



**Economic and Social  
Council**

Distr.

GENERAL

TRANS/WP.29/78/Rev.1/Amend.2  
16 April 1999

ENGLISH

Original: ENGLISH and  
FRENCH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Construction of Vehicles

CONSOLIDATED RESOLUTION ON THE CONSTRUCTION OF VEHICLES (R.E.3)

Revision 1 - Amendment 2

Annex 7/Rev.2 - CLASSIFICATION AND DEFINITION OF POWER-DRIVEN VEHICLES  
AND TRAILERS

Note: The text reproduced below contains revision 2 of annex 7. \*/ It is based on document TRANS/WP.29/1999/15, as corrected (Russian only), which was adopted by the Working Party on the Construction of Vehicles at its one-hundred-and-seventeenth session (TRANS/WP.29/663, paras. 91 and 92).

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\*/ Annex 7/Rev.1 is contained in document TRANS/WP.29/78/Rev.1 and it had been based on document TRANS/SC1/WP29/78/Amend.3.

Annex 7

CLASSIFICATION AND DEFINITION OF POWER-DRIVEN VEHICLES AND TRAILERS

1. CATEGORY L - MOTOR VEHICLES WITH LESS THAN FOUR WHEELS

1.1. Category L<sub>1</sub>:

A two-wheeled vehicle with an engine cylinder capacity in the case of a thermic engine not exceeding 50 cm<sup>3</sup> and whatever the means of propulsion a maximum design speed not exceeding 50 km/h.

1.2. Category L<sub>2</sub>:

A three-wheeled vehicle of any wheel arrangement with an engine cylinder capacity in the case of a thermic engine not exceeding 50 cm<sup>3</sup> and whatever the means of propulsion a maximum design speed not exceeding 50 km/h.

1.3. Category L<sub>3</sub>:

A two-wheeled vehicle with an engine cylinder capacity in the case of a thermic engine exceeding 50 cm<sup>3</sup> or whatever the means of propulsion a maximum design speed exceeding 50 km/h.

1.4. Category L<sub>4</sub>:

A vehicle with three wheels asymmetrically arranged in relation to the longitudinal median plane with an engine cylinder capacity in the case of a thermic engine exceeding 50 cm<sup>3</sup> or whatever the means of propulsion a maximum design speed exceeding 50 km/h (motor cycles with sidecars).

1.5. Category L<sub>5</sub>:

A vehicle with three wheels symmetrically arranged in relation to the longitudinal median plane with an engine cylinder capacity in the case of a thermic engine exceeding 50 cm<sup>3</sup> or whatever the means of propulsion a maximum design speed exceeding 50 km/h.

2. CATEGORY M - POWER-DRIVEN VEHICLES HAVING AT LEAST FOUR WHEELS AND USED FOR THE CARRIAGE OF PASSENGERS

2.1. Category M<sub>1</sub>:

Vehicles used for the carriage of passengers and comprising not more than eight seats in addition to the driver's seat (see also paragraph 8.1. below).

2.2. Category M<sub>2</sub>:

Vehicles used for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 tonnes.

2.3. Category M<sub>3</sub>:

Vehicles used for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tonnes.

2.4. Vehicles of category M<sub>2</sub> and M<sub>3</sub> belong to:

- (i) one or more of the three classes (Class I, Class II, Class III) in accordance with Regulations Nos. 36 and 107.
- (ii) one of the two classes (Class A, Class B) in accordance with Regulation No. 52.

2.4.1. Class I:

Vehicles constructed with areas for standing passengers, to allow frequent passenger movement.

2.4.2. Class II:

Vehicles constructed principally for the carriage of seated passengers, and designed to allow the carriage of standing passengers in the gangway and/or in an area which does not exceed the space provided for two double seats.

2.4.3. Class III:

Vehicles constructed exclusively for the carriage of seated passengers.

2.4.4. Class A:

Vehicles designed to carry standing passengers; a vehicle of this class has seats and may have provisions for standing passengers.

2.4.5. Class B:

Vehicles not designed to carry standing passengers; a vehicle of this class has no provision for standing passengers.

2.5. Remarks.

2.5.1. "Articulated bus or coach" is a vehicle which consists of two or more rigid sections which articulate relative to one another; the passengers compartments of each section intercommunicate so that passengers can move freely between them; the rigid sections are permanently connected so that they can only be separated by an operation involving facilities which are normally only found in a workshop.

2.5.2. Articulated buses or coaches comprising two or more non-separable but articulated units shall be considered as single vehicles.

