



Lorry sizes and weights

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This Note sets out the current maximum size and weight of lorries used on UK roads, the various changes there have been to the rules, usually as a result of EU initiatives, and the enforcement system for monitoring compliance. It also gives the current state of play regarding the continued speculation that longer, heavier lorries will be forced on the UK's roads by the European Commission. Further information on road transport issues can be found on the relevant page of the [Parliament website](#).

The current UK limits, set out in full in the *Road Vehicles (Construction and Use) Regulations 1986* (SI 1986/1078), as amended, are as follows:

weight	<ul style="list-style-type: none">• 44 tonnes for lorries with 6 axles; drive axle(s) must not exceed 10500kg and have road friendly suspension OR have a maximum axle weight not exceeding 8500kg. Each part of the combination must have 3 axles and the trailer must have road friendly suspension. Additionally, an engine complying with at least Euro 2 specification (or gas) is needed for operation over 41000kg.• 40 tonnes for lorries with 5 axles with maximum axle weight limit of 11.5 tonnes
length	<ul style="list-style-type: none">• 12 metres for a rigid vehicle• 16.5 metres for an articulated vehicle if the articulated combination can turn within a concentric radii of 12.5 metres and 5.3 metres; otherwise 15.5 metres• 18.75 metres for a road train (a combination of a lorry and a trailer)
width	<ul style="list-style-type: none">• 2.55 metres excluding driving mirrors• refrigerated vehicles are permitted to be 2.6 metres wide to allow for the extra thickness of the insulation
height	<ul style="list-style-type: none">• no limit, but wherever possible a maximum of 4.95 metres should be adhered to in order to make maximum use of the motorway and trunk road network

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1 Weight limits

1.1 1994 'road train' limit: 44 tonnes

Since 1994 six-axle articulated vehicles and drawbar-trailer combinations weighing 44 tonnes have been allowed when carrying containers for transfer to rail services or for delivery after being conveyed by rail ('road trains'). The maximum drive axle weight for all these vehicles is 10.5 tonnes.

In February 1993 the then Conservative Government consulted on a proposal to increase the maximum gross weight to 44 tonnes for six-axle articulated lorries and drawbar trailer combinations fitted with road-friendly suspensions carrying goods to and from railheads on domestic journeys.¹ The relevant changes were made by two sets of regulations that came into force in March 1994.² The same limits have been allowed for international traffic within the EU since 1 January 1999. The higher weight limit is subject to a requirement that the consignment goes by rail for the long haul part of the journey and that operators use the nearest suitable intermodal rail freight terminal for collection and delivery. Documentary evidence has to be carried in the vehicle to show that the loading unit has travelled, or is destined to travel, by rail.

The vehicles are still required to meet other maximum axle and bogie weights and, although having minimum axle spacings greater than currently required, still have to meet existing turning circle requirements.

1.2 1999 EU limit: 40 tonnes

The EU first made proposals to harmonise maximum weights and dimensions for vehicles in international transport in 1971. There followed a long period of discussion and debate and revised proposals were produced in 1979 and 1981. That finally led to agreement, in December 1984, of Directive 85/3/EEC which set a limit of 40 tonnes on five or more axles for the heaviest lorries used on international journeys between Member States.

¹ DoT, *Heavier Lorries for Combined Road/Rail Transport*, February 1993

² *Goods Vehicles (Plating and Testing) (Amendment) Regulations 1994* (SI 1994/328); *Road Vehicles (Construction and Use) (Amendment) (No 2) Regulations 1994* (SI 1994/329)

Subsequent amendments to the Directive introduced weight limits for two, three and four axle vehicles, revised dimensions for the width of refrigerated vehicles, and revised length for articulated vehicles and drawbar combinations. Amendments in 1992 introduced a technical definition for 'road friendly' suspension for the drive axles of some of the vehicles in the Directive. Amendments in 1998 encouraged the use of combined transport. The UK secured a derogation until January 1999 from the provisions of the 1985 Directive, as amended, to allow it to maintain its existing weight limits of 38 tonnes for articulated vehicles and later, in 1986, to limit axle loads to 10.5 tonnes on the grounds that extra time was needed to strengthen the bridges for the increased weights.

