

ISBN 1 85112 836 0

VEHICLE SPEEDS IN GREAT BRITAIN
1997

DEPARTMENT OF THE ENVIRONMENT, TRANSPORT AND THE REGIONS
STATISTICS BULLETIN (98)19

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June 1998

ISBN 1 85112 836 0

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SUMMARY OF KEY POINTS FROM ANALYSIS OF 1997 SPEED SURVEY

NON-URBAN ROADS - 1997 ESTIMATES (Chart 1 and Section 1: Table 1)

- Cars were the vehicles most likely to be speeding on motorways with 54 per cent of those surveyed exceeding 70 mph and 19 per cent travelling in excess of 80 mph.
- Only 3 per cent of buses and coaches and 8 per cent of articulated heavy goods vehicles (HGVs) exceeded their speed limits on motorways.
- On dual carriageways 91 per cent of articulated HGVs surveyed exceeded their 50 mph limit and 7 per cent exceeded 60 mph. More than half of the cars, buses and coaches on dual carriageways were also found to be speeding.
- On single carriageways levels of speeding were generally considerably lower except for HGVs, with 70 per cent of articulated HGVs exceeding their 40 mph limit and 21 per cent travelling above 50 mph.

URBAN ROADS - 1997 ESTIMATES (Chart 2 and Section 2: Table 5)

- On roads with a 30 mph speed limit cars and light goods vehicles (LGVs) were most likely to be speeding with 70 per cent of cars surveyed exceeding the speed limit and 35 per cent travelling faster than 35 mph.
- Motorcycles were the vehicles most likely to be speeding on 40 mph roads, with 38 per cent exceeding the speed limit and 21 per cent doing so by more than 5 mph. 60 per cent of motorcycles on 30 mph roads were also exceeding the speed limit.
- Of the HGVs surveyed, 57 per cent exceeded the speed limit on 30 mph roads and on 40 mph roads 18 per cent were found to be speeding.
- The proportion of vehicles speeding on 40 mph roads was less than the proportion speeding on 30 mph roads for all types of vehicle. Average speeds were only 3-4 mph higher for all types of vehicles except the average motorcycle speed which was 6 mph higher on 40 mph road

Chart 1: Speeding on non-urban roads

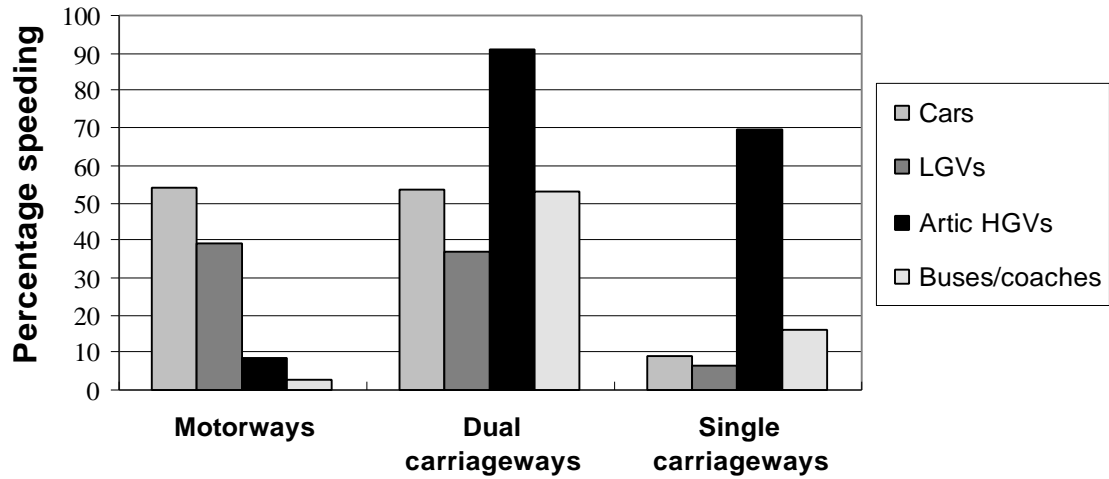
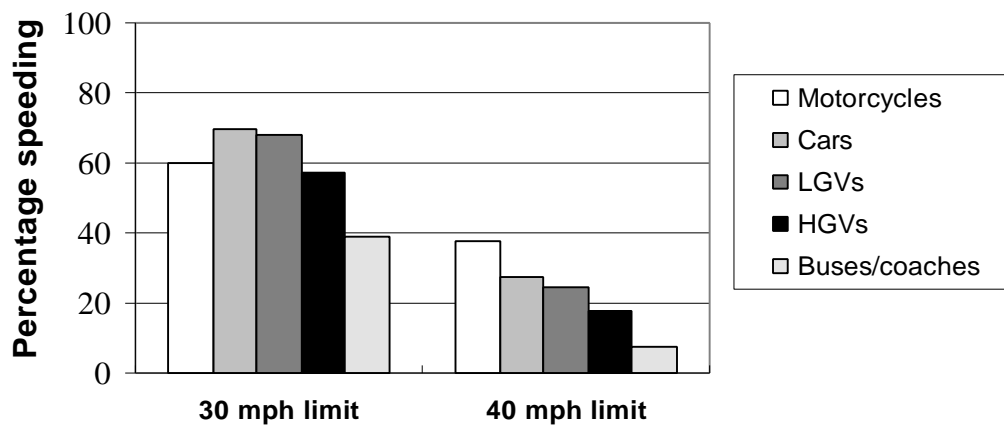


