

STAR RATING EUROPE'S ROADS FOR SAFETY



## **EuroRAP 2003 British Results**

Britain's most improved  
and high risk roads

 **The AA Motoring Trust**

European  
Road  
Assessment  
Programme

## Foreword by John Dawson



In 2002, the first EuroRAP results were published in Britain. League tables were published showing the risks of being involved in a fatal or serious accident across major roads on the British road network. These were outside built-up areas where most deaths happen. The results showed that the risks faced by road users were up to 10 times higher on many innocent-looking single carriageways than on high speed motorways.

The human body cannot withstand the uncushioned forces of an impact at more than 25mph – yet Britain's fastest roads, motorways, are its safest. The motorway is designed to be forgiving at its speed limit and to cushion impacts when things go wrong. Split-level junctions ensure that if vehicles collide at junctions then they are at least travelling in the same direction. Rigid objects at the side of the road are protected by safety fencing. Traffic travelling in opposite directions is separated by a safety fence. Pedestrians are separated from fast moving traffic. The motorway holds few traps for drivers and layouts follow carefully researched design rules.

In contrast, rural single carriageways permit many types of high energy crash. These include brutal side impacts at priority junctions, head-on collisions at legal closing speeds of up to 120mph and crashes into rigid trees, lampposts or poles which stand just inches from the carriageway edge.

The 2003 EuroRAP results brought important new information to Britain's drivers, showing how risks changed as they moved from one road section to another. This year's results include:

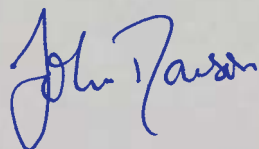
- the most comprehensive accident risk map yet published. The map shows the risk rates for the British primary route network – motorways, trunk roads and local roads signed with "green" direction signs – across England, Scotland and Wales. The mapping includes roads inside and outside built-up areas.

And, for the first time, EuroRAP provides information on success stories and challenges faced by those responsible for public roads:

- Britain's most improved roads: the roads which have improved most since the first results were published – and the engineering and enforcement measures that worked.
- Britain's persistently high risk roads: those with the highest risk and on which at least one person per mile was killed or seriously injured in both survey periods.

The results illustrate that preventing death on the road need be neither expensive nor complex. It does need financial investment but it also requires discipline from authorities in engaging people with the right skills to measure where people are being routinely killed and maimed, to apply systematically the known remedies, and to maintain roads properly.

EuroRAP and The AA Motoring Trust are grateful for the strong support they have received from the emergency services, central and local government, and research institutions that has allowed these important British results to be prepared. They are deeply grateful to the partners whose contributions make EuroRAP possible – in particular, the AA, the European Commission, the FIA Foundation for the Automobile and Society, and Toyota.

A handwritten signature in blue ink that reads "John Dawson".

**Chairman of EuroRAP**

## Britain's most improved roads

Road	From - To	Region	Length (km)	Carriageway type	Fatal & serious accidents 97-99	Fatal & serious accidents 99-01	Percentage of fatal and serious accidents saved	Engineering measures aimed at cutting:			
								Head-on collisions	Single-vehicle run-offs	Accidents at junctions	Accidents involving pedestrians/cyclists
A134	Thetford - A10	East	38	Single	23	9	61		✓		✓
M73	M73 J1 - J3	Scotland	10	Motorway	18	7	61			✓	
A682	A56 - A646 Burnley	North West	11	Mixed	28	13	54	✓	✓		
A45	Coventry Ring Road - M42 J6	W Mids	20	Dual	48	23	52			✓	✓
A6	Leicester - Derby	E Mids	37	Mixed	69	34	51	✓	✓	✓	✓
A299	Faversham - A253 Monkton	South East	29	Dual	34	17	50	✓	✓	✓	
A523	Macclesfield - Hazel Grove	North West	14	Mixed	34	17	50	✓	✓	✓	✓
A75	Gretna Green - Dumfries	Scotland	40	Single	28	14	50	✓	✓	✓	
A243	A3 Hook - M25 J9	London	10	Mixed	40	21	48			✓	
A638	Adwick Le Street - Crofton	North East	19	Single	29	15	48	✓	✓	✓	
A12	Lowestoft - Gt Yarmouth	East	16	Mixed	39	21	46			✓	✓
A91	Stirling - Kinross	Scotland	41	Single	41	23	44		✓		
A90	Dundee - Aberdeen	Scotland	101	Dual	85	57	33			✓	

