



Association of British Drivers

**Response to Department for
Transport Road Safety
Consultation 'A Safer Way'**

June 2009

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Summary

The Association of British Drivers (ABD) welcomes the opportunity to comment on the proposals in the Government's road safety consultation. The ABD is disappointed, however, that the Government still believes its road safety policies during the last twelve years have been successful, and that applying them more effectively in the future will bring about the desired reductions in casualties. The ABD, in contrast, believes the Government's policies have had a negative effect on Britain's culture of road safety and more of the same flawed medicine will only make matters worse. A radical change in direction is required.

The Government's vision is for Britain to have the safest roads in the world, but that is a position that Britain once held and has lost due to the Government's policies. It is right to try to regain that position, but the methods used to pursue it must take account of the vital contribution road transport makes to the economy. The costs and benefits of proposed measures must be fully assessed, and there must be no undue restrictions on road use or excessive monitoring and enforcement of road user behaviour.

A long-term road safety strategy must acknowledge that the majority of road users are responsible individuals. Safe driving is a process of continuous risk management, which cannot be replaced by prescriptive rules that attempt to micromanage drivers. Attempting to do so is counter-productive by reducing drivers' sense of responsibility for their own safety. People respond better to education and guidance than threats of punishment. Enforcement should be reserved for the reckless, irresponsible minority.

The Government's key target is to reduce annual road deaths to around 2,000 by 2020, but we would be well on the way to that target already if the rate of reduction in fatalities had not levelled off so dramatically in the mid 1990s. Many of the other proposed targets and key performance indicators continue to be based on combined totals of killed and seriously injured (KSI) casualties. Despite strong evidence about the unreliability of serious injury figures due to progressive underreporting and/or misclassification, the Government alone continues to insist that KSI totals are a true indicator of success for its road safety policies. Nothing will improve until the Government faces the reality accepted by everyone else.

One economic factor not identified by the Government, but which will affect the delivery of road safety improvements, is the availability of funding to invest in the road network. In particular, lack of investment in the strategic road network over the last 20 years is a major factor in the worsening accident record of single-carriageway rural roads. Many routes now operate at traffic levels in excess of their practical capacity. As flows increase, speeds fall as congestion builds up, leading to driver frustration, risk taking and unreliable journey times. A major programme to replace overloaded single-carriageway strategic routes with motorways or dual carriageways would lead to significant reductions in rural accidents and give economic benefits.

The Government does not understand the crucial difference between exceeding a speed limit and driving at an unsafe speed, which may be above or below the speed limit. Exceeding a speed limit, on its own, cannot cause an accident but driving too fast for the conditions can. Where drivers fail to slow down when circumstances require, it is a symptom of an underlying failure to spot a potential hazard and respond correctly to it. Drivers who exhibit such lack of judgement should be offered remedial training rather than punishment.

Speed limits have a role to play in road safety but are far less important than popularly believed. To enhance safety rather than detract from it, they must be set at levels that command the respect of drivers. This means setting them at the 85th percentile speed (the speed that 85 per cent of drivers would not exceed in the absence of a limit). This method has been found to produce the highest compliance, lowest spread of speed and minimum accident risk.

Many highway authorities have been reducing speed limits below this level for years, and the Government proposes to encourage further reductions. This would only result in further undermining respect for all speed limits. The Government's strategy is based on a claimed relationship between average speed and accident frequency, but the evidence in support of this is badly flawed. The accident problem on rural roads is due not to too much speed but too little, as average speeds have fallen with rising congestion. This can only be solved with major investment in the road network. One measure that should be introduced immediately is to raise the speed limit for heavy lorries from 40 to 50 mph, to reduce the frustration caused to following drivers.