Chart 2: Speeding on urban roads



INTRODUCTION: AUTOMATIC SPEED DATA

1. The Department of the Environment, Transport and the Regions is responsible for setting speed limits on motorways and trunk roads. Local authorities have the power to impose or vary speed limits on principal roads and on all other local roads. In order to monitor the compliance of drivers with these speed limits the Department collects speed data from traffic counting sites around Great Britain.
2. The Department captures these data on a regular basis as a by-product of the core traffic census. This is a continuous survey of traffic at around 130 sites throughout Great Britain, mainly used to estimate changes in the level of traffic. Before 1991 speed data were collected in ad hoc surveys using video cameras.
3. The automatic traffic counters operate most efficiently in uncongested conditions and whenever possible are not placed near junctions, hills or sharp bends. In principle they provide estimates of the speeds at which drivers choose to travel when their behaviour is not constrained by congestion or other road conditions. In practice congested traffic conditions at any site, due for example to dense traffic flow or a road accident, may have an influence upon the estimates and, in consequence, distort the speed distributions for specific types of vehicle. The extent to which drivers' speeding behaviour at these sites reflects behaviour in unconstrained conditions nationally is not certain, and the results should be treated with care. Users are advised to draw broad conclusions rather than specific results from these data.
4. This bulletin contains speed data collected from sites on both urban and non-urban roads. The non-urban results in the bulletin are from 26 motorway sites, 5 dual carriageway non built-up sites and 24 single carriageway non built-up sites during 1996. For the urban roads, data were collected from 30 sites with a 30 mph speed limit and 8 sites with a 40 mph limit. The number of vehicle speeds measured daily at the sites varies widely from a few hundred at the smallest site to many thousands at the motorway sites. Data are collected on a rotating cycle, the cycle being designed to avoid sampling bias which may be caused by time and day effects.
5. The counting equipment relies on an inductive loop and axle sensors to detect vehicle length, chassis height and the number and position of axles. The equipment is capable of classifying 21 different vehicle types. However, the equipment cannot distinguish between vehicles with the same electronic 'footprint' such as cars and car-based vans (which have an identical chassis to that of a car). In such cases vehicles are classified to the group which the equipment recognises rather than that which would be used in a manual count - in the example above the car-based vans would be classified as cars. The data on non-urban speeds are collected continuously and stored in 8 pre-set speed bands for 14 groups of vehicles. These have been used for the non-urban speed study in Section 1. The urban speeds in Section 2 are derived from a special survey in which the urban sites were monitored for 15 minute periods in a pre-determined cycle and the speeds of individual vehicles were collected.
6. The types of vehicle analysed in the non-urban survey are motorcycles, cars, cars towing, LGVs, buses/coaches, rigid 2 axle HGVs, rigid 3 or 4 axle HGVs, articulated HGVs, all 4 axle HGVs and all 5 or more axle HGVs. There are two important points concerning these categories. Firstly, the categories of goods vehicle are not mutually exclusive and therefore in the non-urban survey some vehicles are counted twice. For example, a 4 axle articulated lorry would appear in both the results for all articulated lorries and the results for all 4 axle heavy goods vehicles. In the urban speed survey such vehicles *have* been uniquely allocated to a single category and the 4 or more axle HGVs are not recorded a second time in the articulated HGV category. Secondly, the automatic counters identify rigid 2 axle lorries but

cannot distinguish between vehicles weighing less than 7.5 tonnes gross and those weighing more. The weight of this type of vehicle determines its speed limit on non built-up roads. Consequently it is impossible to tell how many rigid 2 axle HGVs are speeding. The speed limits for different types of vehicle on different classes of non-built up road are shown in Annex A.

7. It was discovered in 1996 that the recording of motorcycle speeds by counters at non-urban sites was distorted . As a result there was the potential for bias in the estimates of motorcycle speeds at these sites and they have been excluded from the analysis. Hence, no data is available for motorcycles on non-urban roads. Software to correct the discrepancy has been tested and implemented during the course of 1997 and 1998 and it is anticipated that some data will be available for non-urban motorcycle speeds in the 1998 vehicle speed survey. Motorcycle speeds collected at the urban sites are not affected by the same problem and are included in Section 2.
8. The accuracy of the average speed depends on the number of sites surveyed and the number of vehicles observed at each site. The higher these numbers the more accurate any estimates of average speed will be. Table B1 in Annex B shows the estimates of average speed for each vehicle type together with their standard errors. It also sets out the statistical reasoning behind the variability underlying the estimates of average speed, and explains how differences between average speeds may be assessed.

