

Kraftfahrt-  
Bundesamt



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agenda item 11)



# / Campaign on noise emissions 2021

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## Campaign on noise emissions 2021

### Approach

Initiated by the Federal Ministry for Digital and Transport (BMDV), the Federal Motor Transport Authority (KBA) tested various passenger cars (M1) and motorcycles (L3e) with regard to their noise emissions in 2021.

All these vehicles were tested in their original condition and additionally with a replacement silencing system available on the market.

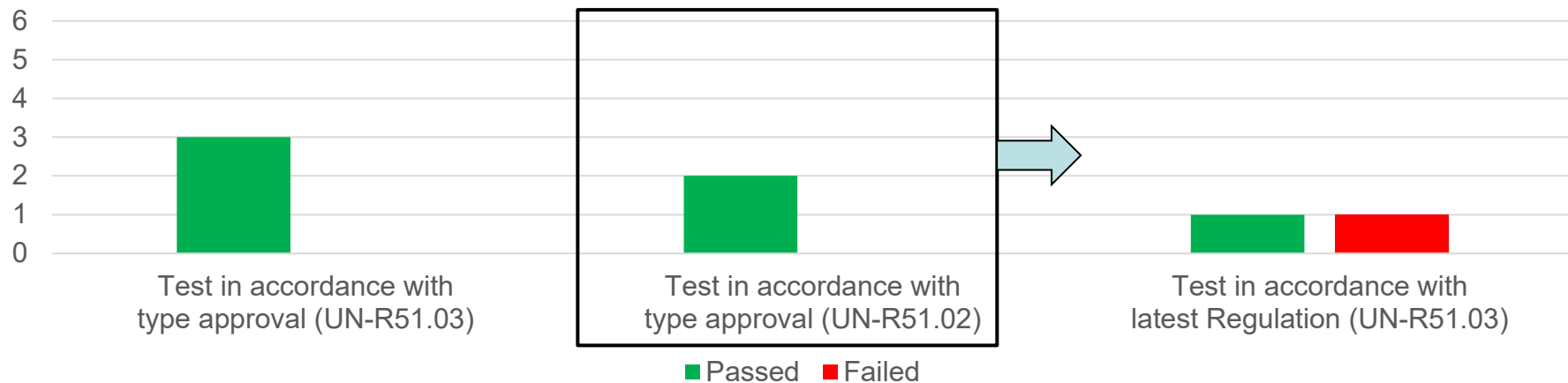
The tests were carried out at the KBA test centre in accordance with the applicable series of amendments to the relevant type-approval regulations and, as far as possible, also in accordance with the latest series of amendments, in order to obtain possible indications for the further development of the regulations.

## Campaign on noise emissions 2021

### Passenger cars

The results of the tests showed that all vehicles in original condition comply with the regulations. All vehicles passed the additional sound emission provisions (ASEP) of the latest regulation. Only one vehicle failed the latest series of amendments due to the reduction of the permissible sound level.