2.5.3. In the case of a towing vehicle designed to be coupled to a semitrailer (tractor for semitrailer), the mass to be considered for classifying the vehicle is the mass of the tractor vehicle in running trim, increased by the mass corresponding to the maximum static vertical load transferred to the tractor vehicle by the semitrailer and, where applicable, by the maximum mass of the tractor vehicle's own load.

2.5.4. "Mass of a vehicle in running order" means the mass of an unladen vehicle with bodywork, and with coupling device in the case of a towing vehicle, or the mass of the chassis with cab if the manufacturer does not fit the bodywork and/or coupling device, including coolant, oils, 90 per cent of fuel, 100 per cent of other liquids except used waters, tools, spare wheel, driver (75 kg) and, for buses and coaches, the mass of the crew member (75 kg) if there is a crew seat in the vehicle.

3. CATEGORY N - POWER-DRIVEN VEHICLES HAVING AT LEAST FOUR WHEELS AND USED FOR THE CARRIAGE OF GOODS

3.1. Category N<sub>1</sub>:

Vehicles used for the carriage of goods and having a maximum mass not exceeding 3.5 tonnes.

3.2. Category N<sub>2</sub>:

Vehicles used for the carriage of goods and having a maximum mass exceeding 3.5 tonnes but not exceeding 12 tonnes.

3.3. Category N<sub>3</sub>:

Vehicles used for the carriage of goods and having a maximum mass exceeding 12 tonnes.

3.4. Remarks

- 3.4.1. In the case of a towing vehicle designed to be coupled to a semitrailer (tractor for semitrailer), the mass to be considered for classifying the vehicle is the mass of the tractor vehicle in running trim, increased by the mass corresponding to the maximum static vertical load transferred to the tractor vehicle by the semitrailer and, where applicable, by the maximum mass of the tractor vehicle's own load.
- 3.4.2. The equipment and installations carried on certain special purpose vehicles (crane vehicles, workshop vehicles, publicity vehicles, etc.) are regarded as being equivalent to goods.

4. CATEGORY O - TRAILERS (INCLUDING SEMITRAILERS)

4.1. Category O<sub>1</sub>:

Trailers with a maximum mass not exceeding 0.75 tonnes.

4.2. Category O<sub>2</sub>:

Trailers with a maximum mass exceeding 0.75 tonnes, but not exceeding 3.5 tonnes.

4.3. Category O<sub>3</sub>:

Trailers with a maximum mass exceeding 3.5 tonnes, but not exceeding 10 tonnes.

4.4. Category O<sub>4</sub>:

Trailers with a maximum mass exceeding 10 tonnes.

4.5. Furthermore, trailers of categories O<sub>2</sub>, O<sub>3</sub> and O<sub>4</sub> are of one of the three following types:

4.5.1. 'Semitrailer':

A towed vehicle, in which the axle(s) is (are) positioned behind the centre of gravity of the vehicle (when uniformly loaded), and which is equipped with a connecting device permitting horizontal and vertical forces to be transmitted to the towing vehicle.

One or more of the axles may be driven by the towing vehicle.

4.5.2. 'Full trailer':

A towed vehicle having at least two axles, and equipped with a towing device which can move vertically (in relation to the trailer) and controls the direction of the front axle(s), but which transmits no significant static load to the towing vehicle.

One or more of the axles may be driven by the towing vehicle.

4.5.3. 'Centre-axle trailer':

A towed vehicle, equipped with a towing device which cannot move vertically (in relation to the trailer) and in which the axle(s) is (are) positioned close to the centre of gravity of the vehicle (when uniformly loaded) such that only a small static vertical load, not exceeding 10 per cent of that corresponding to the maximum mass of the trailer or a load of 1,000 daN (whichever is the lesser) is transmitted to the towing vehicle.

One or more of the axles may be driven by the towing vehicle.

4.6. Remark.

In the case of a semitrailer or centre-axle trailer, the maximum mass to be considered for classifying the trailer corresponds to the static vertical load transmitted to the ground by the axle or axles of the semitrailer or centre-axle trailer when coupled to the towing vehicle and carrying its maximum load.

5. Special purpose vehicle:

A vehicle of category M, N or O for conveying passengers or goods and for performing a special function for which special body arrangements and/or equipment are necessary.