Under [Directive 96/53/EC](#) the UK has been obliged to allow 40-tonne, five-axle lorries on UK roads since 1 January 1999; at the same time the maximum axle weight for lorries was raised from 10.5 to 11.5 tonnes. Although, under EU law, the requirement only applied to international journeys, the Government decided that such vehicles could be used for both domestic and international journeys. It would have been difficult in practice to distinguish national from international journeys.³

These changes did not alter the dimensions of vehicles but allowed more load per vehicle carried. This increased the efficiency and competitiveness of UK hauliers but the increased axle loading caused greater road and bridge wear. A 40-tonne, five-axle lorry with 11.5 axle weight causes about a third more wear than the 38-tonne lorries (on five or six axles) previously permitted. The Labour Government's first transport White Paper, published in July 1998, stated that it would develop a strategy to provide hauliers with incentives to make greater use of six- rather than five-axle lorries.⁴ A six-axle lorry is less damaging to roads and bridges because the extra axle allows the weight to be more evenly spread. However, the load a six-axle lorry can carry is less as the extra axle weighs about a tonne. In addition, the vehicles are more expensive, making them less attractive to hauliers.

1.3 1999 UK limit: 41 tonnes

Before 1 January 1999 the maximum weight for articulated heavy goods vehicles (on five or six axles) in the UK was 38 tonnes. This was set in 1982 when it was increased from 32.5 tonnes.⁵ The weight limit for drawbar trailer combinations (a rigid vehicle pulling a trailer) remained at 32.5 tonnes until 1 January 1993 when it was raised to 35 tonnes, and then to 38 tonnes in 1994. The maximum drive axle weight for all these vehicles is 10.5 tonnes.

To encourage hauliers to use six-axle vehicles, the Government announced that it would allow 41 tonne gross weight vehicles on six axles on UK roads from 1 January 1999.⁶ These vehicles would carry approximately the same load as a 40-tonne lorry on five axles but would cause less road and bridge wear because the maximum axle weight would be limited to 10.5 tonnes by regulation. Budget 1999 also introduced a higher rate of Vehicle Excise Duty (VED) for 40-tonne, five-axle vehicles in order to discourage their use. However, this policy was overtaken by the announcement in Budget 2000 that the Government would allow 44-tonne, six-axle lorries for general use from 1 January 2001.

³ DETR, *A new deal for transport: better for everyone*, Cm 3950, July 1998, para 3.160

⁴ *ibid.*, para 3.162

⁵ DoT, *Lorries, people and the environment: the Government's policies in detail*, November 1982; *Goods Vehicles (Plating and Testing) Regulations 1982* (SI 1982/1478)

⁶ *op cit.*, *A new deal for transport: better for everyone*, para 3.163

1.4 2001 UK limit: 44 tonnes

Forty-four tonne lorries are not necessarily any larger than those of a lesser weight, but are simply permitted to carry heavier loads. The only type of lorry able to operate at 44 tonnes has six axles (three on the tractor unit, three on the trailer), road-friendly suspension and 10.5 tonne drive axle weights. Such vehicles meet the same minimum braking and maximum noise requirements as 38-tonne articulated lorries as well as being the same size. They cause less road wear than 40-tonne, five-axle vehicles that were permitted in 1999, and about the same wear as the 38-tonne lorries permitted up to the end of 1998.

