

In 2000 the Government set a target of a 40% reduction in the number of Killed and Seriously Injured (KSI) casualties by 2010. The reduction was reference to average for the 5 years 1994 to 1998. Hence it effectively applied to a 13.5 year period, namely, mid 1996 to the end of 2010.

How have they fared and how does that compare with the corresponding period ending 1996, prior to any significant effect from the camera campaign, which started in 1993?.

Here are the numbers. Detail is in Appendix 1.

Table 1: The record.

Period/Year	Ratio KSI/K	% reduction		Reduction, % per yr (a)	
		Killed, K	KSI	Killed, K	KSI
Av 1980-84	14.2	37.61	41.27	3.43	3.86
1996	13.36				
Av 1994-98	13.32	17.75	35.54	1.84	4.10
2007	10.44				

(a) Annual reductions are on a compound interest basis.

Firstly, the rate of decline of deaths has fallen off from 3.4% per year to 1.8%, or by a factor of close to two. However, there is an inconsistency; the downward trend in KSI has accelerated slightly rather than falling off. That is highlighted by the change in the ratio of the KSI to Killed (down by 25%, from 14.2 to 10.4). There does not seem to be any reasonable explanation for the latter, beyond under-reporting of the serious casualties compared with earlier years, leading us to ask – is the reporting target driven?

In any event, if the trends continue then the reported reduction in KSI will be 43% by 2010, so achieving the Government's target. However, (a) that target is not materially different from the 41% achieved for the previous period (when there were no special measures) and (b) the likely reduction in deaths, 22%, will be little more than half the 40% hoped for.

The collapse in the trend for deaths has happened despite the installation of tens, if not hundreds of thousands, of speed humps, endless traffic management measures and the speed cameras. The implication is that those policies are damaging, rather than helping, road safety. In any event, had none of the present policies been in place, and had past trends continue unabated, then (a) both **deaths** and KSI casualties would have met the Government's target and (b) there would have been 500 fewer deaths in 2007 than actually occurred. That appears to make the DfT's claim that the cameras save 100 lives per year difficult to sustain.

Not only do we have an apparently dreadful outcome in terms of lives saved but this punitive approach has undermined respect for the police and for the other authorities. Millions have been prosecuted, most of whom were, by any reasonable measure, driving sensibly. Worse still, tens of thousands have lost their licenses and many of them will have lost their jobs or continued to drive - illegally and uninsured.

Support for that approach stems partly from the oft quoted statistic that a high (30%) number of road traffic accidents are due to speed (no doubt "excessive"). We comment, it would perhaps be more honest to say that speed is a contributory factor in 100% of accidents, since if we were all stationary there would be none. However, neither that nor the official line can be used in support of the speed cameras. After all, the cameras only catch people who are breaking the speed limit and that is recorded as a cause in only a trivial proportion of road traffic accidents. Here is the background.

Traffic and Road Research paper LR 323 published in 1998 found that in only 7.3% of accidents was "excessive" speed recorded as a contributory factor. Despite that Marie Taylor of the Traffic and Road Research Lab used the data to claim that 30% of accidents were speed related. To do that she combined the following:

(1)	Failure to judge other person's path or speed	10.7%
(2)	Excessive speed (includes breaking the speed limit)	7.3%
(3)	Following too closely	4.1%
(4)	Slippery road	3.0%
(5)	Aggressive driving	1.4%
(6)	Weather , e.g. mist or sleet	0.8%
(7)	Other local conditions	0.4%
	Total	27.7%

The combination was referred to as “inappropriate speed”. It has morphed, in the minds of the policy makers and the public, to “speeding”(meaning breaking the speed limit) and to 30% when in reality breaking the limit was, on the face of it, present in only a trivial proportion of accidents.

Further, Table 6 from the paper with the title “Contributory Factors to Road Accidents” by the Road Safety Department of the DfT provides as follows (where, and for technical reasons, the combination “Both above” does not match the total for the two classes).

Table 2. Speed as a contributory factor 2005

	Fatal		Serious		Slight		Total	
	Number	%	Number	%	Number	%	Number	%
Exceeding the Limit	325	12	1507	7	5482	4	7314	5
Going too Fast	357	14	2371	11	12708	10	15436	10
Both above	686	26	3896	18	18223	15	22805	15

We comment, (a) those “Going too Fast” were within the speed limit and would not be influenced by the cameras (b) other contributory factors were also present, such as drunk driving, 20%, unknown percentages joy-riding, driving without due care and attention, etc.

Hence, the data cited above, particularly the combination of exceeding the limit and going too fast, creates a false impression as to the extent that driving within speed limits would have avoided any of those accidents. Instead it may be reasonable to halve the numbers associated with Exceeding the Limit when considering the potential of the cameras.

Table 2 of the same report provides data on the causes of accidents. That enables speeding (defined as breaking the speed limit) as a proportion of all causes to be calculated. The percentages are: for fatalities, 5%: for the seriously injured, 3%: for the slightly injured, 1.8% and for all casualties, 2.2%.

