Submission No 27

INQUIRY INTO SPEED ZONING AND ITS IMPACT ON THE DEMERIT POINTS SCHEME

Organisation: National Motorists Association of Australia

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Submission to the NSW Staysafe Committee from the National Motorists Association of Australia (NMAA)

NATIONAL MOTORISTS ASSOCIATION AUSTRALIA .

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The National Motorists Association of Australia is a small group of people in several States who are vitally interested in road safety particularly in positive ways. They come from a range of backgrounds but are well educated, professional people of middle age upwards. They have a wide range of skills but all take pride in their roadcraft skills, enjoy their driving and have a wide experience. The association does not do breakdown services, insurance or travel but acts more like a “think tank” assessing information. It develops the principles of road safety that should be part of official standards.

The two principal authors of this submission each have approximately 2 million kilometres of road experience here and one in particular has extensive experience overseas. One was a mining engineer and is thus acutely aware of safety principles in a dangerous environment. The other has also worked in dangerous environments but also has a long history of assessment of the merits of industrial research and development projects from technological and commercial viewpoints. While a Councillor he has also chaired the Ku-ring-gai Traffic Committee and currently represents the Member for Davidson on that Committee.

▼Inquiry Terms of Reference

That the Committee inquires into and reports on the process of determining speed limits on NSW roads and the imposition of demerit point penalties for speeding offences with particular reference to:

a) the contribution of speed to crash rates on NSW roads;
b) the rationale for and current operation of speed zones on NSW roads;
c) key factors governing the establishment of speed limits;
d) mechanisms for reviewing the appropriateness of maximum speed limits;
e) the operation of speed limits in other jurisdictions;
f) the appropriateness of current thresholds in the Demerit Points Scheme for speeding offences;
g) the impact of demerit points in reducing speeding behaviour; and
h) any other related matters.

a) The contribution of speed and other factors to crash rates in NSW

Crash cause analysis is the fundamental input into any safety programme. The aviation industry is so safe now because of the intense evaluation of the causes of crashes and the application of the lessons learned to policy frameworks. Proper crash cause analysis is a two stage process; the first is a reconstruction of what happened followed by analysis of why each contributory factor happened. It is axiomatic that this be undertaken by highly trained personnel with investigative skills and powers.

Our research shows that there is a wide variance in claims of the importance of speed as a causal factor in crashes. The NMAA stance is that the more professional the investigators are the lower the contribution of speed is to crash causes. The reasons for this are complex but centre around an implicit belief that speed is the cause of all problems and thus there is a bias, whether conscious or otherwise, to conduct research in such a manner that the operator's favourite causation is highlighted.

State and Territory governments in Australia do not analyse crash causation factors properly, and as a result little or no data exists for non-serious injury crashes and the data for more serious crashes is, at best, unreliable.
The NSW authorities habitually tick the "speed" box resulting in the preposterous claim by the then RTA that, in 2002, "46% of fatal crashes were caused by speed". In 2014 the Centre for Road Safety is still claiming that speeding causes 42% of fatal crashes although they are unable to justify this statement.

These claims are based on the inappropriate criteria which police are directed to utilise when attending a road crash. The Centre for Road Safety does not use trained professionals to perform a desk analysis.

Clearly this is inadequate.

Within the English speaking world the UK Police system is outstanding as the best system of road crash cause analysis. Extra information, including operational systems, has been gleaned from a relative of one of our Committee members who is a qualified crash investigator and serves with the West Yorkshire Police.

Specially selected traffic officers (who are trained to a much higher standard than here) undergo an external training course and qualify as accident investigators under the auspices of the London based City and Guilds training and examination system. This course is regarded as difficult even for a science graduate.

The first stage is discovering what happened. This involves taking measurements in a similar manner to the process used here if the crash investigation squad

attend (which is not always the case) but with refinements including confirmation of coefficient of friction with the road surface and the development of a computerised comparison of the damage with manufacturers test crashes (which have known parameters) to give a good knowledge of the actual impact speed. The investigators then can select up to 6 contributory causes which are determined and reported in a standard format. This information together with the injury information is sent to the central government statistics office in addition to being used in the second stage of the investigation. The reporting methodology and contributory cause assessment is based on research work done by the UK Transport Research Laboratory (Report TRL 323).

The second stage involves determining why the contributory causes occurred. This may involve further site inspections and interrogation of witnesses and participants. The final report is then sent to senior officers for determination if any prosecution is warranted. The investigating officers do not initiate prosecutions but may be called as expert witnesses. The second stage findings are not published. The contact suggests that only some 4 to 8 percent of fatal crashes have speed in excess of the speed limit as a significant or primary cause; speed in excess of the limit in many cases derives from other primary causes such as intoxication, suicide etc.

The UK Institute of Advanced Motorists conducted an appraisal of 5 years of the official crash cause statistics held by the UK Government which is appended. Table 1 shows quite clearly that speed in excess of the speed limit was a CONTRIBUTORY (not necessarily significant) causal factor in less than 14% of fatal crashes and much less in serious (7.2%) or minor injury crashes (4.2%). The study covered some 700,000 accidents so should be regarded as robust. (Attachment 1 - Institute of Advanced motorists Factors in accidents report)

The category of “Inappropriate speed for the conditions” is largely identified in inclement weather and is not as widespread here – NSW does not suffer the thick fogs nor widespread frost and snow of the UK.

The NSW Parliament’s Public Accounts Committee recently reported on the outcomes of various Auditor General’s reports. A copy of Chapter Six – Improving Road safety: Speed Cameras of the NSW Auditor General’s report is attached. Attention is directed to clauses 6.16 and 6.17 and to Recommendations 6 and 7. It is noted that one of the NMAA Committee members was mentioned.
(Attachment 2 – PAC Report Chapter 6)

The NSW RMS is still quoting “speeding” as the cause of over 40% of fatal crashes. Given the highly professional sources which state that exceeding the speed limit is a contributory cause in about a fraction of this figure, it is considered that the official RMS figures are deceptive and grossly overstate the contribution of speed to crashes.

The estimate of speed in excess of the speed limit being the prime cause of 4% to 8% of fatal crashes is supported by other sources.

Research by Monash University Accident Research Centre (MUARC) determined that, if all vehicles were fitted with a satellite controlled system that prevented every vehicle from exceeding the posted speed limit, the maximum potential reduction in fatal road crashes would be 8 per cent.

See MUARC report #253 'On-road evaluation of Intelligent Speed Adaptation, Following Distance Warning and Seatbelt Reminder Systems: final results of the TAC SafeCar project' at
http://www.monash.edu.au/muarc/reports/muarc253.html.
Quote: "Based on the logged data, the ISA system by itself is expected to reduce the incidence of fatal crashes by up to 8 percent and serious injury crashes by up to 6 percent."

It is often claimed by those who support low speed limits that the result is less fatal/serious injuries. This is only true if the speed of impact is similar to the speed of travel which is often not the case. The argument on these grounds for lower speeds is tantamount to saying that it is okay to crash so long as you do so at low speeds and only injure or maim people. We are firmly of the belief that the objective of safety measures is to reduce crashes. Harm minimisation being best done by engineering methods.

Recommendation

A specialist unit be developed within the NSW Police to conduct crash cause analysis to the UK standard and follow the operational methodology of the UK Police Services. Findings of this unit should be published annually. Training to be to the standard of the UK City and Guilds course.

b) The rationale for and current operation of speed zones on NSW Roads

The rationale for establishing speed zones is to minimise crashes by having traffic travel not faster than a driver can react to and avoid a collision and to minimise conflict by reducing the speed variance between vehicles. In the mid 1960s the speed limits were 35 miles per hour in built up areas and a prima facie limit of 50 mph in rural areas. About then under the auspices of the Traffic Accident Research Unit (TARU) speed zones were introduced starting outwards from Sydney. In general this meant imposing a maximum limit of 60 mph except on the lone stretch of freeway which was zoned at 65 mph. Some near urban roads e.g. between suburbs were zoned at 45 and 50 mph. Rural roads often have advisory speed signs at hazards.

In 1976 Australia converted to metric measurements and the nearest unit of 10 became the speed limit e.g. 35 mph became 60 kph, 60 mph became 100 kph etc. Simultaneously all the State roads that were unzoned became limited to 100 kph.

More recently many rural roads have been reduced to 90 kph and some urban divided roads have been raised to 70 or 80 kph, school zones and high pedestrian activity zones have been introduced. There are limits every 10 kph from 10 kph to 110 kph. Residential streets have had a default limit of 50 kph imposed.

In the mid 1960s roads were, by present day standards, very poor being narrow, winding, badly surfaced with ruts between the tarmac's broken edges and the dirt alongside the road with solid hazards such as trees and culverts closely adjacent. The cars of the day were equally awful with drum brakes that randomly pulled to the left or right and took an eternity to stop and would fade if used twice. The suspension and tyres meant road holding was extremely poor, the steering system had enormous free play and secondary safety such as seat belts, collapsible steering columns, crumple zones etc were non-existent. The dominant road rule was "Give way to the right" which created a poor attitude amongst drivers.

Recently the aim of reducing trauma in crashes has been used to advocate low limits in both urban and rural areas. This is predicated on the assumption that travelling speed is the same as impact speed which is rarely true. As noted above the message to most people is that it is OK to crash so long as you do it slowly and only injure or maim people. Some statements connecting speed of impact and chances of survival cannot be verified. Use of Recommendation 1 could clarify these claims. As the probability of a crash at any time is extremely low a restriction based on reduction of trauma in the event of a crash has negligible credibility with the driving public.

Ecological reasons for lower limits are often cited. In urban areas other factors are more important. In rural areas a lower constant speed can reduce fuel consumption however lower speeds often involve changes of speed due to traffic conditions and the benefits are minimal.

Avoidance of collisions with animals is used as a rationale for low limits in certain areas. The random nature of interactions, the rapidity of the animal's movement and the predominance of dusk and dawn as the time of movement means that a restriction is inappropriate for most of the day and, in the absence of firm evidence to the contrary most probably ineffective at any time. The swift movement of animals makes a crash unavoidable at any speed.

c) Key factors governing the establishment of speed limits

In NSW the responsibility for setting speed limits is governed by the Road Transport (Traffic Safety and Management) Act 1999. Among other matters it confers sole responsibility for speed limits on the (now) RMS and sets an absolute maximum speed limit of 110 km/h.

Both of these should be reviewed.

Conferring sole responsibility on a bureaucracy avoids the charge of political interference in the setting of limits but it also removes the prospect of checks and balances in the process. Good governance in any area of endeavour, whether government or private industry, is founded on checks and balances in the system. Without checks and balances fanaticism and/or dishonesty readily prevails.

The vestige of control in the legislation setting an absolute maximum of 110 km/h reflects thinking of many decades ago. As noted above many of the parameters have changed since then and the restriction prevents consideration of higher limits despite other jurisdictions demonstrating that, in appropriate circumstances, higher limits can be safely applied. Removal of this restriction would enable trials of higher limits. The Northern Territory is conducting a 12 month trial of an unrestricted limit on a stretch of road that was previously unrestricted, became restricted to 130 km/h under the previous government and has been the subject of complaints by users that it was too slow. At the time of writing there appears to have been no problems other than drivers exceeding a roadworks limit that had been left in place over a weekend.

The RMS has a guideline document for its personnel who fix limits which refers to other standards and some research reports which it describes as “irrefutable”; long experience of assessing research reports described as such are highly refutable. In the case of the major study, which was prepared for the NHMRC and frequently quoted in support of speed limitation and heavy enforcement, there are a number of errors and distortions. The high degree of selectivity in the cases studied, the methodology used in measuring speeds, the low number of comparison cases (the speeds of only 4 vehicles were used to determine travel speeds) and the lack of crash cause analysis make this study highly refutable.

A point in the guidelines refers to frequency of use of driveways or other entrances to premises as an indicator for restricted speed due to potential conflicts of moving vehicles. The definition of frequent use being 3 times per week is absurd.

Solomon in the 1960s made a study of crash speeds versus travelling speeds with some 200,000 measurements of travelling speeds (a very robust study!)

which showed that vehicles travelling at the 85th percentile, i.e. 85% of cars travelled at or below that speed when not inhibited, was the safest. Solomon's findings have been replicated making this a significant finding. For maximum safety the speed limit should be set at a level which would achieve this speed. Setting the posted limit at a little over to the nearest 10 km/h to allow for speedometer error should have traffic travelling so close to the observed 85th percentile that they would be in the safest band. Unfortunately, due to high enforcement levels it is very difficult to determine the free speed i.e. the speed that drivers would choose if they were not restricted.

A frequent complaint by the general public is that there are too many changes in limits over short distances. Examining this in greater depth indicates that the real objection is that there is no apparent reason for the change – that the lower limit has no apparent justification. In 2010/2011 a conference of invited parties e.g. NRMA, Police etc determined minimum lengths of speed zones. This resulted in longer stretches of the same limit but too frequently this was too low for most of the stretch. e.g. the minimum length for a 110 km/h limit was set at 10 kilometres. New stretches of rural divided road designed for a much higher speed but limited to 100 km/h because it is only 9 kilometres long is likely to result in many drivers exceeding the posted limit.

Many jurisdictions, particularly in North America have the 85th percentile as an input into their limit setting, however, it is often over ridden by politics.

There are calls for low limits for ecological reasons i.e. lower emissions and fuel consumption. Although these can be achieved in the laboratory the on road results are quite different – rarely are there straight, flat roads with no other traffic to cause speed variations.

Low limits especially in rural areas cause fatigue and boredom. With a lot of experience in long distance driving, the optimum speed creates sufficient activity to keep the mind stimulated; at less than this boredom sets in which manifests itself in a similar manner to fatigue with micro sleeps and/or periods of inattention.

In urban areas there has been a movement to 50 km/h limits, originally in residential streets but increasingly in collector and major roads. As a default limit this is not often signposted and often roads which look like major roads drivers expect the limit to be 60 km/h.

Local pressure groups often demand local low limits but frequently without foundation. Inappropriate limits bring the principle of speed limits into disrepute. Similarly there are other pressure groups who seek low limits, even if their alleged membership is not at risk, generally often based on the assumption that

slow is safe or that secondary impacts within a vehicle are determined by external speeds.

The UK Association of Chief Police Officers has issued a guideline document on enforcement of speed limits (of which more later) which includes a statement of principle which is that the speed limit on a stretch of road should be apparently appropriate to the normal driver i.e. in the UK context built up areas should be 30 mph, rural roads 60 mph and divided roads 70 mph. Should lower limits be imposed then the reason must be obvious to drivers. It suggests (!) that enforcement of inappropriate limits be benign.

It is suggested that a broad spectrum of standard speed limits be adopted with variations based on experience and sound research especially crash cause analysis.

The suggestions are:

50 km/h - Residential low volume streets
60 km/h - Urban roads with centre lines or lane lines
100 km/h - Rural roads
120 km/h - Rural divided roads

Unless there are good reasons, these limits should apply to all sections of road and not be restricted by length. The differences in standard are obvious.

Obvious variations would be high pedestrian areas, school zones, urban divided roads, closely settled rural areas (1 hectare farms), good standard undivided rural roads. The latter are 110 km/h in the western districts but this should be extended statewide. Variations should also be dominated by the 85th percentile principle.

Variable speed limits (other than school zones) are used on some roads but could be extended. The maximum limit on these roads is always the default limit in case of blackouts etc. Variations may be signalled as a result of traffic conditions or weather. Often the normal limit is set for heavy traffic conditions and at other times the default limit is unnecessarily low. There is no reason why the variable limit could not be higher than the default limit.

In order to introduce checks and balances into the procedures for setting limits it is recommended that a “Roads Users Advisory Committee” be formed to advise on road safety matters including speed and limits. This is more fully explored in section d.

d) Mechanisms for reviewing the appropriateness of maximum speed limits

Following dissatisfaction by the electorate, a mechanism for suggesting speed limit changes was established by the RTA (now RMS) where, via the website, people could suggest changes in limits to the Centre for Road Safety. Associated information in this section of the website includes a section praising cameras and seeking suggestions for locating cameras. This intimates that the Centre for Road Safety is pre-disposed to reducing limits or maintaining the current levels although it is reasonable to expect that many suggestions will be for increases.

Feedback is indirect. Submissions may be acknowledged but the outcomes of a suggestion are not reported back to the originator unless by generic notification by district. Even then the notification of changes are cryptic and do not create faith in the review. The provisions of the 1999 act noted in section c prevent consideration of limits above 110 km/h and this is relied on to not consider certain changes.

As noted in section c the lack of checks and balances in any system is not conducive of good governance. It is therefore recommended that a Roads Users Advisory Committee be established with the objectives of advising the Minister for Roads on matters affecting road users and acting as a supervisory body for the Centre for Road Safety. This is not to usurp the Staysafe Committee but to ensure that recommendations accepted by the Government are carried out appropriately.

A primary task would be to ensure that the work of the Centre is well balanced and of a high standard. Appended is an article from the Sydney Morning Herald which indicates that the Centre does not know what proportion of crashes occur under and over the applicable speed limit. This subject was explored in section a. (Attachment 3 – SMH Report see page 2) (paragraph has been highlighted in bold)

It is disappointing that the Centre for Road Safety has not, 8 months after the release of the Public Accounts Committee Report appended, rectified its lack of understanding of crash cause analysis.

It is envisaged that such a committee would have representatives from the heavy vehicle operators, bus and coach operators, motor cyclists, a law firm experienced in motor vehicle crash claims (Brydens is suggested) and two representatives of drivers. The NRMA has a wide range of services and principally represents an older more conservative membership but many of the staff are ex RTA (RMS) personnel. The NMAA represents more dedicated drivers with a wider experience of conditions both here and overseas but do not provide services.

Cyclists, pedestrians and police are well represented elsewhere but should, in a similar fashion to Council Traffic Committees, have a role as observers with the right to speak but not vote.

Recommendation
A Road Users Advisory Committee be established with a voting membership consisting of a representative from each of:-
Heavy vehicle operators
Bus and Coach operators
A Law firm specializing in motor vehicle injury claims
The NRMA
The NMAA

And non-voting members with a representative from each of:-
Cyclists
Pedestrians
Police
.

The Committee shall:-
1 Advise the Minister for Roads of matters affecting road users
2 Act as the Supervisory Board for the Centre for Road Safety
3 Any other matter requested by the Minister for Roads.

e) The operation of speed limits in other jurisdictions

Jurisdictions in Australia set limits at State level and although there are differences in limits and applications only the Northern Territory has limits above 110 km/h and this is only relatively recently under pressure from Australian Government agencies. Prior to that most of the Northern Territory non urban roads had no limit. The outcome of the imposition of a limit (mostly 130 km/h) resulted in a 73% increase in road fatalities in the two years following its introduction. The Northern Territory has recently commenced a trial on a relatively short stretch of a return to no numerical limit much to the consternation of some bodies.

In the USA States are now able to set their own limits after many years of direction by Federal Agencies. Most States allow local Government to set limits and this has led to exploitation of passing motorists by having a poorly signposted very low limit and enforcing it rigidly. Most States have as part of their rules that the 85th percentile should be considered as the preferred limit but is often over-ruled for political reasons. About 16 States are currently in the process of raising their limits on high class roads, some to 80 mph (130 km/h).

The US Federal Safety Authorities warned that when the 55 mph limit was permitted to be raised it would cause many thousands of extra deaths. This did not happen.

Montana had no numerical limit for some years when limits were relaxed but had to impose limits following a Court ruling that the requirement to drive at a prudent and safe speed was too vague. It is reported that the no limit period was the safest.

The US Institute of Transportation Engineers recommends the 85th percentile method for setting speed limits. Source: http://www.ite.org/pdf/spd_limits.PDF
State governments in Australia use the “Big Brother knows best" approach and often deliberately set speed limits too low.

States in the USA typically have a clearly expressed speed limit policy. An example is the state of Washington. It explains the 85th percentile in its policy and provides these details:-
"Speed limits that reflect the behavior of the majority are determined by what engineers call the '85th percentile speed', or the speed that 85 out of 100 vehicles travel at or below. This method is based on the principle that reasonable drivers will consider road conditions when selecting their speed of travel.”

Studies have consistently demonstrated that there are no significant changes in the 85th percentile speed following the posting of a revised speed limit. Statistics show that roadways with speed limits set at the 85th percentile speed have fewer accidents than roads where the posted speed limit is above or below what the majority naturally travel."
Source: http://www.wsdot.wa.gov/biz/trafficoperations/traffic/limits.htm

In summary, the 85th percentile method is used throughout the USA and Canada by engineers in the road safety field. The Final Report on "The Effects of Raising and Lowering Speed Limits" was issued by the USA Federal government in 1992 - over twenty years ago.

The standard of road safety management in Australia is more than twenty years out of kilter with internationally accepted practice. The state governments are aware of the 85th percentile. Tragically for road safety, instead of revising speed limits to this standard, state governments use it to determine which sites are the most lucrative locations for speed cameras.

In the UK the basic limits are 30 mph in a built up area, 60 mph on rural roads and 70 mph on divided roads. There are variations on these and local government can set other limits there being a move to 20 mph by certain activists. Trucks have lower limits on rural roads and heavy vehicles are speed limited to 90 km/h under EU rules. On Motorways the common free speed is 80

to 85 mph i.e. 10 to 15 mph over the limit. There was a move to lift the official limit to 80 mph but this has stalled for political reasons.