The desire to make speeding as socially unacceptable as drink-driving will never be achieved. Nearly everyone recognises that alcohol impairs a driver's ability and judgement, but the arbitrary and inflexible nature of speed limits is clearly at odds with the variations in road, weather and traffic conditions that dictate the need to alter speed for safety. Speed limit enforcement is invariably targeted at locations where a high proportion of drivers exceed the speed limit because it is safe to do so. Drivers consequently see enforcement as more about raising revenue than safety.

Proposals for an expert panel to produce an independent annual report on road safety performance, and a Road Safety Delivery Board to hold Government to account, would only work if those bodies were truly independent. The appointment process would have to be open and transparent, and appointees would have to be free from financial or other interests that could influence their recommendations. Road user groups would need to be adequately represented, and the ABD would welcome the opportunity to be involved.

To secure greater benefits from safer vehicles, the Government should reverse its recent changes to Vehicle Excise Duty, which discourage buying new cars. The Government also needs to recognise that the growing financial burden being imposed on society as a whole to meet the absurd targets in the Climate Change Act will reduce consumers' ability to afford new vehicles.

The ABD supports technological innovations that assist drivers to maintain control in extreme conditions, but is opposed to those that take control of a vehicle from the driver. The ABD strongly opposes the introduction of Intelligent Speed Adaptation, which it believes would encourage drivers to pass responsibility for speed selection to the system and have a negative effect on road safety.

The ABD is convinced that the right kind of driver training has enormous potential to reduce road casualties. Teaching the key attitudes, beliefs and risk management skills for safety must become the core of driver training, both while learning to drive and for any subsequent remedial courses. Internalising a safety culture within a driver's mind is much more effective than trying to impose it externally. The Government should do more to encourage and promote advanced driver training.

Introduction

The ABD was formed in 1992 to campaign for a better deal for Britain's motorists. In particular, its founder members were very concerned that the increasing use of technology to enforce driving laws would undermine the traditional 'Three Es' approach to road safety (Education, Engineering and Enforcement) that gave Britain the safest roads in the world. Those fears have been more than realised.

The ABD is a voluntary organisation funded by subscriptions and donations from its members and supporters. It receives no funds from public bodies or private-sector businesses, so is truly independent. The ABD is a member of the Parliamentary Advisory Council for Transport Safety and the National Council of Voluntary Organisations.

The ABD's national committee of twenty members has agreed the response to this consultation. The response is in line with the policies outlined on the ABD's website. Individuals who join the ABD are assumed to support its policies in general, so it is not necessary (nor would it be practicable) to seek the views of the entire membership in preparing responses to consultations of this type.

The remainder of this document addresses the questions listed in Appendix C to the consultation paper.

Visions and targets

Q.1 Do you agree that our vision for road safety should be to have the safest roads in the world?

- 1.1 It is right that challenging targets should be set to improve road safety, but they must not be pursued in isolation, or in arbitrary competition with other countries, heedless of the impact the measures taken to achieve them may have on other aspects of society or the economy. Road transport is vital to economic growth and all everyday activities, with 85 per cent of passenger trips and a higher percentage of freight transport relying on the roads.
- 1.2 It would be wrong, therefore, if the relentless pursuit of overambitious targets resulted in unnecessary restrictions on road use or excessive monitoring and enforcement of road user behaviour. The temptation must be resisted to adopt the emotive view that “if it saves one life it is worth it.” Accidents can never be eliminated totally from any transport system, so the costs, both monetary and otherwise, of measures taken in attempting to reduce them must always be weighed against the benefits.
- 1.3 While the vision of having the safest roads in the world is laudable, it must be tempered with the need to adopt only reasonable, practical and effective measures in order to bring it about.

Q.2 Do you agree that we should define a strategy running over twenty years to 2030, but with review points after five and ten years?