Against that background it is difficult to see why the authorities continue to claim that (a) “speeding” is a major contributor to road traffic accidents (b) speed cameras have increased road safety.

Meanwhile LR 421 and LR 511 have led to the often quoted statistic that a one mile per hour reduction in speed saves 5% of accidents, although there are different values for different classes of road.

However, the research first found that on fast roads the accident rate was lower than on slow roads. The reason was that on the slow roads there were more hazards. To overcome that the research divided the roads into 4 groups, each containing roads with similar characteristics. The analysis then found a relationship between speed and accidents although that varied by class of road. That result was almost inevitable since (a) it was the objective of the studies and (b) a relationship must exist since if we were stationary there could be no accidents.

However it is reasonable to speculate that had the subdivision been (a) more extensive and (b) by the level of traffic flow then differences of speed and accident rate within each set of roads would have vanished. Putting it more bluntly, we have a method which, if taken to its limits, may prove “zero = zero”, which is no use at all.

Instead of that approach it would have been better to find the differing accident rates of motorists driving at different speeds on the same road. No doubt that would show those driving unduly fast or unduly slowly were causing the greater number of accidents.

Whatever the case, our view is that although a statement such as “a one mph reduction in speed saves 5% of accidents” may be good propaganda it does nothing to inform policy in the real world beyond providing a stick with which to beat the motorist.

Against that background we advocate that the present coercive and restrictive approach should be phased out in favour of one based on education designed to develop mature and deferential driver behaviour. Such a change might very well be met with a deafening cheer from motorists, balanced by a charge of cynicism and a furious outcry from the anti-car lobby. However, that is a penalty that has to be paid if policy is to be based on the numbers especially when those numbers contradict previously held beliefs.

However, rather than that there is the risk that the word will go out to tick the speeding box on the accident returns as often as possible so as to prove that “we were right all along”. That’s the way to do it!

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Note: The data in the Appendix shows that between 1980 and 2007 deaths per year declined by a factor of two and deaths per veh-km by a factor of 3.8 implying that driving today carries one quarter the risk per mile that arose previously. The decline in deaths per passenger-km since 1965, is even more astonishing; down by a factor of 8.5.

Table A1. Source data

Year	Killed *	Serious *	KSI *	Ratio KSI/K	Bn Veh Km *	K/bn veh-km	KSI/bn veh-km
1964	7820	95000	102820	13.15	152.3	51.3	675.1
1965	7952	98000	105952	13.32	162.7	48.9	651.2
1966	7985	100000	107985	13.52	172.9	46.2	624.6
1967	7319	94000	101319	13.84	180	40.7	562.9
1968	6810	89000	95810	14.07	187.7	36.3	510.4
1974	6883	82000	88883	12.91	229.7	30.0	387.0
1975	6366	77000	83366	13.10	231.7	27.5	359.8
1976	6570	80000	86570	13.18	243.5	27.0	355.5
1977	6614	82000	88614	13.40	246.8	26.8	359.1
1978	6831	83000	89831	13.15	256.5	26.6	350.2
1980	6010	78849	84859	14.12	271.9	22.1	312.1
1981	5846	78259	84105	14.39	276.9	21.1	303.7
1982	5937	79745	85682	14.43	284.5	20.9	301.2
1983	5445	70623	76068	13.97	288.1	18.9	264.0
1984	5599	73059	78658	14.05	303.1	18.5	259.5
1985	5165	70980	76145	14.74	309.7	16.7	245.9
1986	5385	68757	74142	13.77	325.3	16.6	227.9
1987	5125	64293	69418	13.54	350.5	14.6	198.1
1988	5052	63491	68543	13.57	375.5	13.5	182.5
1990	5217	60441	65658	12.59	410.8	12.7	159.8
1994	3650	46540	50190	13.75	421.5	8.7	119.1
1995	3621	45533	49154	13.57	429.7	8.4	114.4
1996	3598	44499	48097	13.37	441.1	8.2	109.0
1997	3599	42984	46583	12.94	450.3	8.0	103.4
1998	3421	40834	44255	12.94	458.5	7.5	96.5
2000	3409	38155	41564	12.19	467.1	7.3	89.0
2006	3172	28673	31845	10.04	507.5	6.3	62.7
2007	2943	27777	30720	10.44	513	5.7	59.9
Av 5 yrs 1964-68	7577.2	95200	102777.2	13.56	171.12	44.3	600.6
Av 5 yrs 1974-78	6652.8	80800	87452.8	13.15	241.64	27.5	361.9
Av 5 yrs 1980-84	5767.4	76107	81874.4	14.20	284.9	20.2	287.4
Av 5 yrs 1984-88	5265.2	68116	73381.2	13.94	332.82	15.8	220.5
Av 5 yrs 1994-98	3577.8	44078	47655.8	13.32	440.22	8.1	108.3

COMMENTS

- (a)** The ratio of KSI to Killed declined by 25%, from an average of 14 for the period (1980 – 1994) to 10.4 in 2007. There does not appear to be any explanation for that other than under-reporting serious casualties compared with previous years. In any event the change in the ratio is most marked after 2000, when the target of a 40% reduction on the 1994-1998 average by 2010 was set.
- (b)** Between 1980 and 2007 deaths per year declined by a factor of two and deaths per veh-km by a remarkable factor of 3.9 or by nearly 75%. Since 1965 reductions are by factors of 2.7 for deaths and 8.6 for deaths per veh-km, an astonishing change.