On the mainland urban limits are 50 kph default and these apply between the signs naming the built up area. There are some 30 km/h roads in residential areas but these are often on roads which cannot be used faster due to the narrowness. Similarly the rural ordinary roads are 90 km/h but in most areas the actual speed is dictated by the topography. On good roads the limit is taken as a guidance. Divided roads in France are set at 110 km/h and full motorways, normally tolled, are 130 km/h but 110 km/h when it is raining. By observation the definition of raining seems to be storm conditions. Holland, Switzerland and Portugal have 120 km/h on motorway standard roads while Italy, Spain, Austria and Germany have 130 km/h limits. The “Unlimited” German Autobahns are actually prima facie limits – if you have an incident (not necessarily a crash) you must be able to prove that it was not your responsibility. Italy has raised its limits on six lane Autostradas to 150 km/h. Denmark has raised its Motorway roads to 130 km/h (from 110 km/h) apparently without problems.

Although many motorway style roads are fairly new there are also many old ones which are no better than Australian standards except for the solid median barriers.

Policing is not as obvious as in Australia except in the UK where cameras are operated essentially by local government. These became very prevalent (6000 speed cameras at one time) but the present government has removed some incentives. Some jurisdictions have closed down their camera operations apparently without problems. France has many cameras but locals disapprove. Some local towns in Italy use cameras but there are allegations of corruption. It is claimed (in a publication aimed at US expatriates) that German camera penalties are low especially on higher speed rural roads. Other German penalties are high, for example not keeping right on Autobahns is likely to be 3 months imprisonment. Holland is the home of the speed camera. Portugal seems to operate on nil enforcement on Motorway style roads.

15 States in the USA have prohibited the use of automated photo enforcement (speed and red light cameras) or have effectively done so by imposing constraints and a 16th is about to do so. This has happened by different methods but is in response to public objections.

f) The appropriateness of current thresholds in the Demerit Points Scheme for speeding offences

The demerit points attached to a breach of a speed limit are highly prescriptive and have a wide range. On the RMS website there are 14 examples according to speed, type of licence and whether or not it is a school zone. In addition there are

double demerit points in designated holiday times. As well as the demerit point structure there are heavy fines and seizure of registration and instant disqualification. In some quarters there are proposals for confiscation of assets (the vehicle) and its destruction.

This is incongruous when the limit itself may, and often is, inappropriately low or circumstances are different from that envisaged by the legislation. For example 31 km/h over the limit in an urban area during the day would be reprehensible but 31 km/h over the limit while overtaking a road train or B-Double may be prudent driving but both would earn 5 points, a heavy fine and a licence suspension.

Overtaking a large vehicle at a low differential speed could mean driving on the wrong side of the road for more than a kilometre; accelerating hard can reduce this to less than 300 metres. No prudent driver would risk their own and others lives by doing it slowly but there would be a risk of prosecution for exceeding the speed limit by a large margin. It should be noted that the sight line before an overtaking move should be at least twice the anticipated overtaking distance. In the case of a slow overtake this could be as much as 3 kilometres but a fast overtake could be as little as 500 metres.

Unfortunately in order to minimise the risk of incurring a penalty drivers sometimes brake while crossing the crown of the road to return to their own side of the road. This can destabilise the car and can lead to loss of control.

Similarly a limit set for conditions at one time of day is not relevant to safety at other times e.g. a High Pedestrian Activity zone may be relevant at 3.00pm but a high demerit point penalty is inappropriate at 3.00am as the risk factor is relatively minor.

Penalties for traffic infringements are unique in our judicial system as they are purely punitive and have no provision for rehabilitation or early release for good behaviour or any significant chance of pleas in mitigation. The system is dominated by compliance but neglects (or even denies) the wider aspects of safety.

It is clear that the current highly prescriptive system does not adequately consider all circumstances and thus the range of thresholds for imposition of points is unreasonable especially as judicial review is either not available or prohibitively expensive. It is noted that the RMS website includes a section emphasising the extra penalties that can be applied by a Court.

The perceived unfairness of the system and effective inability to obtain any mitigation is a likely factor in many cases of disobeying suspensions imposed automatically by administrative action.

We know of no other regime of penalties where the breach is one of degree (i.e. speed to a limit is legal but above is illegal unlike absolute offences such as stealing for which there is no permissible limit) for which there is no permitted defence and for which draconian penalties are imposed immediately without recourse to a Court. If this regime were applied to thieves or thugs there would be an outcry from the human rights advocates.

An alternative system should have a range of penalties and remedial options which would reflect the severity of the incident and most importantly address the issue of rehabilitation/remediation.

The UK offence of "Driving without due consideration for other road users" could be readily adapted for excessive speeding, less than the standard for a charge of dangerous driving, as well as a range of other offences which currently are inadequately addressed by infringement notices with or without demerit points.

In the UK penalties can be a fine of up to 5,000 Pounds Sterling (AUD$9,000), licence suspension, a range of demerit points or even imprisonment.

In order to meet the objectives of prevention and remediation the powers available to a specialised Court would include:-
Stiff fines – up to $10,000
Orders to undertake refresher driving lessons (to an approved standard)
Orders to pass a test within a short time
Orders to pass an enhanced test within a short time
- failing either of the above would result in returning to a learners licence.

Licence suspensions
Disqualification for a specific period following which reversion to learner status

A simple breach of a speed limit without aggravating circumstances would incur only a minor fine without demerit points. Police should be encouraged to caution rather than fine and to ignore matters such as the overtaking case mentioned above. Court appearances for this type of offence should follow the occurrence swiftly; an appearance months later loses its level of remedial impact and allows a miscreant to proceed unrestrained and likely to continue to offend.

While at first sight this would appear to be cumbersome and expensive the vast majority of speeding fines are for low level offences or do not have the gravity necessary to sustain a prosecution for this offence. There are, however, other offences which currently attract penalty notices but are rarely enforced for which remedial penalties would be appropriate.

In order to constrain costs each police vehicle engaged on traffic duty should have high definition cameras recording the scene and the recording should be available to the accused. This is likely to result in early admissions of guilt and perhaps an agreed penalty particularly if remedial in nature.

Although some people would never be satisfied with anything other than automatic draconian penalties notwithstanding the potential for very stiff fines, most would react positively as there is a strong remedial aspect, a humiliation for the worst and most inept miscreants and benign treatment of minor matters. The Minister for Police, who was in the NSW Highway Patrol, is known to be concerned about “Jury wrecking” arising from over zealous enforcement of what is perceived to be minor matters. This regime should improve relations between the police and the public which will assist in other matters.

Recommendation

That the automatic demerits points system for speeding offences be abolished and replaced with a new offence of “Driving (riding) without due consideration for other road users”.
This offence would incorporate other appropriate matters covered by Infringement Notices and other relevant occurrences.
The threshold for prosecution to be actual lack of consideration for other road users.

Penalties to include some or all of:-
Fines to $10,000
Orders to undertake refresher driving lessons (to an approved standard)
Orders to pass a test within a short time
Orders to pass an enhanced test within a short time

- failing either of the above would result in returning to a learners licence.

Licence suspensions
Disqualification for a specific time following which reversion to learner status
Demerit points in the range of 1 to 5

Minor breaches of speed limits below the threshold for this offence be treated as minor no points offences with a low financial penalty.

Traffic matters to be recorded on High Definition video to ensure appropriate evidence.

g) The impact of demerit points in reducing speeding behaviour

Demerit points are a favourite of those who support punishment as the sole input into varying behaviour and forcing compliance with their view of the world. Proponents often cite public recognition of demerit points for speeding especially at double demerit times as evidence of support and efficacy. Observation however strongly suggests that those who pay attention to this are low exposure highly compliant motorists and thus are most unlikely to be affected. On the other hand high exposure drivers are more interested in driving safely than the

possibility of points and talk of points, double or single, is generally not part of their conversations. They are often more alert and less likely to get caught than others. The only time that middle and high exposure drivers seem to express concern is if they are one offence away from suspension. Their topic is then how concentration on the speedometer causes their attention to wander and creates driver errors. In the past when a suspension eliminated points people have selected their time slot i.e. a period when they could manage without driving for 3 months and have deliberately got an extra Infringement notice to regain a clean licence.

The most impact from the detection of an offence is the interaction with a police officer. In past years in the UK before cameras and “On the spot” fines all detected offences were referred to more senior officers for a decision to prosecute. It is said that the most chilling words in the English language that a driver could hear during a conversation with a police officer were “The matter will be reported”. There followed a worrying time before a summons was issued or a letter arrived indicating no further action. A summons was followed by a Court hearing when attendance was required. This was a far bigger impact than today’s methods of being given an infringement notice or worse having one generated by a camera arriving in the mail some weeks later when details of a journey are forgotten.

Although supporters of demerits schemes claim that they remove bad drivers from the roads the fact of no remedial training being required means that they return without learning anything. Worse the enforced three months (or more) out of the driving seat may result in them being deskilled i.e. during a spell of not driving their driving skills deteriorate.

The recommendation in the previous part effectively addresses these issues.

The difficulty in appealing a suspension even if this means loss of job and financial consequences beyond the intent of the legislation is generally regarded as unfair and creates a resentment against authority.

There seems to be no hard evidence of the benefits of demerit points beyond assertions by its supporters. The general variations in crash rates due to other influences would dominate.

Double demerits

NSW was the first State to introduce double demerit points for traffic offences during holiday periods and long weekends, in 1997, but only for "speeding". In 2001 NSW extended the holiday period double demerit points scheme to the offences during Christmas / New Year of not wearing a seatbelt and not wearing a helmet.

The statistics below compare NSW average Christmas / New Year daily fatality rates prior to double demerits and subsequently.

Daily fatality rate 1995/1996 to 1996/1997, i.e. prior to double demerits = 1.60
Daily fatality rate 1997/1998 to 2000/2001, i.e. while double demerits applied only to speeding = 1.82
Daily fatality rate 2000/2001 to 2002/2003, i.e. since double demerits applied to speeding, seatbelt & helmet offences = 1.69

In conclusion, the NSW double demerit points scheme has been an abysmal failure when applied to speeding offences only, and the double demerit points scheme has arguably contributed to an increase in fatalities. It is only since the scheme was applied to seatbelts and helmets that there was any noticeable reduction in holiday fatalities.
However, both seatbelts and helmets are passive/secondary safety measures, and have absolutely nothing to do with crash causation.

An analysis of double demerits in NSW by Professor Alan Buckingham provided these conclusions:
"A larger effect might be expected from the NSW double demerit point (DDP) scheme with its stiff penalties for speeding (as well as other offences) acting as a powerful deterrent. Once again, however, despite claims made about the success of DDP in reducing accidents, the data do not support such an assumption."
"...the introduction of DDP in 1997 did not lead to a sustained reduction in Christmas fatalities compared with previous years. Furthermore, if the DDP scheme were such a success then we would expect a sharper decline in fatalities during DDP periods than for the year taken as a whole. In fact,
for the period 1997-2002 the drop in fatalities during the Christmas DDP period is almost exactly the same as that recorded for the complete year figures. Therefore, the verdict of the DDP scheme for the Christmas period must be 'no effect'." Source: Centre for Independent Studies
http://www.cis.org.au/publications/policy-magazine/article/2374-feature-speed-traps-saving-lives-or-raising-revenue

The present Minister for Roads deserves credit for attempting to address the lack of credibility that the Government has in the area of road safety. Unfortunately, the demerit points system remains a severely punitive system and the focus remains on speed. It seems inevitable that the result will be more drivers losing their licences.

It appears that the Government has not considered the unintended consequences of its previous actions. There is an increasing number of unlicensed drivers who continue driving. Many of these drivers feel compelled to drive while unlicensed for financial reasons. For many, the ability to drive

determines whether they retain their jobs, their means of income and their businesses. The NMAA does not condone unlicensed driving and has criticised the Government for not addressing this issue adequately in the past. The big stick approach to low range speeding is working against the Government's intentions.

The question remains as to whether the Government focus should remain on speed. Over-emphasis on the issue of vehicle speed leads to "speedometer-gazing". Drivers have become so concerned about speeding fines and demerit points that they tend to gaze at their speedometers every few seconds. For many drivers, this distraction becomes an issue equivalent to driving while blindfolded for up to several seconds at a time. Drivers need their eyes focused on the road to have proper control of a vehicle - particularly in areas where there are pedestrians who may unexpectedly run onto the road.

h) Other related matters

h1) Cameras and the over-emphasis on speed

We need far better management of road safety if there is to be a sustained reduction of road fatality ratios. As previous Deputy Prime Minister John Anderson has stated, the emphasis on speed "may blind us to other causes". He did not mention the word revenue, nor did he offer some other means whereby state governments can tax motorists.

Speed cameras have become a blight in Australia. The state government focus on improving road safety should not be solely on speed and revenue. As has been stated above the RMS does not know what causes crashes because the analysis is not done here.

The concept of the "scientific infallibility" of speed cameras has been disproven. Governments in other states have admitted this. Fines totalling $18 million were refunded to the 87,000 drivers caught by 19 faulty cameras in Victoria. An internal government audit revealed hundreds of fines which had to be refunded in South Australia.

The UK Association of Chief Police Officers in its guidelines on speeding offences admits to accuracy of radar, lidar and camera devices being + or – 2mph (3km/h) to 66 mph (106 km/h) and + or - 3% over that speed.

The NMAA is deeply concerned that increasing reliance on technology such as speed cameras has diminished the culture of personal responsibility in drivers. It is a grave mistake to imbue people with the belief that "as long as you stick to the speed limit you are safe" and that is exactly what is happening. We believe it is far better to have responsible drivers who are engaged in their driving and

constantly evaluating their speed, among other aspects of their driving, rather than a fleet of mindless drones focused on their speedometers. There is no one single measure of safe driving - road safety cannot be measured in kilometres per hour.

Speed camera technology does not stop drivers affected by drugs and/or alcohol. Nor does speed camera technology stop unlicensed drivers and unregistered vehicles, apprehend stolen vehicles, catch thieves in their getaway cars, nor stop emotionally distraught drivers. That function is best served by uniformed police pulling errant drivers off the road immediately. Sending an infringement notice by mail ten days after an alleged offence is too late to effectively prevent fatalities and is one of the least effective methods of changing errant driver behaviour.

Speeding fines have become a multi-million dollar source of income for the state government. In 2012, the NSW Attorney General reported that numerous speed cameras were simply “cash cows” and the NSW Minister for Roads turned them off. Now the same government that turned off these speed cameras has turned four of them back on typically because of pressure by local activists. An example is that at Urunga on the North Coast where a drunk crashed into the front of a B-Double which then left the road down a steep grassy slope crashing into a house killing a youth asleep in his bed. Despite the investigation showing that speed was not a cause of the crash or its aftermath a local activist together with the local paper conducted a campaign to lower the speed limit and resurrect the camera.

Was the Attorney General’s report incorrect or is the RMS decision-making driven by raising revenue and an obsession with cameras and speed?

h2) School zones

In safety, hard barriers are far more effective than soft barriers. An example of using hard barriers would be fencing to shut those school entrances that are adjacent to main roads and using side street entrances instead. The use of kerbside fencing to ensure that children do not stray into the road is another good example. Examples of soft barriers are school zone speed signs and speed cameras. Soft barriers do not provide a physical barrier between the danger of moving vehicles and unprotected pedestrians. Another example of a hard barrier is a pedestrian over-bridge or underpass where a main road is adjacent to a school. This provides a very effective means of separating children from the risk especially when combined with kerbside fencing.

The concept of school zones has been poorly conceived and administered in NSW. A large proportion of the population does not know when school holidays occur because they do not have children at school. Public and private schools

have different holidays. Other states have different standard school zone times. This creates confusion.

The means of avoiding this confusion is technologically simple. Flashing warning lights should be a requirement at all school zones when they are active. By this means, motorists are not distracted by looking at their clocks and watches, or thinking about whether it is a school day. The information is conveyed directly and simply.

The present government deserves credit for its increased funding for the flashing lights and its stated aim of having every school zone equipped with these lights by 2015. When all school zones have flashing lights consideration should be given to changing the law to have the special limit only applying when the lights are flashing. This would allow the tailoring of the active period to match the actual times when children are entering or leaving school. For example this would cater appropriately for weekly sports days.

A major risk factor for pedestrian injuries around schools is in the category of parking offences. Speed cameras will not solve this real threat to children. Instead of focusing on speed, the government should enforce no stopping zones and double parking regulations at schools. It is not a glamorous solution and there is less revenue in that for the government, but it is vital if we are to reduce deaths and injuries on roads near schools. Children learn from the example that parents set. Parents who break these basic road rules are training another generation to become unsafe road users. Parents should also be educated not to park on the opposite side of the road to the school as this will tempt children to run into the road. Equally if the child travels by bus then the child should be educated not to cross the road until the bus has gone. Also if children are normally met they should be instructed to wait at the stop until the carer arrives.

h3) Driver training

Young and inexperienced drivers are over-represented in road fatalities. The National Motorists Association of Australia advocates a higher standard of training prior to the practical driving test and that all drivers be required to satisfactorily complete an advanced roadcraft style course with an accredited training organisation before progressing beyond P-plates. The RMS does not support advanced training based on an old desk analysis of reports on the outcomes of advanced training overseas. This compared people who had undertaken “advanced” training with those who had not and found that it tended to create “over-confidence” in those who had undertaken these courses. The obvious errors in these findings is that the courses had an element of semi-competitive training as an attraction and that those who attended were of different background and exposure rate (i.e. higher distance frequency) drivers. A

true comparison of the effect of more advanced driver training is when whole populations are required to undertake this and compared with other whole populations or by pre and post methods.

The resistance to higher training standards extends to refusing to include emergency braking during the training package which reduces the number of log book hours. The new driver thus has no idea what happens in hard braking; the feedback from an anti-lock braking system can easily frighten them into releasing pressure on the brake pedal for example. Most new drivers have no idea of how long it takes to stop a car from normal speeds in dry and wet conditions. Unfortunately they too often learn by accident.

It has been reported that when Denmark changed its driver testing regime from compliance to defensive driving that there was a significant reduction in young drivers involved in fatal crashes. The world's highest standard of driver training and testing is in Germany and this is discernable in comparison with other drivers on the road in Europe. Although it is often said that it would be impossible to upgrade existing drivers the re-unification of Germany provides an example to the contrary. After only a couple of years the "Ossis" had improved their driving standards to an acceptable standard.

The speed restrictions on learner drivers in NSW creates significant problems. There are obvious issues with having them on rural roads and freeways due to the speed differential however in terms of teaching it is impossible (legally) to teach learners merging techniques on entering freeway style roads or higher speed cornering (including adjusting speed from the normal highway cruise speed). Overtaking is a difficult task but the low speed permitted to learners makes this impossible to teach. New drivers have to learn these matters unsupervised and too often with disastrous results.

Recommendation

That the special speed limits for learners and P-platers be abolished and that they should comply with normal limits as posted or default.

That the standard of driver training during the learner period and the practical test be improved continuously with the aim of reaching the German standard as the world's best.

That a course of advanced roadcraft be successfully completed before progress from a provisional licence to a full licence.

h4) Fatigue and inattention

The NMAA is extremely concerned at the increasing prevalence of fatigue and inattention as causal factors and their correlation with lower speed limits and

their enforcement density. In the experience of our members who are frequent long distance drivers, low limits have very low inputs to the brain which creates boredom and inattention. Insufficient brain stimulation is very similar to fatigue in its effects.

h5) Visible police presence

One issue that most road safety groups agree on is that the most effective means of improving driver behaviour on the roads is via marked police vehicles patrolling the roads. Their mission should be the enforcement of all of the road rules, consistently, every day and night of the year. Selectively enforcing one or two road rules is ineffective. Issuing infringement notices for minor breaches of a speed limit is very easy with the technology available but the more difficult cases tend to be avoided especially if there is a real or implied pressure to meet a quota. (It is not implied that there are official quotas) We need more highly visible highway patrol vehicles to patrol the roads and enforce all road rules, not simply the one rule for which technology allows the greatest number of tickets to be issued per hour.

There is a case for unmarked and “Q cars” (disguised vehicles) but they should be confined to non-technical breaches. They are wasted on minor speeding matters but should be looking for matters which would come under the “Drive without due consideration for other road users” regime as suggested in part F. They should focus on matters such as those who increase speed while being overtaken, failure to keep left etc. Q cars would be useful in dealing with those who like to challenge for competitive purposes.

Directing police to undertake random alcohol breath testing during the morning, because it is the least busy period for police is unacceptable. There has been a decline in the number of highway patrol members in the last two decades. We need a highly visible and mobile police presence on our roads in adequate numbers.

h6) Daytime headlamps

The NMAA advocates daytime headlamps to improve vehicle visibility, particularly during the hour after dawn and the hour before dusk. Most Australian drivers consider that headlights are solely for the purpose of illuminating the road ahead. Few drivers realise that headlamps increase the visibility of the vehicle to other road users. This is helpful when making overtaking decisions.

Signage on major roads in the NSW Blue Mountains encourages motorists to switch on their low beam headlights to increase vehicle visibility. The NSW Staysafe Committee should support this low cost option which dramatically increases vehicle visibility, particularly for dark coloured vehicles. Pedestrians

are better protected when vehicles are more visible. Some elderly pedestrians have very poor eyesight and hearing.