SECTION 1: NON-URBAN SPEED DATA

Vehicle speeds by road type and vehicle type (Table 1)

Motorways

1. Motorway speeding at the 26 sites surveyed was widespread, 54 per cent of cars exceeded the 70 mph limit and 19 per cent exceeded 80 mph. The speed distribution for Light Goods Vehicles (LGVs) generally indicates lower speeds than for cars. 39 per cent of LGVs exceeded 70 mph and 8 per cent exceeded 80 mph.
2. 8 per cent of articulated HGVs and 10 per cent of rigid 3/4 axle HGVs exceeded their 60 mph limit. There was little difference between average speeds of the four classes of HGV for which a speed limit could be determined. Only 3 per cent of buses and coaches exceeded 70 mph. Less than half a per cent of all these types of vehicle exceeded the limit by more than 10 mph.
3. The percentage of HGVs, buses and coaches speeding has dropped in recent years. Since August 1992 speed limiters have been fitted to all new goods vehicles of over 7.5 tonnes gross weight and since 1994 these have been set to 56 mph. Since 1992 most coaches have been fitted with speed limiters set to 70 mph and the lower limit of 65 mph was imposed for new vehicles from 1994. It is not known whether the residual levels of speeding by buses, coaches and HGVs are due to the combined tolerances of speed limiters and automatic speed detectors, or to vehicles which remain on the roads without limiters (or with devices that are not operating correctly).

Dual carriageways

1. The distribution of HGV speeds on dual carriageways was virtually the same as on motorways. Consequently the percentage of HGVs speeding on dual carriageways was eight to twelve times higher than on motorways, with between 82 and 93 per cent exceeding their 50 mph limit. Whilst their speed limit is 10 mph lower on dual carriageways than motorways the average speeds recorded were almost as high. Between 6 and 7 per cent were speeding above 60 mph. For buses and coaches the average speed on dual carriageways was 2 mph lower than on motorways and hence the percentage speeding was around eighteen times higher, with over half exceeding their 60 mph limit.
2. About the same proportion of cars, 53 per cent, exceeded the 70 mph limit and 12 per cent exceeded 80 mph, which was the highest level of speeding over 10 mph in excess of the speed limit for any vehicle type on dual carriageways. A third of LGVs exceeded their 70 mph limit. The average speeds of cars and LGVs on dual carriageways were the same as on motorways, although the proportions of cars and LGVs speeding were slightly lower.

Single carriageways

1. It is particularly difficult to draw conclusions from sites on these roads due to their greater variation in surface and design quality. Average speeds were lower and speeding less frequent on these roads than on dual carriageways. However, the proportion of HGVs, in particular the largest goods vehicles, exceeding their speed limit of 40 mph by more than 10 mph was higher. The incidence of speeding by HGVs ranged from 57 to 73 per cent and 14 to 23 per cent of HGVs were exceeding 50 mph.

Table 1 Vehicle speeds on non-urban roads by road type and vehicle type: 1997¹

(a) Motorways ¹ miles per hour/percent/number of vehicles									
	Cars	Cars towing	Light goods ⁴	Buses/coaches	Heavy goods vehicles ⁵				
					Rigid		Articulated ⁷	Rigid/articulated	
					2 axle ⁶	3/4 axle		4 axles	5+ axles
Under 50 mph	5	18	6	7	9	15	8	10	8
50-60 mph	13	51	20	27	53	76	83	83	82
60-65 mph	11	16	15	40	15	7	7	5	7
65-70 mph	17	10	20	23	13	2	2	1	2
70-75 mph	23	4	22	2	7	0	0	0	0
75-80 mph	12	1	9	0	2	0	0	0	0
80-90 mph	17	0	8	0	1	0	0	0	0
90 mph and over	2	0	1	0	0	0	0	0	0
Average speed	70	57	66	61	59	54	55	55	55
Speed limit	70	60	70	70	n/a	60	60	60	60
Percent over limit	54	31	39	3	n/a	10	8	7	9
More than 10 mph over limit	19	6	8	0	n/a	0	0	0	0
Number observed (thousands)	92,050	682	7,376	502	5,893	964	9,030	3,180	6,590

(b) Dual carriageways ²									
Under 30 mph	0	0	0	0	0	0	0	0	0
30-40 mph	0	2	0	1	1	2	0	1	0
40-50 mph	2	17	5	8	12	16	8	14	6
50-60 mph	13	48	22	38	56	75	84	79	86
60-65 mph	12	16	16	35	14	5	5	4	6
65-70 mph	18	10	20	15	9	1	1	1	1
70-80 mph	40	6	30	2	7	1	0	1	0
80 mph and over	13	0	6	0	1	0	0	0	0
Average speed	70	57	66	59	57	54	55	54	55
Speed limit	70	60	70	60	n/a	50	50	50	50
Percent over limit	53	33	37	53	n/a	82	91	85	93
More than 10 mph over limit	13	7	6	2	n/a	6	7	6	7
Number observed (thousands)	11,028	87	808	52	597	118	895	296	687

