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Road Users' Alliance

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Road File 2005

INTRODUCTION	2
STRATEGIC ROAD NETWORK	4
FUNDING	9
ROAD USAGE	12
TRAFFIC VOLUME	16
SAFETY	20
ENVIRONMENT	22

Billion – a thousand million.

GB/UK – Great Britain (England, Wales and Scotland) and United Kingdom (Great Britain and Northern Ireland) are both given as bases for statistics within this document and are identified where appropriate. Tables or statistics not specified as either, relate to GB.

All figures in this booklet are based on the latest statistics available at time of going to press, September 2005. Any updated figures are available from the members-only section of the RUA website.

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INTRODUCTION



John F Kennedy is reported to have said: "It is not the wealth of a nation that builds roads, but the roads that build the wealth of a nation". The creators of *this* nation's wealth are appalled at how much of it is dissipated in traffic congestion and delays caused by under-investment in the UK's strategic "road network".

RUA members, the Federation of Small Businesses and the British Chambers of Commerce *know* that lack of strategic road capacity is damaging the efficiency and competitiveness of British business and reducing our wealth, which in turn has a detrimental impact on all aspects of our daily lives.

There has been no progress on the A303 to the West Country, so no alternative to the congested M5 for all its commercial and vital tourist traffic. Stonehenge, itself an engineering triumph for "primitive" mankind, stands to mock the puny failure of its successors to commence the tunnel and road upgrade. Meanwhile, the aborted improvements to the A27 lead to despair for the south coast business community and the M25 remains the only strategic route to the channel ports.

It is becoming clear that government is incapable, economically and politically, of addressing the road infrastructure challenge facing the UK. The CBI talks about a vacuum between longer term government objectives and short term plans.

Travel outside London is predominantly by car. Is there any serious chance of replicating the success of the London congestion charging scheme in cities across the length and breadth of the country? Road File illustrates that, even if the quality of public transport in the UK were raised to that of the best in Europe, it would still not attract anywhere near enough passengers to make a difference to the amount of traffic on the roads; hence the focus on Road User Charging.

The views of what Road User Charging should seek to achieve differ widely. For the Government it is a traffic reduction policy – apparently an alternative to

a substantial and sustained investment in road infrastructure: "We cannot build our way out of congestion", the supporting philosophy. For others, it is an alternative method for raising tax and should be tax neutral. Both views miss the salient point that we *can* "build our way" out of some, or even most, congestion.

RUA believes that Road User Charging is a sensible way to "ration" road space - prompting road users to check the value of particular journeys and encouraging alternatives, both in the mode and time of travel. But one can only ration something which is in sufficient supply to meet all reasonable need.

Road File shows that our car population is still relatively small and yet our major road network is already too poor to cope. So, we believe that road charging should also fund an increase in capacity, including the necessary environmental impact mitigation such as the use of tunnels. Road users will not trust government with any additional road taxation (just as they will not trust the authorities with personal travel data) but as the M6 Toll has shown, even the most heavily taxed motorists in Europe are prepared to pay extra for a demonstrably better road service.

The benefits of road investment are more than just economic. Measures such as upgrading the "trunk" road system to match, or at least approach, motorway standards, and the segregation of traffic: by type, at junctions and in transit, will improve road safety. Motorways are up to 10 times safer than a single carriageway.

A car travelling at crawling speed generates over 500g/km CO₂¹. At 100kph this falls to around 175g/km. So removing blockages on the road network will deliver a bigger environmental benefit than fruitlessly hoping that car use will not increase. As to hoping it will decrease...

The business of RUA is to enable the business of all road users to flow unhindered – a route that leads to an increase in the wealth of the nation, better safety and less pollution.

Tim Green
Director, Road Users' Alliance

¹NAEI, 2002

STRATEGIC ROAD NETWORK

The redefinition of government statistics makes it very difficult to pinpoint the changes in the dimensions of the UK road network over the past decade.

However, even without detailed analysis, it is increasingly obvious that road capacity has not been keeping up with demand. In fact, during the three years since the first Road File was published, nearly 3,000 miles of road have been "lost". This is due to a change in the way in which road lengths are estimated.