A theme for the introduction could be "switch on to safe driving" - when the driver switches headlights on to low beam this is a conscious decision to drive more safely. An ideal opportunity to introduce this would be in the period before the Christmas holidays.

This statement on behalf of the National Motorists Association of Australia (NMAA) is authorised by NMAA Vice President Gavin Goeldner at [redacted]

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Licensed to skill

contributory factors in road accidents

Great Britain 2005 - 2009

IAM DRIVING ROAD SAFETY

Foreword

In recent years, most of the big leaps forward in road safety have come as a result of vehicle and road design. Looking forward there are very few new technological advances on the horizon to help maintain the downward trend in road casualties.

Five-star cars on five-star roads need five-star drivers. To make the final push towards minimising death, injury and emotional pain on our roads we must tackle the common denominator – human behaviour. Errors – unintentional or intentional, and lapses – momentary or through lack of experience – are behind the vast majority of crashes in the UK today. Our new report looks at hundreds of thousands of police crash reports to pick out the top ten crash contributory factors for a range of road, vehicle and driver types.

For many the results will come as no surprise although they do question the focus on speeding which has for so long underpinned many road safety campaigns. **For the IAM the key issue is what we do next with this information.** For too long technological fixes have been sought when improving the quality of our drivers and riders was clearly the key issue.

The IAM, with its track record of success in delivering advanced drivers and riders, is well placed to help improve the skills of British road users. 'Failure to look' is by far the most common factor recorded along with 'failed to judge another person's path or speed' and 'loss of control'. Advanced driving provides the best solution to these problems through its principles of anticipation, positioning and awareness of hazards. Taking an IAM test and adopting a more measured style of driving would also reduce factors such as 'careless, reckless or in a hurry' and 'travelling too fast for the conditions'.

However, we cannot tackle driver behaviour alone and we are calling for the government to undertake a fundamental review of driver training and link it firmly to continuous post-test learning with real incentives to reward the best drivers.

Alistair Cheyne OBE, IAM Chairman
Simon Best, Chief Executive

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IAM, IAM House, 510 Chiswick High Road, London W4 5RG

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Executive summary

Since 2005, official accident records have included additional information on contributory factors which are designed to provide insights into why and how road crashes happen and to help develop measures aimed at preventing them. A total of 77 categories of contributory factor are available. These provide information on the factors which the police officer attending the scene considers may have contributed to the cause of the accident. They are intended to identify the key actions and failures which led directly to the impact. This report looks at over 700,000 items of official crash data to pick out common themes.

- Driver and rider error or reaction' factors are recorded more frequently than other types – 68% of all crashes
- The next most common are 'injudicious action' factors – 26% of all crashes
- This is closely followed by 'behaviour or inexperience' factors – 25% of all crashes

Many of the issues which receive the most media coverage are not actually among the most common contributory factors. Speeding, drink driving, mobile phone use, tailgating, road rage and bad weather are all important but are not as frequently reported as driver errors;

- 'Exceeding the speed limit' (13.9% of fatal, 7.2% of serious and less for slight)
- 'impaired by alcohol' (10% of fatal and 7% of serious accidents, less slight accidents)
- 'aggressive driving' (8% of fatal accidents, less serious and slight accidents)
- 'slippery road - due to weather' (11% of slight and 8% of serious accidents but less frequently reported in fatal accidents)
- 'sudden braking' and 'following too close' (8% of slight accidents each, but less frequently reported in fatal and serious accidents)
- 'Driver using mobile phone' (0.8% of fatal crashes, but only 0.2% of all injury crashes)
- Vehicle defects are recorded in very few cases (2%).

The report shows the top ten factors for different crash severities, driver age, road types and other issues such as weather and time of crash. These 'top tens' show key variations which the IAM believe can be useful in the design of future interventions. Accidents involving younger and older drivers show different contributory factors and these can be used to tailor training and assessment solutions. For example, 'Learner or inexperienced' is recorded as a contributory factor more frequently on rural roads, minor roads and 60 mph roads than elsewhere confirming the IAM's view that the driving test does little to prepare new drivers for the highest risk activities.

- Younger and older drivers and riders (under 30 and over 70) have 'error or reaction' factors recorded in a larger proportion of cases than among those between 30 and 70
- Older drivers have 'failed to look properly' recorded more frequently than younger drivers and factors associated with ageing and difficulty coping with the traffic environment, which are less frequently recorded for younger drivers.
- Car drivers under 25 have 'exceeding the speed limit' 'travelling too fast for the conditions' and 'learner/ inexperienced' recorded more frequently than drivers over 25
- 'Exceeding the speed limit' features in the top ten factors for motorcyclists in the under 30 and 30 – 59 age groups
- Alcohol features in the top ten factors for drivers aged 25 – 69 and ranks eleventh for drivers under 25, but is less frequently recorded for motorcyclists
- Comparisons between men and women car drivers show many similarities in the contributory factors reported, but 'careless, reckless or in a hurry', 'travelling too fast for the conditions' and 'impaired by alcohol' are recorded more frequently for men than for women, while 'learner or inexperienced driver' is recorded more frequently for women
- In fatal accidents on motorways, alcohol, fatigue and vehicle defects (mainly tyres and brakes) are more frequently reported than in other accidents suggesting the continued need for motorway campaigns and enforcement to focus on these areas.

Using contributory factors to improve road safety

This report provides a subjective indication of the causes of accidents, not a definitive view. Factors which are more obvious to the police officer attending will tend to be recorded more than those which are less obvious or require more in-depth reconstruction. However, the results can still be used to highlight areas for further investigation or to suggest what the priority areas for road safety should be.

It is clear that driver and rider errors, particularly 'failure to look properly' and 'failure to judge the path or speed of other road users correctly' remain significant contributory factors in road accidents. Factors such as 'careless, reckless or in a hurry', 'loss of control' and 'travelling too fast for the conditions' together make up another significant group which could be addressed by a more measured style of driving, taking greater account of the traffic and road conditions prevailing. These human factors are attributed to drivers of all ages, although some factors are more frequently assigned to young drivers and others to older drivers, which points to the value of post-test driver training for improving the quality and safety of drivers.

Some factors are reported in relatively few accidents in total, but are more prominent in specific situations. Analysing these specific groups of accidents can provide insights into their causes which may help to develop measures for reducing the number of injuries.

The IAM believe that this report delivers important insights into what is actually happening on our roads. We should be ensuring that the police are encouraged to view the completion of this information as a high priority and that quality control measures are in place to ensure researchers and policy makers can continue to rely on this rich source of road safety data.

Glossary and definitions

Definitions of accidents and casualties

Accident	Involves personal injury occurring on the public highway (including footways) involving at least one road vehicle or a vehicle in collision with a pedestrian and which becomes known to the police within 30 days.
Fatal injury/ casualty	Injury causes death within 30 days of the accident
Serious injury/ casualty	Injury does not cause death within 30 days of the accident and either results in the casualty being detained in hospital as an in-patient, or any of the following injuries: fractures, concussion, internal injuries, crushings, severe cuts and lacerations, severe general shock requiring treatment, or any injury which causes death more than 30 days after the accident
Slight injury/ casualty	Injury of a minor character such as a sprain (including whiplash neck injury), bruise or cut which are not judged to be severe, or slight shock requiring roadside attention. Injuries not requiring medical treatment are included
Fatal accident	Accident involving at least one fatal casualty
Serious accident	Accident in which no one is fatally injured, but at least one casualty received serious injuries
Slight accident	Accident in which at least one casualty receives slight injuries but no fatal or serious injuries

Other definitions

Car	Taxis and private hire cars are included with private cars
Motorcycle	Includes moped
Rural roads	Roads which are either outside towns, or in towns with less than 10,000 population.
Season	Spring: March – May, Summer: June – August, Autumn, September – November, Winter: December - February

1 Introduction

1.1 Previous work

The IAM Policy and Research Division has funded a series of projects over the past few years which have looked in detail at the national accident data on specific issues. A unique aspect of these studies was that they combined accident data for several years. The number of accidents included in the combined data was large enough for more complex and multi-dimensional breakdowns of the data to be carried out than are usually possible.

Since 2005, the accident records have included additional information on contributory factors which is designed to provide insights into why and how road accidents happen, to assist in investigating measures aimed at preventing accidents. A total of 77 categories of contributory factor are available. These provide information on the factors which the police officer attending the accident considers may have contributed to the cause of the accident. They are intended to identify the key actions and failures which led directly to the impact.

This report presents the results from a small project which has carried out some preliminary analysis of the contributory factors data for the five years that are currently available: 2005 to 2009.

1.2 Project objectives

The main objective of the project is to analyse and report on contributory factors data for accidents and vehicles to identify the main contributory factors involved for:

- drivers and riders in different age groups, men and women
- accidents on different types of road
- accidents at different times
- accident severity.

The secondary objectives are:

- to identify the role of factors associated with driver error in contributing to road accidents, with a view to focusing on ways to improve the quality of driving
- to use this initial analysis to gain an understanding of the potential for the data to be used to support further investigations on specific topics in future, complementing the IAM's earlier projects based on analysis of the national road accident data.

1.3 This report

This report presents the results of the initial analysis, with a brief commentary. The focus at this stage is on the eight main groups of factors[1] and the 'top ten' individual factors associated with different groups of drivers or accident circumstances (where and when

[1] Road environment; Vehicle defects; Injudicious action; Driver/ Rider error; Impairment or distraction; Behaviour or inexperience; Vision affected; Pedestrian; Special codes

accidents happen). Before that, all of the contributory factors are presented, comparing fatal, serious and slight accidents, to illustrate the full range of information available and the proportion of accidents in which each of the 77 factors is reported.

Over the five years (2005-2009) covered by this analysis, there were almost 700,000 accidents which were attended by the police and for which contributory factors were recorded. These are the accidents which are analysed in Sections 2, 3 and 4. They represent about three-quarters of all accidents reported to the police and recorded in the accident database during this five year period.

Section 5 presents the contributory factors recorded for cars and motorcycles in accidents which were reported to the police during this five year period and shows how these factors vary with the age of drivers and riders, and the gender of car drivers.

The results are summarised in Section 6, along with conclusions on the options for further analysis of the contributory factors data.

1.4 Limitations of the analysis

The contributory factors can be used to provide more insights into the causes of the accident than can be gleaned from the facts about the accident circumstances in the remainder of the accident record. However it is important to bear in mind that there are certain limitations which mean that the contributory factors recorded can only be taken as an indication of the cause of the accidents.

The factors tend to be subjective, reflecting the opinion of the police officer reporting on the accident. They are not necessarily based on a detailed investigation of the accident. Some factors are more 'obvious' than others at the time when the police officer attends the scene. Because the information recorded is admissible as evidence in court, any factors that are recorded need to be supported by clear evidence.

Some research has been done comparing the factors recorded in specific accidents in the national accident database with those recorded in an in-depth study (Richards et al 2010). This found that in general fewer factors were recorded per accident in the national data than in the in-depth study. The types of factor which were less likely to be recorded in the national data than in the in-depth study were those which appear to allocate blame for an accident (such as those in the 'injudicious action' group, which includes 'exceeding the speed limit') and one of the factors in the 'behaviour' group - 'careless, reckless or in a hurry'.

1.5 Contributory Factor Data

The reporting form used by the police at the scene of an accident is designed for recording up to six of the factors which are considered to have contributed to the accident occurring. The 77 factors available for recording are grouped into nine different types.

Factors are assigned to individual participants, and multiple factors can be recorded for individuals. Thus more than one factor can be attributed to accidents, individuals and their vehicles. The percentages presented in this report are the percentage of accidents or vehicles having a specific contributory factor attributed to them, and because more than one factor can be attributed, they do not total 100.

Details of how each factor is defined can be found in the instructions for completing road accident reports (known as Stats20 - see Department for Transport, 2004).

2 Contributory Factors and Accident Severity

A fatal accident is one in which at least one person is killed, a serious accident involves at least one serious injury but no fatalities, and a slight accident involves at least one casualty with minor injuries but no serious injuries or fatalities. (See the Glossary on page iv for definitions.)

Table 1 (which is spread over two pages) shows the proportion of fatal, serious and slight accidents with each of the 77 contributory factors attributed to them, and the proportion with each of the nine types of factor (shown in bold above the group of factors which they describe). Both the groups of factors and the individual factors within these groups are listed in the order of frequency with which they are reported. The key points are:

- At all levels of accident severity, the 'driver/ rider error or reaction' factors are recorded more frequently than other types – 68% of all accidents
- The next most common are 'injudicious action' factors – 26% of all accidents, but a larger proportion of fatal (31%) than serious or slight (26%)
- This is closely followed by 'behaviour or inexperience' factors – 25% of all accidents and again a larger proportion of fatal (28%) than serious or slight (24%)
- Other types of factor which vary with accident severity are:
    - 'road environment' (more often recorded in slight accidents than more serious incidents)
    - 'impairment/ distraction' (more often in fatal accidents than serious or slight accidents) and
    - pedestrian behaviour (more often recorded in fatal accidents and serious accidents than slight accidents).
- Vehicle defects are recorded in very few cases (2%).

Table 1 Contributory factors and accident severity

Contributory factor reported in accident	Accident severity			All accidents
	Fatal	Serious	Slight	
Driver/ Rider Error or Reaction	**65.3%**	**61.8%**	**68.6%**	**67.5%**
Failed to look properly	20.5%	29.3%	36.3%	35.0%
Failed to judge other person's path or speed	11.6%	14.0%	20.0%	18.9%
Loss of control	34.0%	19.7%	13.4%	14.7%
Poor turn or manoeuvre	12.0%	13.8%	14.1%	14.1%
Sudden braking	3.0%	4.5%	7.7%	7.2%
Swerved	6.2%	4.2%	3.7%	3.8%
Junction overshoot	1.7%	1.9%	2.4%	2.3%
Failed to signal or misleading signal	0.6%	1.3%	2.0%	1.9%
Junction restart (moving off at junction)	0.9%	1.1%	1.8%	1.7%
Passing too close to cyclist, horse rider or pedestrian	1.1%	1.4%	1.4%	1.4%
Injudicious Action	**31.4%**	**25.0%**	**26.1%**	**26.0%**
Travelling too fast for conditions	15.9%	11.3%	9.9%	10.2%
Following too close	1.3%	2.8%	7.5%	6.7%
Exceeding speed limit	13.9%	7.2%	4.6%	5.2%
Disobeyed 'Give Way' or 'Stop' sign or markings	2.1%	2.8%	3.5%	3.4%
Disobeyed automatic traffic signal	1.0%	1.4%	1.8%	1.8%
Cyclist entering road from pavement	0.5%	1.0%	0.9%	0.9%
Illegal turn or direction of travel	0.7%	0.8%	0.7%	0.8%
Disobeyed pedestrian crossing facility	0.4%	0.7%	0.4%	0.4%
Vehicle travelling along pavement	0.4%	0.3%	0.3%	0.3%
Disobeyed double white lines	0.9%	0.5%	0.2%	0.2%
Behaviour or Inexperience	**28.0%**	**25.8%**	**24.4%**	**24.7%**
Careless, reckless or in a hurry	17.2%	16.7%	16.1%	16.2%
Learner or inexperienced driver/rider	5.3%	5.5%	5.2%	5.3%
Aggressive driving	8.3%	5.1%	3.6%	3.9%
Nervous, uncertain or panic	1.1%	1.3%	1.8%	1.7%
Unfamiliar with model of vehicle	1.4%	1.1%	0.8%	0.8%
Inexperience of driving on the left	0.4%	0.4%	0.5%	0.5%
Driving too slow for conditions or slow vehicle (e.g. tractor)	0.1%	0.1%	0.1%	0.1%
Road Environment	**10.9%**	**13.3%**	**15.6%**	**15.1%**
Slippery road (due to weather)	5.9%	7.9%	10.6%	10.1%
Road layout (e.g. bend, hill, narrow carriageway)	3.2%	2.8%	2.7%	2.7%
Deposit on road (e.g. oil, mud, chippings)	0.8%	1.7%	1.5%	1.5%
Animal or object in carriageway	0.8%	1.0%	1.2%	1.2%
Poor or defective road surface	0.7%	0.8%	0.6%	0.5%
Inadequate or masked signs or road markings	0.4%	0.4%	0.5%	0.3%
Temporary road layout (e.g. contraflow)	0.2%	0.2%	0.3%	0.2%
Defective traffic signals	0.0%	0.1%	0.2%	0.1%
Traffic calming (e.g. speed cushions, road humps, chicanes)	0.1%	0.2%	0.1%	0.1%

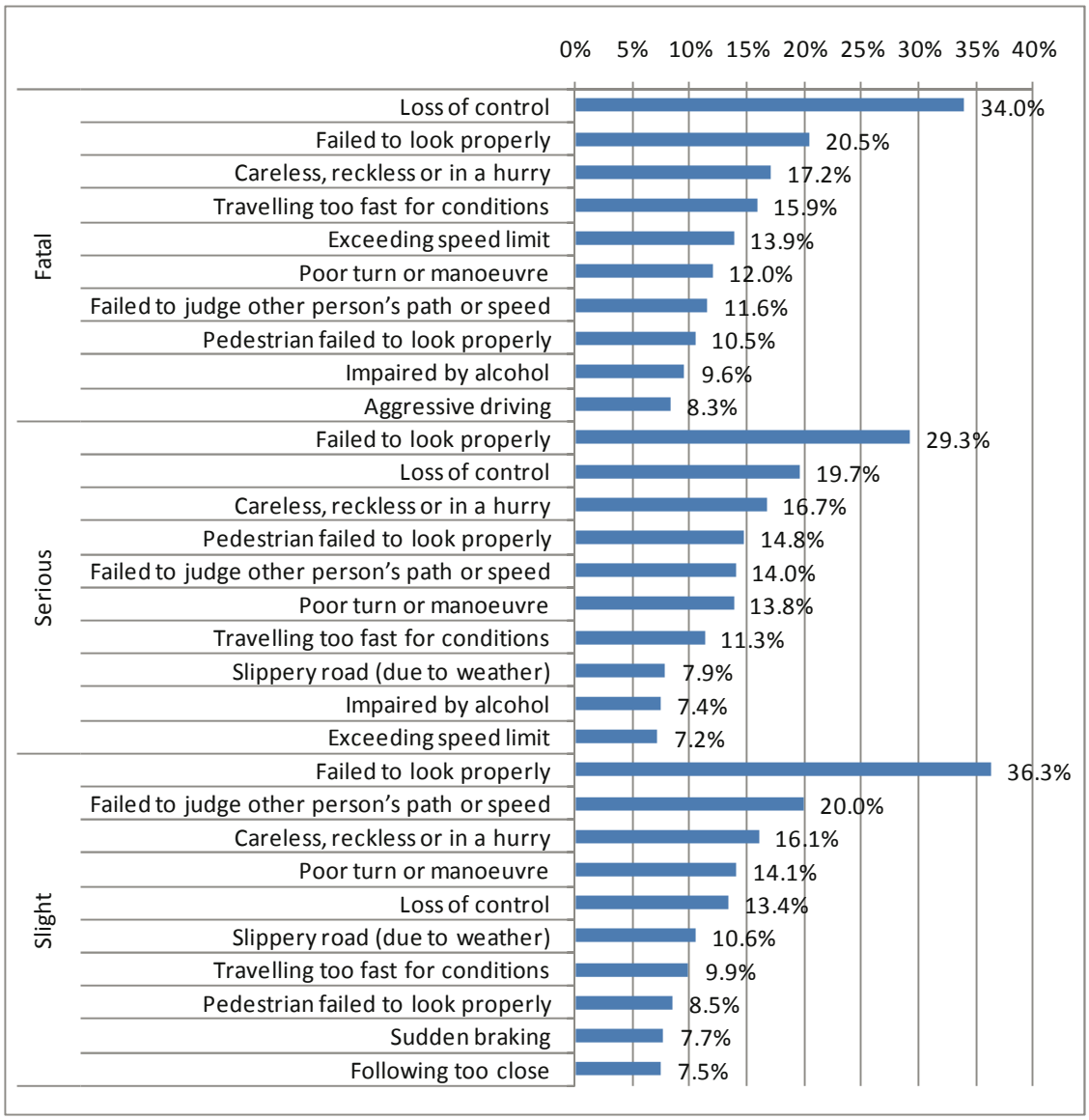
Contributory factor reported in accident	Accident severity			All accidents
	Fatal	Serious	Slight	
Pedestrian only (casualty or uninjured)	**18.2%**	**20.4%**	**11.5%**	**13.0%**
Pedestrian failed to look properly	10.5%	14.8%	8.5%	9.5%
Pedestrian careless, reckless or in a hurry	3.4%	6.3%	3.6%	4.0%
Pedestrian crossing road masked by stationary or parked vehicle	1.9%	4.4%	2.4%	2.7%
Pedestrian failed to judge vehicle's path or speed	5.2%	4.5%	2.4%	2.8%
Pedestrian impaired by alcohol	4.1%	3.5%	1.5%	1.9%
Dangerous action in carriageway (e.g. playing)	2.2%	1.9%	0.9%	1.1%
Pedestrian wrong use of pedestrian crossing facility	1.2%	1.4%	0.7%	0.8%
Pedestrian wearing dark clothing at night	3.3%	1.3%	0.5%	0.7%
Pedestrian disability or illness, mental or physical	1.9%	0.8%	0.3%	0.4%
Pedestrian impaired by drugs (illicit or medicinal)	0.4%	0.3%	0.1%	0.2%
Impairment or Distraction	**19.6%**	**14.2%**	**11.1%**	**11.7%**
Impaired by alcohol	9.6%	7.4%	4.7%	5.2%
Distraction in vehicle	2.6%	1.7%	2.1%	2.1%
Fatigue	3.1%	1.8%	1.3%	1.4%
Distraction outside vehicle	1.0%	1.0%	1.5%	1.4%
Illness or disability, mental or physical	3.6%	1.8%	1.2%	1.3%
Impaired by drugs (illicit or medicinal)	2.2%	0.9%	0.4%	0.5%
Not displaying lights at night or in poor visibility	0.4%	0.4%	0.3%	0.3%
Cyclist wearing dark clothing at night	0.4%	0.4%	0.3%	0.3%
Driver using mobile phone	0.8%	0.3%	0.2%	0.2%
Uncorrected, defective eyesight	0.4%	0.2%	0.1%	0.2%
Vision Affected by:	**7.5%**	**9.2%**	**10.5%**	**10.3%**
Stationary or parked vehicle(s)	1.1%	2.9%	3.2%	3.1%
Dazzling sun	1.5%	1.8%	2.2%	2.2%
Rain, sleet, snow, or fog	1.5%	1.5%	1.9%	1.9%
Road layout (e.g. bend, winding road, hill crest)	1.7%	1.5%	1.5%	1.5%
Vehicle blind spot	1.0%	1.0%	1.3%	1.2%
Vegetation	0.4%	0.4%	0.4%	0.4%
Dazzling headlights	0.4%	0.3%	0.3%	0.3%
Buildings, road signs, street furniture	0.2%	0.2%	0.2%	0.2%
Spray from other vehicles	0.1%	0.2%	0.2%	0.2%
Visor or windscreen dirty or scratched	0.2%	0.1%	0.1%	0.1%
Special codes	**6.1%**	**5.2%**	**4.5%**	**4.6%**
Other	4.4%	3.3%	2.7%	2.8%
Stolen vehicle	1.1%	1.0%	0.7%	0.8%
Emergency vehicle on a call	0.3%	0.4%	0.6%	0.5%
Vehicle in course of crime	0.4%	0.4%	0.4%	0.4%
Vehicle door opened or closed negligently	0.1%	0.4%	0.4%	0.4%
Vehicle Defects	**2.8%**	**2.2%**	**1.9%**	**1.9%**
Tyres illegal, defective or under inflated	1.5%	0.9%	0.7%	0.7%
Defective brakes	0.7%	0.6%	0.6%	0.6%
Overloaded or poorly loaded vehicle or trailer	0.4%	0.3%	0.2%	0.2%
Defective lights or indicators	0.2%	0.2%	0.2%	0.2%
Defective steering or suspension	0.2%	0.2%	0.2%	0.2%
Defective or missing mirrors	0.0%	0.0%	0.0%	0.0%
Total number of accidents	**11,968**	**104,760**	**576,959**	**693,687**