### Results of vehicles in original condition

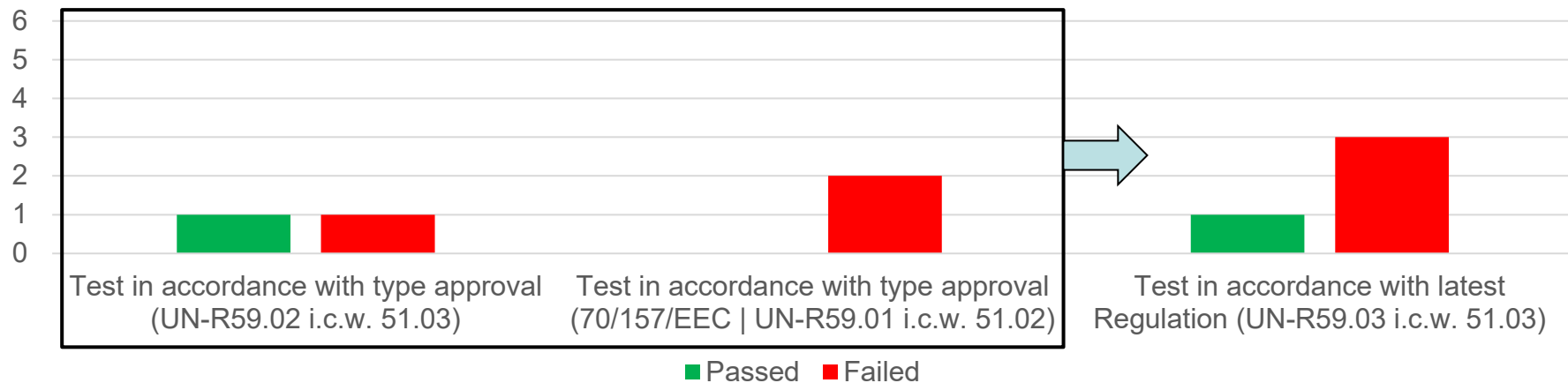


## Campaign on noise emissions 2021

### Passenger cars

The results of the tests of the replacement silencing systems show a different picture. One manufacturer was not able to provide a system in a condition that could be mounted. Only one of the remaining four systems, could just comply with the permissible sound levels.

### Results of replacement exhaust systems (NORESS)



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## Campaign on noise emissions 2021

Passenger cars

No.	Original condition		Replacement silencing system	
	According TA	Latest (UN-R51.03)	According TA	Latest (UN-R59.03 i.c.w. 51.03 )
1	Passed (UN-R51.03)	Already type approved in accordance to UN-R51.03	Failed (UN-R59.02 i.c.w. 51.03)	Failed
2	Passed (UN-R51.03)		test not performed <sup>1</sup>	
3	Passed (UN-R51.03)		Passed (UN-R59.02 i.c.w. 51.03)	Passed
4	Passed (UN-R51.02)	Passed	Failed (UN-R59.01 i.c.w. 51.02 )	Failed
5	Passed (UN-R51.02)	Failed	Failed (70/157/EEC)	Failed

<sup>1</sup> Testing was not possible due to structural deficiencies on the replacement silencing system.

## Campaign on noise emissions 2021

# Motorcycles

Six motorcycles were selected for the tests, covering different designs.

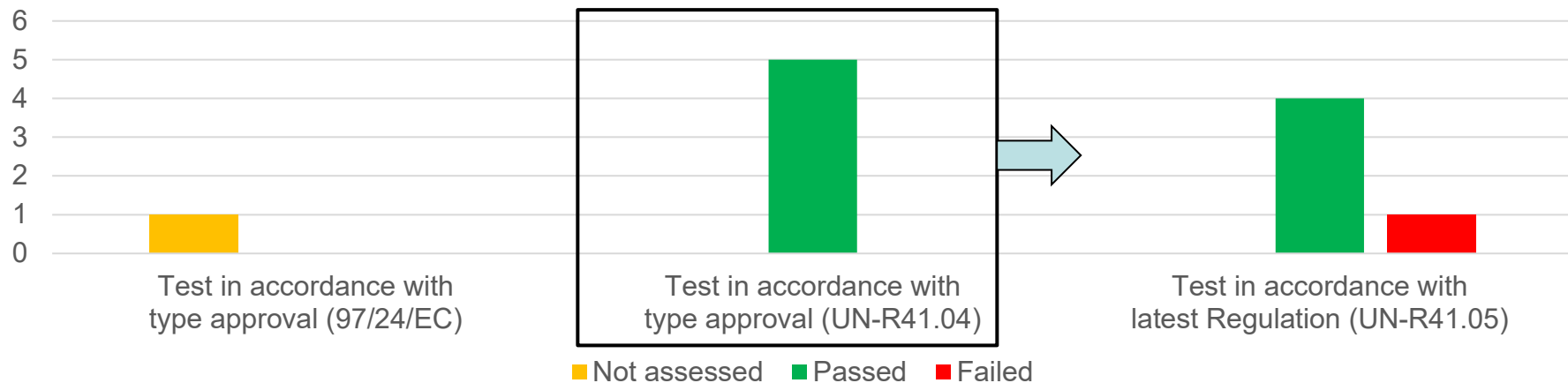
Additionally six approved NORESS were tested.

## Campaign on noise emissions 2021

### Motorcycles

The results of the tests showed that all motorcycles in original condition comply with the regulations. Only one vehicle failed, but the result was not assessed due to the age of the vehicle, as manipulation of the silencing system could not be ruled out either.

