The trend of noise regulation in Japan

Ministry of Land, Infrastructure, Transport and Tourism & Japan Automobile Standards Internationalization Center
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Flow of establishing vehicle noise regulation in Japan

CEC: Central Environment Council
MOE: Ministry of the Environment
MLIT: Ministry of Land, Infrastructure, Transport and Tourism

Noise Regulation Act
Revision
Permissible limit of automotive noise

Road Transport Vehicle Act
Revision
The Announcement that Prescribes Details of Safety Regulations for Road Transport Vehicles

Enforcement of regulation

CEC consults MOE, MOE informs MLIT, MLIT comments, MLIT issues Notice on flow of establishing vehicle noise regulation in Japan.

WTO (World Trade Organization)
Current vehicle noise regulation

**Constant speed test**
(introduced in 1951)

* Constant speed test for motorcycles was abolished when UN-Regulation No.41 was introduced in Japan.

**Acceleration test**
(introduced in 1971)

* Acceleration test for motorcycles was abolished and replaced by 'acceleration test' and 'ASEP' when UN-Regulation No.41 was introduced in January 2014.

**Stationary test**
(introduced in 1986)

- Noise regulation value has been gradually strengthened.

### Transition of Acceleration noise regulation value on passenger cars

<table>
<thead>
<tr>
<th>Regulation at</th>
<th>70</th>
<th>75</th>
<th>80</th>
<th>85</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td></td>
<td></td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td></td>
<td></td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>1979</td>
<td></td>
<td></td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>1982</td>
<td></td>
<td>78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998/1999</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Next vehicle noise regulation

【Scope】 M and N category

【Outline of the Amendment】

Current regulations in Japan

- Constant speed test
- Acceleration test (Full throttle acceleration)
- Stationary test (Absolute value)

Next regulation harmonizing with R51-03

- Constant speed test is not applied.
- Acceleration test (Normal driving condition in urban traffic)
- Additional Sound Emission Provisions (ASEP)
- Stationary test
  * New Type Approval Vehicles: Measurement only
  * In use car: Relative value
- Compressed air noise (GVWR >2.8t)

※ “GVWR” means technically permissible maximum laden mass.

【Date of enforcement】

<table>
<thead>
<tr>
<th></th>
<th>Phase1</th>
<th>Phase2</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Type Approval Vehicles (Except the import vehicle)</td>
<td>[1 October] 2016</td>
<td>[1 September] 2020 (N2 : 2022)</td>
</tr>
<tr>
<td>Other than above mentioned</td>
<td>Not applied</td>
<td>[1 September] 2022 (N2 : 2023)</td>
</tr>
</tbody>
</table>

※ “GVWR” means technically permissible maximum laden mass.

● Compressed air noise (GVWR >2.8t)
Next vehicle noise regulation

【Regulation value】

(Same as UNR51-03))

Phase 3 has been designed in UNR51-03 on the assumption that review will be conducted if necessary.

日本将暂时不采用Phase 3。

### Veh. Cat. | Vehicles used for the carriage of passengers | Phase 1 | Phase 2
--- | --- | --- | ---
M1 | PMR\textsuperscript{1} \leq 120 | 72 | 70
120 < PMR \leq 160 | 73 | 71
PMR > 160 | 75 | 73
PMR > 200, no. of seats \leq 4, R-point height \leq 450mm from the ground | 75 | 74

M2 | GVWR\textsuperscript{2} \leq 2.5 t | 72 | 70
2.5 t < GVWR \leq 3.5 t | 74 | 72
GVWR > 3.5 t; P_n\textsuperscript{3} \leq 135 kW | 75 | 73
GVWR > 3.5 t; P_n > 135 kW | 75 | 74

M3 | P_n \leq 150 kW | 76 | 74
150 kW < P_n \leq 250 kW | 78 | 77
P_n > 250 kW | 80 | 78

### Veh. Cat. | Vehicles used for the carriage of goods | Phase 1 | Phase 2
--- | --- | --- | ---
N1 | GVWR \leq 2.5 t | 72 | 71
GVWR > 2.5 t | 74 | 73

N2 | P_n \leq 135 kW | 77 | 75
P_n > 135 kW | 78 | 76

N3 | P_n \leq 150 kW | 79 | 77
150 kW < P_n \leq 250 kW | 81 | 79
P_n > 250 kW | 82 | 81

\textsuperscript{1} PMR (Power to Mass Ratio) means following formula.