Figure 1 shows the ten most frequently reported of the individual factors in fatal, serious and slight accidents. The key points are:

- Seven factors are in the top ten for fatal, serious and slight accidents, but their ranking varies with severity of the accident. These are 'loss of control', 'failed to look properly', 'careless, reckless or in a hurry', 'travelling too fast for the conditions', 'poor turn or manoeuvre' 'failed to judge another person's path or speed' and 'pedestrian failed to look properly'
- 'Loss of control' is the most frequently recorded single factor in fatal accidents (34%); it ranks second in serious accidents (20%) and fifth in slight accidents (13%)
- 'Failure to look properly' is the most frequently recorded factor in both serious (29%) and slight (36%) accidents, and is the second most frequently recorded in fatal accidents (21%)
- A driver or rider who is 'careless, reckless or in a hurry' is the third most common factor in fatal, serious and slight accidents, accounting for 16-17% in each case
- 'Travelling too fast for the conditions' and 'exceeding speed limit' are the fourth and fifth most frequently recorded in fatal accidents (16% and 14%) but rank lower in serious (11% and 7%) and slight accidents.[2]
- 'Failed to judge another person's path or speed' is the second most frequently recorded in slight accidents (20%), but ranks seven in fatal accidents and six in serious accidents
- Factors which are not in the top ten in fatal, serious and slight accidents are:
    - 'impaired by alcohol (10% of fatal and 7% of serious accidents, less slight accidents)
    - 'aggressive driving' (8% of fatal accidents, less serious and slight accidents)
    - 'slippery road - due to weather' (11% of slight and 8% of serious accidents but less frequently reported in fatal accidents)
    - 'sudden braking' and 'following too close' (8% of slight accidents each, but less frequently reported in fatal and serious accidents).

[2] Note that 'exceeding speed limit' takes precedence and is intended to be recorded in cases where vehicles were also travelling too fast for the conditions. 'Travelling too fast for the conditions' is intended to be recorded in cases where the driver or rider was travelling within the speed limit, but too fast for the conditions. However some drivers have both factors recorded.

Figure 1 Ten most frequently reported factors in fatal, serious and slight accidents



3 Accidents on different types of road

3.1 Road class

Table 2 shows the types of contributory factor reported for accidents on different classes of road.

- 'Driver/ rider error or reaction' is reported in a larger proportion of accidents on motorways and A roads than on minor roads, particularly C and unclassified roads
- 'Behaviour or inexperience' is less frequently reported in motorway accidents (where learner drivers are not legally able to drive) than on other types of road
- Factors associated with pedestrians are, as expected, rarely reported on motorways and are reported for higher proportions of accidents on minor roads than on major roads
- 'Impairment or distraction' and 'vehicle defects' are reported for a larger proportion of motorway accidents than for accidents on other types of road.

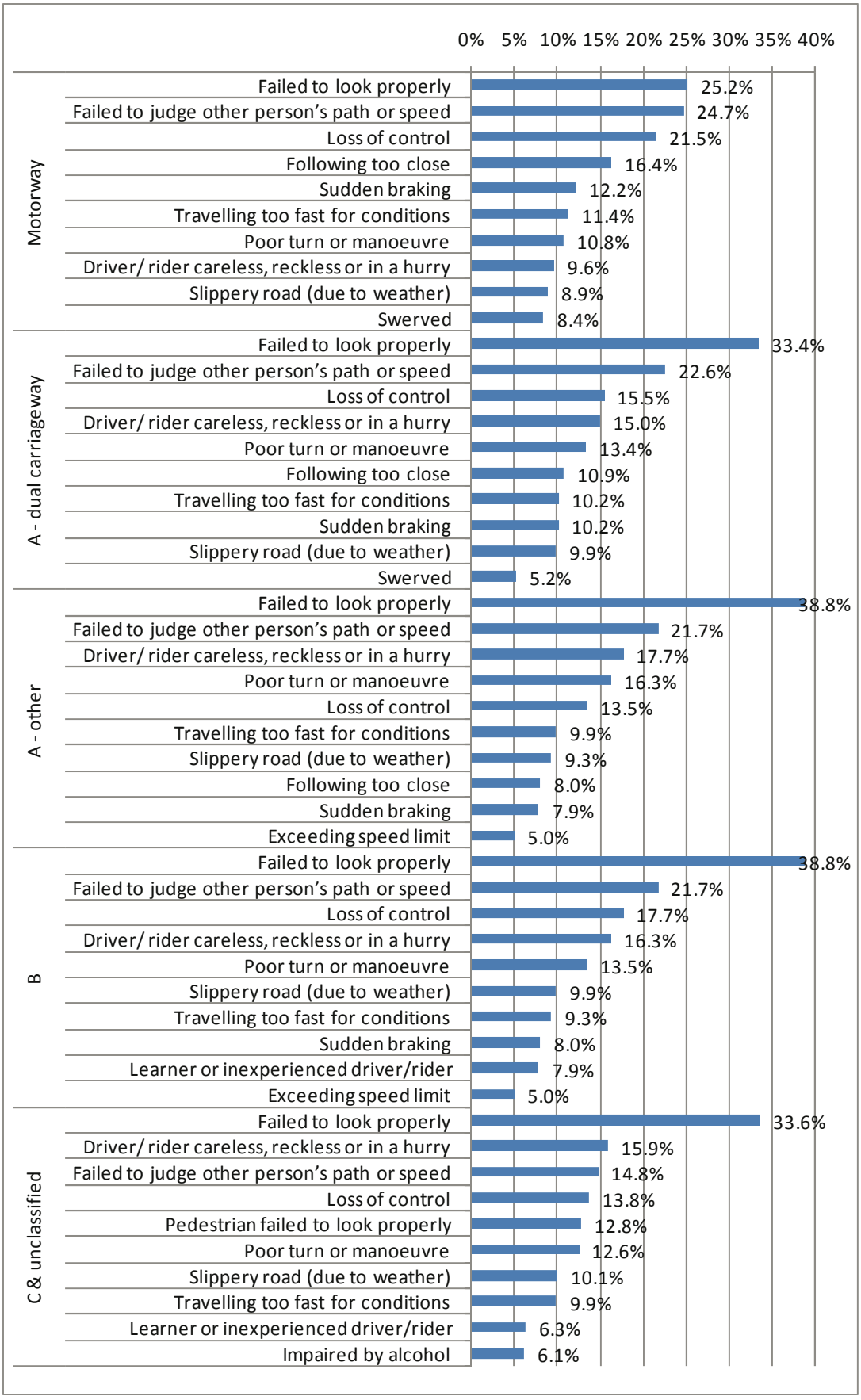
Table 2 Types of contributory factor reported for accidents on different types of road

Contributory factor type	Road Class and Type					All roads
	Motorway	A - dual carriageway	A - other	B	C & unclassified	
Driver/ Rider Error or Reaction	71.3%	69.7%	71.2%	68.0%	62.7%	67.5%
Injudicious Action	26.6%	29.4%	26.6%	26.6%	24.2%	26.0%
Behaviour or Inexperience	16.2%	23.0%	25.4%	25.4%	25.4%	24.7%
Road Environment	12.6%	13.8%	13.6%	19.2%	15.9%	15.1%
Pedestrian only (casualty or uninjured)	1.3%	8.7%	11.6%	11.4%	17.7%	13.0%
Impairment or Distraction	14.7%	11.6%	11.2%	12.2%	11.7%	11.7%
Vision Affected	9.7%	7.6%	9.0%	10.7%	12.2%	10.3%
Special codes	5.1%	4.7%	4.3%	4.0%	5.1%	4.6%
Vehicle Defects	4.1%	2.4%	1.7%	1.7%	1.8%	1.9%
Number of accidents	33,971	71,334	247,090	89,237	252,055	693,687

Figure 2 shows that:

- 'Failed to look properly' is the most frequently reported factor on all types of road but is less frequently reported on motorways (25%) than on other roads (33% - 39%)
- 'Failure to judge another person's path or speed' ranks second on all types of road except for minor roads
- 'Following too close' is reported more frequently on motorways (16%) and dual carriageways (11%) than other roads (less than 5% on minor roads)
- Seven factors appear in the top ten on all classes of road: failed to look properly', 'failure to judge another person's path or speed', loss of control, 'travelling too fast for the conditions', 'poor turn or manoeuvre', 'driver/ rider careless, reckless or in a hurry' and 'slippery road' (due to weather)
- The factors which appear in the top ten on some, *but not all*, classes of road are:
    - 'exceeding the speed limit' (single carriageway A roads and B roads only)
    - 'learner or inexperienced driver/ rider' (B, C and unclassified roads only)
    - 'pedestrian failed to look properly' (C and unclassified roads only)
    - 'impaired by alcohol' (C and unclassified roads only).
- These factors which are in the top ten for minor roads only may reflect the way minor roads are used (pedestrians and learner drivers may be found more on such roads; drink drivers tend to report that they drive on local quiet roads after drinking alcohol (Hopkin et al 2010, Sykes et al 2010).

Figure 2 Ten most frequently reported factors in accidents on different classes of road



3.2 Rural and urban roads

Table 3 shows two main differences in the types of factor reported between accidents in urban and rural roads:

- road environment factors are reported in a larger proportion of accidents in rural areas than urban areas
- pedestrian factors are, as expected, reported in a larger proportion of accidents in urban areas.

Table 3 Types of contributory factor reported for accidents in urban and rural areas

Contributory factor type	Area	
	Urban	Rural
Driver/ Rider Error or Reaction	66.2%	69.6%
Injudicious Action	25.1%	27.5%
Behaviour or Inexperience	24.8%	24.5%
Road Environment	9.1%	24.4%
Pedestrian only (casualty or uninjured)	18.7%	4.2%
Impairment or Distraction	10.5%	13.6%
Vision Affected	10.0%	10.6%
Special codes	5.2%	3.8%
Vehicle Defects	1.5%	2.6%
Number of accidents	417,887	275,710

Figure 3 shows that eight factors appear in the top ten for both urban and rural roads.

- 'Failed to look properly' is the most frequently recorded factor in both, but is recorded in 41% of accidents in urban areas and 26% in rural areas.
- 'Loss of control' and 'slippery road – due to weather' are recorded more frequently on rural roads than urban.
- Factors which are in the top ten for urban but not rural roads are:
    - 'poor turn or manoeuvre', 'pedestrian failed to look properly' and 'pedestrian careless, reckless or in a hurry'
- Factors in the top ten for rural but not urban roads are:
    - 'sudden braking' and 'learner or inexperienced driver/ rider'.

Figure 3 Ten most frequently reported factors in accidents in urban and rural areas

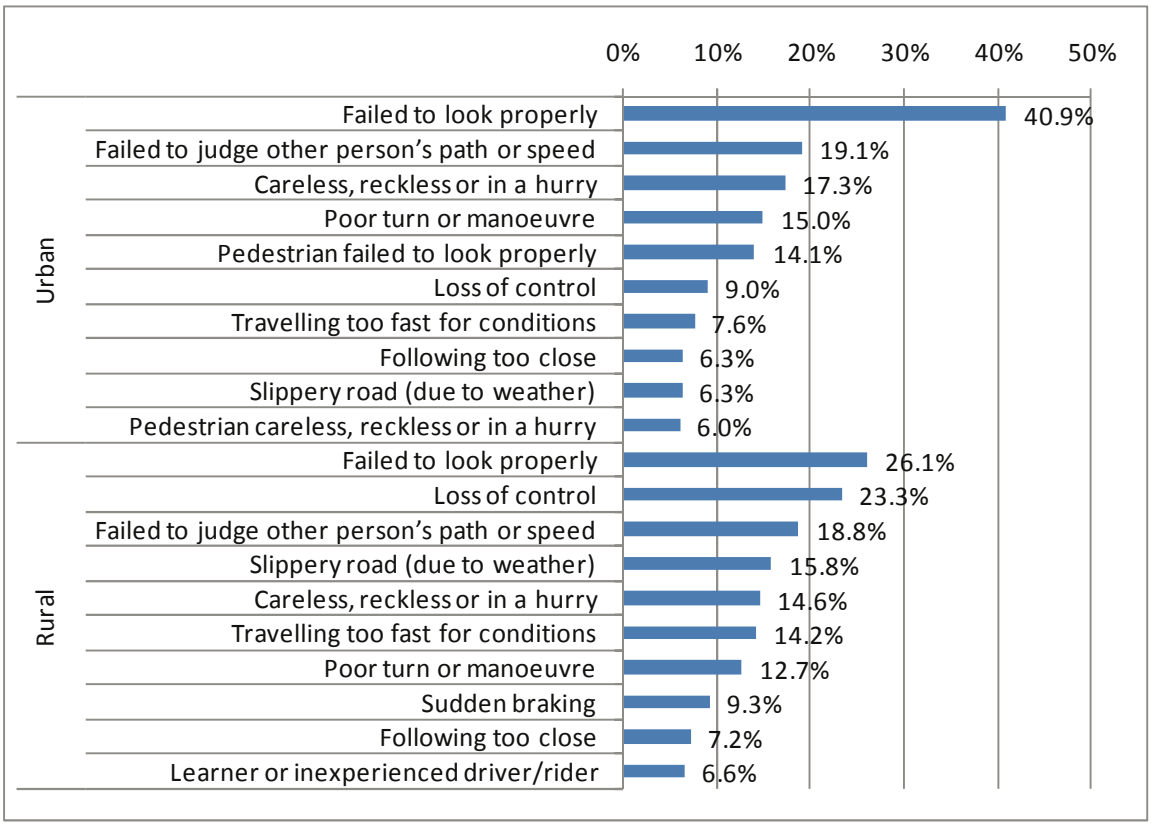


Table 4 shows that comparing types of road between urban and rural areas:

- 'Injudicious action' is reported in a larger proportion of accidents on motorways and dual carriageways in urban areas than on other types of road (in urban or rural areas)
- 'Road environment' factors are reported in a larger proportion of accidents on minor roads in rural areas than in urban areas or on major roads
- 'Impairment or distraction' factors are reported in a larger proportion of accidents on each type of road in rural areas than on equivalent roads in urban areas
- 'Pedestrian' factors are reported in a larger proportion of accidents on minor urban roads than rural roads or major roads.

Table 4 Types of contributory factor reported: road class in urban and rural areas

Contributory factor type and area	Road class and type			
	Motorway	A - dual carriageway	A - other	B, C or unclassified
Urban area				
Driver/ Rider Error or Reaction	73.6%	67.7%	69.7%	63.6%
Injudicious Action	31.7%	31.7%	25.7%	23.4%
Behaviour or Inexperience	17.9%	24.2%	25.7%	24.5%
Road Environment	13.7%	10.1%	7.5%	9.7%
Pedestrian only (casualty or uninjured)	1.3%	13.4%	17.3%	20.9%
Impairment or Distraction	11.5%	9.6%	9.5%	11.2%
Vision Affected	9.0%	7.3%	8.5%	11.5%
Special codes	4.6%	4.8%	5.0%	5.4%
Vehicle Defects	2.7%	1.5%	1.2%	1.6%
Number of accidents	4,444	40,527	142,967	229,949
Rural area				
Driver/ Rider Error or Reaction	70.9%	72.3%	73.3%	65.0%
Injudicious Action	25.9%	26.5%	27.9%	27.7%
Behaviour or Inexperience	16.0%	21.3%	25.0%	27.2%
Road Environment	12.4%	18.7%	22.1%	31.2%
Pedestrian only (casualty or uninjured)	1.2%	2.6%	3.7%	5.9%
Impairment or Distraction	15.2%	14.2%	13.4%	13.2%
Vision Affected	9.8%	8.0%	9.6%	12.5%
Special codes	5.2%	4.7%	3.2%	3.7%
Vehicle Defects	4.4%	3.5%	2.3%	2.1%
Number of accidents	29,523	30,801	104,088	111,298

3.3 Speed limit

The following types of factor are reported in a larger proportion of accidents on roads with a speed limit of 70 mph than on other roads:

- ‘Impairment or distraction’
- ‘Vehicle defects’.

‘Road environment’ factors are reported in a larger proportion of accidents on 60 mph roads than on other roads.

Table 5 shows the following factors to be reported in a smaller proportion of accidents on roads with a speed limit of 30 mph or under than on other roads:

- ‘Driver/ rider error or reaction’
- ‘Injudicious action’
- ‘Road environment’.

The following types of factor are reported in a larger proportion of accidents on roads with a speed limit of 70 mph than on other roads:

- ‘Impairment or distraction’
- ‘Vehicle defects’.

‘Road environment’ factors are reported in a larger proportion of accidents on 60 mph roads than on other roads.

