

# Tightening of Measures Against Motor Vehicle Exhaust Noise Pollution in Japan

GRB, September 2007

Geneva

Environment Division  
Engineering and Safety Dept.  
Road Transport Bureau  
Ministry of Land, Infrastructure and Transport

MLIT, JAPAN

1

## Background

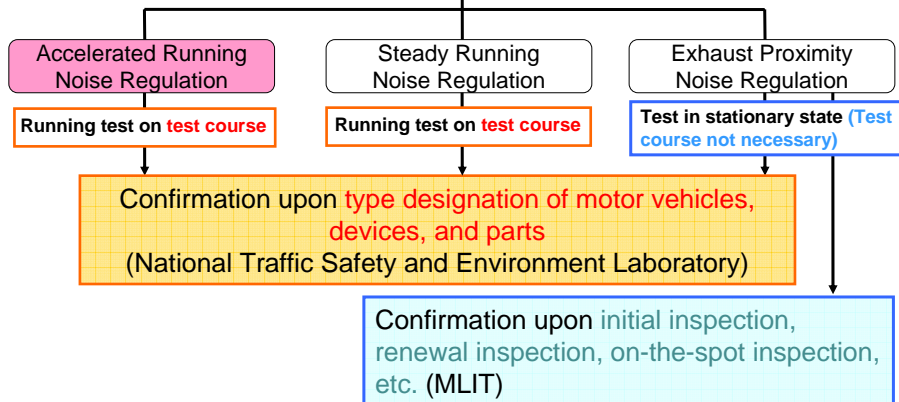
- An increasing number of vehicles are continuously generating loud/annoying noises due to muffler being replaced, causing a social problem.
- To address this problem, MLIT and the Ministry of Environment jointly established the *Council on Measures Against Motor Vehicle Exhaust Noise Pollution* in July 2004.
- Based on the discussion results reported by the Council in June 2006, the measures to effectively eliminate vehicles with modified mufflers, which cause noise problems, will be tightened through revision of relevant regulations.

MLIT, JAPAN

2

## Outline of the Current Motor Vehicle Noise Regulations

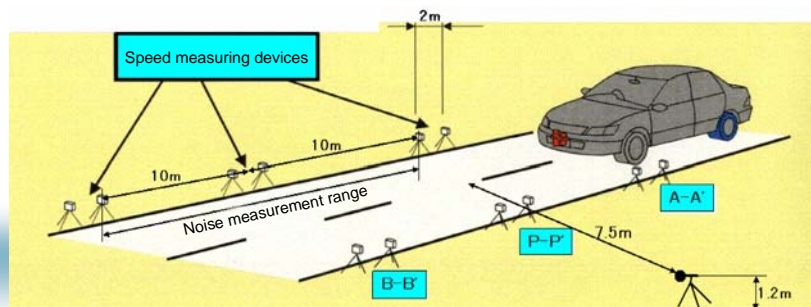
### Safety Regulations for Road Vehicles



◆ Due to insufficient testing facilities, non-certified vehicles (parallel imported vehicles, etc.) and in-use vehicles are exempt from the accelerated running noise regulation and the steady running noise regulation.