The introduction of 44-tonne lorries was first recommended in the 1980 report by Sir Arthur Armitage,⁷ though they were not accepted by the Government of the day.⁸ Following a further report by the House of Lords in 1994 the Conservative Government concluded that more detailed evaluation was needed before one could conclude that an increase in lorry weights would lead to a decrease in numbers.⁹ To that end the Government issued a consultation paper in December 1996, seeking views on an increase in the general weight to 44-tonnes.¹⁰ The paper set out the case for a general increase in the maximum lorry weight to 44 tonnes as follows:

- A saving of about 6,500 vehicles would bring about benefits in the form of reduced congestion, fuel savings with resultant savings in emissions, and cost and efficiency savings for industry;
- There would also be operational and other efficiency savings for industry arising from the need to run fewer vehicles;
- Since individual 44 tonne lorries would normally cause no more wear to roads and bridges than existing 38 tonne vehicles, they would result in less wear per tonne of goods carried; and
- The incentive of the extra payload offered by 44 tonne vehicles would encourage operators to re-equip with less polluting Euro 2 vehicles more rapidly than would otherwise be the case.¹¹

It also set out the case against an increase:

- The public belief that 44-tonne vehicles are bigger, noisier, more dangerous and more damaging to roads, other road users, and to property than 38-tonners;
- The resulting increase in the efficiency and competitiveness of the road freight industry if 44-tonne lorries were allowed would cause some goods to switch from rail to road and could undermine the efforts of rail freight operators to increase their share of the market; and
- If traffic switched from rail to road this would reduce the number of lorries 'saved' by a move to 44 tonnes, in an extreme case possibly by up to a half, thus reducing the saving to approximately 3,200 vehicles.¹²

⁷ *Report of the inquiry into lorries, people and the environment*, December 1980, para 402

⁸ *op cit.*, *Lorries, people and the environment: the Government's policies in detail*

⁹ DoT press notice, "Government reject recommendations to increase general lorry weight to 44 tonnes", 9 December 1994

¹⁰ DoT, *Lorry Weights - a consultation paper*, 2 December 1996

¹¹ *ibid.*, paras 20-23

In March 1997 the Government announced that it would allow lorries engaged in 'piggyback' road/rail movements to operate at 44 tonnes, but the wider question was deferred because of the 1997 General Election.¹³ The new Labour Government gave its views on heavier lorries in its 1998 transport White Paper:

We have also considered whether to go further and allow for general use the 44 tonne 6 axle lorry which was recommended by Sir Arthur Armitage in 1980 and which has been used for combined road/rail transport in the UK since 1994. 44 tonne lorries are effectively the same lorries as existing 38 tonne lorries: they are the same size, they meet the same minimum braking requirements, and the same maximum noise requirements, and their effects on road wear are similar. They would make road haulage more efficient because each lorry can be more fully laden, requiring fewer journeys for the same distribution tasks. Although a 44 tonne lorry would burn slightly more fuel and thus pollute slightly more than a 40 or 41 tonne lorry, the reduction in the total number of lorries for any given amount of goods distributed would bring less pollution overall. Similarly, there would, overall, be less noise, congestion and nuisance, greater safety and less damage to roads and bridges.

However, a significant disadvantage of allowing 44 tonne lorries for general use is the risk that this could, in some situations, provide an incentive to switch freight from rail to road. One of the key objectives of the *New Deal* for transport is to encourage rail freight as a way of reducing pollution and congestion. Rail freight has benefited from the existing weight concession for combined road/rail movements. While much of the traffic that would take advantage of 44 tonne lorries, such as fuel deliveries to filling stations, is unsuitable for transfer to rail, it seems likely that some existing or future rail freight would transfer to road if 44 tonne lorries were allowed for general use (...)

We therefore intend to ask the *Commission for Integrated Transport ... to consider the case for allowing 44 tonne lorries, on 6 axles, for general use in the light of the results of the review of the basis of lorry VED rates and evidence from interested parties including the rail freight operators and industry generally.* In bringing forward its recommendations, we will ask the Commission to consider the best solution consistent with our approach for integrated and sustainable transport; in particular, whether there are measures that could be adopted to mitigate the potential impact on rail freight, including phasing of the introduction of 44 tonne lorries to allow more time for rail operators to expand their markets. We will also ask the Commission to consider whether there is scope for limiting any extension to 44 tonnes to lorries with the highest standards of emissions. We would not envisage the implementation of 44 tonne lorries before 2003. It is our intention to give railways the chance to develop the heavy load market.¹⁴