Nevertheless, the figures over a 10-year period to 2004 show that while traffic has grown by over 20%, the length of our road network has grown by less than 2%.

**20% traffic increase,
road increase 1.6%**

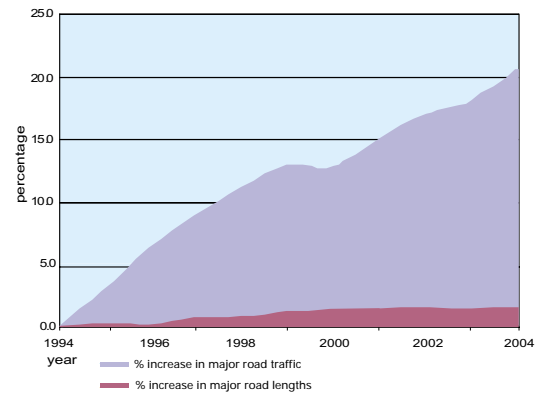
Many improvements to the road network could be undertaken with minimal impact on the countryside.

For example "strategic routes" could be properly identified and then improved to a uniform specification by the removal of pinchpoints and the improvement of intersections, where necessary, with under-passes rather than fly-overs.

In fact, the amount of land covered by all our roads is relatively small (less than 1%), and that used for main roads is very small indeed.

Motorways, which carry nearly 20% of our traffic, represent less than 1% of all our roads, but are the crucial arteries of the country, the means by which most of our freight is transported and a vital ingredient in the success of our business.

INCREASE IN TRAFFIC AND ROAD NETWORK



Source: DfT July 2005

BRITAIN'S ROAD NETWORK

	2004	1994
type of road in kms		
Motorways	3,523	3,242
Trunk roads	9,147	11,646
Principal roads	37,521	34,502
Sub total, Major Roads	50,192	49,389
Minor roads	337,482	336,168
TOTAL	387,674	385,557

Source: DfT July 2005 anomalies in addition due to rounding up

Over the last 10 years, Britain has built just under 175 miles (281km) of motorway. During the same time there has been a 36.6% increase in motorway traffic. So the implication that the building of new roads creates traffic is demonstrably wrong.

roads cover less than 1% of the country

ROADS AS PERCENTAGE OF LAND MASS

	Land mass area (1,000 sq kms)	Roads as % of land mass
Great Britain	230	0.9
Northern Ireland	14	1.1
United Kingdom	244	0.9

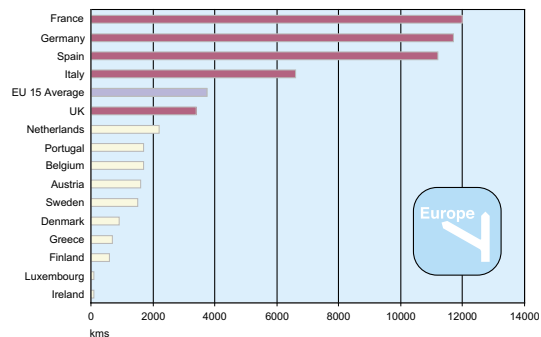
Source: DfT October 2003



Britain languishes at the bottom of the European premier league when it comes to a commercially competitive road network.

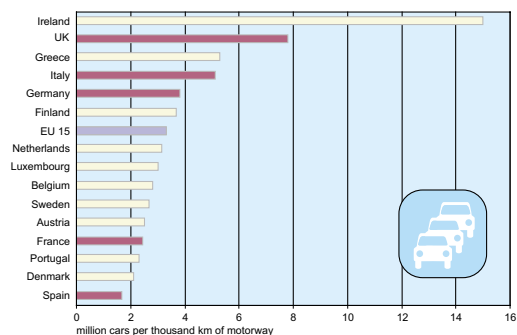
Despite our car ownership being well under the EU average, mile for mile we have more cars on our roads than any economically comparable European country. The impact of this on business efficiency and competitiveness is becoming deeply concerning to British business.