## Steady Running Noise Test Method and Accelerated Running Noise Test Method

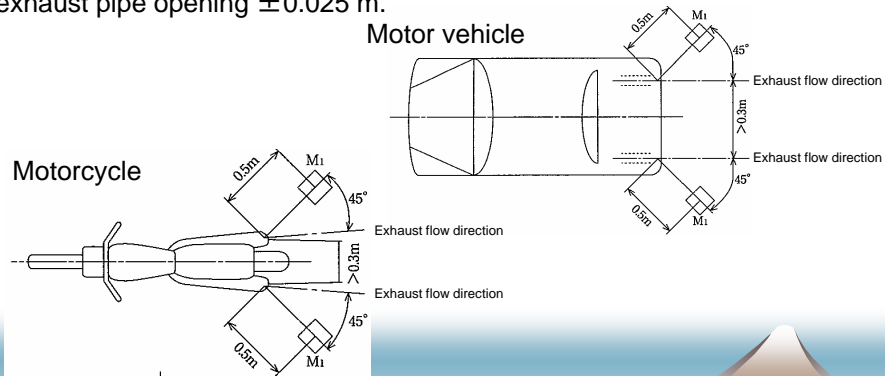
- Noise measurement range
  - \* 20 m from A-A' (entrance) to B-B' (exit)
- Position of the microphone
  - \* On the line passing through the center of P-P'; 7.5 m from the center of the road; and 1.2 m from the ground
- Speed
  - \* Steady: Noise measured when the vehicle passes through the range at a constant speed of 50 km/h
  - \* Accelerated: Noise measured when the vehicle enters at 50 km/h and passes through the range with the accelerator pedal fully depressed



## Exhaust Proximity Noise Test Method

The same method as ISO 5130

- The accelerator pedal is rapidly released from a speed of 75% of the maximum power  $\pm 100$  (rpm).
- The microphone is positioned at M1 at the height of the center of the exhaust pipe opening  $\pm 0.025$  m.



MLIT, JAPAN

5

## Outline of Motor Vehicle Noise Limit Values in Japan

**Noise limit values (passenger cars, motorcycles, motor-driven cycles)**

Vehicle category			Limit value (dB)		
			Accelerated	Steady	Proximity
Passenger cars (no more than 10 occupants)			76	72	96 For rear engines: 100
Motorcycles	Small-sized	Displacement > 0.25 L	73	72	94
	Light	0.125 L < Displacement $\leq$ 0.250 L	73	71	94
Motor-driven cycles	Class II	0.050 L < Displacement $\leq$ 0.125 L	71	68	90
	Class I	Displacement $\leq$ 0.050L	71	65	84

**\* Limit values for commercial vehicles also exist.**

MLIT, JAPAN

6

## Measurement of Exhaust Proximity Noise at On-the-Spot Inspection/Vehicle Inspection



On-the-spot inspection

Vehicle inspection  
(Renewal inspection)

MLIT, JAPAN

7

## Present Status of Motor Vehicle Noise Problems

> **Comments submitted to MLIT Hotline Station**

74% of the comments related to motor vehicle traffic (vehicle inspection, maintenance, environment) were complaints about noise (331 complaints; tentative statistics for April-October 2006).

(Survey by MLIT)

> **Attitude survey of residents along highways**

68% of the respondents consider "exhaust (muffler) noise" as an annoying motor vehicle noise.

(Survey by MLIT)

> **Questionnaire survey of visitors at motor shows**

73% of the respondents feel that the motor vehicle exhaust noise caused by muffler replacement has become worse in recent years.

(Survey by MLIT)

> **Percentage of vehicles equipped with replacement mufflers**

Passenger cars: 6-13%      Motorcycles: 33-62%

(Survey by JAMA)

MLIT, JAPAN

8

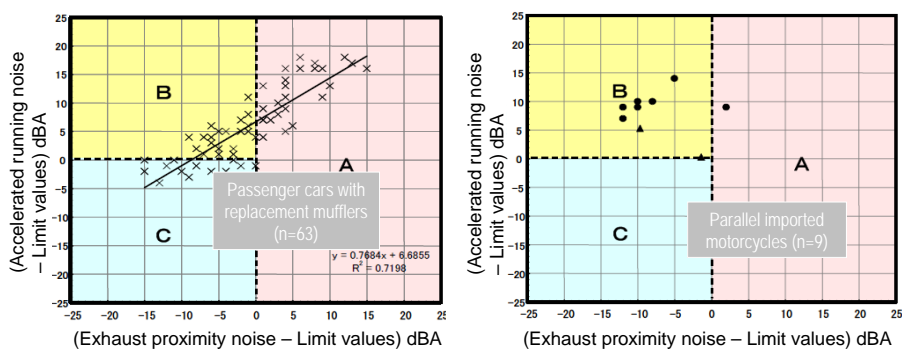
## Current Noise Conditions of Vehicles Equipped with Replacement Mufflers and Non-Certified Vehicles