\textit{Maximum output power (kw) / Mass of a vehicle in running order(kg) } \times 1000

\textsuperscript{2} GVWR: Technically permissible maximum laden mass (t)

\textsuperscript{3} P_n: Rated Maximum net power (kW)
Next tire noise regulation

【Scope】

- M, N and O category
  * Automobile which wear the following tires is out of scope.
    • Tires having a nominal rim diameter code $\leq 10$ (or $\leq 254$ mm) or $\geq 25$ (or $\geq 635$ mm)
    • Tires with a speed rating less than 80 km/h
    • Professional off-road tires.
    • Temporary use spare tires
    • Tires designed for competitions
    • Tires intended to be fitted to road vehicles of categories other than M, N and O
    • Tires fitted with additional devices to improve traction properties (e.g. studded tires)
    • Tires designed only to be fitted to vehicles registered for the first time before 1 October 1990.
    • Tires conforming to Regulation No.75
    • Stud-less tires*
  * Japanese original tires which is designed to ensure the safety on both ice and snow

【Date of enforcement】

<table>
<thead>
<tr>
<th>Category of vehicle</th>
<th>Date of enforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New Type Approval Vehicles (Except PHP Vehicle)</td>
</tr>
<tr>
<td>M1</td>
<td>1 April 2018</td>
</tr>
<tr>
<td>M2, N1, O1, O2</td>
<td>1 April 2019</td>
</tr>
<tr>
<td>M3, N2, N3, O3, O4</td>
<td>1 April 2023</td>
</tr>
</tbody>
</table>
**Next tire noise regulation**

### Regulation value

#### Tire noise

(0n thee UNR117)

<table>
<thead>
<tr>
<th>Class of tire</th>
<th>Normal Section Width (mm)</th>
<th>Limit dB (Stage 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>( w \leq 185 )</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>( 185 &lt; w \leq 245 )</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>( 245 &lt; w \leq 275 )</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>( 275 &lt; w )</td>
<td>74</td>
</tr>
</tbody>
</table>

The above limits shall be increased by 1 dB(A) for "snow tyre for use in severe snow conditions", extra load tyres or reinforced tyres, or any combination of these classifications.

#### Rolling resistance

(0n thee UNR117)

<table>
<thead>
<tr>
<th>Class of tire</th>
<th>MAX value(Stage 1)</th>
<th>MAX value(Stage 2)</th>
<th>Unit: N/kN</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>12.0</td>
<td>10.5</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>10.5</td>
<td>9.0</td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>8.0</td>
<td>6.5</td>
<td></td>
</tr>
</tbody>
</table>

For "snow tire for use in severe snow conditions", the limits shall be increased by 1 N/kN.
### Wet grip

( Same as UNR117 )

<table>
<thead>
<tr>
<th>Category of use</th>
<th>Wet grip index(G)</th>
<th>C1</th>
<th>C2 (coming into force at October 2014)</th>
<th>C3 (coming into force at October 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>C1</td>
<td>Other</td>
<td>Traction tires</td>
</tr>
<tr>
<td>Normal tire</td>
<td></td>
<td>≥1.1</td>
<td>≥0.95</td>
<td>≥0.85</td>
</tr>
<tr>
<td>Snow tire</td>
<td></td>
<td>≥1.1</td>
<td>≥0.95</td>
<td>≥0.85</td>
</tr>
<tr>
<td>Severe snow tire</td>
<td></td>
<td>≥1.0</td>
<td>≥0.85</td>
<td>≥0.85</td>
</tr>
<tr>
<td>Special use tire</td>
<td></td>
<td>≥0.9</td>
<td>≥0.85</td>
<td>≥0.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥0.85</td>
<td>≥0.85</td>
<td>≥0.65</td>
</tr>
</tbody>
</table>
Schedule of enforcement of R117-02 in Japan

- Period of Public Comment: From 31 July 2015 to 4 September 2015
- Publication and Enforcement of the revision of the Safety Regulations for Road Transport Vehicles on the same day: 8 October 2015 (tbd)

Schedule of enforcement of R51-03 in Japan

- Period of Public Comment: December 2015 (tbd)
- Publication and Enforcement of the revision of the Safety Regulations for Road Transport Vehicles on the same day: March 2016 (tbd)

Japanese contribution to the GRB activities for the future

Japan will participate positively in the GRB activities as ever, considering the issues discussed in GRB such as the limit values for R51-03 Phase 3.
Thanks for your attention!

Ministry of Land, Infrastructure, Transport and Tourism
&
Japan Automobile Standards Internationalization Center