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ESMP data manual 1992: Engine speed at maximum power and noise test engine speeds for vehicles 1970 to 2005

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Manual
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Contents

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Preface

This manual is incorporated into the Environment Protection Regulations (the Regulations) without modification.

The engine speed at maximum power (ESMP) data in this manual is used in stationary exhaust noise testing to check vehicle compliance against the maximum noise levels specified in Part 5.6 Division 3 of the Regulations.

It provides industry and government with a comprehensive list of engine speeds for use in performing measurements of noise levels of motor vehicles by the stationary test method. The stationary test method is set out in the *National Stationary Exhaust Noise Test Procedures for In-Service Motor Vehicles* produced by National Transport Commission (NTC) and National Environment Protection Council (NEPC). It is the test method that is required to be used in the Regulations to test vehicle noise (as it was also in the Environment Protection (Vehicle Emission) Regulations 2013). The *ESMP data manual 1992* is an incorporated document to the Regulations. This information can also be used in the stationary test method of the comparable state legislation and Australian Design Rules.

The Environment Protection Regulations apply to vehicles up to and including 4.5 tonnes gross vehicle mass (GVM). Noise regulations for vehicles of more than 4.5t GVM are managed nationwide by the National Heavy Vehicle Regulator.

Noise, and traffic noise in particular, is a major environmental problem. Progressive tightening of new vehicle noise levels has been made. However, once 'in-service' vehicle noise levels can increase for a variety of reasons. This may be due to neglect and deterioration of the exhaust system, or the deliberate modification of the system by the vehicle owner. State enforcement programs are designed to reduce the number of vehicles that exceed the maximum permissible noise limits. The data in this manual provide the necessary information to do this.

This manual is available as an Adobe Acrobat© file and may be printed from that file on a 'one-off' basis for individual or company use.

Disclaimer

EPA has prepared this manual to the best of its knowledge, information and belief. While reasonable care has been taken in the compilation of the manual, EPA does not guarantee the accuracy of the information contained in this manual and accepts no responsibility whatever arising from the use of that information.

Explanatory notes

The ESMP data in this manual should be used in the first instance. This manual contains ESMP data that is current up until 2005. If the ESMP or test speed for an ADR 83/00 certified vehicle is not listed in this manual, it may be found using the:

- Green Vehicle Guide website owned by Commonwealth Department of Infrastructure, Regional Development and Cities at time of writing http://www.greenvehicleguide.gov.au, or
- ADR 83/00 data available from the Road Vehicle Certification Service website owned by the Commonwealth Department of Infrastructure, Regional Development and Cities at time of writing https://rvcs.infrastructure.gov.au/contents.html

If the ESMP or test speed for a vehicle cannot be found in any of the above resources, a default test speed value can be found in a table on page 6 of this manual. Heavy vehicles powered by diesel engines are to be operated at maximum governed speed. Therefore, the ESMP for these vehicles are not contained in the manual.

The data are arranged alphabetically by make, model, and series, as well as year of manufacture as an aid to identification. In the case of an engine type that was not originally fitted to the vehicle, the engine speed should be for that engine type, not the vehicle.

The figure on each entry labelled 'Test Speed' is the engine speed at which the vehicle should be tested. In some cases of motor cycles, no ESMP is given: the test speed data has been obtained directly from the manufacturer's noise test label found on the motor cycle.

In the case that the test speed for a motor cycle cannot be found in this manual, and the test speed can be found on a label on the motor cycle, the test speed on the label can be used.

Key:

MANUFACTURER, MODEL, SERIES =	Vehicle identification
YEAR =	Years manufactured
ENGINE ID =	Identification of the engine type (type code or serial no.)
ENGINE SIZE =	Engine size in millilitres
CYL =	Number of cylinders including configuration and engine type e.g. V=vee, R=rotary, 2S=2 stroke, D=diesel, otherwise 'in-line' 4 stroke can be assumed.
ESMP =	Engine speed at which maximum power is developed (rev/min)
TEST SPEED =	Engine speed at which the vehicle is to be tested (rev/min)

Noise levels

The following tables contain the current maximum permissible noise limits for the stationary test method.