- Noise measurements for vehicles equipped with replacement mufflers indicate that:
  - \* Many do not meet the accelerated running noise standards that are required of type-designated (certified) vehicles.
  - \* Some meet the exhaust proximity noise standards, others do not.
- Noise measurements for vehicles which are not type-approved indicate that:
  - \* As is the case with vehicles equipped with replacement mufflers, many do not meet the accelerated running noise standards even though they meet the exhaust proximity noise standards.

MLIT, JAPAN

9

## Current Noise Conditions and Problems



- Zone A: The exhaust proximity noise standards are not met.
- Zone B: The exhaust proximity noise standards are met, but the accelerated running noise standards for type-designated motor vehicles are exceeded.
- Zone C: Both the exhaust proximity noise standards and the accelerated running noise standards for type-designated motor vehicles are met.

MLIT, JAPAN

10

## Outline of the Revision

➤ **Expansion of the applicability of standards for accelerated running noise, etc.**

Standards for accelerated running noise, etc., which have been applicable only to “new vehicles which are type-approved” will be made applicable to “vehicles whose mufflers have been replaced” as well as “new vehicles which are not type-approved (including imported vehicles).

➤ **Prohibition of muffler construction that makes illegal modification easy**







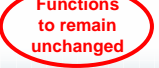
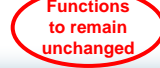

The revised regulation will prohibit the muffler construction in which the noise-reducing mechanism, such as the inner silencer, can be easily mounted/removed by using screws; it will require the mechanism to be fixed by welding or riveting.

➤ **Establishment of muffler certification system and use of the system in renewal inspection, etc./on-the-spot inspection**

Mufflers will be added to the list of devices subject to the device type designation system. If, at the time of renewal inspections, etc. (vehicle inspection) and/or on-the-spot inspection, compliance with the required standards, such as the accelerated running noise standards, cannot be demonstrated, by a test report of a public testing laboratory, for vehicles whose mufflers have been replaced with those other than genuine mufflers or type-designated mufflers, then these vehicles will be treated as not complying with the Safety Regulations.

## Expansion of Applicability of Japanese Noise Regulations

### ○Applicability of noise regulations

Announcement that Prescribes Details of Safety Regulations for Road Vehicles	Accelerated Running Noise Regulation (on test course)	Steady Running Noise Regulation (on test course)	Exhaust Proximity Noise Regulation (in stationary state)
Section 1 Standards that apply to designated motor vehicles, etc. (for mass production) to be newly used for operation, etc.	 Limit values	 Limit values	 Limit values
Section 2 * Standards that apply to motor vehicles (parallel imported vehicles, etc.) to be newly used for operation, except for designated motor vehicles * Standards that apply to in-use motor vehicles that have been modified, etc.	 Limit values	 Limit values	 Limit values
Section 3 Standards that apply to in-use motor vehicles (renewal inspection, etc.)	 Functions to remain unchanged	 Functions to remain unchanged	 Limit values

 Already in effect     Expansion scheduled to be in effect at this revision

## Schedule

- Promulgation date: Around the fall of 2007
  - Effective time, scope of applicability:
    - Motor vehicles and power-driven cycles (excluding imported vehicles) to be newly type-designated in or after January 2008
    - All motor vehicles and power-driven cycles (including imported vehicles) to be manufactured in or after December 2009
- \* Device type designation for mufflers (silencers) will be in effect in January 2008.

## WTO/TBT Notification

Under the *Agreement on Technical Barriers to Trade*, which is specified in the *Marrakesh Agreement Establishing the World Trade Organization*, Members must, when adopting or revising a mandatory standard that may be a barrier to trade between Members, publish the draft regulation or draft revision through the WTO at an early, appropriate stage.



Already published for  
2 months



Illegal muffler



*END*

MLIT, JAPAN