Table A2. Percentage Reductions – casualties

Year/period	Duration Years	Casualties						
		Numbers (from Table A1)			% change		Change % per year (A)	
		Killed, K	KSI	Ratio KSI/K	K	KSI	K	KSI
Av 1964-68	13.5	7577.2	102777.2	13.56	-20.68	-17.43	-1.7018	-1.4090
1980		6010	84859	14.12				
Av 1974-78	13.5	6652.8	87452.8	13.15	-21.58	-24.92	-1.7847	-2.1009
1990		5217	65658	12.59				
Av 1980-84	13.5	5767.4	81874.4	14.20	-37.61	-41.26	-3.4348	-3.8639
1996		3598	48097	13.37				
Av 1984-88	13.5	5265.2	73381.2	13.94	-35.25	-43.36	-3.1687	-4.1232
2000		3409	41564	12.19				
Av 1994-98	10.5	3577.8	47655.8	13.32	-17.74	-35.54	-1.8430	-4.0956
2007		2943	30720	10.44				
Decades								
1986	10	5385	74142	13.77	-33.18	-35.13	-3.9522	-4.2353
1996		3598	48097	13.37				
1997	10	3599	46583	12.94	-18.23	-34.05	-1.9922	-4.0777
2007		2943	30720	10.44				

(A) Compound rates

COMMENT

For the periods ending 1996 and 2000 the annual % decline is close to double that for the periods ending 1980, 1990 and 2007

The decline in deaths is not consistent with the decline in KSI for the period ending 2007, suggesting under-reporting of the seriously injured casualties compared with earlier decades.

Table A3. Percentage Reductions – per billion veh-km

Year/period	Duration Years	Casualties per bn Veh-km						
		Numbers (from Table A1)			% change		Change % per year (A)	
		Killed, K	KSI	Ratio KSI/K	K	KSI	K	KSI
Av 1964-68	13.5	44.3	600.6	13.56	-50.08	-48.04	-5.0164	-4.7335
1980		22.1	312.1	14.12				
Av 1974-78	13.5	27.5	361.9	13.15	-53.87	-55.84	-5.5705	-5.8744
1990		12.7	159.8	12.59				
Av 1980-84	13.5	20.2	287.4	14.20	-59.71	-62.06	-6.5115	-6.9269
1996		8.2	109.0	13.37				
Av 1984-88	13.5	15.8	220.5	13.94	-53.87	-59.64	-5.5696	-6.5004
2000		7.3	89.0	12.19				
Av 1994-98	10.5	8.1	108.3	13.32	-29.41	-44.68	-3.2629	-5.4829
2007		5.7	59.9	10.44				
Decades								
1986	10	16.6	227.9	13.77	-50.73	-52.16	-6.8330	-7.1076
1996		8.2	109.0	13.37				
1997	10	8.0	103.4	12.94	-28.22	-42.11	-3.2615	-5.3201
2007		5.7	59.9	10.44				

(A) Compound rates

COMMENT

As with Table A2 the decline in the deaths per veh-km has flattened off by close to a factor of two on the annualised basis. That is not consistent with the KIS trend.

Over the past decade the prime objective of most traffic management schemes has been to reduce road accidents. That has led to junction designs that have reduced capacity at precisely the points where capacity is most needed. E.g. at roundabouts channelisation ensures that the major turning movement is often congested while there are empty lanes for the minor movements.



Figure 3 – a typical channelisation scheme-causing congestion where none need exist.

Similarly at signal controlled junctions. There the fashionable and dedicated right turning lanes for the smallest of movements have removed much needed capacity.

Meanwhile one-way systems and banned turns force detours that are sometimes over a mile long. Such detours increase traffic flows generally and may lead to more accidents than would have occurred had the original turn been allowed.

In addition the number of signal controlled pedestrian crossings, costing £50,000 to £80,000 each, has greatly expanded. These show red long after the pedestrians have passed bringing traffic on major routes to a complete standstill. We also have bus lanes which, even in peak hours, are substantially empty.

A consequence is that we now have congestion and air pollution over extended periods where none need exist. Further, the level of control imposed undermines the driver by removing from him reasonable decision making.

Now there is a movement suggesting that all those expensive schemes should be torn up in favour of no road markings or traffic signals at all.

See the Ken Tod Archive to follow.