Table 5 Types of contributory factor reported for accidents: speed limit

Contributory factor type	Speed limit				All roads
	30 mph or less	40 - 50 mph	60 mph	70 mph	
Driver/ Rider Error or Reaction	65.3%	72.3%	69.7%	71.9%	67.5%
Injudicious Action	24.4%	29.7%	28.9%	25.7%	26.0%
Behaviour or Inexperience	24.9%	24.4%	26.9%	18.7%	24.7%
Road Environment	9.7%	16.4%	31.6%	15.0%	15.1%
Pedestrian only (casualty or uninjured)	19.3%	6.1%	2.2%	1.7%	13.0%
Impairment or Distraction	10.8%	12.4%	12.7%	14.8%	11.7%
Vision Affected	10.6%	8.8%	10.9%	8.7%	10.3%
Special codes	5.3%	3.8%	3.1%	4.9%	4.6%
Vehicle Defects	1.5%	1.9%	2.3%	4.0%	1.9%
Number of accidents	418,327	80,927	133,824	60,609	693,687

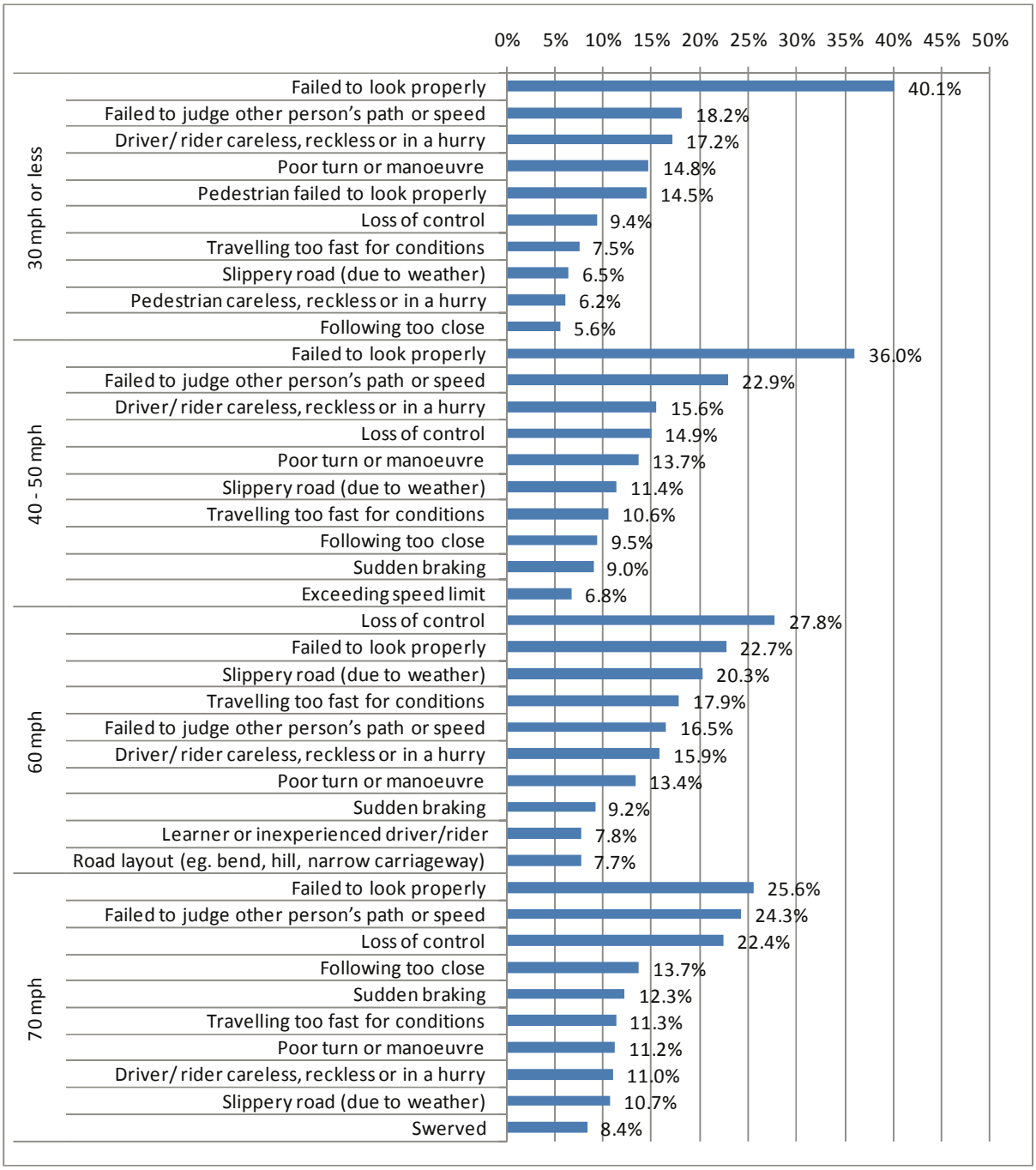
Figure 4 shows that seven factors appear in the top ten for all speed limits.

- Recording of ‘failed to look properly’, the most frequently recorded factor, varies with speed limit from 40% of accidents on roads with a speed limit up to 30 mph to 26% of accidents where the speed limit is 70 mph.
- ‘Slippery road due to weather’ is more commonly recorded on roads with a speed limit of 60 mph than elsewhere.

Factors which appear in the top ten for some speed limits only are:

- ‘Sudden braking’ is in the top ten for roads with a speed limit of 40 mph or more
- ‘Pedestrian failed to look properly’ and ‘pedestrian careless, reckless or in a hurry’ are reported in the top ten for 30 mph roads only
- ‘Learner or inexperienced driver/ rider’ and ‘road layout’ (e.g. bend, hill, narrow carriageway) are ranked nine and ten respectively on 60 mph roads but do not appear in the top ten on other roads.

Figure 4 Ten most frequently reported factors in accidents on roads with different speed limits



3.4 Type of road and accident severity

Table 6 shows that there are some differences in the types factors reported on different classes of road which vary with accident severity:

- 'Impairment or distraction' is reported in a larger proportion of fatal accidents on motorways (31%) than on other classes of road and is also reported in a larger proportion of serious accidents on motorways (24%) than other roads; but in slight accidents, the proportion of accidents with this type of factor varies less with road class.

- ‘Injudicious action’ is reported in a larger proportion of fatal accidents on A, B and minor roads than on motorways, while there is less variation with road class in the proportion of serious and slight accidents with such factors reported.
- ‘Behaviour or inexperience’ is reported in a larger proportion of fatal accidents on minor roads (32%) than on other classes of road or in accidents with less severe injuries.
- On motorways, ‘pedestrian’ factors are reported in 13% of fatal accidents but only 2% of serious and 1% of slight accidents on motorways.

Table 6 Types of contributory factor reported: road class and accident severity

Contributory factor type and severity	Road class and type			
	Motorway	A - dual carriageway	A - other	B, C or unclassified
Fatal				
Driver/ Rider Error or Reaction	61.1%	60.0%	68.2%	64.8%
Injudicious Action	23.4%	29.9%	31.9%	32.6%
Behaviour or Inexperience	16.0%	23.6%	28.0%	31.5%
Road Environment	8.1%	8.4%	10.7%	12.5%
Pedestrian only (casualty or uninjured)	13.2%	24.0%	16.8%	18.4%
Impairment or Distraction	30.9%	18.4%	18.8%	19.2%
Vision Affected	4.4%	6.0%	7.5%	8.4%
Special codes	9.2%	6.6%	4.5%	7.2%
Vehicle Defects	5.2%	3.2%	2.4%	2.8%
Number of accidents	676	1,693	4,972	4,627
Serious				
Driver/ Rider Error or Reaction	68.6%	62.1%	65.4%	58.5%
Injudicious Action	23.7%	26.2%	25.9%	24.2%
Behaviour or Inexperience	18.6%	23.6%	26.2%	26.5%
Road Environment	12.7%	11.0%	12.4%	14.4%
Pedestrian only (casualty or uninjured)	1.9%	18.5%	18.5%	23.5%
Impairment or Distraction	24.1%	14.9%	13.4%	13.9%
Vision Affected	6.8%	6.5%	8.5%	10.4%
Special codes	6.4%	5.7%	4.6%	5.5%
Vehicle Defects	5.8%	2.4%	1.9%	2.2%
Number of accidents	3,579	10,033	38,561	52,587
Slight				
Driver/ Rider Error or Reaction	71.9%	71.2%	72.4%	65.1%
Injudicious Action	27.1%	30.0%	26.7%	24.8%
Behaviour or Inexperience	16.0%	22.9%	25.2%	25.1%
Road Environment	12.7%	14.5%	13.9%	17.3%
Pedestrian only (casualty or uninjured)	0.9%	6.6%	10.1%	14.6%
Impairment or Distraction	13.3%	10.9%	10.6%	11.3%
Vision Affected	10.2%	7.8%	9.1%	12.1%
Special codes	4.8%	4.5%	4.2%	4.7%
Vehicle Defects	3.9%	2.3%	1.6%	1.7%
Number of accidents	29,716	59,608	203,557	284,078

Table 7 shows some variations with accident severity between urban and rural roads:

- ‘Driver/ rider error or reaction’ and ‘impairment or distraction’ are reported in a larger proportion of fatal and serious accidents in rural areas than urban areas

- ‘Pedestrian’ factors are reported in a larger proportion of fatal and serious accidents in urban areas than in rural areas or in slight accidents
- In slight accidents, the reporting of most factors does not vary between urban and rural areas, except that ‘road environment’ is reported more frequently in rural areas and ‘pedestrian’ factors more in urban areas

Table 7 Types of contributory factor reported: accident severity and urban and rural areas

Contributory factor type	Fatal		Serious		Slight	
	Urban	Rural	Urban	Rural	Urban	Rural
Driver/ Rider Error or Reaction	56.6%	70.2%	56.5%	68.4%	67.9%	69.8%
Injudicious Action	30.5%	31.9%	22.8%	27.7%	25.4%	27.3%
Behaviour or Inexperience	27.0%	28.6%	24.5%	27.5%	24.9%	23.7%
Road Environment	5.4%	14.0%	6.9%	21.3%	9.4%	25.4%
Pedestrian only (casualty or uninjured)	33.7%	9.7%	31.4%	6.7%	16.5%	3.5%
Impairment or Distraction	15.7%	21.7%	11.9%	17.0%	10.2%	12.6%
Vision Affected	8.4%	6.9%	9.3%	9.1%	10.1%	11.1%
Special codes	7.6%	5.3%	6.1%	4.2%	5.0%	3.7%
Vehicle Defects	1.5%	3.6%	1.7%	2.9%	1.5%	2.5%
Number of accidents	4,267	7,701	58,386	46,357	355,234	221,652

4 Accidents at different times

4.1 Time of day

Table 8 shows that the main variations are between accidents at night and those during the day:

- ‘Behaviour or inexperience’, ‘impairment or distraction’ and ‘injudicious action’ are reported in a larger proportion of accidents between 7 pm and 7 am than during the day
- ‘Vision affected’ is reported in a larger proportion of accidents between 7 am and 7 pm than at night
- ‘Road environment’ is reported in a larger proportion of accidents at night and in the morning rush hour than between 10 am and 7 pm.

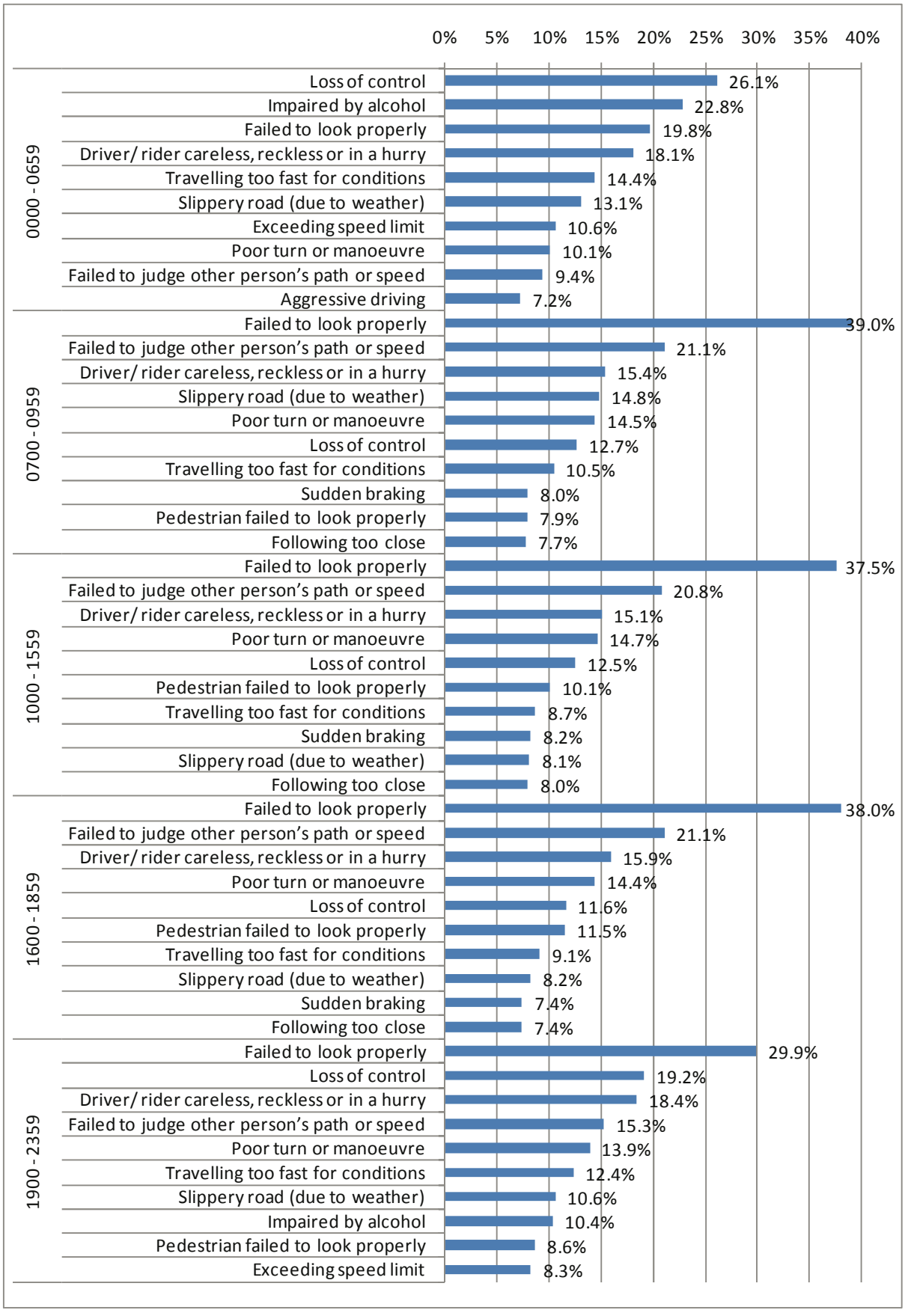
Table 8 Types of contributory factor reported: time of day

Contributory factor type	Time of day					All times
	0000 - 0659	0700 - 0959	1000 - 1559	1600 - 1859	1900 - 2359	
Driver/ Rider Error or Reaction	57.8%	70.2%	69.7%	68.3%	64.5%	67.5%
Injudicious Action	29.7%	25.3%	24.5%	25.0%	29.2%	26.0%
Behaviour or Inexperience	28.2%	21.4%	23.0%	23.9%	30.1%	24.7%
Road Environment	18.8%	19.8%	13.2%	12.7%	16.1%	15.1%
Pedestrian only (casualty or uninjured)	11.4%	10.0%	13.1%	15.2%	13.2%	13.0%
Impairment or Distraction	31.9%	7.1%	8.2%	9.2%	16.4%	11.7%
Vision Affected	6.0%	13.7%	10.6%	10.9%	7.8%	10.3%
Special codes	7.4%	3.4%	4.6%	4.0%	5.3%	4.6%
Vehicle Defects	1.8%	1.8%	2.0%	1.8%	2.0%	1.9%
Number of accidents	57,368	109,723	238,992	159,712	127,818	693,613

Figure 5 shows that seven individual factors are in the top ten at each time of day, but the ranking of the factors within the top ten varies:

- ‘Impaired by alcohol’ is the second most frequent factor reported for accidents between midnight and 7 am (23% of accidents); it features in 10% of accidents between 7 pm and midnight but is not in the top ten at other times
- ‘Exceeding the speed limit’ also features in the top ten between 7 pm and midnight and between midnight and 7 am but not at other times
- ‘Aggressive driving’ ranks tenth between midnight and 7 am but is not in the top ten factors at other times
- ‘Sudden braking’ features in the top ten in accidents between 7 am and 7 pm, but not at night
- ‘Pedestrian failed to look properly’ is one of the top ten factors in each time period except between midnight and 7 am.

Figure 5 Ten most frequently reported factors in accidents at different times of day



4.2 Weekdays and weekends

Table 9 shows that proportion of accidents with different types of factor reported is similar at weekends and on weekdays, except that 'impairment or distraction' is reported in a larger proportion of accidents at weekends (17%) than on weekdays (10%).

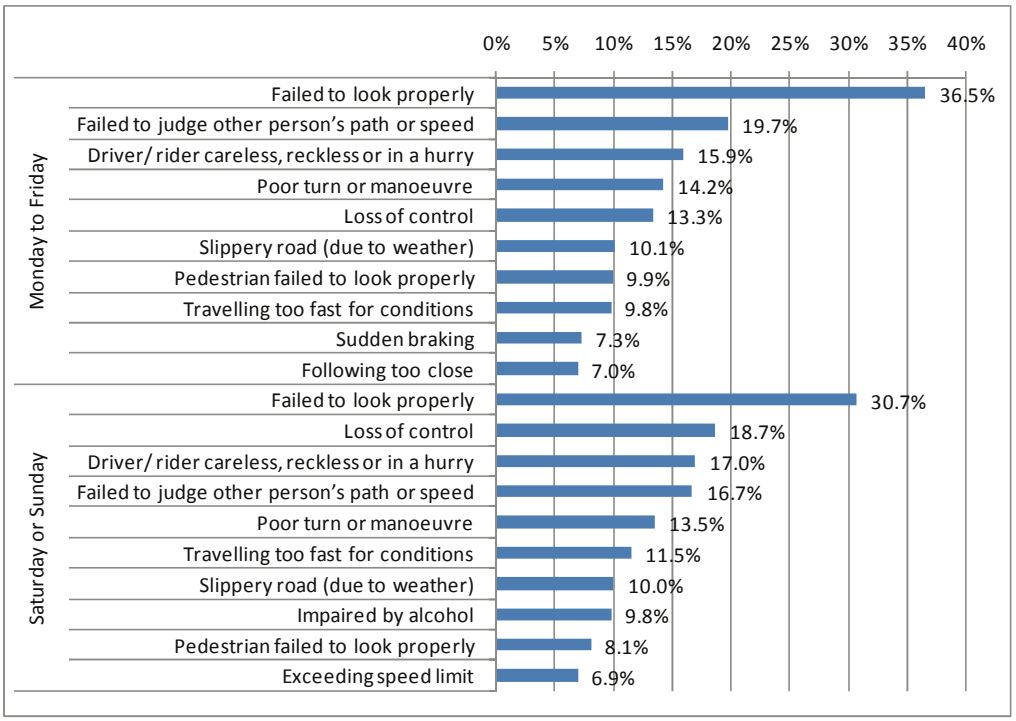
Table 9 Types of contributory factor reported: weekdays and weekends

Contributory factor type	Weekday or weekend	
	Monday to Friday	Saturday or Sunday
Driver/ Rider Error or Reaction	68.1%	65.9%
Injudicious Action	25.4%	27.8%
Behaviour or Inexperience	24.0%	26.8%
Road Environment	24.0%	26.8%
Pedestrian only (casualty or uninjured)	13.3%	12.0%
Impairment or Distraction	10.1%	16.5%
Vision Affected	10.8%	8.7%
Special codes	4.5%	5.0%
Vehicle Defects	1.9%	2.0%
Number of accidents	515,754	177,933

Figure 6 shows that of the top ten factors reported, eight are the same on weekdays and weekends, although the ranking varies. The differences are:

- 'Impaired by alcohol '(10%) and exceeding the speed limit (7%) are in the top ten at weekends only
- 'Sudden braking' and 'following too close' are in the top ten on weekdays (7%) but not at weekends.

Figure 6 Ten most frequently reported factors in accidents on weekdays and at weekends



4.3 Season

Table 10 shows that the main difference between different times of year is that 'road environment' factors are reported in a larger proportion of accidents in winter (21%) than at other times (e.g. 13% in summer).

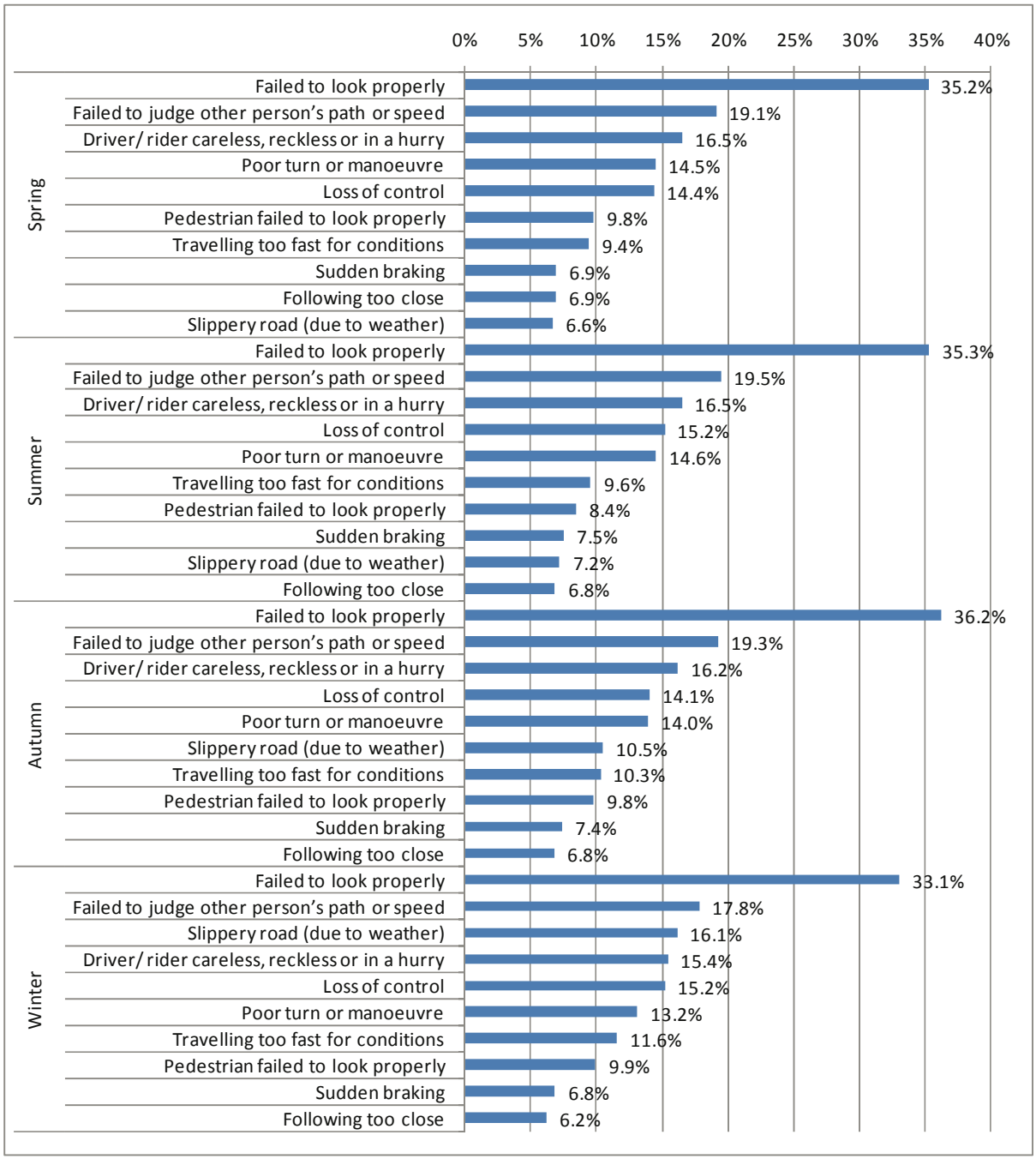
Table 10 Types of contributory factor reported: season

Contributory factor type	Season				All year
	Spring	Summer	Autumn	Winter	
Driver/ Rider Error or Reaction	67.7%	69.1%	68.0%	65.3%	67.5%
Injudicious Action	26.0%	26.1%	25.8%	26.2%	26.0%
Behaviour or Inexperience	25.4%	25.5%	24.6%	23.3%	24.7%
Road Environment	11.9%	12.7%	15.4%	20.8%	15.1%
Pedestrian only (casualty or uninjured)	13.4%	11.7%	13.2%	13.5%	13.0%
Impairment or Distraction	12.1%	12.1%	11.4%	11.3%	11.7%
Vision Affected	9.5%	9.4%	10.9%	11.1%	10.3%
Special codes	4.9%	4.8%	4.4%	4.5%	4.6%
Vehicle Defects	1.9%	2.2%	1.8%	1.7%	1.9%
Number of accidents	166,279	176,710	185,641	165,057	693,687

Figure 7 shows that in each season, the top ten factors reported in accidents are the same, but their ranking differs.

