

STAR RATING EUROPE'S ROADS FOR SAFETY



EuroRAP 2004 British Results
Tracking accident rates, road improvements
and motorcycle involvement

The **AA** *Motoring Trust*

European
Road
Assessment
Programme

Foreword by John Dawson



This year's EuroRAP results provide the first complete comparison of risk rates for one three-year period (1997-1999) with another (2000-2002) across Britain's primary route network. The results show that the application of simple engineering measures continues to pay the highest dividends, with speed cameras also making a contribution on about half of road sections. In 2004, a further 17 road sections (Table 1) have joined the list of Britain's most improved roads published in 2003.

The total number of roads in the higher risk categories has reduced by 46 per cent, from 158 to 86 sections. But 11 roads remain persistently high risk (Table 2). On these roads the overall trend is encouragingly downward but at least one person continued to be killed or seriously injured on every mile during the survey period. As a society, the measures that we take to deal with accident problems of this magnitude remain disproportionate to the size and human and economic cost of the problem. We must mobilise far larger-scale application of systematic, affordable measures than we are currently doing.

Our research also shows that, whilst some authorities are active in evaluating the benefits of their safety schemes, others do not seem to be aware that the often minor measures they have implemented have saved a large number of lives. Some are surprised. Authorities and senior management must become more systematically engaged in developing and monitoring these lifesaving programmes.

This year's EuroRAP results contain road-specific information about Britain's worsening problem of death and crippling injury involving motorcyclists. One in 6 deaths on British roads is a motorcyclist, yet motorcycles account for only 1 per cent of travel. Motorcyclists are 30 times more likely to be killed than car drivers. Road deaths are no longer falling and one key reason is that motorcycle deaths are rising and are at their highest level for a decade.

Motorcyclists are being killed in large numbers in accidents with cars. More than 4 in 10 of all motorcyclist deaths are at junctions, often where riders are simply not being seen. Road engineers must implement design features, particularly at junctions, that will marshal traffic, improve layout and visibility and prevent fatal collisions between drivers and motorcyclists. Car drivers must "think bike" and everyone must stick to the rules of the road.

With nearly 40 per cent of motorcycle deaths occurring on bends, it is also time to respond to motorcyclists' wish to have safety fencing tailored to their needs. Safety fencing is a highly effective energy-absorbing restraint when struck by cars running off the road, but some designs can be brutal to the bodies of motorcyclists. Across Europe, new designs are being implemented where shielding and energy-absorbing materials make barriers a lifesaver for everyone. UK authorities must act on the new European research.

But there are limits to the behaviour that engineers can design for – there is a small group of irresponsible motorcyclists who ride to specific locations to use public roads as a race track. And too frequently they kill or maim themselves and others who get in the way.

EuroRAP finds that on 6 in 10 of the worst performing roads on the primary road network the police say that there are major issues concerning motorcycles racing at excessive speed. In the case of Britain's worst performing road, no fewer than 26 of the 27 fatal or serious accidents involved motorcycles. This is an urgent enforcement problem and intelligence-led policing is beginning to tackle this mobile lawlessness. The loss of life and risk to innocent parties is so pressing that the aerial surveillance now being used by some police forces is well justified. Table 3 lists the roads where the contribution to risk from motorcyclists is greatest among the higher risk sections.

But stopping wilful dangerous behaviour on a few public roads will not stop most of the casualties among motorcyclists. EuroRAP reveals that about 20 per cent of British road sections studied have at least a third of all their fatal and serious accidents involving motorcyclists. The safer riding schemes promoted by responsible motorcycle interests need more support. And, in general, Britain's road design is not sufficiently forgiving to vulnerable two-wheelers. With motorcyclists alone representing 1 in 6 road deaths in Britain, motorcyclists' safety needs proactive attention. Motorists must "think bike", but so too must road engineers.

Finally, the behaviour of the small, irresponsible, mobile groups of motorcyclists masks which "normal" British roads away from national parks and routes to the seaside are among the worst performing. The roads identified in Table 4 show where overall risk is highest when motorcycle accidents are excluded.