The Commission for Integrated Transport (CfIT) was consequently asked to consider the case for allowing 44-tonne, six-axle, lorries for general use. CfIT produced an interim report in March 2000 that stated that the introduction of 44-tonne lorries would generate efficiency savings, leading to a small net reduction in lorry mileage, and produce environmental benefits. The possible drawbacks included vehicles travelling increased distances and the diversion of freight from rail to road.¹⁵ CfIT did not publish its final report until after the Government had already taken the decision to proceed with 44-tonne lorries in February 2001. The final report made several recommendations, in particular, that all 44-tonne lorries

¹² *ibid.*, paras 24-27

¹³ DoT press notice, "John Watts gives piggyback the green light", 6 March 1997

¹⁴ *op cit.*, *A new deal for transport: better for everyone*, paras 3.164-3.165 and 3.168 [emphasis in original]

¹⁵ CfIT, *Permitting 44 tonne lorries for general use in the UK*, 6 March 2000

should reach Euro II emission standards; and that there should be more road haulage enforcement activity and better resourcing of enforcement.¹⁶

The Government announced in Budget 2000 that 44-tonne, six-axle lorries would be allowed from 1 January 2001 (later changed to 1 February). At the same time it also announced changes to the rates of VED on the largest vehicles.¹⁷ The *Road Vehicles (authorised weight) (amendment) Regulations 2000* (SI 2000/3224) made the relevant changes. The Government's view was that they would result in "a considerable saving in lorry miles where heavy goods are being carried and will be no bigger, and cause less road wear, than existing 40 tonne, 5 axle lorries".¹⁸

1.5 The future: longer, heavier lorries?

There have been several stories in the press over recent years about the possibility of longer, heavier vehicles being allowed on UK roads. Most have focused on an increase in the weight limit to 60 tonnes but some have even suggested that 100-tonne lorries might be permitted; they are often colloquially referred to as 'supertrucks' or 'megatrucks'.

It is the case that heavier lorries are used in some European countries and there have been trials in the Netherlands and Germany. Work has been undertaken in the UK to look at these vehicles but the Government's view has generally been cool. For example, in December 2005 the then Transport Minister said in the House:

I have not been convinced that these vehicles are well suited to the UK at the present time, for a number of reasons. I have not seen clear evidence that longer and heavier vehicles (LHVs) would deliver economic benefit to the industry and in particular whether the benefits would come from increased mass, increased volume or both.

I believe that more work needs to be done to look at axle loadings for various designs of LHVs and the consequent impact on pavements, bridges and other infrastructure; and to estimate the costs of any reinforcement or remedial works.¹⁹

In October 2006 the Department for Transport commissioned the Transport Research Laboratory (TRL) and Heriot-Watt University to undertake a 'desk-based study' to assess both the benefits and disbenefits that could conceivably arise from the potential use of different types of longer and heavier goods vehicles. The [report](#) was published in June 2008; alongside which the then Secretary of State, Ruth Kelly, announced that longer and heavier lorries would not be allowed on UK roads:

The report, commissioned by the Department for Transport from the Transport Research Laboratory, found that super-lorries could lead to an increase in CO2 emissions due to goods shifting from rail to road, create serious implications for the management of the road network - as the vehicles would be unsuitable for many roads and junctions - as well as introducing new safety risks.

[...]

There are also uncertainties about how efficiently such vehicles could be used, particularly when sourcing loads of sufficient size to make return journeys sustainable;

¹⁶ CfIT, [Permitting 44 tonne lorries for general use in the UK](#), 20 February 2002

¹⁷ HM Treasury, [Budget 2000](#), HC 346, March 2000, paras 6.69-6.71

¹⁸ [HC Deb 1 February 2001, c260W](#)

¹⁹ [HC Deb 7 December 2005, cc101-102WS](#)

and about their impacts on the viability of existing rail freight services and the potential for future growth.²⁰