- The main difference is that 'slippery road (due to weather)' ranks third in winter (16% of accidents) but as expected, has a lower ranking at other times of year (7% in spring and summer, 10% in autumn).

Figure 7 Ten most frequently reported factors in accidents at different times of year



4.4 Time and severity

Table 11 shows that within an accident severity category, many of the types of factor are reported in a similar proportion of accidents in each time period, with a few exceptions:

- 'Impairment or distraction' and 'injudicious action' are reported in a higher proportion of accidents between midnight and 7 am, to a lesser extent in the evening and much less during the day, in the case of fatal, serious and slight accidents.

Table 11 Types of contributory factor reported: time of day and severity

Contributory factor type and severity	Time of day				
	0000 - 0659	0700 - 0959	1000 - 1559	1600 - 1859	1900 - 2359
Fatal					
Driver/ Rider Error or Reaction	57.4%	69.2%	70.7%	67.4%	61.5%
Injudicious Action	36.0%	28.6%	26.5%	30.5%	35.7%
Behaviour or Inexperience	29.1%	22.7%	23.6%	24.9%	30.6%
Road Environment	12.1%	15.3%	10.2%	8.9%	10.6%
Pedestrian only (casualty or uninjured)	17.5%	14.2%	16.8%	21.5%	19.6%
Impairment or Distraction	33.5%	15.5%	14.3%	14.8%	21.2%
Vision Affected	5.3%	10.7%	9.0%	8.1%	5.2%
Special codes	9.1%	4.1%	5.7%	4.9%	6.2%
Vehicle Defects	2.0%	3.8%	3.0%	2.3%	3.4%
Number of accidents	2,135	1,294	3,396	2,279	2,864
Serious					
Driver/ Rider Error or Reaction	54.1%	66.7%	63.8%	62.0%	59.3%
Injudicious Action	30.4%	23.6%	22.5%	22.9%	29.0%
Behaviour or Inexperience	29.1%	22.7%	23.6%	24.9%	30.6%
Road Environment	14.7%	18.1%	12.4%	11.2%	13.3%
Pedestrian only (casualty or uninjured)	16.6%	16.1%	20.9%	23.9%	20.6%
Impairment or Distraction	36.5%	8.2%	9.2%	9.6%	19.1%
Vision Affected	5.3%	13.4%	10.0%	10.0%	6.7%
Special codes	8.2%	4.0%	5.2%	4.3%	5.6%
Vehicle Defects	2.1%	2.1%	2.3%	2.1%	2.3%
Number of accidents	11,334	13,613	33,518	24,281	22,002
Slight					
Driver/ Rider Error or Reaction	58.8%	70.8%	70.7%	69.5%	65.7%
Injudicious Action	30.4%	23.6%	22.5%	22.9%	29.0%
Behaviour or Inexperience	27.9%	21.2%	22.9%	23.7%	30.0%
Road Environment	20.1%	20.1%	13.4%	13.1%	16.9%
Pedestrian only (casualty or uninjured)	9.7%	9.1%	11.7%	13.5%	11.5%
Impairment or Distraction	30.6%	6.8%	7.9%	9.0%	15.7%
Vision Affected	6.3%	13.7%	10.7%	11.1%	8.1%
Special codes	7.1%	3.3%	4.5%	4.0%	5.2%
Vehicle Defects	1.7%	1.7%	2.0%	1.8%	1.9%
Number of accidents	43,899	94,816	202,078	133,152	102,952

Similarly, Table 12 shows that ‘impairment or distraction’ factors are reported more frequently for accidents at the weekend than in the week, in fatal, serious and slight accidents. ‘Injudicious action’ is reported more frequently for fatal accidents at weekends (35%) than on weekdays (30%), but the difference in reporting of ‘injudicious action’ for serious and slight accidents between weekends and weekdays is smaller.

Table 12 Types of contributory factor reported: weekdays and weekends and severity

Contributory factor type	Fatal		Serious		Slight	
	Monday to Friday	Saturday or Sunday	Monday to Friday	Saturday or Sunday	Monday to Friday	Saturday or Sunday
Driver/ Rider Error or Reaction	65.0%	66.0%	62.0%	61.1%	69.2%	66.9%
Injudicious Action	29.5%	35.2%	24.0%	27.4%	25.6%	27.7%
Behaviour or Inexperience	26.7%	30.8%	24.9%	28.0%	23.8%	26.4%
Road Environment	10.4%	12.1%	13.0%	13.9%	15.4%	16.0%
Pedestrian only (casualty or uninjured)	19.4%	15.8%	21.4%	18.1%	11.8%	10.7%
Impairment or Distraction	17.5%	23.8%	12.1%	19.3%	9.6%	15.7%
Vision Affected	10.0%	7.4%	10.0%	7.4%	11.0%	9.0%
Special codes	5.1%	5.5%	5.1%	5.5%	4.4%	4.8%
Vehicle Defects	2.8%	2.9%	2.2%	2.2%	1.8%	1.9%
Number of accidents	7,962	4,006	74,477	30,283	433,315	143,644

5 Contributory factors reported for vehicles: cars and motorcycles

While a large proportion of accidents have at least one contributory factor reported, many vehicles involved in accidents have no contributory factor; 46% of cars and 39% of motorcycles have no contributory factor reported. The figures presented in this section show the percentages of vehicles with contributory factors as a percentage of all vehicles in accidents where the police attended the scene, including those with no contributory factor reported.

5.1 Car drivers

The proportion of car drivers with no contributory factor reported is lower for young drivers and drivers over 70 than for those between 30 and 70, as Table 13 shows.

- 'Driver error or reaction' is reported more frequently for younger and older drivers than for those between 30 and 70, reflecting factors such as poor judgement by younger drivers and decrease in functioning among older drivers
- 'Injudicious action' and 'behaviour or inexperience' are reported more frequently for drivers under 30, and particularly under 20, than for drivers over 30
- 'Impairment or distraction' is reported more frequently for drivers over 70 and slightly more frequently for those under 30, than for those aged 30-70, again reflecting decrease in functioning among older drivers
- 'Road environment' factors are also reported more frequently for younger drivers, particularly those under 20, reflecting inexperience and poor judgement in more difficult driving conditions
- 'Vehicle defects', although reported in only a small proportion of accidents, are reported for a larger proportion (1%) of drivers under 30, who tend to drive older vehicles, than for drivers over 30 (around 0.5% - 0.7%).

Table 13 Types of contributory factor reported for cars: driver age

Contributory factor type	Driver age									All ages
	Under 20	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	
Driver/ Rider Error or Reaction	49.8%	42.1%	34.7%	32.2%	32.4%	35.3%	46.0%	58.7%	65.0%	38.1%
Injudicious Action	24.9%	18.3%	12.4%	10.3%	9.4%	8.9%	9.7%	10.9%	11.9%	14.0%
Behaviour or Inexperience	33.4%	15.3%	9.5%	7.5%	6.9%	6.9%	8.5%	10.6%	12.1%	12.3%
Road Environment	16.6%	11.4%	7.9%	7.1%	6.5%	6.0%	5.8%	6.2%	5.8%	9.1%
Impairment or Distraction	8.3%	8.3%	6.2%	5.2%	5.0%	5.5%	8.4%	12.4%	16.6%	6.7%
Vision Affected	6.3%	6.2%	5.7%	5.7%	5.9%	6.7%	7.9%	9.6%	9.5%	6.1%
Special codes	2.7%	2.1%	1.9%	1.5%	1.2%	1.3%	1.6%	2.5%	5.0%	1.8%
Vehicle Defects	1.4%	1.1%	0.7%	0.6%	0.5%	0.5%	0.6%	0.7%	0.6%	0.8%
No factor recorded for vehicle	26.3%	39.0%	50.0%	54.1%	54.8%	52.0%	40.3%	25.8%	18.9%	45.7%
Number of car drivers	88,285	248,251	207,255	179,811	113,795	64,241	33,993	13,804	862	950,297

Table 13 shows that the variation in the frequency of reporting different types of factor between drivers in their 30s, 40s, 50s and 60s is relatively small; the main differences are between younger drivers, older drivers and drivers in this 30 – 69 group. Therefore the analysis of the top ten individual factors which follows in Figure 8 shows the top ten factors reported for drivers in three key age groups with different levels of accident involvement: young drivers under 25, 25 to 69 year olds and over 70s. Six of the top ten factors reported for drivers in each of these groups are the same in each group and in most cases these are in the top six, but there are differences in ranking and frequency of reporting.

The main differences are between drivers over 70 and others:

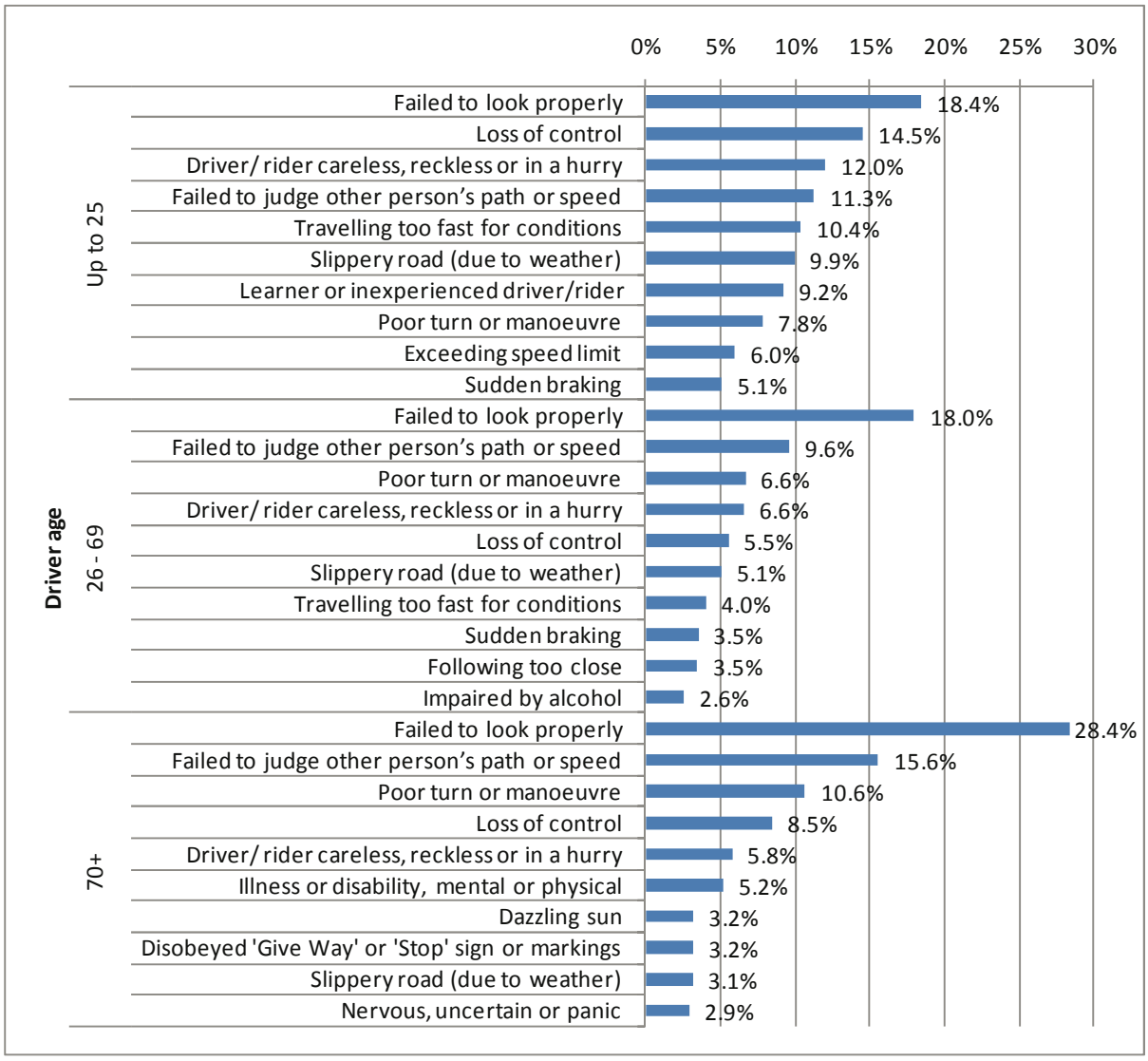
- 'Failure to look properly' is reported more frequently than other factors in each of the three age groups but is reported far more frequently in the case of older drivers (28%) than in the other two groups (18%)
- The factors ranked six to ten in frequency of reporting for older drivers include some associated with ageing and difficulty coping with the traffic environment which do not appear in the top ten for other drivers: 'illness or disability', 'dazzling sun', 'disobeyed Give Way or Stop sign' and 'nervous, uncertain or in a panic'.

In the other age groups:

- Some of the factors associated with more aggressive driving styles appear in the top ten: 'exceeding the speed limit' in the under 25 age group and 'travelling to fast for the conditions', 'sudden braking', 'following too close', in the under 25 and 25 – 69 age groups
- Alcohol features in the top ten factors for drivers aged 25 – 69 (3%) and ranks 11 (4.6%) in the 17-24 age group
- Inexperience features in the top ten for those under 25
- 'Slippery road due to weather' is recorded for almost 10% of drivers under 25 but 5% of those aged 25 - 69; this may be associated more driving on rural roads but may also reflect lack of experience with these conditions.

These differences in the frequency with which contributory factors are assigned to drivers of different age groups are consistent with findings of other research (as summarised in Hopkin 2010 and Hopkin 2008) and can to some extent be explained by where drivers of different ages are driving.

Figure 8 Ten most frequently reported factors for cars: driver age



Almost half of the cars involved in accidents which are driven by women have no contributory reported (49%) this is rather higher than the proportion for cars driven by men (44%).

The main difference between men and women in the types of factor reported is that a smaller proportion of women than men are attributed with 'injudicious action' and 'behaviour or inexperience'.

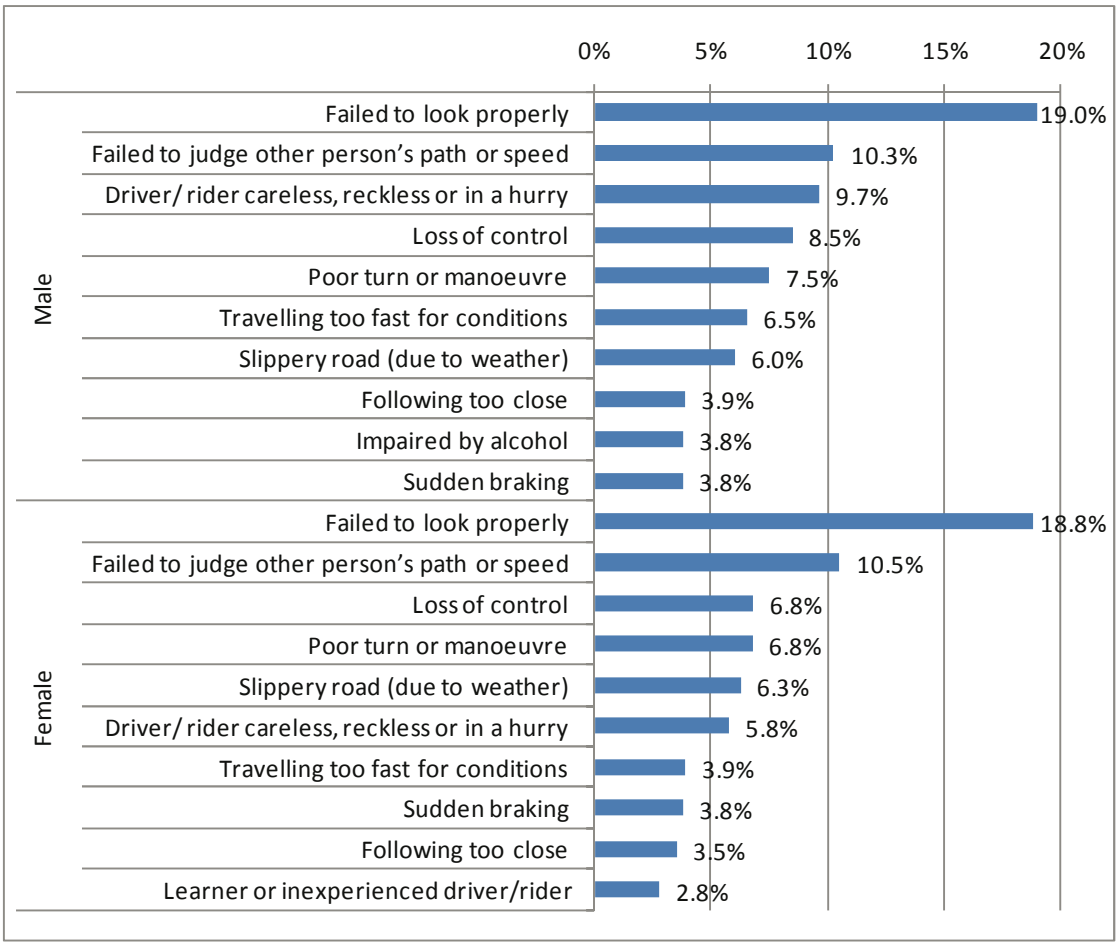
Table 14 Types of contributory factor reported for cars: male and female drivers

Contributory factor type	Driver gender	
	Male	Female
Driver/ Rider Error or Reaction	38.9%	37.0%
Injudicious Action	15.8%	11.0%
Behaviour or Inexperience	14.2%	10.0%
Road Environment	8.8%	9.0%
Impairment or Distraction	7.6%	5.0%
Vision Affected by	5.8%	6.4%
Special codes	2.3%	1.3%
Vehicle Defects	0.9%	0.7%
No factor recorded for vehicle	43.8%	48.7%
Number of car drivers	633,601	348,294

Nine of the top ten individual contributory factors are the same for men and women. 'Careless, reckless or in a hurry' is recorded more frequently for men (10%) than women (6%), while 'travelling too fast for the conditions' is recorded for more men (7%) than women (4%).

- 'Impaired by alcohol' appears in the top ten factors for men (reported for 4% of men driving a car involved in an accident)
- 'Learner or inexperienced driver' is in the top ten for women (reported for 3% of women driving a car involved in an accident).

Figure 9 Ten most frequently reported factors for cars: male and female drivers



5.2 Motorcyclists

As for car drivers, the proportion of motorcyclists with no contributory factor reported is lower under the age of 30 and over 70 than in the 30-70 age group, as Table 15 shows:

- 'Rider error or reaction' is reported more frequently for those over 70 (48%) and under 30 (43%) than for those aged 30-70 (39%)
- 'Behaviour or inexperience' is reported for a larger proportion of riders under 30 (and particularly those under 20) than for riders in other age groups
- 'Injudicious action' is reported rather less frequently for riders over 50 than in other age groups.