(c) Single carriageways ³									
Under 20 mph	1	2	1	1	1	2	1	1	1
20-30 mph	3	5	3	6	5	7	5	6	4
30-40 mph	26	27	28	39	30	34	24	32	22
40-50 mph	37	47	38	37	41	43	49	44	50
50-60 mph	25	18	24	15	20	13	20	15	21
60-65 mph	5	1	4	1	2	0	1	1	1
65-70 mph	3	0	2	0	1	0	0	0	0
70 mph and over	1	0	1	0	0	0	0	0	0
Average speed	46	43	45	42	43	41	44	42	45
Speed limit	60	50	60	50	n/a	40	40	40	40
Percent over limit	9	20	7	16	n/a	57	70	61	73
More than 10 mph over limit	1	2	1	1	n/a	14	21	16	23
Number observed (thousands)	14,084	150	1,053	84	763	168	561	272	369

1 Average vehicle speeds from 26 motorway sites

2 Average vehicle speeds from 5 dual carriageway sites

3 Average traffic speeds from 24 single carriageway sites

4 Goods vehicles under 3.5 tonnes gross weight

5 Goods vehicles over 3.5 tonnes gross weight

6 Speed limit depends on loading which cannot be determined

7 Includes 4 and 5+ axle types

2. Only 9 per cent of the cars surveyed exceeded their 60 mph limit compared to 53 per cent exceeding the 70 mph limit on dual carriageways.

Average car speeds by time of day (Table 2)

1. On motorways the average car speed varied by time of day between 66 mph and 73 mph. The lowest speeds, occurring during the morning and evening peaks, may be attributed to denser and slower moving traffic.
2. For dual carriageways the range in average speeds was from 68 mph to 71 mph with no evidence of lower average speeds during the peaks.
3. On single carriageways the range in average speeds was from 45 mph to 51 mph and the highest speeds occurred at night.
4. Although some congestion may have occurred during the survey periods, the evidence in Table 2 indicates that this is unlikely to have dramatically affected the overall results because of the relatively small variation in average speeds between peak and off-peak periods.

Weekday and weekend comparisons (Table 3)

1. The number of observations at weekends is small for some vehicle classes on dual carriageways because there is less traffic, so care should be taken in drawing anything but the broadest conclusions from these data.
2. There is evidence that speeds increase slightly at the weekend when traffic flows are lower and the proportion of heavy vehicles is much smaller. The proportion of vehicles speeding also generally shows an increase at weekends. The only exceptions which showed a decrease were cars on dual carriageways. On motorways and single carriageways the largest increases in the percentage of vehicles speeding were for 3 or 4 axle HGVs. On dual carriageways buses and coaches registered the highest increase.

Table 2 Average car speeds by time of day: 1996

Time of day	miles per hour		
	Motorways	Dual carriageway	Single carriageway
0000-0400	72	67	51
0400-0600	72	68	51
0600-0700	71	69	50
0700-0800	67	69	47
0800-0900	68	70	46
0900-1000	71	69	47
1000-1100	72	69	46
1100-1600	71	69	46
1600-1700	68	68	46
1700-1800	67	68	46
1800-1900	69	69	47
1900-2200	71	69	49
2200-2400	71	67	49
0000-2400	70	68	47

Table 3 Weekday and weekend comparisons: 1997

Vehicle type	Road type	miles per hour/percent			
		Weekday		Weekend	
		Average speed	Percent speeding	Average speed	Percent speeding
Cars	Motorway	69	53	71	58
	Dual carriageway	70	54	70	52
	Single carriageway	46	9	47	9
LGVs	Motorway	66	38	68	44
	Dual carriageway	66	36	67	40
	Single carriageway	45	6	46	8
Buses/coaches	Motorway	60	3	62	3
	Dual carriageway	59	50	60	61
	Single carriageway	41	15	43	20
Rigid 3/4 axle	Motorway	54	9	55	17
	Dual carriageway	54	81	55	84
	Single carriageway	41	56	43	64
Articulated	Motorway	55	8	55	9
	Dual carriageway	55	91	55	91
	Single carriageway	44	69	45	74

Comparisons with earlier speed surveys (Table 4)

1. Early surveys of vehicle speeds in free flow conditions using video cameras were carried out in 1975, 1976, 1977, 1983 and 1987. The results from the 1983 and 1987 surveys are shown in earlier editions of this bulletin.
2. The changing number of sites between 1991 and 1995 implies that changes in the data should be treated as indicative only. In addition there have been slight changes in the specification of the speed data collected since 1991 which will impart a degree of error in assessing changes since then. The effects of site selection upon average speeds are not known, but are expected to be minimal.
3. Table 4 shows that the level of speeding by cars on motorways has remained broadly similar since the surveys began. Speeding by articulated HGVs and coaches on motorways has decreased significantly.
4. In contrast there has been an increase in speeding on dual-carriageways for all three vehicle types. Speeding at single-carriageway sites remains largely unchanged, although a decrease in bus and coach speeding is apparent between 1996 and 1997, whilst earlier variation may reflect site selection.