MOTORWAY NETWORK LENGTH BY COUNTRY



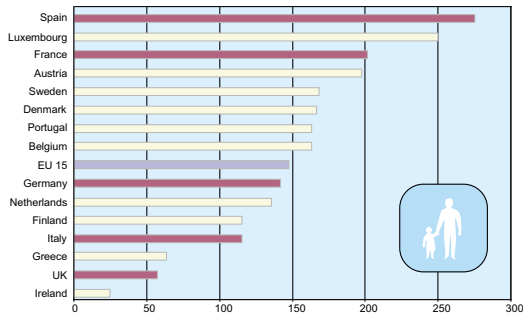
Source: ERF 2005

RATIO OF PASSENGER CARS PER THOUSAND KM OF MOTORWAY



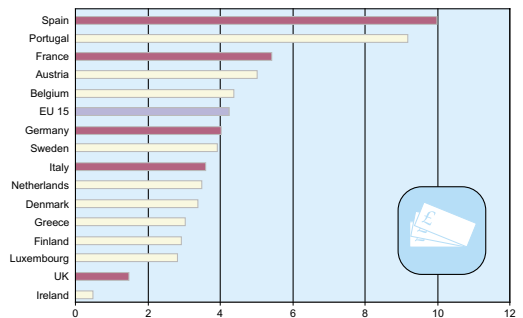
Source: ERF 2005

RATIO OF MOTORWAY NETWORK LENGTH TO HEAD OF POPULATION



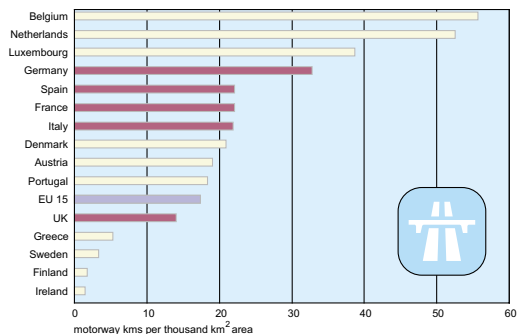
Source: ERF, European Commission 2005

RATIO OF MOTORWAY NETWORK LENGTH TO GDP



Source: ERF, IMF 2005

EUROPEAN MOTORWAY DENSITY



Source: ERF 2005

FUNDING

The UK motorist continues to pay a high price for the privilege of using an inadequate road system, contributing £43.5bn to Treasury funds in taxes alone.

Motoring contributes another £80bn to the economy through the motor trade and motoring services industry.

£43.5bn road user taxes
- £6.58bn budget for roads

TAXES COLLECTED FROM ROAD USERS

Fuel tax	£22.8bn
Vehicle excise duty	£4.9bn
VAT on vehicles	£7.0bn
VAT on fuel	£5.9bn
Company car tax	£2.9bn
TOTAL	£43.5bn

Source: HMCE, DVLA, Inland Revenue, SMMT, UKPIA

**Central Government Budget
for Roads: £6.58bn**

MOTORING COSTS

Running and standing costs ¹	43.1bn
Total spent on new cars ²	40.1bn
Road user taxes	43.5bn
TOTAL	126.7bn

¹ Sources: AA January 2005, TSGB 2004, fuel prices from SMMT.

² Estimate based on new registrations 2003-04, DfT 2005.

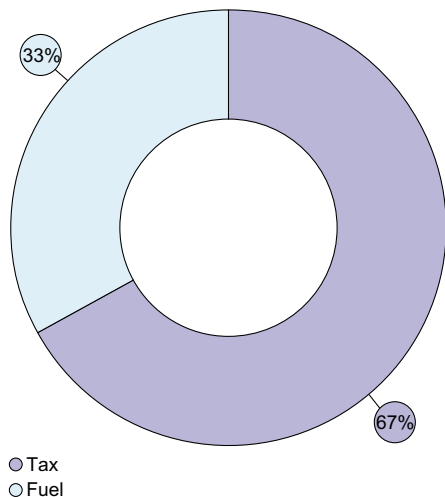
British motorists pay mainly through the price of their fuel, which is the most heavily taxed in Europe. While duty is a fixed tax per litre, VAT is an additional tax set as a percentage of the cost per litre, so the Treasury benefits in proportion to every oil price rise.

