L wot i). IWG proposes GRB-67-xx.
- IWG for ASEP proposes to precise following paragraph to avoid interpretation

6.2.3. Additional sound emission provisions

[...]

The sound emission of the vehicle under typical on-road driving conditions, which are different from those under which the type-approval test set out in Annex 3 and Annex 7 was carried out, shall not deviate from the test result in a significant manner.

Report of discussions and conclusions

General consideration of ASEP revision and application

- Some concerns where 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.
- IWG ASEP requests to L-categories people :
 - to consider model,
 - to provide information on technologies and manipulations,
 - to provide data to help the group to understand application of the model on the largest range of vehicles

Report of discussions and conclusions

Model concept and test program

The model was presented and discussed :

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

With :

- L tyre, No Load :

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

- L propulsion, No load :

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

- L propulsion, Dynamic:

$$L_{DYN} = \text{slope}_{DYN,FL} \times LOG_{10} \left(\frac{(n_{test} - n_{shift})}{(n_{wot\ ref} - n_{shift})} \right) + L_{REF,DYN,NL} + \Delta L_{DYN}$$

- Anchor points are defined from L_{wot} and L_{crs} (from the lower or single gear, the acceleration, the vehicle speed v_{BB} , the engine speed n_{BB}).

Report of discussions and conclusions

Model concept and test program

- Test program and excel files for datas were reviewed following preliminary tests :
 - [ASEP-05-13 \(OICA\) 2017-11-09 IWG DATA ENTRY SHEET - WITH EXAMPLE.xlsx](#)
 - [ASEP-05-17 \(OICA\) 2017-11-06 IWG DATABASE TYRE ROLLING SOUND PUBLIC.xlsx](#)
 - [ASEP-05-16 \(OICA\) 2017-11-06 IWG DATABASE STATIONARY PUBLIC.xlsx](#)
- Prediction model and data were presented and discussed :
 - [ASEP-06-02 \(OICA\) OICA presentation - ASEP Development - Physical Expectation Model - OFFICIAL.pdf](#)
 - [ASEP-06-03 \(OICA\) DATABASE ALL VEHICLES - PUBLIC.xlsx](#)
- Data collection was running :
 - to create a data pool which can be used to investigate the impact of the ASEP revision on current vehicle technology,
 - to deliver data to support the validation of design parameters for the ASEP assessment model.

To be done for the 7th meeting

- The group strongly requests GRB members to participate and to deliver data in respect to the model and/or the sound emissions:
 - Delivery van, micro-van, budget car, BEV, HEV, any new technologies, sport cars, manipulated vehicles, ...
- The group requests to IWG members to work on:
 - Model parameters such as x% evaluation, slopes, ...
 - Partial throttle : Vehicle sound model and test method : How to specify ?, which input for the model (%load, acceleration, pedal course, ...).
 - Low and high speed alternative approaches if tests are difficult due to facilities, methods, ...
 - §.6.2.3 (last sentence) of the main body of the UN Regulation 51-03

To be done at the 7th meeting

The group proposes to work on :

- Test program and data collection
- Prediction model for DYN,
- Application to all technologies,
- Formulas and table of symbols, first draft of new annex 7
- §.6.2.3. (last sentence) of the main body of the UN Regulation 51-03