## Britain's persistently high risk roads†

Road	From - To	Region	Length (km)	Carriageway type	Fatal & serious accidents 97-99	Fatal & serious accidents 99-01	Predominant accident types involve:	
A537	Macclesfield - Buxton*	North West	13	Single	35	35	Head-ons	
A534	Welsh boundary - Nantwich*	North West	24	Single	33	32	Run-offs	
A682	M65 J13 - A65 Long Preston*	North West	24	Single	25	24	Head-ons	Run-offs
A54	Congleton - Buxton*	North West	24	Single	24	18	Head-ons/run-offs/junctions	
A631	Gainsborough - A1103*	E Mids	24	Mixed	23	21	Junctions	
A683	A6 - Kirkby Lonsdale*	North West	24	Single	28	23	Junctions	
A61	Barnsley - Wakefield*	Y & Humber	10	Single	13	17	Junctions	
A1101	Outwell (A1122) - Long Sutton (A17)*	East	21	Mixed	22	25	Head-ons	
A44	Leominster - Worcester*	W Mids	37	Single	39	34	Junctions	
A53	Leek - Buxton*	W Mids	20	Single	20	18	Junctions	
A5	Daventry - Rugby (A428)	W Mids/E Mids	16	Mixed	23	18	Junctions	
A70	Cumnock - Ayr*	Scotland	21	Single	25	20	Junctions	
A59	Skipton - Harrogate*	Y & Humber	30	Single	48	42	Junctions	Head-ons
A28	Ashford - Margate*	South East	47	Mixed	104	93	Junctions	Pedestrians/cyclists
A436	A417 Little Witcombe - A40 Shipton*	South West	10	Single	10	10	Head-ons	Junctions
A170	Thirsk - Scarborough*	Y & Humber	70	Single	64	57	Junctions	
A60	Mansfield - Worksop*	E Mids	20	Single	44	36	Junctions	
A71	Kilmarnock - M74 J8*	Scotland	39	Single	39	38	Head-ons	
A6	Derby - Buxton	E Mids	56	Single	97	89	Junctions	
A660	Leeds - Otley	Y & Humber	20	Mixed	59	55	Pedestrians/cyclists	Junctions
A43	Corby - Stamford	E Mids	23	Single	35	26	Head-ons	Junctions

† High accident rates per billion vehicle km in both time periods (black and the highest of the red group on the map overleaf), sections 4-100 miles long, with at least 1 fatal or serious accident per mile per three years.

\* National and local highway authorities have provided details to EuroRAP of improvements made to these road sections since 2001.

# Risk rating of Britain's motorways and major roads

This map shows the statistical risk of death or serious injury occurring on Britain's motorways and major roads for 1999-2001. The risk is calculated by comparing the frequency of death and serious injury on every stretch of road with how much traffic each road is carrying. For example, if there are 20 accidents involving death or serious injury on a stretch of road 5 miles long that carries 10,000 vehicles a day, then the risk is 10 times higher than if the road section has the same number of accidents but carries 100,000 vehicles.

Some of the roads shown have had improvements made to them recently, but during the survey period the risk of a fatal or serious injury accident on the black road sections was more than 10 times higher than on the safest (dark green) roads.

For more information on the statistical background to this research, visit the EuroRAP website at [www.eurorap.org](http://www.eurorap.org).





© Copyright AA Foundation for Road Safety Research. The AA Foundation is indebted to the Department for Transport, the Scottish Executive and the National Assembly for Wales for allowing use of data in creating the map. Accident information is for 1999-2001, the most recent available when the map was prepared. Traffic data is 1998 factored to 2000 with local corrections where appropriate. The road network is based on the 1996 network modified to include major changes between 1996 and 2000 but excludes London and the centres of other major cities. For reasons of space, not all road numbers can be shown. No results are presented for roads shown in grey - these are either motorway spurs, connecting sections off the major route network or other short links. Risk rates on road sections vary but it is expected that, on average, road sections off the major route network shown will have higher rates than those sections on it.



EuroRAP aims to provide regular tracking of accident risk, initially on Britain's primary route network (motorways and the roads with the green direction signs). This network accounts for 6 per cent of Britain's road length but has about 40 per cent of the fatal accidents. Engineering measures can eliminate routine accidents, often at low cost. Making drivers more aware of safe speeds with simple road markings and signs can reduce risk on those sections where effective engineering solutions are difficult to apply or where improvements are delayed for financial reasons.

## Head-ons

From 1999–2001 there were 2,784 head-on accidents involving death or serious injury on Britain's primary roads. Central barriers keep traffic separated. Clear road markings warn drivers of impending hazards. Speed restriction with cameras and warning signs, particularly on rural stretches not typically associated with lower speeds, reduce these and other kinds of accidents. One of Britain's most improved roads has enhanced its centre line markings and used 'SLOW' markings on a red background. Fixed speed cameras, mobile speed cameras and enforcement signs have been used on three of Britain's most improved roads, two of which also now operate helicopter patrols\*.



### **Enhanced road markings have been put in on the:**

A682 A56 – A646 Burnley

### **Speed cameras and enforcement have been used on the:**

A6 Leicester – Derby\*

A523 Macclesfield – Hazel Grove\*

A75 Gretna Green – Dumfries

## Run-offs

From 1999–2001 there were 3,172 single vehicle run-off accidents involving death or serious injury on Britain's primary roads. Bends which are not clearly marked, poor skid resistance surfacing and missing road studs can contribute substantially. An unfenced object close to the road is a death trap if hit at 50mph. Safety barriers at bends have been erected on two of Britain's most improved road sections and three have improved warning signs and markings.