- 2.1 It is agreed that targets should be set for ten years and reviewed after five, but it is not clear from Chapter 3 of the consultation document what strategy is proposed for the 20-year period. However, the references in paragraphs 3.8 and 3.10, which refer respectively to the longer term effects of vehicle technology and the need for ‘significant’ changes in how we use the roads, including greater enforcement of traffic laws, suggest even more emphasis on control and punishment of drivers. The ABD would not support such a strategy.
- 2.2 While the ABD sees some merit, therefore, in looking further ahead than ten years, a long-term strategy must acknowledge that the majority of road users are responsible individuals. Safe use of the roads requires continuous risk management of constantly changing circumstances. It is too complex to be achieved by prescriptive rules that attempt to micromanage drivers, which can be counter-productive by reducing drivers’ sense of responsibility for their own safety. People also respond more positively to education and guidance than threats of punishment. Enforcement should be reserved for the reckless, irresponsible minority.

Q.3 Do you agree that our targets should be to reduce:

- **road deaths by at least 33 per cent by 2020 compared to the baseline of the 2004–08 average number of road deaths;**

- **the annual number of serious injuries on our roads by 2020 by at least 33 per cent;**
 - **the annual total of road deaths and serious injuries to children and young people (aged 0–17) by at least 50 per cent against a baseline of the 2004–08 average by 2020;**
 - **by at least 50 per cent by 2020 the rate of KSI per km travelled by pedestrians and cyclists, compared with the 2004–08 average?**
- 3.1 The ABD agrees that a target to reduce road deaths by 33 per cent by 2020 is a reasonable one. This would result in the number of deaths falling to around 2,000 per year from the baseline figure of about 3,000. It must be pointed out, however, that the rate of reduction in road deaths since the mid 1990s has been much slower than during the previous 25 years. The fatality rate (taking account of traffic flow increases) reduced much more slowly than during the previous 45 years. This is despite continuing significant improvements in vehicle safety features. Had the previous rate of reduction continued during the last 15 years, there is every possibility that road deaths would now be around the 2,500 mark, or halfway to the proposed 2020 target.
- 3.2 The ABD believes that a large part of the blame for this poor performance (which has enabled several other countries to reduce their fatality rates below the UK's) is due to the misguided emphasis on speed and the enforcement of speed limits. There is no evidence that the Government recognises the damage that has already been done to the culture of road safety in the UK by its policies or, as noted in the response to Question 2, that it intends to pursue different policies in the future. Unless it does so, there is little possibility of the proposed target being achieved.
- 3.3 There are similar reservations about the target for serious injuries, with the added concern about the unreliability of official figures for this category of casualty. The consultation document refers to the divergence in trend between fatalities and serious injuries but makes no mention of the strong evidence that this is due to worsening underreporting and/or misclassification of the latter. Even the Transport Committee has accepted that serious injury data does not give a true picture of the casualty trend, but the Government is in denial by continuing to claim that serious injuries have fallen significantly, when they have not. Until there is an acceptance of this reality, there will continue to be concern that the Government is only grandstanding on road safety and does not really care about reducing casualties, as long as it can use flawed figures to claim success.
- 3.4 Despite separating deaths from serious injuries in the first two proposed targets, they are combined again in the third and fourth ones. This exposes them to false claims due to the unreliability of the dominant figures for serious injuries. While the ABD recognises that road deaths are relatively small in number within the target areas selected, making them subject to significant random variation from year to year, combined killed and seriously injured (KSI) targets have no credibility unless there is more reliable collection of data for non-fatal casualties.

- 3.5 Given the level of concern about the high casualty rate among young drivers (17–25), it is surprising that there is no separate target for casualty reduction in this group. Although covered by one of the proposed performance indicators, the ABD considers there should be a separate target for this class of road user.
- 3.6 The targets for casualty reductions among children, pedestrians and cyclists are very ambitious. The ABD is concerned that, as expressed in paragraph 1.2 above, these targets should not be used to justify disproportionate restrictions and enforcement against drivers, based on flawed claims for the effectiveness of such measures. These issues are explored in detail below in response to some of the later questions in the consultation document.

Q.4 We are proposing a set of indicators in order to help us to monitor performance. Do you believe these cover the right areas?