FUEL TAX AS PERCENTAGE OF PUMP PRICE

	Tax as % Unleaded	Tax as % Diesel
UK	67.15	65.05
Germany	64.77	56.14
Netherlands	64.58	51.74
France	64.20	54.76
Sweden	62.46	55.29
Denmark	62.32	54.90
Belgium	61.98	51.28
Italy	61.94	53.12
Ireland	59.00	51.59
Luxembourg	54.16	43.37
Spain	53.28	46.21

Source: Wood Mackenzie OPAL August 2005.
Based on average major brand prices.

UK PETROL PRICES & DUTIES PER LITRE



Source: Wood Mackenzie OPAL, August 2005.
Based on average major brand prices.

**UK fuel tax highest
in Europe - 67%**

In spite of this, the central government budget allocated to roads has decreased over the last year. It remains under £7bn: 16% of the fuel tax take.

The Annual Local Authority Road Maintenance (ALARM) Survey continues to paint an increasingly grim picture of the importance attached to the country's key asset, the road network. Over 10 years it has consistently reported a shortfall of around £1bn per annum in road maintenance funding, and rising concern from highways engineers about the consequent increasing threat to safety.

ALARM SURVEY

	ENGLAND (exc London)	WALES	LONDON
Shortfall in road structural maintenance budget per year	£943m	£114m	£109m
Average shortfall per authority	£8.2m	£4.7m	£3.3m
Percentage of authorities which believe there is a threat to road users' safety due to road maintenance under funding	86%	100%	92%
Frequency of road surfacing	51 yrs	61 yrs	23 yrs
Percentage of budget used on reactive maintenance	25%	39%	37%

Source: AIA, ALARM Survey 2005

ROAD USAGE

Rail transport continues to demand a level of public funding far in excess of its contribution to total travel. Despite attracting an increase of 32% in rail travel over the decade since 1993, rail still accounts for only 6% of passenger travel, most of it focused on London. However, not including additional grants and subsidies, 30% of the transport budget is devoted to rail: a figure starkly disproportionate to its role.

roads carry over 93% of passengers

Even in countries with superbly efficient, reliable and integrated public transport systems, travel by rail does not exceed single figures in percentage terms. Investment in alternatives to roads does not reduce the total dominance of their importance.

European passenger travel by rail 6%

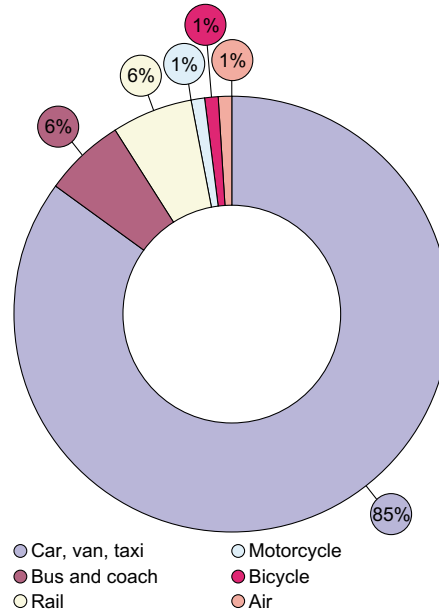
GB PASSENGER TRAVEL BY MODE

	2003	1993
	billion passenger kms	
Car, van, taxi	678	607
Bus and coach	47	44
Rail	49	37
Motorcycle	6	4
Bicycle	5	4
Air	9.1	5.1
All modes	794	701