5.1. Motor caravan:

A special purpose M<sub>1</sub> category vehicle constructed to include accommodation space which contains at least the following equipment:

- (i) seats and table
- (ii) sleeping accommodation which may be converted from the seats
- (iii) cooking facilities, and
- (iv) storage facilities

This equipment shall be rigidly fixed to the living compartment; however, the table may be designed to be easily removable.

5.2. Armoured vehicle:

Vehicle intended for the protection of conveyed passengers and/or goods and complying with armour plating anti-bullet requirements.

5.3. Ambulance:

Motor vehicle of category M intended for the transport of sick or injured people and having special equipment for such purpose.

5.4. Hearse:

Motor vehicle intended for the transport of deceased people and having special equipment for such purpose.

6. CATEGORY T - AGRICULTURAL AND FORESTRY TRACTORS

'Agricultural and forestry tractor':

A power-driven vehicle, either wheeled or tracklaying, which has at least two-axles, whose function depends essentially on its tractive power, and which is specially designed to pull, push, carry or actuate certain implements, machines or trailers intended for use in agriculture or forestry.

Such a tractor may be arranged to carry a load and attendants.

7. CATEGORY G - OFF-ROAD VEHICLES

7.1. Definition.

Off-road vehicles are considered to be the vehicles of categories M and N satisfying the requirements of this paragraph, checked under the conditions indicated in paragraphs 6.2. and 6.3.

7.1.1. Vehicles in category  $N_1$  with a maximum mass not exceeding 2 tonnes and vehicles in category  $M_1$  are considered to be off-road vehicles if they have:

at least one front axle and at least one rear axle designed to be driven simultaneously including vehicles where the drive to one axle can be disengaged;

at least one differential locking mechanism or at least one mechanism having a similar effect and

if they can climb a 30 per cent gradient calculated for a solo vehicle.

In addition, they must satisfy a least five of the following six requirements:

the approach angle must be at least 25E;  
the departure angle must be at least 20E;  
the ramp angle must be at least 20E;  
the ground clearance under the front axle must be at least 180 mm;  
the ground clearance under the rear axle must be at least 180 mm;  
the ground clearance between the axles must be at least 200 mm.

- 7.1.2. Vehicles in category  $N_1$  with a maximum mass exceeding 2 tonnes or in category  $N_2$ ,  $M_2$  or  $M_3$  with a maximum mass not exceeding 12 tonnes are considered to be off-road vehicles either if all their wheels are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged, or if the following three requirements are satisfied:

at least one front axle and at least one rear axle are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged;

there is at least one differential locking mechanism or at least one mechanism having a similar effect;

they can climb a 25 per cent gradient calculated for a solo vehicle.

- 7.1.3. Vehicles in category  $M_3$  with a maximum mass exceeding 12 tonnes or in category  $N_3$  are considered to be off-road either if the wheels are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged, or if the following requirements are satisfied:

at least half the wheels are driven;

there is at least one differential locking mechanism or at least one mechanism having a similar effect;

they can climb a 25 per cent gradient calculated for a solo vehicle;

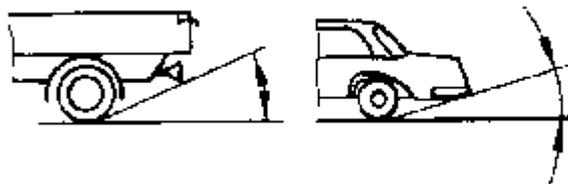
at least four of the following six requirements are satisfied:

the approach angle must be at least 25E;  
the departure angle must be at least 25E;  
the ramp angle must be at least 25E;  
the ground clearance under the front axle must be at least 250 mm;  
the ground clearance between the axles must be at least 300 mm;  
the ground clearance under the rear axle must be at least 250 mm.

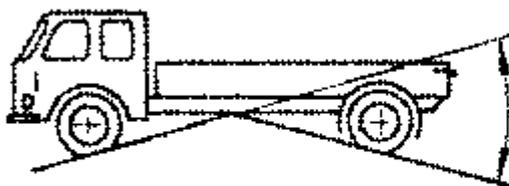
- 7.2. Load and checking conditions.
- 7.2.1. Vehicles in category  $N_1$  with a maximum mass not exceeding two tonnes and vehicles in category  $M_1$  must be in running order, namely with coolant fluid, lubricants, fuel, tools, spare-wheel and a driver considered to weigh a standard 75 kilograms.
- 7.2.2. Power-driven vehicles other than those referred to in paragraph 6.2.1. must be loaded to the technically permissible maximum mass stated by the manufacturer.
- 7.2.3. The ability to climb the required gradients (25 per cent and 30 per cent) is verified by simple calculation.  
In exceptional cases, however, the technical services may ask for a vehicle of the type concerned to be submitted to it for an actual test.
- 7.2.4. When measuring front and rear incidence angles and ramp angles, no account is taken of underrun protective devices.
- 7.3. Definitions and sketches of front and rear incidence angles, ramp angle and ground clearance.
- 7.3.1. 'Approach angle' - see Standard ISO 612:1978, term No. 6.10.