However, since then there has been speculation that the EU might legislate to overturn any UK-wide ban and permit heavier lorries on the roads. In January 2009 it was reported that Transport Commissioner Antonio Tajani had said that the EU would “not push” for the widespread use of 60-tonne trucks.²¹ At about the same time, the Commission published the results of a study which recommended the introduction of longer, heavier vehicles provided some ameliorating measures are taken. However, it did also highlight political difficulties in some Member States, including the UK.²² Further reports by the EU Joint Research Centre²³ and the German Fraunhofer Institute²⁴ added to the debate, fuelling speculation of a draft Directive to amend the weight limit. However, in June 2009 *Local Transport Today* reported the remarks of a European Commission spokesman that:

No-one is going to force this policy [of longer, heavier lorries] on an individual member state. It would be insane even to attempt to do that ... the Germans are reluctant to allow the use of LHVs on their roads because of the impact it may have on the rail freight sector ... anything which impacts negatively on rail freight's competitiveness will struggle to gain support in Germany.²⁵

There were further reports in October 2009 that a draft Directive might be forthcoming, though the Department for Transport does not believe this ‘likely’:

The European Union is preparing to sweep aside British objections and allow 60-ton foreign “mega-lorries” to be driven on roads in the UK.

The so-called road trains comprise a juggernaut with a trailer fixed to the back. They are more than a third longer and heavier than those currently allowed in Britain.

The government banned mega-lorry trials last year, but the new EU regulation that could be adopted by the European parliament as early as next year will allow them to travel freely across member states whatever national concerns there may be about the economic, environmental and safety impact.

The Campaign for Better Transport, which opposes the changes, has identified John Berry, formerly a civil servant at the Department for Transport and now working for the European commission, as one of the key officials behind the road train initiative.

[...]

The transport department said it opposed any EU super-lorry proposal “that did not give the UK the power to block their use on UK roads for safety or environmental reasons.” A spokesman said Britain would be obliged to adopt EU legislation but added: “This is unlikely to happen”.²⁶

²⁰ DfT press notice, “[superlorries' not permitted on British roads – Kelly](#)”, 3 June 2008

²¹ “No 60-tonne vehicles on Europe’s roads”, *Europolitics*, 26 January 2009

²² Transport & Mobility Leuven for the EC, *Final report: effects of adapting the rules on weights and dimensions of heavy commercial vehicles as established within Directive 96/53/EC*, January 2009

²³ JRC, *Longer and Heavier Vehicles for freight transport*, 2009

²⁴ Fraunhofer Institute, *Long-Term Climate Impacts of the Introduction of Mega-Trucks*, May 2009

²⁵ “We’re not going to impose longer, heavier lorries on UK roads – EU”, *Local Transport Today*, 5 June 2009 [LTT 521]

²⁶ “[Brussels to override Britain's ban on mega-lorries](#)”, *The Sunday Times*, 4 October 2009

2 Vehicle checks

Roadside checks of larger vehicles are undertaken by the Vehicle and Operator Services Agency (VOSA).²⁷ If the weight recorded at a roadside check is above the permitted limit the VOSA vehicle examiner will issue the driver with an Overloaded Prohibition Notice, (which may contain particular conditions). A copy of a prohibition notice will be sent to the owner of the vehicle. In the case of 'O' Licensed vehicles the Traffic Commissioner will also be notified. Examiners have the discretion to direct the vehicle to a nearby facility where a proportion of the goods carried can be off-loaded or the load re-distributed.

Any instance of overloading which amounts to less than 30 per cent or five tonnes of the maximum plated weight, where there is no record of previous overloading, will not result in prosecution action. However, prosecution action will be taken within this overloading threshold where there is evidence of repeat offending. Prosecution action will also be taken when an overloading offence amounts to or exceeds 30 per cent or five tonnes of the maximum plated weight, irrespective of any previous offences.