- 4.1 Of the thirteen proposed key performance indicators (KPIs), eleven monitor casualty trends. Of these, four are based on fatalities and the other seven on KSI totals. As explained in answer to Question 3, KSI figures cannot provide a credible basis for monitoring performance unless the collection of serious injury data is made substantially more robust than at present. The ABD would prefer, therefore, that separate KPIs are included for fatalities in all cases.
- 4.2 The eleven casualty trend KPIs are a mixture of casualty rates and casualty numbers, with no apparent consistency or logic in choosing one or the other. The first five KPIs are rates per 100 million kilometres, which is the best measure of comparative performance over time, although some of these KPIs are related to the first two targets for achievement by 2020, which are expressed in absolute numbers rather than rates. It would seem logical, therefore, to include additional KPIs that directly reflect the targets.
- 4.3 The second KPI would monitor pedestrian casualty rates, but this would depend on the availability of data on total kilometres travelled on foot. Road Casualties GB published to date only shows numbers of pedestrian casualties, so the viability of this KPI will require additional data collection.
- 4.4 The sixth and seventh KPIs monitor casualties among drivers under the age of 25 and people over the age of 70, respectively. In the former case the KPI is expressed in absolute numbers of casualties, while for the latter case it is in casualties per 100,000 people over 70 years of age. The use of a rate per capita is logical in the case of older people, to allow for an ageing population, but it would make sense to include a rate per capita for young drivers also, so that valid comparisons can be made over time, regardless of demographic changes.
- 4.5 The eighth KPI monitors fatalities on rural roads. Since future traffic growth is likely to be at a higher rate on rural roads than in urban areas, the ABD would prefer a rate per 100 million vehicle-kilometres to be used, to prevent accidents on rural roads being given undue weight. The ABD has serious reservations about the Government's proposed strategy for improving safety on rural roads, as explained in answer to Question 11, below.
- 4.6 The ninth KPI concerns pedestrian casualties in 'most deprived' areas compared with those in areas 'least deprived'. The reasons for these

differences are most likely due to social factors and the ABD is concerned that extreme road safety interventions should not be used as a substitute for tackling these difficult issues more directly.

- 4.7 The tenth KPI concerns fatalities in accidents where at least one driver or rider was over the blood-alcohol limit. It is not clear whether 'rider' includes pedal cycle riders, as these are not subject to the same penalties for drink-driving as motor vehicle users. There may be a case for having a separate KPI for fatalities where a cyclist or pedestrian was over the blood-alcohol limit for drivers. There may also be a case for a KPI to monitor fatalities in accidents where one or more drivers, cyclists or pedestrians was judged to be impaired by drugs, either legal or illegal.
- 4.8 The eleventh KPI monitors car occupants killed while not wearing a seat belt. On its own, this KPI is of limited use. The proportion of car occupants who wear a seat belt should also be subject of a KPI, so that the relative risk of death between wearing and not wearing a belt can be demonstrated.
- 4.9 The twelfth KPI concerns the proportion of vehicles exceeding speed limits. The ABD believes that those measures proposed in the consultation document that would lead to further reductions in speed limits would lead to more drivers exceeding them, so the Government's policies will have a negative impact on this indicator. The fact that this KPI is included at all shows the Government's lack of understanding of the purpose of speed limits, and fails to appreciate the significant difference between exceeding a speed limit and the far more relevant issue of speed inappropriate for the conditions, which may or may not be in excess of the limit. In the ABD's view, speed limit compliance in itself is not a key issue to improving road safety, so this KPI should be deleted.
- 4.10 The final KPI monitors the cost of road casualties. The usefulness of this indicator is heavily dependent on the consistency of recording non-fatal injury accidents, which as previously explained is highly suspect.

Context

Q.5 We have identified a number of factors that may affect our ability to deliver road safety improvements in the future world we are planning for. Do you think we have taken account of the key risks and opportunities? Are there others you would add?

