

LISACar Charter

Lisa Car

Light and SAFE Car

UPDATE SPRING 2021

First version : Spring 2014

Whereas

1. TRANSPORT, CARS AND CO₂ EMISSIONS

Cars are responsible for 12 % of all CO₂ emissions in the European Union. Between 1990 and 2018, CO₂ emissions from road transport (of which about two thirds are attributable to cars) have gone up by 26.8 % in Europe.

Recital 7 of Regulation (EU) 2019/631* stipulates that: *“If road transport emissions increase further, such increases will continue to counteract emissions reductions made by other sectors to combat climate change.”*

* Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO₂ emission performance standards for new passenger cars and for new light commercial vehicles



2. TRANSPORT AND ROAD ACCIDENT VICTIMS

The number of road accidents in Europe, which has decreased during the last three decades, has hardly declined since 2013. It remains unacceptable, with 22,700 fatalities (EU27) in 2019 and about 135,000 severe injuries each year.* This hecatomb cannot be considered as the status quo and must be fought on every front.

The main measures that have been, and continue to be used in the fight for road safety concern improving (1) driving behaviour, (2) infrastructure and facilities (3) the passive and active safety of cars.

* European Commission :
Road safety statistics, http://ec.europa.eu/transport/road_safety/specialist/statistics/index_en.htm

3. FUNCTION AND OPERATION OF A CAR

The primary function of a modern motor vehicle is to transport one to nine passengers on a road network without them having to make any physical effort.

The drivers are required to comply with the Highway Code, and in particular to stay within the maximum speed limits, which depend on the road network.

In Europe, the general speed limits are mostly 50 km/h for urban roads (30 km/h becoming more and more widely used), 80 or 90 km/h for rural roads and 120 or 130 km/h for motorways, with the exception of about 70 % of the German motorway network, where there is no permanent speed limit.

4. CAR MANUFACTURING

Automobile manufacturers must comply with product standards (particularly with regards to safety and the environment) defined at European level.

The mass (or weight), power and top speed of new cars sold in Europe have increased very significantly in the last few decades. This trend continues, as can be seen by the increase of these three variables between 2001 and 2018. Their values were 1 397 kg, 98 kW and 193 km/h in 2018 compared with 1 268 kg, 74 kW and 180 km/h in 2001.*

Weight, power and top speed are closely related: when the latter increases, weight must be increased (reinforcement of the vehicle glider, soundproofing, etc) as must the power (to preserve the same dynamic behaviour).

Vehicles with a “square front” profile, inspired by SUVs and other four-wheel drive vehicles, have increased extensively since the beginning of the 21st century. 8.3 % of all new cars registered in the European Union in 2008 were SUVs – and 38.3% in 2019.

* Source: ICCT, European vehicle market statistics - Pocketbook 2020/21



5. RELATIONSHIP BETWEEN DESIGN AND THE ENVIRONMENT

These four parameters (weight, power, top speed and front) have an impact on fuel consumption – and therefore on CO₂ emissions, which are directly proportional for thermal engines.* The heavier the vehicle, the more energy it will need to move (regardless of its type). Energy consumption increases almost linearly with the weight of the vehicle.** Moreover, a car with an engine that is optimised to reach 250 km/h consumes more energy per kilometre than a less fast car, even at the speeds authorised by the Highway Code. Finally, a “square,” less aerodynamic profile, also induces higher energy consumption. An increase in mass and power also results in higher emissions of air pollutants (including non-exhaust emissions: brake wear, tyre wear, road surface wear and resuspension of road dust), either as a direct effect or an indirect effect (changes in driving behaviour).

* The combustion of a litre of petrol releases 2.36 kg CO₂ ; that of a litre of diesel 2.63 kg

** International Transport Forum. 2017. Lightening Up: How Less Heavy Vehicles Can Help Cut CO₂ Emissions

6. RELATIONSHIP BETWEEN DESIGN AND SAFETY

The weight and the top speed are decisive factors for road safety: there is a clear relationship between the maximum kinetic energy of a vehicle ($1/2 m v_{top}^2$) and its “dangerousness.”*

Vehicles with a “square front” profile cause the greatest damage to others in the event of collision, particularly with pedestrians or cyclists.

The increase of weight, power and top speed of vehicles as well as the trend towards more “square front” profiles reduces the benefit of improvements made to the passive and the active safety of vehicles.

* See the analysis carried out under the “citizen car” project : <http://www.voiturecitoyenne.fr/index.php>

7. RELATIONSHIP BETWEEN DESIGN AND BEHAVIOUR

The developments described in the previous paragraph can lead to dangerous behaviour. This can result from a false feeling of safety and the loss of sensation of speed (associated with the “comfort” provided by heavy vehicles.) It can also arise from the desire to exploit the dynamic potential of the vehicle or the feeling of invulnerability that can be generated from driving a SUV or four-wheel drive vehicle.



8. FEASIBILITY OF LIMITING THE SPEED, WEIGHT, POWER AND DESIGN OF THE FRONT

The top speed of trucks is limited. This measure is not extended to vans (light utility vehicles) and cars strictly because of commercial reasons.

Motor vehicles and their components are subject to numerous product standards.* The weight, power, and top speed of cars could be limited under similar standards, as could the characteristics of their front side.

* Cf. e.g. Regulation (EU) 2018/858 and Regulation (EU) 2019/2144

Resolutie

The signatories of this LISA Car Charter

Consider the reduction of greenhouse gas and air pollutants emissions and of the number of road victims (fatalities and severe injuries) to be two major priorities of the transport sector.

Highlight, to that end, the need to reduce the weight, power and top speed of cars as well as the “aggressiveness” of their front side.

Support, accordingly, the LISA Car concept as defined here. A LISA Car is a car whose weight, power, top speed and front side design are optimised to limit their dangerousness and emissions (CO₂ and air pollutants) while providing transport for one to nine persons on the road network at speeds of up to 130 kilometres per hour.

Consider that, by 2030, all (100%) of new cars sold in Europe should meet this definition, with the exception of vehicles intended for professional use that require specific characteristics.

Affirm that only a strict regulatory framework is capable of guaranteeing that this objective will be achieved.

Call on the European Commission to broach this matter as a matter of urgency and to propose a bill within two years maximum establishing the LISA Car concept and its restrictive character.

Call on political and administrative officials, at all levels of power, to relay this demand to the European Commission.

Point out that certain motor vehicles currently on the market meet the definition of the LISA Car concept in whole or in part.

Call on political, administrative and private sector officials to promote the use of this type of vehicles among the population and the fleets of companies or administrative authorities.

Undertake to make every effort, in accordance with their competences and means, to ensure a positive response to these demands.