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

Chairman of EuroRAP

Table 1 Britain's most improved roads (1997-99 vs 2000-02)*

No.	Description	Region/ country	(km)	Carriageway type	Fatal & serious accidents		Reduction	Percentage decrease in fatal & serious accidents	Engineering measures aimed at cutting:				
					1997-99	2000-02			Accidents at junctions	Head-ons	Run-offs	Accidents involving pedestrians/cyclists	Other measures include
A43	Kettering - Corby	E Mids	14	Mixed	25	5	20	80	✓		✓	✓	50-30mph reductions; cameras; visible policing
A45	Coventry ring road - M42 J6	W Mids	20	Dual	48	14	34	71	✓			✓	Extensive route action
A666	M61 J3 - Bolton	North West	7	Dual	19	6	13	68			✓		70-50mph reductions
A477	St Clears - A478	Wales	19	Single	23	8	15	65	✓			✓	Speed limit reduced; resurfacing
A523	Macclesfield - Hazel Grove	North West	14	Mixed	34	12	22	65	✓		✓	✓	60-50mph; cameras; helicopter enforcement
A44	Llangurig - Aberystwyth	Wales	38	Single	33	12	21	64	✓		✓	✓	Village safety; route action
A159	Gainsborough - Scunthorpe	E Mids	25	Single	27	11	16	59	✓				Signing & lining
A6	Leicester - Derby	E Mids	37	Mixed	69	29	40	58	✓		✓	✓	60-50mph reductions; cameras; helicopter
A454	Wolverhampton - Bridgnorth	W Mids	21	Single	41	18	23	56	✓	✓	✓	✓	Extensive route action
A259	Brenzett - Hastings	South East	31	Single	45	20	25	56				✓	Camera; speed awareness; resurfacing
A1	A1(M) Stotfold - Eaton Socon	SE/East	22	Dual	33	15	18	55	✓			✓	Layby closure; signing; cameras; 50mph
A5	Bangor - Holyhead	Wales	41	Now dual	37	17	20	54	✓	✓	✓	✓	Upgrading to dual carriageway
A487	A470 Gelliudan - Bangor	Wales	56	Single	36	17	19	53	✓			✓	Speed limit changes; resurfacing; cameras
A77	Ayr - Glasgow	Scotland	41	Mixed	82	39	43	52	✓	✓		✓	Route action & traffic management
A21	A229 - Hastings	South East	22	Single	47	23	24	51	✓			✓	60-50mph reductions; resurfacing; cameras
A38	Bristol - M5 J22	South West	37	Single	54	28	26	48				✓	Cameras; 50-30mph & 40-30mph in villages
A631	M18 J1 - Gainsborough	E Mids	34	Mixed	50	26	24	48	✓	✓	✓	✓	Dualling; cameras
A82	Glasgow - A811 Alexandria	Scotland	23	Dual	65	34	31	48	✓				Resurfacing; junction anti-skid
M42	M42 J3A to J7	W Mids	17	Motorway	47	25	22	47	✓				Extensive route action
A11	Thetford - Norwich	East	40	Mixed	59	33	26	44	✓	✓		✓	Dualling; resurfacing; lining & signing

Appeared in Britain's most improved roads list 2003

Table 2 Britain's persistently high risk roads (1997-99 and 2000-02)**

No.	Description	Region/ country	(km)	Carriageway type	Fatal & serious accidents		Change in fatal & serious accidents	Percentage change in fatal & serious accidents	Percentage contribution of accident types (2000-02)†				
					1997-99	2000-02			Junctions	Head-ons	Run offs	Pedestrians/ cyclists	Other
A537	Macclesfield - Buxton	North West	13	Single	35	27	-8	-23	22	11	37	0	30
A682	M65 J13 - A65 Long Preston	N West/Y&H	24	Single	25	23	-2	-8	22	30	35	4	9
A54	Congleton - Buxton	North West	24	Single	24	22	-2	-8	18	36	18	9	18
A534	Welsh border - Nantwich	North West	24	Single	33	26	-7	-21	19	50	19	0	12
A623	Baslow - Chapel-en-le-Frith	North West	22	Single	21	31	10	48	13	35	19	10	23
A59	Skipton - Harrogate	Y & Humber	30	Single	48	43	-5	-10	51	12	19	5	12
A44	Leominster - Worcester	W Mids	37	Single	39	35	-4	-10	31	29	26	3	11
A1101	Outwell (A1122) - Long Sutton (A17)	East	21	Mixed	22	28	6	27	21	18	36	18	7
A660	Leeds - Otley+	Y & Humber	20	Mixed	59	52	-7	-12	23	6	4	52	15
A6	Derby - Buxton+	E Mids/N West	56	Single	97	87	-10	-10	40	14	15	18	14
A631	Gainsborough - A1103	E Mids	24	Mixed	23	18	-5	-22	44	22	22	0	11

Appeared in Britain's persistently high risk roads list 2003

*Ranked by the percentage change in fatal and serious accidents from 1997-99 to 2000-02; significant reduction at the 99 per cent level; section lengths are greater than 5km; minimum number of 7 fatal or serious accidents in 1997-99.