### Results of motorcycles in original condition

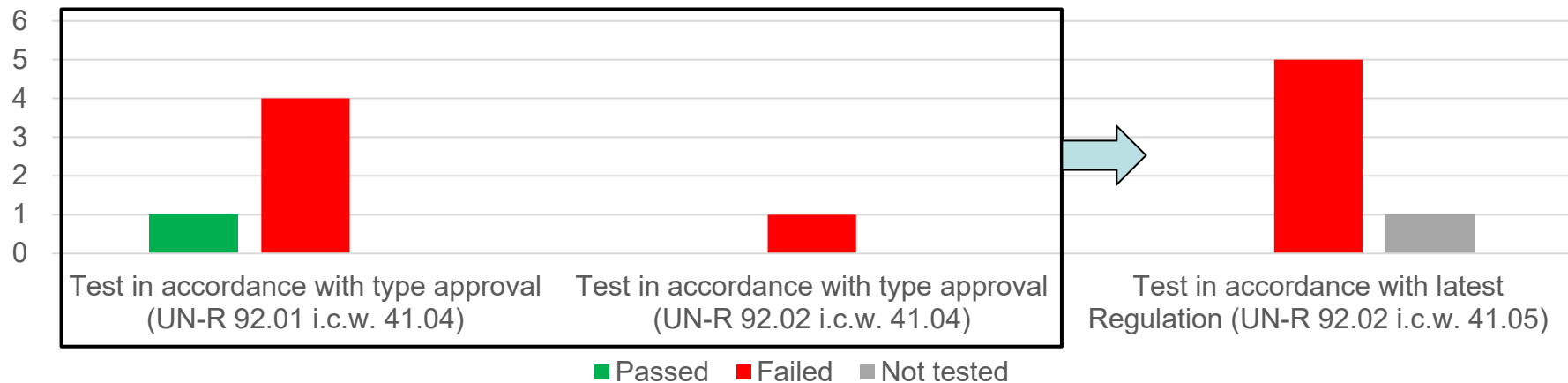


## Campaign on noise emissions 2021

### Motorcycles

Only one of the tested replacement silencing systems could comply with the permissible sound levels (in accordance with the type approval). All other tested replacement silencing systems did not comply with the regulations. The sound levels for urban driving were 4 to 9 dB(A) above the permissible limits.

### Results of replacement exhaust systems (NORESS)





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## Campaign on noise emissions 2021

### Motorcycles

No.	Original condition		Replacement silencing system	
	According TA	Latest (UN-R41.05)	According TA	Latest (UN-R92.02 i.c.w. 41.05)
1	Passed (UN-R41.04)	Passed	Failed (UN-R92.02 i.c.w. 41.04)	Failed
2	Passed (UN-R41.04)	Passed	Failed (UN-R92.01 i.c.w. 41.04)	Failed
3	Passed	Passed	Failed (UN-R92.01 i.c.w. 41.04)	Failed
4	Failed <sup>2</sup> (97/24/EC)	Not tested <sup>3</sup>	Failed (UN-R92.01 i.c.w. 41.04)	Not tested <sup>3</sup>
5	Passed (UN-R41.04)	Passed	Passed (UN-R92.01 i.c.w. 41.04)	Failed
6	Passed (UN-R41.04)	Failed	Failed (UN-R92.01 i.c.w. 41.04)	Failed

<sup>2</sup> Not assessed due to the age and unknown maintenance history of the vehicle.

<sup>3</sup> Not tested due to the clearly missed permissible sound level during the test in accordance with type approval.

## Campaign on noise emissions 2021

### Conclusion

The results show that the noise emission tests should be continued and extended to ensure that only compliant vehicles and replacement silencing systems are placed on the market by economic operators.

Therefore, we would like to propose a Joint Action for market surveillance on noise emissions, and that the Commission includes separate technical units such as silencing systems in the test planning.

## Campaign on noise emissions 2021

### Improvement to the regulation

In the latest series of amendments to Regulation 41, the test range for ASEP has been broadened. This results in a wider test range. In addition, tests are possible in all gears, including first gear. Within the scope of the campaign, tests had been carried out in first gear and in the limit range with regard to the engine speed  $n(BB)$ :

A sound pressure level of 93.5 dB(A) was determined for one motorcycle, which is already high. Nevertheless the test was passed, as the individual limit value for this test comes out with 111.7 dB(A)!

The extension of the test range without a corresponding update of the limit value calculation leads to extremely high limit values and thus also to extremely high permissible sound levels.

An effective reduction of noise emissions from motorcycles in real driving conditions can only be achieved if the limit value calculation will also be adapted (Step 2 of RD-ASEP!).

## Legal notice

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