Source: DfT October 2004

GB TRANSPORT BY MODE

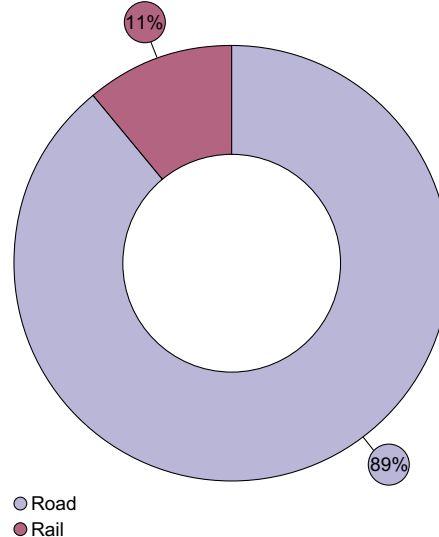
billion passenger kms



Source: DfT October 2004

FREIGHT MOVEMENT

billion tonne kms



Source: DfT July 2005, October 2004
Note: The figures for rail are for the preceding financial year, i.e. 2004 figures are for 2003/04

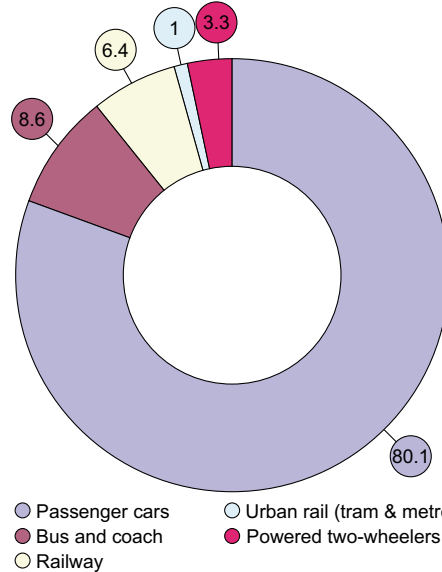
LAND PASSENGER TRANSPORT BY MODE EU 15

	Powered two-wheelers	Urban rail (tram & metro)	Railway	Bus and coach	Passenger cars
	% passenger kms				
Austria	2.8	8.7	14	72.8	1.7
Belgium	0.7	6.2	10.2	82.1	0.8
Denmark	-	7.3	11.9	79.7	1
Finland	0.8	4.7	10.9	82.4	1.3
France	1.2	8.4	4.6	84.4	1.4
Germany	0.9	7.9	6.6	80.3	2
Greece	1	1.4	16.6	64.4	16.7
Ireland	-	3.6	13.9	81.6	0.9
Italy	0.6	5	10.5	76.4	7.5
Luxembourg	-	5.5	13.7	79.9	0.9
Netherlands	0.9	8.5	4.3	85.8	0.5
Portugal	0.5	3.2	8.5	81	6.8
Spain	1.3	5	11.7	78.6	3.4
Sweden	1.9	7.8	8.7	80.7	0.9
UK	1.1	5.4	6.3	86.5	0.7
EU-15	1	6.4	8.6	80.1	3.3

Source: ERF 2005

LAND PASSENGER TRANSPORT BY MODE EU 15

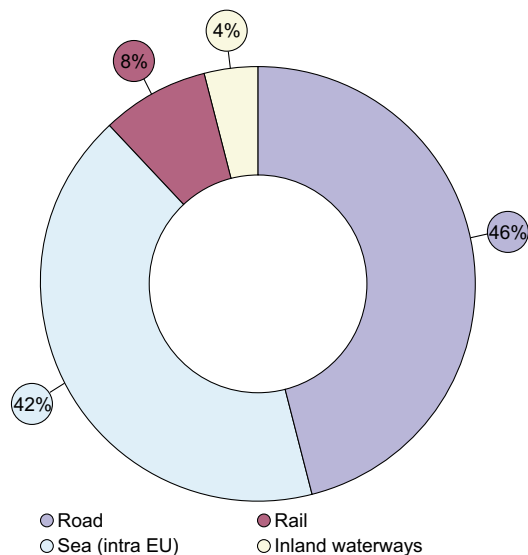
billion passenger kms



Source: ERF 2005

GOODS TRANSPORT BY MODE EU 15

billion tonne kms



Source: ERF 2005

TRAFFIC VOLUME

licensed vehicles up by 30%

The total number of licensed vehicles in use has risen in line with government forecasts by almost 30% between 1994 and 2004, with cars continuing to account for the vast majority, around 84%, of all vehicles. Any shift in travel mode, effectively limited to cities where alternatives exist, will make no significant impact on the dominance of the car. In fact, an increase in personal wealth resulting from a healthy economy and increasingly accessible car prices, will lead to more widespread car ownership. Currently, UK car ownership is well below the EU average, so the forecast increase in cars and car travel is inevitable.