Changes in non-urban vehicle speeds between 1996 and 1997

1. Table B1 in Annex B shows the standard errors of the average speeds for each vehicle type and road class. Using these estimates of standard error together with those from 1996 it is possible to perform a significance test on the changes in average speed between these two periods.
2. Changes in average vehicle speeds between 1996 and 1997 were not statistically significant at the 95 per cent level for any types of vehicle on any of the three classes of non-urban road.

Table 4 Non-urban speed surveys: 1991 - 1997

		number/ miles per hour/ per cent						
		1991	1992	1993	1994	1995	1996	1997
Motorways	Sites	9	18	20	25	25	25	26
	Observations (thousands)	6,483	14,987	52,933	73,234	96,351	103,322	126,266
	Average car speed	72	70	70	68	70	70	70
	Percent exceeding limit	60	56	56	47	55	57	54
	Average artic speed	59	58	57	56	56	55	55
	Percent exceeding limit	43	40	34	25	23	11	8
	Average bus/coach speed	64	65	64	62	62	61	61
	Percent exceeding limit	19	20	21	15	11	3	3
Dual carriageways	Sites	3	3	3	4	5	5	5
	Observations (thousands)	1,163	1,214	6,495	8,809	14,149	15,208	14,569
	Average car speed	67	66	67	67	68	69	70
	Percent exceeding limit	38	39	40	40	47	49	53
	Average artic speed	54	53	54	54	55	55	55
	Percent exceeding limit	72	72	74	78	89	89	91
	Average bus/coach speed	55	54	53	56	57	59	59
	Percent exceeding limit	29	30	29	39	44	50	53
Single carriageways	Sites	16	24	12	24	24	23	24
	Observations (thousands)	1,629	2,634	10,209	16,737	16,514	16,769	17,504
	Average car speed	48	45	45	47	47	47	46
	Percent exceeding limit	10	7	7	10	10	10	9
	Average artic speed	44	43	42	45	45	45	44
	Percent exceeding limit	71	64	63	72	73	72	70
	Average bus/coach speed	46	40	40	43	43	44	42
	Percent exceeding limit	24	11	14	20	21	22	16

1 Comparisons are indicative only, see commentary.

SECTION 2: URBAN SPEED DATA

Vehicle speeds by speed limit and vehicle type (Table 5)

30 mph roads

1. Speeding was common among all drivers at the 30 sites surveyed. The worst offenders were drivers of cars and LGVs, of which 70 per cent and 68 per cent respectively exceeded the speed limit. Around half of these were travelling at more than 5 mph above the limit. 60 per cent of the motorcycles surveyed were speeding.
2. Well over half of the heavy goods vehicles observed were speeding. However, over one third of motorcycles and cars exceeded 35 mph but only about one fifth of HGVs exceeded the limit by 5 mph.
3. The speed distribution for buses and coaches indicates lower speeds than for other vehicles. 39 per cent of buses and coaches exceeded the speed limit and 13 per cent did so by more than 5 mph.

40 mph roads

1. Average speeds were slightly higher for all vehicle types on these roads although speeding was far less common than on 30 mph roads. Motorcyclists were the worst offenders at the 8 sites surveyed with 38 per cent travelling in excess of the speed limit and 21 per cent doing so by more than 5 mph. 27 per cent of the cars travelled in excess of the speed limit, with 9 per cent travelling at over 45 mph.
2. 19 per cent of 2 axle HGVs were speeding and speeding by larger HGVs ranged from 11 per cent to 16 per cent. Only around 5 per cent of goods vehicles were found to be speeding by more than 5 mph.

Average car speeds by time of day (Table 6)

1. Vehicle speeds on urban roads were collected between 6 am and midnight. Some sites may have been affected by congestion during part of the day. In general, car speeds and the percentage speeding were slightly lower during the morning and evening peak periods when the traffic flow was heaviest, and highest in early morning or late evening when traffic was lightest. The hour of the survey period with the worst speeding was from 6 am to 7 am, when 86 per cent of cars on 30 mph roads and 49 per cent on 40 mph roads were speeding.
2. Average speeds and the percentage speeding showed more variation by time of day than at the non-urban sites as shown in Table 2. The pattern of this variation on 30 mph and 40 mph roads was similar.

Weekday and weekend comparisons (Table 7)

1. Average speeds were slightly higher at the weekend and speeding was more commonplace confirming the evidence from non-urban speed data that less dense weekend traffic slightly increases average speed and speeding. However, none of the vehicle types shown were observed to have an average speed at weekends which was more than 1 mph higher than the average weekday speed on either 30 mph or 40 mph roads.