If the owner of an ADR83/00 certified vehicle has modified that vehicle's exhaust, it is no longer regarded as being certified with ADR 83/00.

Table 1: Forward control passenger car, off-road passenger vehicle, passenger car, passenger car derivative.

Date of manufacture	Noise level [dB(A)]
< 1 November 1983	96
≥ 1 November 1983	90
ADR 83/00 certified	Must not emit noise exceeding the stationary noise level established for that vehicle when it was certified by more than 5 dB(A).

Table 2: Motor cycle or motor tricycle

Date of manufacture	Noise level [dB(A)]
< 1 March 1985	100
≥ 1 March 1985	94
ADR 83/00 certified	Must not emit noise exceeding the stationary noise level established for that vehicle when it was certified by more than 5 dB(A).

Table 3A: Goods vehicle or bus – spark ignition engine

Gross vehicle mass (tonne)	Exhaust height (millimeters)	Date of manufacture	Noise level [dB(A)]
≤ 3.5	< 1500	< 1/7/83	92
		≥ 1/7/83	89
> 3.5 and ≤ 4.5		< 1/7/83	98
		≥1/7/83	95
≤ 3.5	≥ 1500	< 1/7/83	88
		≥ 1/7/83	85
> 3.5 and ≤ 4.5		< 1/7/83	94
		≥ 1/7/83	91

Table 3B: Goods vehicle or bus – diesel engine

Gross vehicle mass (tonne)	Exhaust height (millimetres)	Date of manufacture	Noise level [dB(A)]
≤ 3.5	< 1500	< 1/7/80	105
		≥ 1/7/80 & < 1/7/83	102
		≥ 1/7/83	99
> 3.5 and ≤ 4.5		< 1/7/80	107
		≥ 1/7/80 & < 1/7/83	104
		≥ 1/7/83	101
≤ 3.5	≥ 1500	< 1/7/80	101
		≥ 1/7/80 & < 1/7/83	98
		≥ 1/7/83	95
> 3.5 and ≤ 4.5		< 1/7/80	103
		≥ 1/7/80 & < 1/7/83	100
		≥ 1/7/83	97

Note:

The symbols in the previous tables mean:

< less than

≤ less than or equal to

> greater than

≥ greater than or equal to

In the column 'Date of manufacture' in the previous tables these symbols mean:

< before

≥ on or after

Stationary test method

The stationary test method is set out in the *National Stationary Exhaust Noise Test Procedures for In-Service Motor Vehicles*, which is amended from time to time, and is published by the National Transport Commission (NTC) and National Environment Protection Council (NEPC) ISBN 0 642 54456 5.

It is available for download from the NTC website at time of writing: https://www.ntc.gov.au/sites/default/files/assets/files/National%20Stationary%20Noise%20Test%20Procedures%20For%20In-Service%20Motor%20Vehicles%20.pdf

Default test speeds

Passenger cars, passenger car derivatives, forward control passenger vehicles and off road passenger vehicles

No. of cylinders or type of engine	Test speed (rev/min)
5 cylinders or less	4000
6 cylinders and is • manufactured before 1995 • manufactured in 1995 or later	 3200 3600
8 cylinders • manufactured before 2000 • manufactured in 2000 or later	 3300 3900
More than 8 cylinders	4300
Rotary	4500

Motor cycles and motor tricycles

Two stroke engine	3750
Four stroke engine: • Harley Davidson • others	 2500 3000

Goods vehicles and buses – spark ignition engines

6 cylinders or more	3000
4 cylinders manufactured before 1970	2500
4 cylinders manufactured on or after 1970	3500

Goods vehicles and buses – diesel engines

Maximum governed speed.

EPA acknowledges Aboriginal people as the first peoples and Traditional custodians of the land and water on which we live, work and depend. We pay respect to Aboriginal Elders, past and present and recognise their continuing connection to, and aspirations for Country.