In its report on the Department for Transport's Executive Agencies, the Transport Committee questioned whether roadside checks are concentrated in the right place (particularly near ports).²⁸ In its response to the Committee, VOSA said:

VOSA is collaborating with the Highways Agency in response to concern about high offending rates among vehicles on international journeys entering or leaving the UK via the South East ports. Additional staff have been provided to increase the number of vehicles checked by a factor of five. Results from the first four months of the pilot continue to show high levels of offending by the target operators and drivers on these routes.

Following the Ministerial launch of this pilot in July, articles in the trade press were highly supportive, endorsing the increase of enforcement activity targeted against vehicles on international journeys and UK operators who continue to flout the law.²⁹

In April 2008 the Government announced an additional £24 million available to VOSA over a three-year period from 2008 to enable them to carry out more enforcement checks on HGVs on international journeys.³⁰ Foreign vehicles are more likely to be responsible for overloading than UK-registered vehicles.

In an August 2009 report on VOSA the Transport Committee generally praised the Agency's efforts to tackle illegal overloading:

In general, VOSA has tended towards carrying out fewer checks on UK vehicles and more on foreign vehicles over the last few years. For example, the total number of UK-registered HGVs checked for overloading offences fell by 42.9%, from 26,802 to 15,316, between 2005-06 and 2007-08. Checks for the same offences on foreign vehicles increased by 25.9%, from 8,110 to 10,213, over the same period. However, the numbers of prohibitions issued following these checks increased from 13.1% to 28.6% for UK vehicles and from 17.5% to 33.1% for foreign-registered vehicles. The pattern was similar regarding PSVs.

²⁷ the procedure for checks is described in full on the [Business Link website](#)

²⁸ Transport Committee, *The Work of the Department for Transport's Agencies...* (ninth report of session 2005--06), HC 907, 27 July 2006, paras 78-80

²⁹ *Government response to the Committee's Ninth Report of session 2005-06* (fifteenth special report of session 2005-06), HC 1615, 26 October 2006, p16

³⁰ [HC Deb 19 October 2009, c1208W](#)

The consensus among witnesses was that the trend towards increasing prohibition rates, observed over the past three years, represented an improvement in VOSA's targeting techniques, rather than a decrease in vehicle compliance standards generally, indicating that the efficiency and effectiveness of VOSA's methods are increasing. Industry representatives indicated that targeting through the OCSR [Operators Compliance Risk Score], WIMS [weigh-in-motion sensors] and other techniques has produced important advances in enforcement, allowing VOSA to direct resources at those operators that are most likely to be in breach of regulations instead of inconveniencing those operators with a good record of compliance and wasting examiners' time.³¹

3 Domestic weights in other EU countries

Some EU countries allow higher gross weights for domestic operations than those permitted under EU rules for international transit. There was some discussion of harmonising domestic limits in the early 1990s, but this was resisted by several Member States, particularly Denmark, Finland Sweden and the Netherlands which would have had to reduce their current ceilings as their maximum weights were (and are) far higher than those proposed by the EU.

The lorry weights allowed in the individual Member States are set out in the following table taken from the Freight Transport Association's *International Road Transport Guide* (11th Ed.), 2006, p406:

	Four axles	Road train, five axles +	Arctic, five axles +
Austria	38	40	40
Belgium	39	44	44
Denmark*	38	48	48
Finland	38	60	48
France	38	40	40
Germany	36	40	40
Greece	36	40	40
Ireland**	35	40	40
Italy	40	44	44
Luxembourg	-	44	44
Netherlands	40	50	50
Norway	-	50	47
Portugal	37	40	40

³¹ Transport Committee, *The enforcement activities of the Vehicle and Operator Services Agency (VOSA)* (seventh report of session 2008-09), HC 39, 24 August 2009, paras 16-17

Spain	36	40	40
Sweden^{***}	-	60	60
Switzerland	34	34	34
UK^{****}	36	40	40
<p>* = five axles = 44t, six axles = 48t</p> <p>** = arctic combin, weight depends on axles spacing (over 8m = 48t)</p> <p>*** = depends on axle spacing and road network</p> <p>**** = 44t on 3+3 configuration with Euro 2/3 engine</p>			