- 5.1 The factors identified in the consultation document are grouped into the three categories of environmental, economic and social. Most of the factors listed under the economic and social headings are reasonably predictable, such as traffic increasing as the economy grows, and demographic change.
- 5.2 One factor missing from the economic list that will affect the ability to meet road safety targets is the availability of funding to invest in the road network. One reason why accidents have increased on rural main roads is the failure of successive governments to fund increases in capacity to accommodate traffic growth. This is a particular problem where traffic on single-carriageway routes has grown beyond their practical and safe capacity, leading to driver frustration and risk taking. A major programme to relieve these routes with dual carriageway or motorway alternatives would greatly alleviate the rural road safety problem.
- 5.3 The factors listed under the environmental heading are largely dependent on the EU and Government policies driving them. The overarching environmental factor is the claim that carbon dioxide emissions are a significant cause of climate change. This claim is being used to justify higher fuel and vehicle taxes, planning policies aimed at denser urban development, reduced road building, and attempts to promote modal shift away from car use.
- 5.4 In addition to the extra financial burden on motor vehicle users, climate change is being used to justify subsidies for otherwise unviable energy sources, such as wind power. These subsidies are being paid by householders and industry (and its customers) and are expected to grow significantly in the future. Other environmental taxes and charges might also be introduced. The overall effect will be to reduce the disposable income of consumers, who might not be able to afford to buy new, safer cars as a result. This factor should be included, therefore, as a risk under the economic heading.
- 5.5 Alternative means of fuelling road vehicles will undoubtedly be developed in the future, as new technology becomes viable, and few people will be willing to forgo the convenience that cars provide. The claimed shortage of oil reserves is, in any case, largely artificial and caused by environmental groups objecting to the exploitation of new supplies and alternatives such as oil shale.
- 5.6 The ABD has studied the evidence on climate change and, like thousands of independent scientists worldwide, has concluded that it is due almost entirely to natural cycles. The impact of rising carbon dioxide concentrations in the atmosphere is insignificant. The weight of evidence refuting man-made climate change is increasing rapidly, and the climate has now entered a period of cooling. It is unlikely, therefore, that the claims of man-made climate change can be sustained for much longer.

- 5.7 When the fallacy is exposed, and it becomes clear that those promoting it have either ignored evidence they should have considered, or have deliberately suppressed that evidence for political or pecuniary advantage, there is likely to be a strong public backlash. The outcome could be that the factors listed under the environmental heading might change significantly, if the policies driving them are rejected.

Q.6 We think that the key challenge for road safety from 2010 is better and more systematic delivery rather than major policy changes. Do you agree?

- 6.1 As already indicated in the response to Question 3, the ABD considers that existing Government policies, especially the emphasis on speed limits and their enforcement, are a significant cause of the poor rate of road casualty reduction since the mid 1990s. So the ABD does not agree that road safety can be improved by more efficient implementation of the same policies – those policies need to be changed radically.
- 6.2 Paragraph 4.7 of the consultation document cites the 14 per cent figure for fatal accidents in which exceeding the speed limit was recorded as a factor. It then claims that this factor may be ‘responsible’ for many more fatalities. These statements show the Government’s lack of understanding of the difference between a factor and a cause. The mere fact that a vehicle may have been travelling at a speed in excess of an arbitrary number of miles per hour cannot, in itself, be the cause of an accident. What can be a cause is travelling at a speed that is unsafe, taking into account all the conditions prevailing at the time (road layout, weather, vehicle capabilities, presence of other road users, and so on). As conditions change, so will the safe speed, which may be either above or below the legal speed limit.
- 6.3 Rather than concentrate on the enforcement of speed limits, far more attention needs to be paid to inappropriate speed and the reasons that some drivers fail to adjust their speed according to the conditions. Leaving aside the tiny minority who deliberately and knowingly drive too fast (and on whom enforcement should be targeted), those who fail to slow down when circumstances require it are exhibiting a lack of the necessary skills of hazard observation and response. Inappropriate speed is just a symptom of this underlying failure, so road safety interventions need to be targeted at identifying drivers who lack these skills and educating them, not punishing them.
- 6.4 As noted in paragraph 2.2 above, safe driving is a process of continuously managing the risks presented by the road environment and other road users. Those risks and the interactions between them are complex and constantly changing. Safe driving cannot be reduced, therefore, to a few simplistic rules and sound bites, which is what successive governments have been attempting to do for the last fifteen years. Not only does this not improve road safety, it has the opposite effect by sending the subliminal message that all a driver needs to do is stick rigidly to the rules. Drivers are actively discouraged from thinking for themselves and are led to believe they are safe if they drive within speed limits. In fact, there is no certainty that driving within a speed limit is safe, any more than exceeding it is automatically dangerous.