Between 1994 and 2004 the number of cars on UK roads increased by nearly 28% and car traffic, i.e. the number of vehicle miles travelled, increased by 15%. The volume of light van traffic, however, has increased by 40% over the same period.

LICENSED VEHICLES IN USE

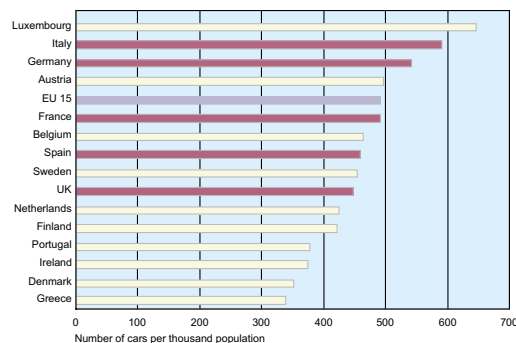
	2004 thousands	1994	% increase
Cars & taxis	27,069	21,231	27.4
Motorcycles	1,209	755	60.1
Buses & coaches	178	154	15.5
Goods	3,244	2,526	28.4
Other	559	566	-1.2
TOTAL	32,259	25,231	27.8

Source: DfT May 2005

motorway traffic up by 37%
rural A road traffic up by 21%

Motorways carry an increasingly high proportion of traffic, seeing an increase of 37% over the 10 years to 2004. During the same period, traffic on rural A roads has increased by 21%, significantly more than that on urban roads.

EUROPEAN CAR OWNERSHIP



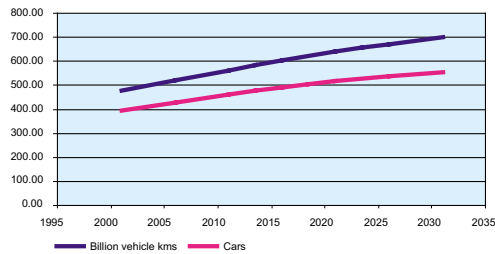
Source: ERF 2005

TRAFFIC VOLUME BY TYPE OF VEHICLE

	2004	1994
	billion vehicle kms	
Cars and taxis	398.1	345.0
Motorcycles	5.2	3.8
Buses and coaches	5.2	4.6
Light vans	60.8	43.3
Goods vehicles	29.4	24.8
Bicycles	3.9	4.0
All vehicles	502.5	425.6

Source: DfT July 2005 anomalies in addition due to rounding up

ESTIMATE FOR GB TRAFFIC DEMAND



Source: National Road Traffic Forecasts (GB) 1997, DETR

MOTOR VEHICLE TRAFFIC BY ROAD CLASS

	2004 billion vehicle kms	1994	% increase
Motorways	96.6	70.7	36.6
Rural 'A' Roads	141.3	116.5	21.3
Urban 'A' Roads	82.8	78.5	5.5
Sub total, 'A' Roads	224.1	195.1	14.9
Minor rural roads	65.9	57.6	14.4
Minor urban roads	112	98.1	14.2
Sub total, minor roads	177.9	155.7	14.3
All roads	498.6	421.5	18.3

Source: DfT July 2005 anomalies in addition due to rounding up

Regional differences in traffic, the number of cars per head of population, and the percentage of national rail journeys, reflect the economic picture of the country. The highest level of car ownership is in the south east, which also accounts for the highest percentage of traffic nationally, while London has the lowest car ownership. Nearly 50 per cent of national rail journeys are made from London and 16.5% from the south east.

Roads are of vital importance to any integrated transport system. Of all passengers travelling to and from the UK's main airports, over 80% use roads.

It is unrealistic to expect a significant number of truck loads to be shifted to rail. Despite a 37% increase in the amount of freight transported by rail in the last 10 years, 89% of freight transported overland (excluding pipeline) is carried by road. These percentages are repeated across Europe, despite its better rail network and the economies of greater distance.