Table 15 Types of contributory factor reported for motorcycles: rider age

Contributory factor type	Rider age							All riders
	Under 20	20-29	30-39	40-49	50-59	60-69	70+	
Driver/ Rider Error or Reaction	43.1%	43.0%	40.1%	38.9%	38.8%	40.7%	47.7%	41.3%
Injudicious Action	17.2%	18.4%	15.3%	13.5%	10.6%	10.2%	8.5%	15.6%
Behaviour or Inexperience	34.7%	20.5%	13.7%	10.4%	8.7%	8.3%	7.0%	19.2%
Road Environment	13.4%	11.7%	11.4%	12.2%	13.6%	12.6%	12.4%	12.3%
Impairment or Distraction	4.3%	4.2%	3.1%	2.6%	2.3%	2.5%	2.2%	3.5%
Vision Affected	5.2%	4.6%	4.3%	4.4%	4.4%	4.5%	4.2%	4.6%
Special codes	3.3%	2.0%	1.6%	1.6%	1.4%	1.4%	1.6%	2.1%
Vehicle Defects	1.7%	1.2%	0.8%	0.9%	1.0%	1.1%	1.6%	1.1%
No factor recorded for vehicle	31.6%	36.8%	42.3%	44.5%	45.0%	44.3%	37.1%	39.1%
Number of riders	24,051	24,262	21,495	18,929	8,275	2,549	669	100,230

Figure 10 shows the top ten factors reported for riders in three key age groups, with different levels of accident involvement: young drivers under 30, 30 to 59 year olds and over 60s.

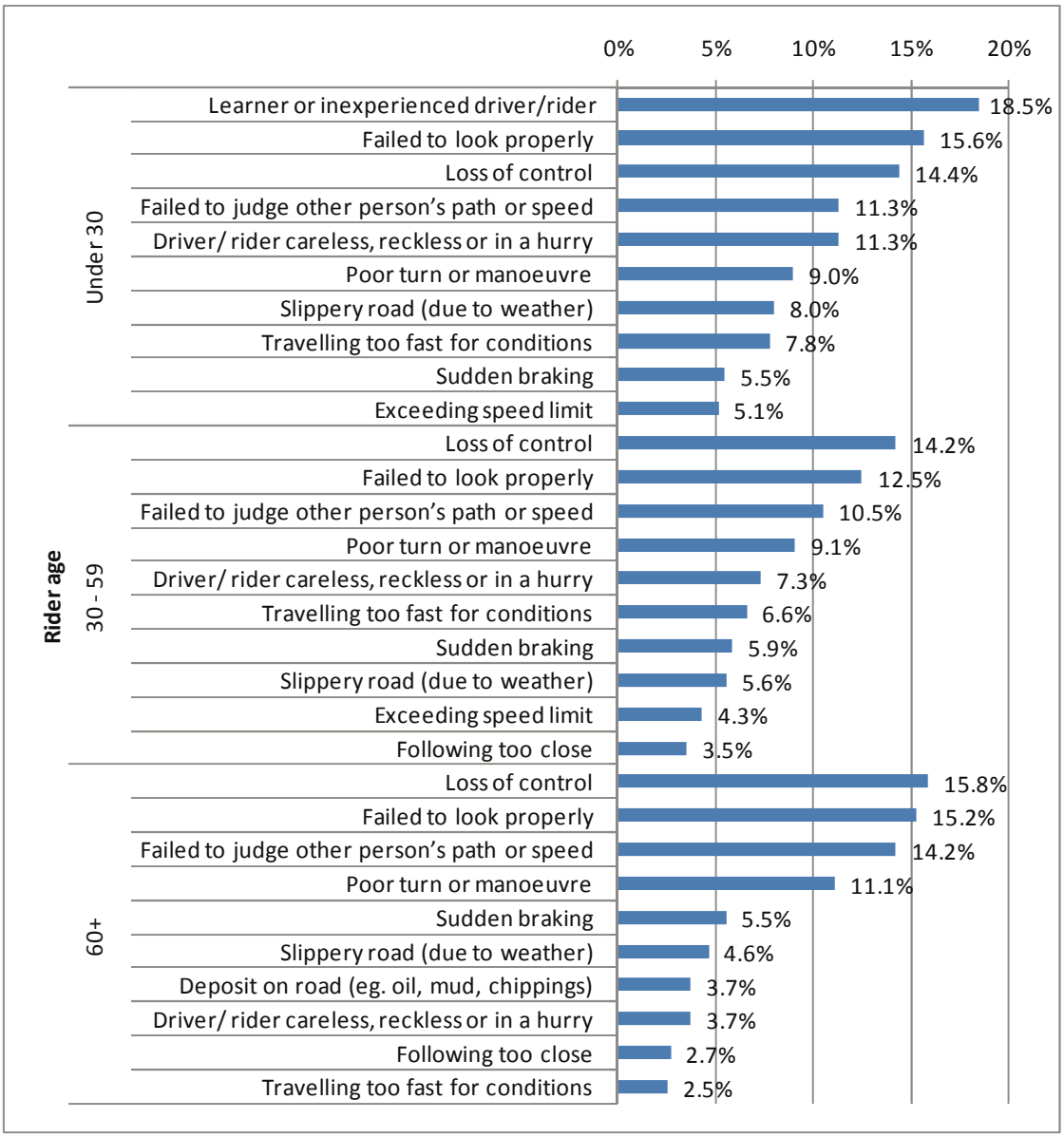
- ‘Failed to look properly’ and ‘loss of control’ were the most frequently reported factors for riders aged 30 – 60 and over 60 (13% - 16%).
- ‘Learner/ inexperienced’ was the factor reported most frequently for riders under 30 (19%), with ‘failed to look properly’ and ‘loss of control’ ranking second and third (16% and 14%).

Ranking of factors varied between age groups but most of the top ten factors were the same for riders in each of the three age groups. Factors which did not appear in the top ten in all three age groups were:

- ‘Deposit on road’ - 4% of riders over 60 but less frequently for other age groups
- ‘Learner/ inexperienced’ – 19% of riders under 30
- ‘Exceeding speed limit’ – 5% of riders under 30 and 4% of riders aged 30 – 59 but fewer riders over 60.

These differences between age groups are consistent with the findings of other research on motorcycle accidents (see Hopkin 2009).

Figure 10 Ten most frequently reported factors for motorcycles: rider age



5.3 Comparison between car drivers and motorcyclists

As mentioned earlier, the proportion of motorcyclists with no contributory factor reported is lower than for car drivers. Comparison of Table 13 with Table 15 shows:

- 42-45% of motorcyclists in their 30s, 40s, 50s and 60s have no contributory factor reported compared with 52-55% of car drivers in these age groups
- 32% of motorcyclists under the age of 20 have no contributory factor reported compared with 26% of car drivers under 20.

The main differences in the types of factor reported for motorcyclists and car drivers are:

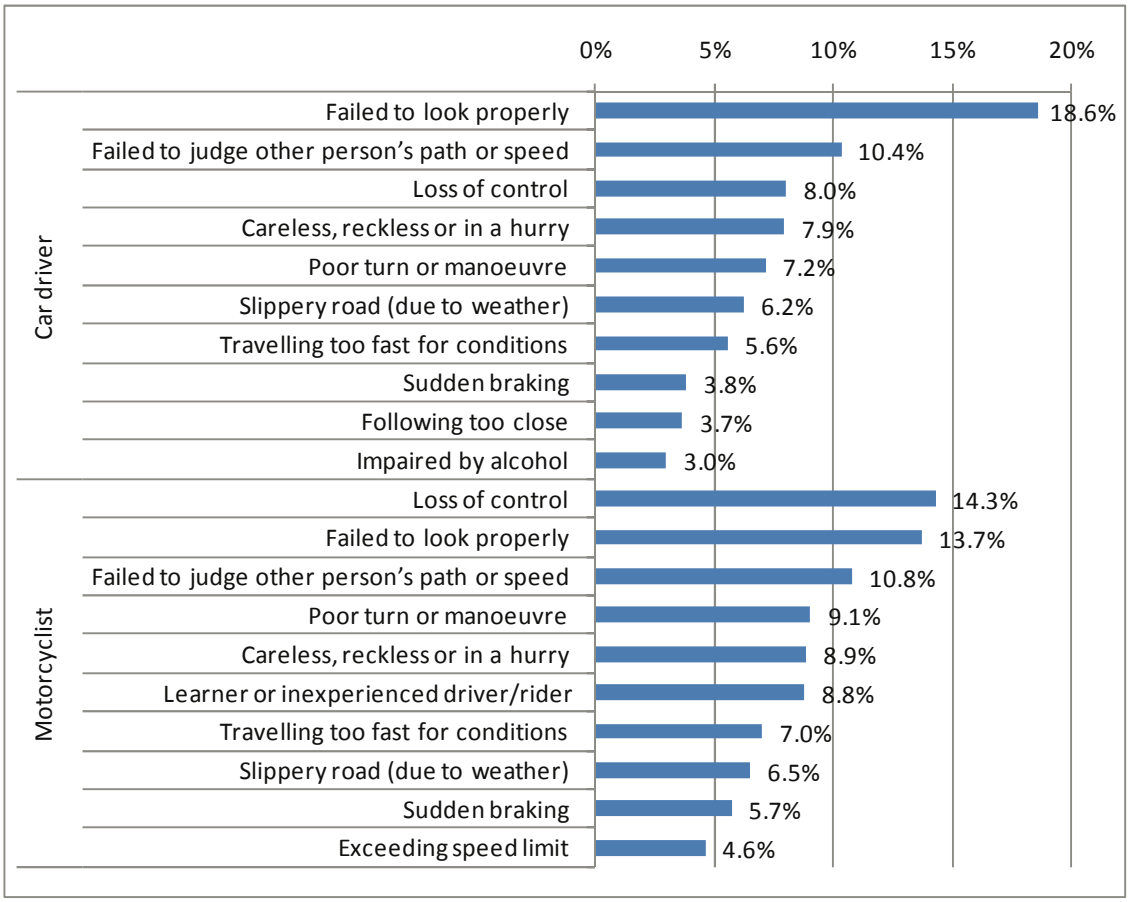
- 'Behaviour or inexperience' is reported more frequently for motorcyclists than for car drivers, particularly between the ages of 20 and 50, reflecting the greater take up of motorcycling over the age of 30 compared with driving

- ‘Road environment’ is reported more frequently for motorcyclists than car drivers over the age of 30.

Figure 11 shows that of the top ten factors reported for car drivers and motorcyclists, nine are the same, although the ranking varies:

- ‘Loss of control’ is more frequently reported for motorcyclists than other factors (14%) and is less frequently reported for car drivers (8%)
- ‘Failure to look properly’ is more frequently reported for car drivers than other factors (19%) and is less frequently reported for motorcyclists (14%)
- ‘Impaired by alcohol’ is the tenth most frequently reported factor for car drivers (3%) but ranks 15 (2%) for motorcyclists
- ‘Learner or inexperienced’ ranks 6 for motorcyclists (9%) but ranks 12 for car drivers (3%).

Figure 11 Ten most frequently reported factors: cars and motorcycles



6 Summary and conclusions

6.1 Summary of results

Types of factor

Human factors are recorded as contributing to the cause of accidents far more frequently than the road environment or defects in the vehicle.

The most frequently recorded factor type is ‘driver/ rider error or reaction’, in 68% of all accidents. Two other types of factor are reported in a quarter of all accidents: ‘injudicious action’ and ‘behaviour or inexperience’. Between 10 and 15% of accidents are recorded in the ‘road environment’, ‘pedestrian’, ‘impairment or distraction’ or ‘vision’ groups. Vehicle defects are recorded in just 2% of accidents.

Accident severity

There are some differences between fatal, serious and slight accidents in the individual contributory factors recorded.

‘Loss of control’ is recorded in a third of fatal accidents, a fifth of serious accidents and fewer slight accidents.

‘Failure to look properly’ is the second most frequently recorded factor in fatal accidents (one fifth) and the most frequently recorded factor in serious and slight accidents (one third).

‘Failed to judge another person’s path or speed’ is the second most frequently recorded factor in slight accidents (one fifth) but less often in serious or slight accidents.

‘Travelling too fast for the conditions’ and ‘exceeding the speed limit’ are more frequently recorded for fatal accidents than less severe incidents.

‘Slippery road due to weather’ is the main ‘road environment’ factor and is more commonly reported for slight accidents (one tenth) than fatal or serious accidents.

Where accidents happen

‘Failed to look properly’ is recorded more frequently than other factors on all types of road but is more frequently recorded on roads in towns, roads which are not motorways, and roads with a speed limit of 50 mph or less, than on rural roads, motorways and high speed roads.

‘Failed to judge another person’s path or speed’ the second or third most frequently recorded on most types of road and at most speed limits, the exceptions being minor roads and 60 mph roads.

‘Loss of control’ is recorded in a higher proportion of accidents on motorways, high speed roads and rural roads, than lower speed and urban roads.

Factors associated with pedestrians are recorded more frequently on minor urban roads than other roads, reflecting different patterns of use.

‘Learner or inexperienced’ is recorded as a contributory factor more frequently on rural roads, minor roads and 60 mph roads than elsewhere.

‘Slippery road due to weather’ is one of the top ten factors on all types of road but is recorded more frequently on 60 mph roads and rural roads than elsewhere.

Factors associated with impairment or distraction are more frequently recorded in fatal and serious accidents on motorways and rural roads, than in slight accidents or more severe accidents on other roads.

‘Behaviour or inexperience’ is reported in a larger proportion of fatal accidents on minor roads than on other roads or in accidents with less severe injuries.

When accidents happen

The contributory factors recorded vary between accidents at night and in the daytime. Between 7 pm and 7 am, ‘loss of control’, ‘failed to look properly’ and ‘driver/ rider careless reckless or in a hurry’ are the most frequently recorded factors. In addition between midnight and 7 am ‘impaired by alcohol’ is the second most frequently recorded factor.

At other times, ‘failed to look properly’, ‘failure to judge another person’s path or speed’ and ‘driver/ rider careless reckless or in a hurry’ are the three most commonly recorded factors, with ‘failed to look properly’ recorded far more frequently than at night.

Comparing weekdays and weekends shows that many of the most commonly recorded factors are recorded to a similar extent on weekdays and weekends. However ‘impaired by alcohol’ and ‘exceeding the speed limit’ are among the ten most frequently recorded factors at weekends but not during the week , while ‘sudden braking’ and ‘following too close’ are more frequently recorded on weekdays than at weekends.

In winter, ‘slippery road due to weather’ is recorded more frequently than at other times of year but otherwise differences between seasons in the types of factor recorded are small.

Cars and motorcycles involved in accidents

A larger proportion of motorcyclists involved in accidents are reported with a factor thought to have contributed to the accident, compared with car drivers. Younger motorcyclists and younger car drivers more frequently have contributory factors reported than their older counterparts.

Younger and older drivers and riders (under 30 and over 70) have ‘error or reaction’ factors recorded in a larger proportion of cases than among those between 30 and 70.

Young drivers and riders also have ‘behaviour or inexperience’ factors attributed to them more frequently than older people.

Older car drivers have ‘failed to look properly’ recorded more frequently than younger drivers and factors associated with ageing and difficulty coping with the traffic environment, which are less frequently recorded for younger drivers.

Car drivers under 25 have ‘exceeding the speed limit’ ‘travelling too fast for the conditions’ and ‘learner/ inexperienced’ recorded more frequently than drivers over 25. ‘Exceeding the speed limit’ features in the top ten factors for motorcyclists in the under 30 and 30 – 59 age groups.

Alcohol features in the top ten factors for drivers aged 25 – 69 and ranks 11 for drivers under 25, but is less frequently recorded for motorcyclists.

Comparisons between men and women car drivers show many similarities in the contributory factors reported, but ‘careless, reckless or in a hurry’, ‘travelling too fast for the conditions’ and ‘impaired by alcohol’ are recorded more frequently for men than for women, while ‘learner or inexperienced driver’ is recorded more frequently for women.

6.2 Conclusions

Improving safety

The data provide a subjective indication of the causes of accidents, not a definitive view. Factors which are more obvious to the police officer attending will tend to be recorded more than those which are less obvious, while those which allocate blame or imply careless or reckless behaviour are less likely to be recorded. However the results can still be used to highlight areas for further investigation or improvement in road safety.

It is clear that driver and rider errors, particularly failure to look properly and failure to judge the path or speed of other road users correctly remain significant contributory factors in road accidents. Factors such as 'careless, reckless or in a hurry', 'loss of control' and 'travelling too fast for the conditions' together make up another significant group which could be addressed by a more measured style of driving, taking greater account of the traffic and road conditions prevailing. These human factors are attributed to drivers of all ages, although some factors are more frequently assigned to young drivers and others to older drivers, which points to the value of post-test driver training for improving the quality of driving, and hence road safety.

Some factors which are reported in relatively few accidents in total, are more prominent in specific situations. Analysing these specific groups of accidents can provide insights into their causes which may help to develop measures for improving road safety - for example accidents involving specific groups of road users, or particular combinations of accident circumstances. In fatal accidents on motorways for example, alcohol, fatigue and vehicle defects (mainly tyres and brakes) are more frequently reported than in other accidents. Information on the increased risks of driving in these specific circumstances may encourage drivers to take a more responsible approach.

Factors associated with the road environment are less frequently attributed as factors contributing to the cause of accidents than the 'human' factors. Engineering measures have been developed to address many of these, but an anticipatory and measured driving style will reduce the role of factors such as road surface conditions and the road layout in causing accidents.

The analytical approach

One of the objectives of this report was to explore the potential for the data to be used further. The results have demonstrated the feasibility of comparing the types of contributory factors recorded for four or five different accident circumstances. Graphical presentation of the 'top ten' individual factors recorded for two or three different sub-groups of accidents has successfully depicted the key factors and how they vary (or not) with accident circumstances. More specific conclusions on the options for further analysis are summarised below.

Number of cases for analysis

This analysis has not been limited by small numbers of cases. With nearly 700,000 accidents having contributory factors recorded, it would be feasible to undertake further analysis of variations in contributory factors with accident circumstances, or of accidents with specific factors recorded. There is also some scope for further analysis of contributory factors attributed to broad sub-groups of drivers or riders. However it is recommended that

analysis should focus on simple categorisations and on two-dimensional rather than three-dimensional comparisons, as explained below.

Approach to presentation

Presenting the percentage of accidents or vehicles for which the full range of 77 factors was reported (as in Table 1) provides a comprehensive picture of the data. However because most of the factors are reported in a very few cases, the value of these '77 factor' tables appears limited.

The graphs showing the 'top ten' individual factors provide a snapshot of the key factors (reported for at least 5-8% of accidents and at least 3-5% of drivers or riders) and how they vary with accident circumstances and driver characteristics. This appears to be a more useful approach to presenting the individual factors than the tables covering all 77, and does show some differentiation between sub-groups, often in the factors ranked towards the bottom of the top ten.

The tables showing how the incidence of reporting the nine contributory factor types vary with accident circumstances and driver or rider characteristics provide an overview. In further work, commentary on the main factors reported within some of these groups would enhance this type of analysis.

Complexity of analysis

Some of the analysis has compared factors in fatal, serious and slight accidents on different types of road or time of day. Presenting variations in the incidence of the types of contributory factor becomes complex when there are more than four or five categories to compare (such as Table 4, Table 6, Table 7, and Table 11). However the results show that combining fatal and serious accidents into one group to simplify the comparisons would mask differences in factors reported in fatal and serious accidents. Graphs illustrating the top ten individual factors should be limited to two or three categories (see for example Figure 2 and Figure 5 which have more categories).

For any future analysis of the contributory factors data, it would be worthwhile to refine the grouping of accidents to simplify the presentation and focus on the main differences, taking these considerations into account.

Confidence in factors recorded

When contributory factors are recorded, they are assigned a 'confidence' rating by the police officer at the scene: factors are recorded as either 'possible' or 'very likely'. One element of further analysis could focus on the contributory factors recorded as 'very likely', omitting those classified as 'possible', to investigate whether different patterns and associations emerge among the factors which police officers felt more certain about recording.

7 Acknowledgements

The assistance of the Department for Transport Accident Statistics Branch, for providing a copy of the accident records for analysis, is gratefully acknowledged.

Thanks are due to Neil Greig, who managed the project at the IAM.

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The IAM

President: Nigel Mansell OBE

Chairman: Alistair Cheyne OBE

The IAM (Institute of Advanced Motorists) is the UK's largest independent road safety charity, dedicated to raising driving standards, engaging with the road-using public and influencing road safety policy.

Established in 1956, the IAM is best known for the advanced driving test and the advanced driving course. The IAM directly influences the driving and riding of more than 160,000 road users a year (full members, associates and commercial clients) in the UK and Ireland.

Brunel University found most drivers and riders who receive advanced driving coaching developed significantly better skills, from speed management and cornering to hazard awareness and keener anticipation.

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IAM products include:

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- Momentum, for younger drivers
- Special assessment, for advanced drivers
- Skill for life: the advanced motorcyclist programme
- RoadRider+
- RideCheck+
- RideCheck
- Special assessment, for advanced riders
- CycleCheck
- CycleRide
- CycleRide+
- Ecolution – for cheaper and greener motoring

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- Online learning
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IAM policy and research

Director of policy and research: Neil Greig

Established in 2007 the IAM policy and research division supports the advocacy work of the IAM. Core activities include:

- undertaking a unique programme of road safety research
- encouraging responsible motoring by promoting advanced driver and rider training
- promoting practical evidence-based policies that improve the safety of all road users

IAM research projects published in the last four years include:

- Who's in the driving seat? Gender differences in driving attitudes and behaviour
- IAM older drivers – safe or unsafe?
- IAM motorcycling facts
- Cycling motorists
- 16 – the dangerous age for moped riders
- Young drivers – where, when and why they are unsafe
- Barriers to change – designing safer roads for motorcyclists
- Rural roads – the biggest killer
- Star rating roads for safety (partnership with the Highways Agency)
- Traffic laws and policing – does Sweden do them better?
- Child safety – a guide for parents

More information for each can be found at **iam.org.uk/reports**

The study was carried out by road safety researcher Jean Hopkin.