- 6.5 It is for this reason that the ABD believes that current policies have had a negative impact on road safety, being one of the main reasons why casualties have reduced more slowly than before the mid 1990s. Speed limits have a valid role in road safety but are much less important than is popularly believed. The purposes of speed limits are:
- To guide inexperienced drivers away from grossly exceeding safe speeds.
 - To warn drivers of expected hazard density.
 - To provide a basis for enabling the police to prosecute those who drive at recklessly high speeds for the conditions.
- 6.6 In order to perform those roles properly, speed limits must be set at levels that command the respect of the responsible majority of drivers. Substantial evidence from around the world shows that the greatest compliance with speed limits occurs when they are set at around the 85th percentile level, this being the speed that 85 per cent of drivers would not exceed in the absence of a limit. Not only do speed limits set in this way result in a high level of compliance, they are associated with a low spread of speeds and fewer accidents than when set in any other way.
- 6.7 In recent years it has become the practice of many highway authorities to reduce speed limits below the 85th percentile level, leading to reduced compliance, greater spreads of speeds and more accidents. The dangerous effects of unreasonable speed limits were highlighted in a report of the Suffolk Coroner on a fatal accident that occurred in November 1996. That verdict is reproduced in Annex A. Some highway authorities have also extended speed limits for significant distances beyond the length of road where they may be appropriate, in the mistaken belief that drivers will slow down sooner. The effect is usually the opposite, as drivers ignore speed limits for which there is no obvious need.
- 6.8 Not only do these practices lead to drivers losing respect for speed limits, they also result in drivers being prosecuted for travelling at speeds that in many cases are quite safe. The majority of speed cameras are placed where a substantial proportion of drivers exceed the speed limit, which is usually a clear indication that the limit is too low at that location. It is hardly surprising, therefore, that many drivers now regard speed limit enforcement as just a cynical exercise in revenue raising.
- 6.9 The current system of speed limits is doing more harm than good, so a radical change of policy is required. Speed limit reductions based on the mistaken belief and manufactured 'evidence' that they will reduce accidents across the board must cease, and highway authorities should be required to raise limits where necessary to match 85th percentile speeds. Even when set correctly, speed limits are not an absolute indication of a safe speed, so enforcement needs to be much more flexible than at present. Reliance on cameras must end and enforcement should be by trained traffic police officers, who should exercise discretion by taking account of all the prevailing circumstances. As already explained, too high a speed for the conditions is a failure of hazard observation and response, so police officers should recommend retraining in appropriate cases, rather than prosecution.

- 6.10 Paragraph 4.24 of the consultation document lists the three components of a desired 'safe, holistic road system' as safer roads, safer vehicles and education of road users – in that order. As always, it seems that education remains the poor relation to engineering and enforcement. While safer roads and vehicles are certainly important, the vast majority of accidents are caused by human error on the part of one or more road users, so the potential for reducing accidents through the correct use of education is far greater than that of engineering and enforcement.
- 6.11 As explained in its response to the Government's consultation on road safety compliance, the ABD is convinced that the right kind of driver training has enormous potential to reduce road casualties. Teaching the key attitudes, beliefs and risk management skills for safety must become the core of driver training, both while learning to drive and for any subsequent remedial courses. Internalising a safety culture within a driver's mind is much more effective than trying to impose it externally. This should become the core feature of the Government's new road safety strategy.