89% of freight by road

Between 1995 and 2003 domestic freight dropped by 15% and exports also decreased, while import tonnage to the UK increased by 20%.

PORTS TRAFFIC

	2003	1995
total foreign and domestic traffic, thousand tonnes		
Imports	229,273	190,302
Exports	174,003	178,801
Domestic	152,386	179,127
All	555,662	548,230

Source: DfT October 2004

AIRPORT TRAFFIC

	Birmingham	Gatwick	Heathrow	Luton	Manchester	Stansted
% of passengers using this mode						
Private car	52.7	50.5	35.9	60.3	57.5	49.8
Hire car	2.7	2.6	3.1	3	2.4	3.5
Taxi/minicab	21.5	14.5	25.3	12.2	29.2	7.7
Tube/tram	0	0	14	0	0	0
Rail	0.8	25	8.9	0	6.7	28.5
Bus/coach	21.5	7.3	12.6	24.3	3.6	10.2
Other	0.8	0.1	0.3	0.2	0.6	0.3

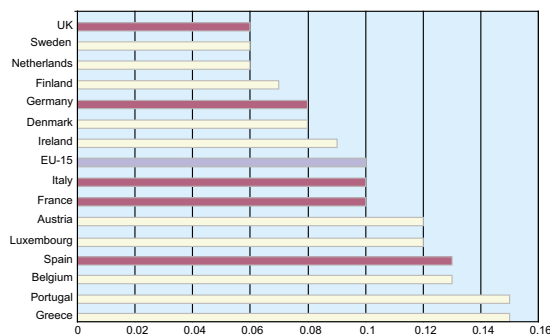
Source: CAA 2005

SAFETY

Despite its higher levels of traffic and congestion, the UK shares with Sweden and the Netherlands the lowest road fatality rate in Europe. Britain's roads are becoming safer to drive on. Roads rated as having a high or medium risk for death and serious injuries have fallen by 30% since 2002².

EUROPEAN ROAD FATALITIES 2003

per 1,000 population



Source: ERF 2005
Note: Data for Belgium 2002

motorways are the safest roads in Britain

Inter-urban single carriageway roads are amongst those categorised as having the highest risk, with an accident rate of more than 10 times those of motorways³.

The improvement of roads to bypass towns and villages as multi-carriageways, combined with good road design to provide protection, will not only benefit our road network but help to save more lives.

² AA Motoring Trust

³ EuroRAP

ROAD CASUALTIES

	2004	1994
Major Roads (motorways, trunk and principal roads):		
Fatal	1,818	2,125
All severities	103,501	117,195

Minor Roads (B, C and unclassified roads):		
Fatal	1,160	1,198
All severities	103,909	117,044

Built-up roads (subject to a speed limit of 40mph or less):		
Fatal	1,238	1,542
All severities	148,717	172,855

Non built-up roads (subject to a speed limit of greater than 40):		
Fatal	1,740	1,646
All severities	58,693	54,159

All roads:		
Fatal	2,978	3,326
All severities	207,410	234,254

Number per 100 million vehicle kms:		
Accident rate	42	55

Source: DfT June 2005 anomalies in addition due to rounding up

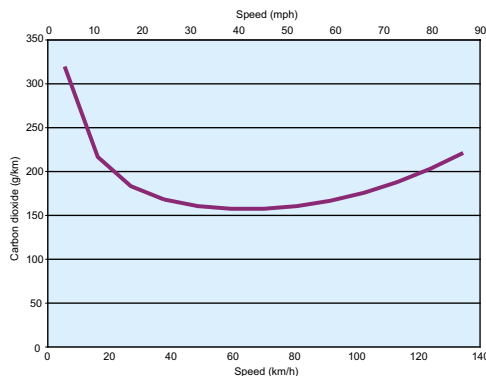
ENVIRONMENT

Significant improvements are being made in air quality. The motor manufacturing industry has reduced CO₂ emissions from new cars by 10% over just seven years, while other emissions have been reduced even more radically. Changes in car-buying are also having an effect, with a growing trend towards the purchase of new diesel cars, which emit lower levels of CO₂.