Table 5: Vehicle speeds on urban roads by speed limit and vehicle type: 1997**(a) 30 mph speed limit roads¹**

						miles per hour/ percent/ number of vehicles				
						Heavy goods vehicles ⁵				
						Rigid	Articulated	Rigid/articulated		
	Motorcycles ³	Cars	Cars towing	Light goods ⁴	Buses/coaches	2 axle	3 axle	3 axle	4 axles	5+ axles
Under 20 mph	16	5	7	6	11	8	8	13	8	9
20 - 30 mph	23	25	32	26	50	33	34	40	34	43
30 - 35 mph	23	35	38	36	26	35	39	31	38	36
35 - 40 mph	19	25	18	24	9	17	16	13	17	10
40 - 45 mph	10	8	4	7	2	4	3	2	3	1
45 - 50 mph	5	2	0	2	0	1	0	0	0	0
50 mph and over	4	0	0	0	1	1	0	1	0	0
Average speed	32	33	31	32	28	31	30	29	30	29
Percent over 30 mph	60	70	61	68	39	58	58	47	58	48
Percent over 35 mph	37	35	23	32	13	23	19	16	20	12
Number observed (thousands)	7	1,894	7	112	15	52	4	1	9	7

(b) 40 mph speed limit roads²

						miles per hour/ percent/ number of vehicles				
						Heavy goods vehicles ⁵				
						Rigid	Articulated	Rigid/articulated		
	Motorcycles ³	Cars	Cars towing	Light goods ⁴	Buses/coaches	2 axle	3 axle	3 axle	4 axles	5+ axles
Under 20 mph	7	3	5	4	4	4	5	11	6	6
20 - 30 mph	18	12	18	15	33	18	21	25	21	21
30 - 35 mph	16	26	28	27	33	28	28	28	31	30
35 - 40 mph	20	31	32	30	22	30	31	25	27	29
40 - 45 mph	17	18	13	17	6	13	12	9	12	11
45 - 50 mph	10	7	4	6	1	4	2	2	3	2
50 - 60 mph	8	3	1	2	0	1	1	0	1	1
60 mph and over	3	0	0	0	0	1	0	0	0	0
Average speed	37	36	34	36	32	35	34	32	34	33
Percent over 40 mph	38	27	18	24	7	19	14	11	16	14
Percent over 45 mph	21	9	4	8	1	6	3	2	4	3
Number observed (thousands)	5	982	3	69	8	35	3	1	7	7

1 Speed measurements taken from 30 sites.

2 Speed measurements taken from 8 sites.

3 Motorcycles includes mopeds and other types of powered two wheeled vehicles.

4 Goods vehicles up to 3.5 tonnes gross weight.

5 Goods vehicles over 3.5 tonnes gross weight.

Table 6: Average car speeds by time of day: 1997

miles per hour/ percent				
Time of day	30 mph limit		40 mph limit	
	Average speed	Percent speeding	Average speed	Percent speeding
0600-0700	36	86	40	49
0700-0800	33	74	38	36
0800-0900	31	61	34	21
0900-1000	32	69	36	25
1000-1100	32	70	36	26
1100-1200	32	68	36	25
1200-1300	33	70	36	26
1300-1400	33	70	36	25
1400-1500	32	70	36	25
1500-1600	32	66	36	24
1600-1700	32	66	35	23
1700-1800	32	66	34	25
1800-1900	33	72	36	30
1900-2000	33	74	38	31
2000-2100	34	76	38	33
2100-2200	34	76	38	32
2200-2300	34	78	38	34
2300-2400	35	79	39	38
0600-2400	33	72	37	28

Table 7: Weekday and weekend comparisons: 1997

miles per hour/ percent					
Vehicle type	Speed limit	Weekday		Weekend	
		Average speed	Percent speeding	Average speed	Percent speeding
Cars	30mph	32	69	33	73
	40mph	36	27	37	28
LGVs	30mph	32	67	32	70
	40mph	35	24	36	25
Motorcycle	30mph	31	60	32	61
	40mph	37	38	37	39
Rigid 2 axle	30mph	31	59	31	60
	40mph	35	19	35	21

Average speeds on urban roads by time of year (Charts 3 and 4)

1. Due to the small number of sites surveyed and the small changes seen throughout the year few of the differences in quarterly average speeds are significant. However, a significant drop in average speeds for motorcycles on 30 mph roads was observed between the third and fourth quarters of 1997 and in previous years the rise between the first and second quarters has also been significant. Chart 3 illustrates that motorcycle speeds were, on average, higher in the summer and lower in winter, probably because motorcycles are the vehicles most affected by adverse weather conditions and possibly because of seasonal differences in motorcycle usage. There is some evidence, as shown in Chart 4, that this may also occur on 40 mph roads, although the changes are not statistically significant on these roads since the number of sites surveyed is lower.
2. Average speeds for most other vehicle types showed little variation throughout the year. For example, average car speeds remained between 32 and 33 mph on 30 mph roads throughout 1997 and at 36 mph on 40 mph. Charts 3 and 4 show the average quarterly speeds for cars, generally the fastest vehicles on urban roads and for buses and coaches, generally the slowest vehicles on urban roads. None of the quarterly average speeds in 1997 differed significantly from the average speeds in the corresponding quarter of 1996.