Q.7 This consultation document sets out the current evidence on the key road safety challenges. Do you agree with our analysis? Would you highlight any others?

- 7.1 Paragraphs 2.6 and 2.7 of the consultation document refer to the divergence in trend between fatal and serious injuries, but attempt to explain the lower rate of fatality reduction by claiming it was due to worsening behaviour among some drivers and riders. In fact, as explained in paragraph 3.3 above, the divergence is due entirely to progressive underreporting or misclassification of serious injuries. This is now accepted by everyone except, it seems, the Government.
- 7.2 The passive safety (occupant protection) of vehicles has continued to increase throughout the last fifteen years, so there is no logical reason why fatalities as a proportion of the KSI total should have increased. In 1950 there were around 10 serious casualties for each fatality. By 1985 this had improved to about 14 serious casualties for each fatality, reflecting the improvement in passive safety of vehicles. By 2004, however, the fatality ratio was back to 10 serious casualties for each fatality, the same as in 1950. This cannot be explained without accepting the decline in reliability of serious injury figures.
- 7.3 As explained in answer of Question 6, the reduced rate of casualty reduction in recent years is certainly due in part to worsening behaviour by some road users, but this has been the inevitable consequence of the Government's misguided emphasis on speed limits and their enforcement. In addition to undermining drivers' sense of responsibility for their own safety, reliance on automated enforcement of speed limits with cameras has led to a reduction in police traffic patrols, allowing the reckless minority to engage in dangerous behaviour with less chance of being caught.
- 7.4 Paragraph 2.23 of the consultation document repeats the claim that a 1 mph reduction in average speed leads to a 5 per cent reduction in accidents. This finding comes from a desk-top study by the Transport Research Laboratory in report PR58 ("Speed, speed limits and accidents") published in 1994. That

study has been analysed by a highly qualified statistician, whose findings are set out in Annex B. His conclusions are that the claimed speed/accident relationship is dependent on the analysis techniques used and, in particular, how changes in traffic flow are dealt with. He also concludes that the claimed reduction in average speeds as a result of reducing a speed limit, when the data is analysed correctly, is only half that claimed by the study's authors (1.2 mph per 10mph speed limit reduction rather than 2.5 mph).

- 7.5 The claimed average-speed/accident relationship on which much of the Government's approach to road safety depends is far from robust, yet it is the cornerstone of policies that have already led to many needless speed limit reductions (and driver prosecutions). It will lead to many more, unless the fallacy of this theoretical relationship is accepted.
- 7.6 As explained in response to Question 11, below, the relatively poor safety performance of many rural roads is associated with decreasing average speeds as a result of congestion – the complete opposite of the claimed relationship. The timing of the publication of PR58, shortly after installation of the first speed cameras, suggests it was commissioned by the Government of the day to retrospectively justify the policy decisions already taken, namely to reduce investment in the road network and concentrate road safety policy on the low-cost option of speed limit enforcement. These decisions have been disastrous for road safety and have been continued with even greater enthusiasm by the present Government. They must be reversed.

New performance framework

Q.8 We are proposing a number of measures to support the effectiveness of the road safety profession. Do you think they will be effective? What else might need to be done?