**Road sections on the network where risk is highest – fatal and serious accident rates (per billion vehicle kilometres) involving vehicles of all types; roads on which at least 1 fatal or serious accident per mile has occurred in both time periods; section lengths are greater than 5km, risk rates were high or the highest of the medium-high on the map overleaf in both time periods (highest ranked first), there was a minimum number of 7 fatal or serious accidents in both time periods. †National and local authorities responsible for all road sections except those marked "+". "+" have provided details to EuroRAP of improvements made to these road sections since 2001-02. †Percentages may not sum to 100 due to rounding.

AA Trust 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 2000-2002. 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.

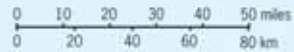
Some of the roads shown have had improvements made to them recently, but during the survey period the risk of a fatal or serious injury accident on the black road sections was more than 10 times higher than on the safest (dark green) roads.

For more information on the statistical background to this research, visit the EuroRAP website at www.eurorap.org. For further road safety information, see www.aatrust.com.

AA TRUST RISK RATING

- Low risk (safest) roads
- Low-medium risk
- Medium risk
- Medium-high risk
- High risk

- Motorway and dual carriageway sections
- Single carriageway and mixed single and dual sections
- Motorway spurs and linking roads



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The AA Motoring Trust



Motorcycle accidents and overall risk on the network

EuroRAP identifies the risk to all road-users on every section of primary road. The centre-fold map shows how this risk varies. Identifying where risk is high is the first step in reducing risk. A growing component is the risk associated with accidents involving motorcyclists. But the solutions to motorcycle accidents may not be the same as those for other accidents so it is important to know where motorcycles contribute disproportionately.

Fact File

In 2002 there were 6,686 motorcycle casualties killed or seriously injured in Britain, 21 per cent of the total¹.

- deaths² on 501-1000cc motorbikes grew by 40 per cent from 1997-2002; deaths on smaller or larger machines scarcely changed
- peak age group for fatalities was 30-34 but the biggest increase from 1997-99 to 2000-02 was in the 30-49 age group
- 60 per cent died on non-built up roads; larger bikes are disproportionately involved in fatalities on rural roads
- 53 per cent of motorcycle deaths involve a car, 7 per cent a lorry and 28 per cent no other vehicle
- 37 per cent of deaths occur on bends; an increase of 4 per cent from 1997-2002
- 14 per cent of motorcyclists were overtaking when the fatal accident occurred
- 44 per cent of all motorcyclist deaths occur at junctions



National park – an unwanted race track



A537 – 26 of 27 severe accidents involved motorcycles

Table 3 shows higher-risk road sections where some combination of the proportion of motorcyclists in the traffic, road-user behaviour or road design leads to a large contribution to risk from motorcycle accidents. Table 4 shows where risk contributed by road-users other than motorcyclists is high. Tables 3 and 4 also show the contribution of the four main types of fatal and serious accident – head-on collisions; run-offs; junctions; and pedestrians or cyclists.

Road authorities, enforcement agencies and road-user groups must work together to reduce motorcyclist injury by:

- promoting safer riding with user-groups
- tough mobile enforcement led by helicopter surveillance where justified
- promoting “think bike” to motorists
- promoting “think bike” to engineers in their design of accident reduction schemes
- improving the “hygiene” factors – road lighting, signing, surfacing, marking and clearing up of diesel spills
- implementing innovative solutions such as the shielded safety fences seen especially on bends in France and Germany (pictured)
- funding research³



Promoting safer riding in Cheshire



The *Moto.tub* barrier in France

¹ Road Casualties Great Britain, Department for Transport, 2003, published annually

² Source (all fatality data): Department for Transport “Tomorrow’s roads – safer for everyone. The first three year review.” April 2004

³ See, for example, Federation of European Motorcyclists’ Associations (2000), Final report of the motorcyclists and crash barriers project, www.finnbike.com/Fema_kaidetutkimus.pdf

⁴ Photos courtesy of: Cheshire County Council; Lancashire County Council; Sodirel (barrier - www.sodirel.com)

Table 3 High and medium-high risk roads with high motorcycle involvement in accidents (2000-02)*