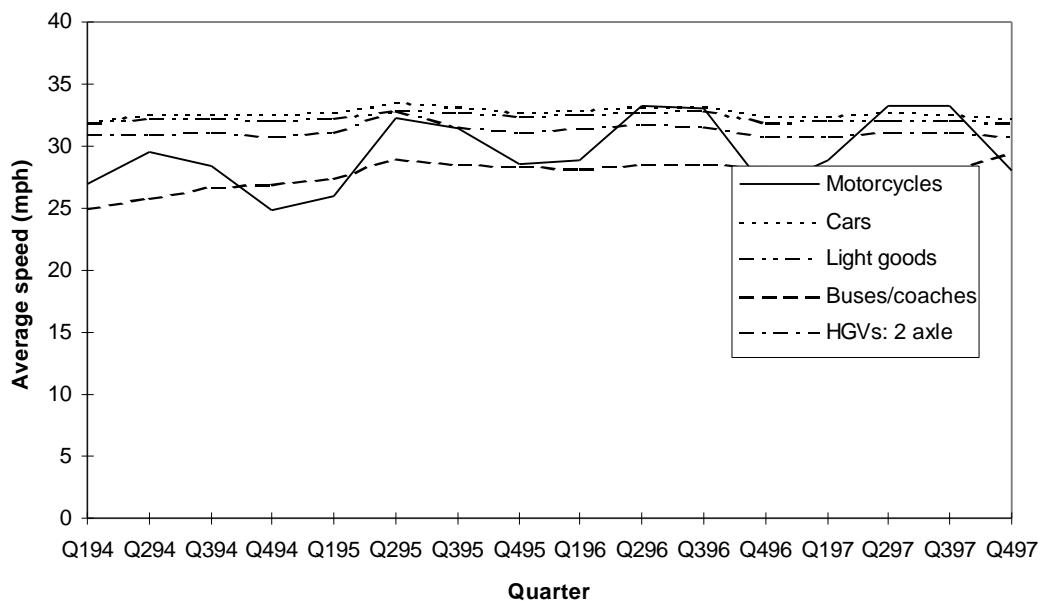
Comparisons with earlier speed surveys (Table 8)

1. The first urban speed survey was carried out in 1994 and has been operating continuously since then. Detailed results are shown in earlier editions of this bulletin. Although the survey method has not changed and the selection of sites has remained fairly constant the comparisons should be treated as indicative only.
2. Table 8 shows that average car speeds on urban roads appear to have remained at similar levels over the past four years.

Changes in urban vehicle speeds between 1996 and 1997

1. The standard errors of the average speeds for each vehicle type and road class in 1997 are shown in Table B1 of Annex B. Using these estimates of standard error together with those from 1996 there was found to be no significant change in average vehicle speeds between the two years for any vehicle type.