The recommendations shown in the foreword are those of the IAM.

The IAM welcomes debate on the facts and issues that Jean Hopkin's analysis presents; please email us at **info@iamtrust.org.uk** to tell us what you think should be done to increase the priority given to solving the human factors in crashes.

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Chapter Six – Improving Road Safety: Speed Cameras

INTRODUCTION

6.1 Speed cameras aim to improve road safety by reducing speeding and, consequently, the number and severity of vehicle crashes.[183] The Roads and Traffic Authority (the RTA, now called Roads and Maritime Services) estimated that around 40 per cent of road deaths in NSW were caused by speed, resulting in more than 170 deaths each year from speeding.[184]

6.2 People filmed by a camera driving over the speed limit are fined and accumulate demerit points on their drivers licence.[185] All fines for speeding offences captured by the RTA or NSW police cameras are issued by the State Debt Recovery Office (SDRO). Over 370,000 speeding fines were issued in the 2010-11 financial year, netting over $58 million in revenue. According to the RTA, only the revenue generated from drivers speeding around school zones is allocated to specific road safety programs. The bulk of revenue collected is re-distributed through other government programs.

THE PERFORMANCE AUDIT

6.3 The audit assessed whether the speed cameras of the Road and Traffic Authority's (RTA) are located in places that reduce speeding and make NSW roads safer. Specifically, the audit assessed whether:

- speed cameras are located in areas identified by RTA as having the greatest road safety risk
- comprehensive selection criteria have been developed by RTA to determine the location of cameras
- the RTA analyses crash and speeding data to identify black spots before camera installation
- speed cameras reduce speeding and road crashes
- the RTA reviews potential high risk and existing sites for camera suitability
- speed cameras have improved road safety in NSW
- fine revenue from speed cameras reduce after installation
- an evaluation framework is in place to assess camera effectiveness

[183] NSW Auditor-General's Office Performance Audit Report, Improving Road Safety: Speed Cameras, July 2011, p. 8
[184] Improving Road Safety: Speed Cameras, p. 8
[185] Improving Road Safety: Speed Cameras, p. 8

- information on the road safety impact of each camera is publicly available.[186]

6.4 Due to community concerns about the usefulness of speed cameras, as part of the audit process, the public were invited to nominate fixed speed cameras that they were most concerned about and those they believed improved road safety. Over 1,700 people responded, with 69 per cent of respondents viewing cameras as revenue-raisers and only 15 per cent in support of them.[187]

6.5 The Auditor-General engaged an independent road safety consultant to provide expert advice and guidance throughout the audit, in relation to comparative practices and approaches in other jurisdictions.

6.6 The Audit did not examine:

- signs or the accuracy of speed cameras
- speed enforcement by police
- the future roll out of cameras
- other road safety measures such as road engineering and public education.[188]

Audit Conclusions

6.7 The Auditor-General found that there was no overall criteria to determine the most appropriate camera type for roads classed as high risk. The audit found that camera type dictates site selection decisions, rather than the nature of the black spots,[189] and that there might be more appropriate cameras than the ones currently in place.[190] Roads and Maritime Services advised that it is shifting focus from fixed speed cameras at black spots to an increase in mobile cameras, aimed at reducing speeding across the network.[191]

6.8 The Auditor-General found that the RTA had developed different site selection criteria for the three different camera types used in NSW. The audit also noted that site selection criteria for fixed cameras were more comprehensive than for mobile speed cameras, and were in fact more comprehensive that in many other jurisdictions. However, the selection criteria for mobile cameras were not as comprehensive as in other jurisdictions with longer-established mobile camera programs. One criterion for locating a mobile camera is that it must have been a location used by the NSW Police Force in their mobile camera program. The Auditor-General found that 'by restricting sites to former Police locations, sites with greater road safety risk may not be given priority.'[192]

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[186] NSW Auditor-General's Performance Audit Report, Improving Road Safety: Speed Cameras, p. 25
[187] Improving Road Safety: Speed Cameras, p. 9
[188] Improving Road Safety: Speed Cameras, p. 10
[189] Improving Road Safety: Speed Cameras, p. 13
[190] Improving Road Safety: Speed Cameras, p. 13
[191] Improving Road Safety: Speed Cameras, p. 13
[192] Improving Road Safety: Speed Cameras, p. 12

6.9 The report also noted that RTA analysis of safety camera locations does not include vehicle speeds or the number of speed-related crashes.[193]

6.10 In addition, the audit found that some mobile locations where there are high numbers of crashes have not yet had cameras deployed. More information and comprehensive monitoring is needed to determine the impact of speed cameras on speeding behaviours.[194] There may be locations for mobile cameras with greater road safety risk than the existing mobile camera positions that were formerly used by police. The RTA indicated during the audit that an arrangement was being made to expand the selection criteria to include locations outside those formerly used by the Police and increase the mobile speed cameras enforcement hours from 1,000 to over 12,000.[195]

6.11 In relation to the question of whether speed is a cause of crashes and fatalities, the audit observed that the RTA only analysed crash data to identify potential sites for different camera types. Speeding data analysis from speed-related crashes was limited and there was no comprehensive examination by the RTA. Vehicle speeds were only reviewed for non-school zone fixed speed camera locations.[196]

6.12 In relation to fine revenue generated by the cameras, the audit noted that the face value of fines from fixed speed cameras declines the longer they have been operating.[197] However, the Auditor-General did not find any evidence that potential revenue is a factor in decisions about where cameras are located. He concluded that site selection criteria for all camera types focused on road safety.[198] The report also concluded that, while there is information about fines and revenue per camera publicly available through State Debt Recovery Office's (SDRO) website, more effort is needed to provide information on the road safety impact of each speed camera to the public. Current information on the SDRO's website does not show trends since camera installation, which would make it easier for the public to see the impact of cameras on speeding and driver behaviour.[199]

6.13 The Auditor-General found that the RTA evaluation framework, which includes speed surveys, crash and injury analysis, and the community attitude survey, helps to assess the impact of fixed speed cameras. However, the audit found that the RTA needs to include reduction in vehicle speed as a key performance measure.

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[193] NSW Auditor-General's Performance Audit Report, Improving Road Safety: Speed Cameras, p. 14

[194] Improving Road Safety: Speed Cameras, p. 15

[195] Improving Road Safety: Speed Cameras, p. 15

[196] Improving Road Safety: Speed Cameras, p. 14

[197] Improving Road Safety: Speed Cameras, p. 23

[198] Improving Road Safety: Speed Cameras, p. 22

[199] Improving Road Safety: Speed Cameras, p. 25

Auditor-General's Recommendations

6.14 The Auditor-General made six recommendations:

1	By March 2012, develop an overarching strategy for speed cameras incorporating all camera types, which: • includes criteria to determine the appropriate camera type for each road with a high safety risk. • prioritises potential sites based on death or serious injury. • defines how the effectiveness of each camera type will be assessed, including the analysis timeframe, and key performance indicators on vehicle speed, infringements, and crash severity. • includes its new focus on reducing speeding across the road network, as well as at specific locations.
2	Document the reasons for all future camera decisions where the location is inconsistent with site selection criteria.
3	By December 2011, annually review existing site locations to check if speed cameras are still appropriate.
4	By September 2011: • assess the crash impact of existing fixed speed cameras for a minimum of five years post installation. • where there has been no significant impact, consider an alternative camera site and other road safety treatments for that site.
5	By March 2012, annually monitor the effectiveness of individual speed cameras.
6	By June 2012, publicise trends in crashes, revenue, and speeding or infringement data, for each speed camera, and update this annually.

THE COMMITTEE'S EXAMINATION

6.15 As part of the Committee's follow up of the Auditor-General's Performance Audits, the Chair wrote to Transport for NSW (TfNSW) on 25 September 2012, inviting the agency to provide a submission detailing action taken in response to the Performance Audit. TfNSW responded on 21 November 2012.

6.16 A submission was also received from Mr Michael Lane, in his capacity as a member of the public. He was advised that the Committee was conducting a follow-up audit of the implementation of recommendations made by the Auditor-General, and not a general inquiry into speed cameras.

6.17 The submissions were forwarded to the Auditor-General for comment, and he in turn responded on 5 February 2013. In relation to Mr Lane's submission, the Committee requested the Auditor-General respond only to the extent that it related to the performance report.

6.18 Questions on notice were sent to TfNSW on 13 March 2013, requesting additional information. They responded to the Committee on 16 April 2013.

6.19 All of the Auditor-General's recommendations have been accepted, with the majority already implemented.

6.20 **Recommendation 1** has been completed, with the strategy launched on 1 June 2012.[200] The aims of the strategy are clearly outlined in the introductory section:

> This strategy aims to outline the current speeding problem, community attitudes to speeding and speed enforcement and clearly articulate the benefits of a comprehensive speed camera strategy for speed cameras in NSW. The strategy reassures the community that speed enforcement together with comprehensive public education campaigns and engineering treatments can save lives on our roads.[201]

6.21 **Recommendation 2** was accepted and is currently ongoing.[202] TfNSW advised that the Centre for Road Safety (CRS) determines the location of cameras based on criteria for each type of camera as described in the NSW Speed Camera Strategy. [203]

6.22 In relation to mobile speed cameras, TfNSW identified three broad criteria used in selecting this type of camera location:

i Assessing road safety risk through the review of crashes or identifying the road as high risk, based on crash types.

ii Consultation and nomination by the NSW Police Force through the joint *'Strategic Road Safety Coordination Group'*.

iii Community members nominating locations and the Centre for Road Safety assessing those locations for suitability.[204]

6.23 For red-light speed cameras, intersections are prioritised based on the frequency and severity of crashes and the proximity to other fixed enforcement cameras on the network.[205] Fixed speed camera locations were selected based on a high frequency and severity of crashes over a length of roads no longer than 1000m. Also, fixed cameras were considered the best option for areas that are difficult to

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[200] http://www.rta.nsw.gov.au/roadsafety/downloads/nsw_speed_camera_strategy.pdf, viewed 22 March 2013.

[201] Transport for NSW, *NSW Speed Camera Strategy*, June 2012, p. 3

[202] Submission 12, Transport for NSW, p. 2

[203] Submission 1, Transport for NSW, p. 2

[204] Submission 1, Transport for NSW, p. 2

[205] Submission 1, Transport for NSW, p. 2

enforce such as tunnels and school zones with high severity of crashes or locations that have a high risk of pedestrian crashes.[206]

6.24 Point-to-Point speed cameras are used for heavy vehicle speeding enforcement. Location information for this camera type was not provided. However, TfNSW advised the Committee that enforcement lengths were based on assessment of heavy vehicle crashes or speeding behaviour.[207]

6.25 **Recommendations 3, 5 and 6** have all been addressed as part of the annual review of speed camera programs.[208] TfNSW also advised that Speed Camera Safety Reviews would be included as part of the safety treatment announcement in the coming months. The deployment of mobile speed cameras is overseen by Roads and Maritime Services, based on the CRS deployment strategy. Roads and Maritime Services conducts random surveillance activities, GPS monitoring and desktop review to ensure that the speed camera operator conducts enforcement as specified.[209]

6.26 The Hon Duncan Gay, Minister for Roads and Ports, announced on 16 April 2013 that as a result of the inaugural Speed Camera Performance Review, speed cameras were to be removed from two locations in NSW.[210] The review found that fixed cameras had 'reduced fatalities at their locations by a massive 87 per cent, but there was a handful of cameras where further investigations were necessary.'[211]

6.27 **Recommendation 4** was accepted and completed in March 2012.[212] A five year analysis was completed in September 2011, followed by reviews of 38 individual fixed digital speed camera locations.[213] The first annual review, issued on 17 July 2012, identified five fixed cameras locations for review and a sixth location identified for further consultation with NRMA Motoring and Services. [214]

6.28 In relation to maintenance of speed cameras, TfNSW confirmed that all speed measuring devices are tested for accuracy by both the manufacturer and RMS at least once per year. All instruments are tested to the base measurements of time (seconds), frequency (Hz) and length (Metre) and maintained with "certificate of traceability" under the appropriate regulation.[215]

6.29 The Committee examined the need for speed cameras in NSW to have approval from the International Organisation of Legal Metrology (OIML).[216] TfNSW stated that there was no requirement for approval as the OIML did not approve speed

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[206] Submission 1, Transport for NSW, p. 2
[207] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 2
[208] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 2
[209] Submission 1, Transport for NSW, p. 3
[210] The Hon Duncan Gay, Roads Minister, *Three Speed Cameras to be removed after review*, 16 April 2013
[211] The Hon Duncan Gay, Roads Minister, *Three Speed Cameras to be removed after review*, 16 April 2013
[212] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 2
[213] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 3
[214] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 3
[215] Submission 1, Transport for NSW, p. 4
[216] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 4

measuring devices. TfNSW also commented that the role of the OIML was to 'promote the global harmonisation of legal metrology procedures'.[217] Australia's National Measurement Institute (NMI) is a member of the OIML and oversees the implementation of metrology standards in Australia.

6.30 TfNSW confirmed that speed cameras in Australia are regulated through the *Road Transport (Safety and Traffic Management) Act 1999* and do not require approval from the NMI.[218]

6.31 NSW figures currently state that 42 per cent of all fatal crashes are caused by speed. This is used as a key rationale for the use and placement of speed cameras in NSW. The Committee requested additional information about the data collected by TfNSW, citing statistics from the United Kingdom (UK) as a comparison. The UK figures show that only 13.9 per cent of fatal crashes have speed as a contributing factor with other causes reported on separately. TfNSW commented that when the figures for the United Kingdom include 'fatal crashes where travelling too fast for the conditions and where speeding was involved,' the figures would be much closer to the NSW figure.[219]

6.32 TfNSW advised that the Centre for Road Safety collects data on a range of contributing factors involved in crashes such as drink driving, fatigue and seatbelt use. This results in the higher percentage of cases where speed may only be a contributing factor.

6.33 In a supplementary submission to the Committee, Mr Lane also raised concern about the crash statistics collected by TfNSW, commenting that adding 'speed related' crashes to 'exceed speed limit' crashes over inflates the figures:

> NSW are inflating the 'speeding problem' by including crashes which do not involve speed in excess of the speed limit [to the category of crashes that include speed] as a contributing cause. As speed cameras can only detect vehicles that are exceeding the speed limit they are only an effective deterrent to a portion of these, e.g. drunks thieves, suicides etc. are unaffected.
>
> The use of the grossly inflated figures achieved by adding "speed related" crashes to "Exceed speed limit" crashes distorts the input into policy framework. Additionally crashes involving over limit speed but where camera detection would have no effect should also be removed from the policy framework supporting cameras.
>
> Given that the conditions in the UK are significantly worse than NSW it is abundantly clear that NSW figures are a gross exaggeration.[220]

Committee Comment:

6.34 It is encouraging that that TfNSW has accepted all six of the Auditor-General's recommendations, and that many of the Auditor-General's recommendations have been encompassed in the recent Speed Camera Strategy.

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[217] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 4

[218] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 4

[219] Response to questions on notice, Mr Tim Reardon, Deputy Director General, Transport for NSW, p. 5

[220] Submission 2, Mr Michael Lane, p. 3

6.35 One outstanding area remains regarding the data collected around fatal crashes. The Committee believes that TfNSW should review what data it collects, particularly where the data has been used as the rationale for the location of a camera.

6.36 The Committee believes that TfNSW should be more specific in its reporting on the statistics regarding fatal crashes. If speed is not the only reason for the crash then this should be captured. For example, if a drunk driver has a crash involving speed then both speed and alcohol should be reported as a cause of the crash. The Committee is concerned that incidents where speed is involved, but is not the main cause, are not reflected adequately in the statistics reported by TfNSW.

RECOMMENDATION 5

That Transport for NSW review the data collected in relation to causes of fatal accidents, particularly where the data has been used as, rationale for the location of a camera, and that all causes of a fatal accident, including speed, be collected and transparently reported on in greater detail.

RECOMMENDATION 6

That causes of fatal crashes be more precisely identified and include categories such as driving too fast for conditions and speed as a contributing factor (where another factor such as alcohol is the primary cause), rather than relying on 'exceed speed limit' as an all-encompassing speed-related factor.

6.37 The NSW Parliament's Joint Standing Committee on Road Safety (Staysafe) has a broad remit to monitor, investigate and report on road safety issues in New South Wales. This includes countermeasures aimed at reducing deaths and injuries. The Committee recommends that the Minister for Roads refer to the Staysafe Committee an inquiry into the appropriateness of the current categories of causes of fatal crashes, with a view to developing the more precisely defined categories referred to in Recommendation 6. In conducting the inquiry, the Committee should refer to best practice in other jurisdictions including the United Kingdom.

RECOMMENDATION 7

That the Minister for Roads refer an inquiry into the appropriateness of current categories of causes of fatal crashes, with a view to developing more precisely defined categories referred to in Recommendation 6.

6.38 The Performance Audit highlighted the importance of monitoring whether speed cameras are being appropriately used. The Committee is aware of public scepticism around speed cameras being revenue-raisers rather than having a primary road safety purpose. To address this scepticism, and help increase public confidence, the Committee recommends that the Staysafe Committee be given an ongoing role to monitor speed cameras, including their use and location. In undertaking this role, the Staysafe committee should engage with road user groups, police and other stakeholders.

RECOMMENDATION 8

That the resolutions appointing the Joint Standing Committee on Road Safety (Staysafe) be amended to include an ongoing monitoring of speed cameras, in consultation with road user groups, police and other stakeholders.

Phone use overtakes not wearing seatbelts as cause of fatal car accidents

Date

February 13, 2014

Amanda Hoh

Journalist

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Deadly distractions: Illegal use of a mobile phone while driving. *Photo: Ken Robertson*

- Mobile phones and driving: the law

Texting, surfing the internet or talking on the phone while driving is now one of the top five causes of fatalities on NSW roads, along with speeding, fatigue and drink driving, road safety officials say.

The use of phones while driving has overtaken people not wearing seatbelts as one of the major causes of fatal car accidents, said Marg Prendergast, general manager of the NSW Centre for Road Safety, but the difficulty of collecting conclusive data about the role of distractions meant such accidents were under-reported.

“The problem is that people are addicted to their phones,” Ms Prendergast said. “The key message that people need to understand is: no phone call, no message, no song is worth risking your life or somebody else's. I just don't think people get that yet.”

“This is our mission for the next decade – to highlight the dangers and get people to adjust their behaviour.”

Ms Prendergast said speeding represented 42 per cent of all road fatalities, the most prevalent of all causes. However, the government and police have no statistics on how many fatalities were caused as a result of people exceeding the speed limit; the figures cited as speeding also include motorists travelling below the speed limit.

The warning comes after NSW Police on Wednesday issued nearly 1000 fines for phone use while driving – with one woman getting caught twice.

The 29-year-old driver was first fined at 11am for allegedly talking on the phone, and was stopped again 25 minutes later by a different police car.

She lost three demerit points on each infringement notice and was fined a total of $608.

NSW police say such examples showed that people were ignoring safety messages about the use of phones when behind the wheel.

“You would think that by now, every driver in NSW would be aware of the dangers and laws relating to talking, texting, online chatting or web browsing on a phone while driving,” said Assistant Commissioner John Hartley, the NSW Police Traffic and Highway Patrol Commander.

More than a third of the 1000 fines were issued to drivers in Sydney's Central Metropolitan Region, which stretches from the CBD through the eastern suburbs and down to Sutherland.

This was followed by drivers in the North West Metro with 173 fines, South West Metro, 110, Northern NSW, 85, Southern, 58, and Western NSW, 39.

From July 2013 to January 2014, more than 20,800 mobile phone infringements were issued.

Professor Mike Regan, applied experimental psychologist at the UNSW Transport and Road Safety Centre, said the high number of fines indicated that drivers need more education about the dangers of using phones.

While he believes safety messages such as the “Get your hand off it” campaign were getting through to people, drivers were simply finding ways to get away with the offence.
“The laws, it seems, are reasonably effective in targeting the sources of visual manual distraction, but I think the problem is that, generally, there's not enough police enforcement,” he said.

“Even if they are out enforcing the laws, it's quite difficult to see people interacting with these devices.

“These bans are only effective if they are properly enforced and the fines are high enough.”

Professor Regan has urged car manufacturers and phone designers to develop technology for the Australian market that prevents people from using their phones while driving.

Ms Prendergast believes current law enforcement was adequate and that more education was needed.

She said the government was exploring new ways to catch offenders, including the use of roving police cameras.

Since November 1, 2012, it has been illegal for drivers to talk on their mobile phone unless it is secured in a cradle.

Texting, video messaging, online chatting, reading preview messages and emailing via the phone is illegal, even if the phone is secured or if the car is stationary but not parked.

Learner drivers, P1 licence holders and motorcycle riders are prohibited from using mobiles phones at all.

It is an offence to hold the phone while driving or when stationary.

It is also illegal to rest the phone on one's lap or hold it between one's ear and shoulder.