No.	Description	Region/country	(km)	Carriageway type	Number fatal & serious accidents involving motorcycles 2000-02		Percentage of accidents on section 2000-02	Percentage of motorcycle accidents by type (2000-02)†				
								Junctions	Head-ons	Run-offs	Pedestrians/cyclists	Other
A537	Macclesfield - Buxton	North West	13	Single	26		96	23	35	12	0	31
A683	M6 J34 - Kirkby Lonsdale	North West	24	Single	12		63	42	17	8	0	33
A54	Congleton - Buxton	North West	24	Single	10		45	20	20	40	0	20
A682	M65 J13 - A65 Long Preston	N West/Y&H	24	Single	9		39	33	11	33	0	22
A534	Welsh border - Nantwich	North West	24	Single	9		35	33	22	33	0	11
A65	Long Preston - M6 J36+	N West/Y&H	42	Single	23		43	70	9	13	0	9
A631	Gainsborough - A1103	E Mids	24	Single	9		50	67	11	22	0	0
A85	Crianlarich - Perth+	Scotland	87	Single	25		40	24	28	28	4	16
A6	Derby - Buxton	E Mids/N West	56	Single	36		41	44	17	11	3	25
A515	Lichfield - Buxton	W Mids/N West	73	Single	23		40	50	9	18	0	23
A628	M67 - A616 ("Woodhead")	N West/Y&H	24	Single	14		33	7	21	14	0	57
A283	A24 - Shoreham-by-Sea	South East	13	Single	11		48	45	18	9	9	18
A166	York - Driffield+	Y & Humber	40	Single	11		34	45	0	27	0	27

Table 4 Roads in Britain where risk is highest when motorcycle risk is removed (2000-02)**

No.	Description	Region/country	(km)	Carriageway type	Fatal & serious accidents (all vehicle types)		Number fatal & serious accidents not involving motorcycles 2000-02	Percentage of all fatal & serious accidents on section not involving motorcyclists 2000-02	Percentage of non-motorcycle accidents by type (2000-02)†				
					1997-99	2000-02			Junctions	Head-ons	Run-offs	Pedestrians/cyclists	Other
A59	Skipton - Harrogate	Y & Humber	30	Single	48	43	35	81	49	23	9	6	14
A44	Leominster - Worcester	W Mids	37	Single	39	35	28	80	29	25	32	7	7
A1101	Outwell (A1122) - Long Sutton (A17)	East	21	Single	22	28	24	86	17	42	17	21	4
A660	Leeds - Otley+	Y & Humber	20	Mixed	59	52	43	83	12	7	5	60	16
A53	Leek - Buxton	W Mids	20	Single	20	13	11	85	18	9	27	36	9
A77	Stranraer - Ayr+	Scotland	80	Single	63	52	47	90	32	34	19	9	6
A16	Boston - A1028+	East Mids	33	Single	21	21	19	90	47	26	16	11	0
A71	Kilmarnock - M74 J8	Scotland	39	Single	39	31	29	94	24	31	24	17	4
A70	Cumnock - Ayr	Scotland	21	Single	25	18	18	100	33	11	11	28	17
A442	Telford - A53 Hodnet	W Mids	16	Single	18	11	10	91	50	30	10	10	0

Appeared in Britain's persistently high risk roads list 2003

*Roads in the top two risk categories with at least one-third of their risk contributed by motorcycle accidents. Roads with the highest contribution to risk from motorcyclists are ranked first. Sections listed had at least 1 fatal or serious accident (of all kinds) per mile 2000-02, there were at least 9 motorcycle accidents per section and section lengths are greater than 5km. NB: this is not a ranking of the roads that are "the most dangerous for motorcyclists".

**Roads on which the contribution to risk of fatal or serious accidents (per billion vehicle kilometre) other than motorcycle accidents is highest (highest ranked first). Sections listed had at least 1 fatal or serious accident (of all kinds) per mile 2000-02, there were at least 9 non-motorcycle accidents per section and section lengths are greater than 5km. †National and local authorities responsible for all road sections except those marked "+" have provided details to EuroRAP of improvements made to these road sections since 2001-02. †Percentages may not sum to 100 due to rounding.

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EuroRAP is financially supported by The AA Motoring Trust, The European Commission, the FIA Foundation for the Automobile and Society, and Toyota Motor Europe.

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Published by the Automobile Association Foundation for Road Safety Research on behalf of EuroRAP, June 2004. A company limited by guarantee, registered No. 2069723. Registered as a charity in England No. 295573. Registered Office: Millstream, Maidenhead Road, Windsor, Berkshire SL4 5GD, UK. Publication No. 11/2004/FDN42/ER05