**Chart 3: Average speed trends for selected vehicle types
on 30 mph roads**



**Chart 4: Average speed trends for selected vehicle types
on 40 mph roads**

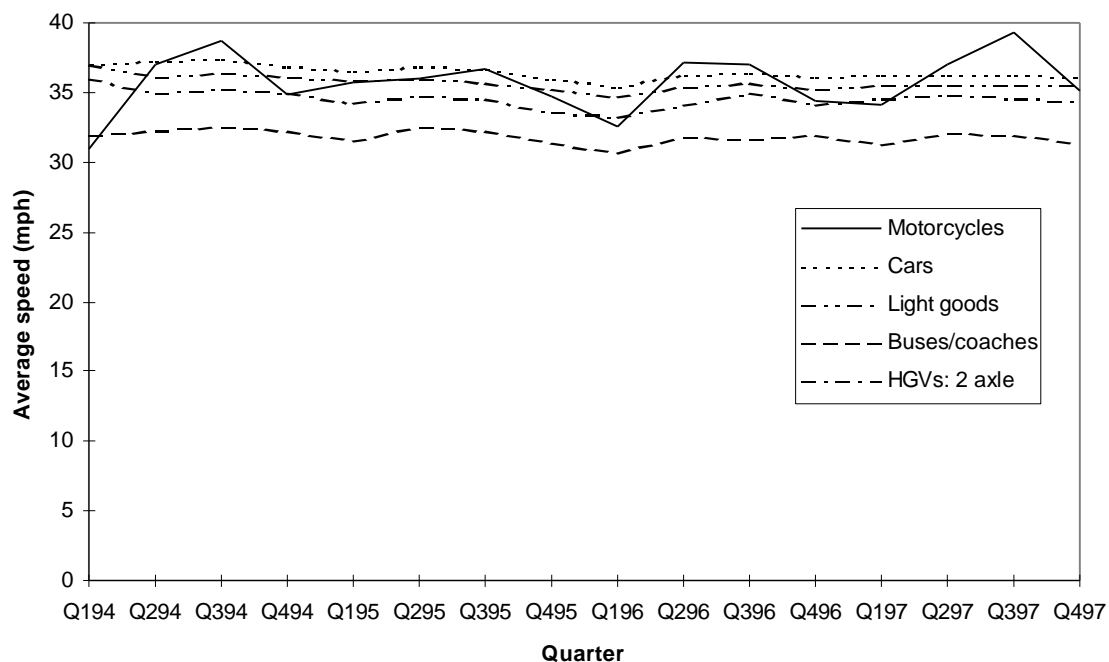


Table 8 Urban speed surveys: 1994 - 1997¹

		number/ miles per hour/ per cent			
		1994	1995	1996	1997
30 mph limit	Sites	32	31	30	30
	Observations (thousands)	2,745	2,793	2,047	2,109
	Average motorcycle speed	28	30	31	32
	Percent exceeding limit	46	52	56	60
	Average car speed	33	33	33	33
	Percent exceeding limit	69	72	72	70
	Rigid 2-axle HGV speed	31	32	31	31
	Percent exceeding limit	56	61	61	58
	Average bus/coach speed	26	28	28	28
	Percent exceeding limit	25	38	39	39
40 mph limit	Sites	8	8	8	8
	Observations (thousands)	1,408	1,425	1,068	1,121
	Average motorcycle speed	36	36	35	37
	Percent exceeding limit	37	36	34	38
	Average car speed	37	37	36	36
	Percent exceeding limit	31	28	25	27
	Rigid 2-axle HGV speed	35	34	34	35
	Percent exceeding limit	22	18	16	19
	Average bus/coach speed	32	32	31	32
	Percent exceeding limit	9	8	6	7

1 Comparisons are indicative only, see commentary.

Annex A: UK Maximum speed limits on non built up roads

		miles per hour		
Vehicle type		Motorway	Dual carriageway	Single carriageway
Cars /motorcycles ¹		70	70	60
Cars towing	1 trailer	60	60	50
	2 or more trailers	40	20	20
Buses /coaches	< 12 metres	70	60	50
	> 12 metres	60	60	50
Goods vehicle	< 7.5 tonnes ²	70	60	50
	artic < 7.5 tonnes	60	60	50
	> 7.5 tonnes ³	60	50	40
Goods vehicle towing 2 or more trailers		40	20	20

1 Not more than 3.5 tonnes. Includes car-derived vans.

2 Maximum laden weight. Not an artic, trailer puller or car-derived van.

3 Maximum laden weight of cab and trailer

Annex B: Average vehicle speeds and their standard errors: 1997

miles per hour											
		Motorcycles ¹	Cars	Cars towing light goods ²	Buses/coaches ²	Heavy goods vehicles ³					
						Rigid		Rigid/articulated			
						2 axle	3/4 axle ⁴	Articulated ⁵	4 axles	5+ axles	
Non-urban sites											
Motorways ⁶	Average speed	-	69.6	56.6	66.2	60.8	58.7	54.3	55.0	54.7	55.2
	Standard error	-	0.9	0.4	0.7	0.5	0.6	0.5	0.4	0.3	0.4
Dual carriageways	Average speed	-	69.9	56.9	66.1	59.3	57.4	53.6	54.8	54.1	55.2
	Standard error	-	2.1	1.8	2.3	1.1	1.8	1.4	1.7	1.5	1.8
Single carriageway ⁸	Average speed	-	46.2	43.4	45.4	41.6	43.4	41.3	43.8	42.4	44.6
	Standard error	-	1.8	1.1	1.6	1.6	1.4	1.5	1.4	1.4	1.5
Urban sites											
30mph ⁹	Average speed	31.5	32.6	30.8	32.1	28.4	31.0	30.1	29.0	30.2	28.6
	Standard error	1.6	0.8	1.1	0.8	1.0	1.0	1.1	1.1	1.1	1.7
40mph ¹⁰	Average speed	36.8	36.2	34.3	35.5	31.7	34.6	33.5	31.5	33.5	33.3
	Standard error	2.7	1.5	1.6	1.5	1.2	1.4	1.4	1.7	1.7	1.8

1 Motorcycles includes mopeds and other types of powered two wheeled vehicles

2 Goods vehicles up to 3.5 tonnes gross weight

3 Goods vehicles over 3.5 tonnes gross weight

4 Does not include 4 axle types on urban roads

5 Includes 4 and 5+ axle types

6 Average traffic speeds from 26 motorway sites

7 Average traffic speeds from 5 dual carriageway sites

8 Average traffic speeds from 24 single carriageway sites

9 Average traffic speeds from 30 30mph sites

10 Average traffic speeds from 8 40mph sites