50mph = less than 1/2 the emissions of 5mph

However, running counter to these positive effects is the impact of worsening congestion, with journey times on major routes increasing significantly over just a four-year period. Enabling the free-flow of traffic is one of the most significant ways in which to reduce emissions. A vehicle travelling at 10mph produces more emissions over a given distance than one travelling at 80mph, with optimum speeds between 30 and 50 mph. Traffic flowing at 50mph produces half the emissions of congested traffic crawling along at 5mph.

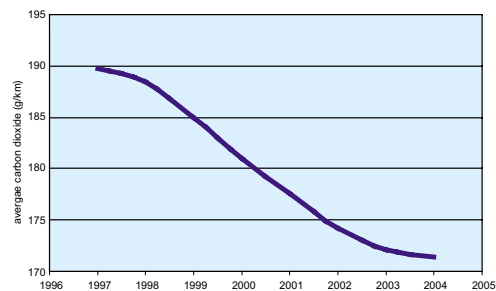
SPEED vs EMISSIONS



Source: NAEI 2003

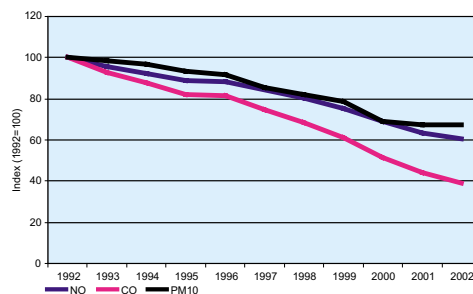
The cost of congestion is therefore more significant than just the estimated £20bn p.a. cost to British Industry⁴.

UK AVERAGE CO₂ EMISSIONS FOR NEW CARS



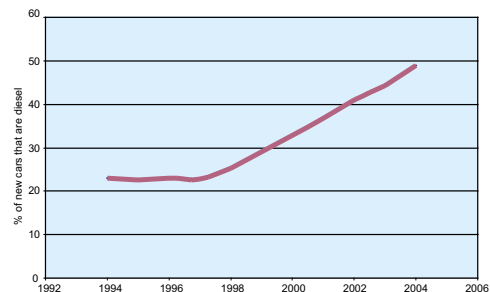
Source: SMMT April 2005

REDUCTION OF EMISSIONS 1992-2002



Source: DfT July 2004

DIESEL AS PERCENTAGE OF TOTAL NEW CARS EU 15



Source: ACEA August 2005

⁴CBI

INCREASE IN JOURNEY TIMES

	1998	2002	% increase
Manchester – Liverpool	28mins	33mins	17.8
Cambridge – Ipswich	47mins	56mins	19.1
Nottingham – Sheffield	54mins	1hr 3m	16.7
Oxford – Southampton	1hr 4m	1hr 14m	15.6
Birmingham – Bristol	1hr 30m	1hr 42m	13.3
London – Leeds	2hr 43m	3hr 6m	14.1

Source: Trafficmaster Journey Time Index, winter 2002

Central government is encouraging local authorities to at least trial road user charging. Their resistance reflects concern about the impact of traffic reduction on local economies.

Traffic is: employees commuting; customers shopping; citizens enjoying improving lifestyles; patients visiting clinics at regional hospitals – in short, the activities of daily life, to a level and quality not possible without a car.

Using road charging to verify the value of journeys during busy times is one thing, using it to avoid improvement of our road network threatens both economic growth and the wellbeing of our citizens. RUA advocates a balance: road charging to fund significant road network improvements *and* to promote the efficient use of an infrastructure asset to match our European competitors' quality of life.





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Shell Bitumen is pleased to sponsor Road File.

Developments in bitumen and asphalt technology now provide many solutions to achieve longer lasting, safer and quieter roads that require less maintenance. Road maintenance and build quality are paramount to sustaining an infrastructure capable of meeting modern traffic demands, a fact which is becoming increasingly appreciated by the modern motorist.

For the past 80 years, Shell has been committed to helping produce the very best solutions for the road building industry, and the road user.



www.rua.org.uk

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