### **Safety barriers have been installed on the:**

A6 Leicester – Derby

A523 Macclesfield – Hazel Grove

### **Improved warning signs and road markings have been put in on the:**

A6 Leicester – Derby

A523 Macclesfield – Hazel Grove

A682 A56 – A646 Burnley



About 1 in 7 fatal and serious accidents on Britain's primary network are head-on collisions, 1 in 7 are single-vehicle run-offs, 1 in 3 occur at junctions and 1 in 7 involve pedestrians or cyclists.

## Junctions

From 1999–2001 there were 7,017 brutal side impacts and other accidents that involved death and serious injury at junctions on Britain's primary roads. Roundabouts reduce speeds and deflect traffic so that colliding vehicles meet with glancing blows and injuries are much reduced. Two of the most improved roads have replaced priority junctions with roundabouts and two with split level junctions. Britain, more than many European countries, needs to concentrate on junction improvements.



### **Split-level junctions have been constructed on the:**

A90 Dundee – Aberdeen  
A299 Faversham – A253

### **A roundabout has been put in on the:**

A638 Adwick Le Street – Crofton  
A12 Lowestoft – Great Yarmouth



## Pedestrians

From 1999–2001 there were 2,831 accidents involving death or serious injury to pedestrians or cyclists on Britain's primary roads. Pedestrian refuges and guard railing at junctions control where and how pedestrians cross the road and form a safety barrier separating vulnerable individuals from traffic. In the same way, wide footpaths allow pedestrians to walk beside the road, well away from moving vehicles. Allocated cycle lanes allow pedal cyclists to ride on the road away from pedestrians, and reduce the need for them to enter the main flow of traffic. Two of Britain's most improved roads have constructed pedestrian refuges at junctions and one has used pedestrian guard railing.



### **Pedestrian refuges have been constructed on the:**

A6 Leicester – Derby  
A523 Macclesfield – Hazel Grove

### **Pedestrian guard railing has been put in on the:**

A12 Lowestoft – Great Yarmouth

## EuroRAP Partners

### Motoring organisations supporting EuroRAP are:

- The AA Motoring Trust (Britain): [www.aatrust.com](http://www.aatrust.com)
- AA Ireland: [www.aaireland.ie](http://www.aaireland.ie)
- ACI (Italy): [www.aci.it](http://www.aci.it)
- ADAC (Germany): [www.adac.de](http://www.adac.de)
- Autoliitto (Finland): [www.autoliitto.fi](http://www.autoliitto.fi)
- AMZS (Slovenia): [www.amzs.si](http://www.amzs.si)
- ANWB (Netherlands): [www.anwb.nl](http://www.anwb.nl)
- FDM (Denmark): [www.fdm.dk](http://www.fdm.dk)
- FFAC (France): [www.automobileclub.org](http://www.automobileclub.org)
- M (Sweden): [www.motormannen.se](http://www.motormannen.se)
- NAF (Norway): [www.naf.no](http://www.naf.no)
- ÖAMTC (Austria): [www.oeamtc.at](http://www.oeamtc.at)
- RACC (Spain): [www.racclub.net](http://www.racclub.net)
- RACE (Spain): [www.race.es](http://www.race.es)
- TCB (Belgium): [www.touring.be](http://www.touring.be)
- TCS (Switzerland): [www.tcs.ch](http://www.tcs.ch)

### Public authorities and other bodies providing technical assistance or data to the programme include:

- England - The Department for Transport - [www.dft.gov.uk](http://www.dft.gov.uk) and The Highways Agency - [www.highways.gov.uk](http://www.highways.gov.uk)
- CSS (County Surveyors' Society) - [www.cssnet.org.uk](http://www.cssnet.org.uk)
- TRL - Transport Research Laboratory - [www.trl.co.uk](http://www.trl.co.uk)
- France - Ministère de l'Équipement des Transports, du Logement, du Tourisme et de la Mer - [www.equipement.gouv.fr](http://www.equipement.gouv.fr)
- Ireland - National Roads Authority - [www.nra.ie](http://www.nra.ie)
- Italy - the Italian transport ministry - [www.infrastrutturerapporti.it](http://www.infrastrutturerapporti.it) with the Istituto Nazionale di Statistica - [www.istat.it](http://www.istat.it)
- The Netherlands - Adviesdienst Verkeer en Vervoer - [www.rws-avv.nl](http://www.rws-avv.nl)
- Scotland - The Scottish Executive - [www.scotland.gov.uk](http://www.scotland.gov.uk)
- Spain - Dirección General de Tráfico - [www.dgt.es](http://www.dgt.es) with Ministerio de Fomento - [www.mfom.es](http://www.mfom.es)
- Sweden - Swedish National Road Administration - [www.vv.se](http://www.vv.se)
- Wales - The National Assembly for Wales - [www.wales.gov.uk](http://www.wales.gov.uk)
- Catalonia - Servei Català de Trànsit - [www.gencat.es](http://www.gencat.es)

 The AA Motoring Trust

 FIA Foundation  
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EUROPEAN ROAD ASSESSMENT PROGRAMME  
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