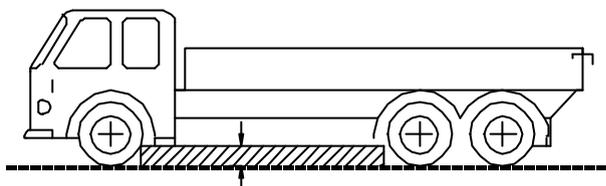
- 7.3.2. 'Departure angle' - see Standard ISO 612:1978, term No. 6.11.



- 7.3.3. 'Ramp angle' - see Standard ISO 612:1978, term No. 6.9.



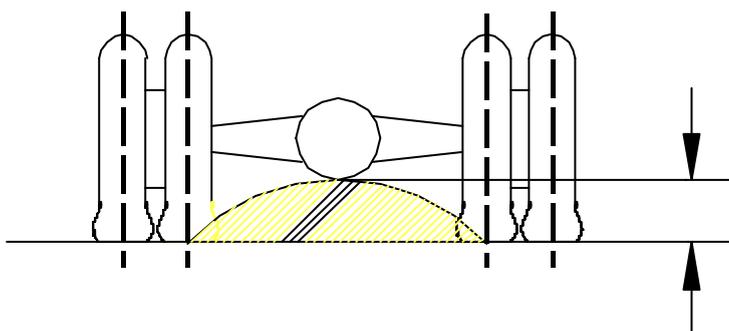
7.3.4. "Ground clearance between the axles" means the shortest distance between the ground plane and the lowest fixed point of the vehicle. Multi-axle bogies are considered to be a single axle.



7.3.5. "Ground clearance beneath one axle" means the distance beneath the highest point of the arc of a circle passing through the centre of the tyre footprint of the wheels on one axle (the inner wheels in the case of twin tyres) and touching the lowest fixed point of the vehicle between the wheels.

No rigid part of the vehicle may project into the shaded area of the diagram.

Where appropriate, the ground clearance of several axles is indicated in accordance with their arrangement, for example 280/250/250.



7.4. Combined designation.

Symbols M and N may be combined with symbol G.

For example, a vehicle of category N<sub>1</sub> which is suited for off-road use may be designated as N<sub>1</sub>G.

8. DEFINITION OF TYPE OF BODYWORK (only for complete/completed vehicles)

The type of bodywork may be indicated by the following codification:

8.1. Passenger cars (M<sub>1</sub>)

AA Saloon:

Standard ISO 3833:1977, term No. 3.1.1.1., but including also vehicles with more than 4 side windows.

AB Hatchback:

Saloon (AA) with a hatch at the rear end of the vehicle.

AC Station Wagon (Estate car):

Standard ISO 3833:1977, term No. 3.1.1.4.

AD Coupé:

Standard ISO 3833:1977, term No. 3.1.1.5.

AE Convertible:

Standard ISO 3833:1977, term No. 3.1.1.6.

AF Multi-purpose vehicle:

Motor vehicle other than those mentioned in AA to AC intended for carrying passengers and their luggage or goods, in a single compartment. However, if such a vehicle meets both of the following conditions it is not considered to be a vehicle of category M<sub>1</sub>:

1. The number of seating positions, excluding the driver, is not more than 6.

1.1. A "seating position" shall be regarded as existing if the vehicle is provided with "accessible" seat anchorages.

1.1.1. "Accessible" shall mean those anchorages which can be used. In order to prevent anchorages being "accessible", the manufacturer shall physically obstruct their use, for example by welding over cover plates or by fitting similar permanent fixtures which cannot be removed by use of normally available tools.

and

$$2. \quad P - (M + N \times 68) > N \times 68$$

where:

P = technically permissible maximum laden mass in kg

M = mass in running order in kg

N = number of seating positions excluding the driver

8.2. Special purpose vehicles (M<sub>1</sub>)

SA Motor caravan: see paragraph 5.1.

SB Armoured vehicle: see paragraph 5.2.

SC Ambulance: see paragraph 5.3.

SD Hearse: see paragraph 5.4.

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