- 8.1 The proposals in paragraphs 4.40 to 4.43 of the consultation document seem reasonable in themselves, but there are concerns about how they will be implemented in practice. Better dissemination of road safety data is clearly desirable but is only as valuable as the accuracy of the data itself. As pointed out already, there are serious reservations about the accuracy of figures for non-fatal casualties.
- 8.2 There needs to be recognition that annual data of road safety performance within local areas and at route level can be subject to apparently large changes from year to year due to random variation. Many speed cameras have been installed following upward blips in accident numbers, which have then reverted to the long-term mean and the cameras given the credit. The road safety profession as a whole needs to be better trained in the correct use of statistics, including the need for controls in establishing whether a particular intervention has been successful.
- 8.3 The whole tone of the consultation document suggests that the Government believes its road safety policies are correct and they just need implementing more effectively. The ABD is concerned, therefore, that the Government will continue to promote its policies to the road safety profession and discourage alternative views and approaches. The Government needs to accept that it does not have a monopoly of wisdom on the subject and must be open-minded in reviewing long-held beliefs. The road safety profession also needs to be less insular and welcome input from independent experts in safe driving, including as part of the safety audit process.

Q.9 Do you agree that an independent annual report on road safety performance, created on an annual basis, would be a worthwhile innovation?

- 9.1 An expert panel such as that described in paragraph 4.35 of the consultation document, to provide an annual report on road safety performance, would certainly be a step forward, provided it was truly independent. The suggestion is, however, that it would be appointed by the Government, so there is concern that appointees would be drawn from organisations that broadly support the Government's road safety strategy.
- 9.2 The appointment process would need to be open and transparent. Members of the panel would have to show they were free of financial interests that could influence their recommendations, e.g. manufacturers of speed detection equipment. There would need to be adequate representation from road user groups, including drivers and motorcyclists. The ABD would welcome the chance to be represented.

Q.10 Do you agree that the Road Safety Delivery Board should be tasked with holding Government and other stakeholders to account on the implementation of a new national road safety plan?

- 10.1 According to paragraph 8.19 of the consultation document, the proposed Road Safety Delivery Board would comprise representatives of highway authorities, the police, fire service and interested Government departments. With the exception of the fire service, these are the same bodies that would be tasked with achieving the targets in the new road safety plan, so in effect they would be judging themselves. This is not acceptable, as the Department for Transport, camera partnerships and highway authorities have a history of using selected and misleading information to give a false impression of the effectiveness of their road safety strategies.
- 10.2 Whatever new body is set up to monitor progress and hold the Government to account must be completely independent, both operationally and financially, from the Government and other agencies responsible for delivering safer roads. Perhaps it could be combined with the proposed expert panel, which could then both monitor performance and propose changes to policy in the light of experience. As noted above, its independence and impartiality would be crucial to its acceptability in these roles.

Roads and local authorities

Q.11 Do you agree that highway authorities reviewing and, where appropriate, reducing speed limits on single carriageway roads will be an effective way of addressing the casualty problem on rural roads? Are there other ways in which the safety of rural roads can be improved?

- 11.1 The limitations of speed limits have already been explained in answer to Question 6, above. Nowhere are those limitations more apparent than on single-carriageway rural roads, due to their frequent changes in geometry and hazard density. The maximum safe speed on these roads is constantly changing along their lengths, so whatever speed limit is applied will be too low at some points and too high at others. Drivers must, therefore, adjust their speed according to the conditions and must be educated, when necessary, in how to do so. They cannot be micromanaged with speed limits.
- 11.2 The Government's lack of understanding in this area is clear from paragraph 17 of the Executive Summary in the consultation document. This states that, while speed is a factor in many accidents, compliance with the 60 mph national speed limit on rural single-carriageway roads is good – so the problem must be that the speed limit is too high! This interpretation is quite wrong.
- 11.3 As explained in paragraph 6.2 above, speed is only a factor in accident causation when it is inappropriate for the conditions, regardless of what the speed limit happens to be. The extensive network of rural single-carriageway roads varies from narrow country lanes to modern, properly engineered trunk routes. In the absence of signs reminding drivers of the national speed limit, they are not constantly thinking to themselves that they are legally entitled to travel at 60 mph; they vary their speed according to what they can see ahead of them, and they do this without reference to the speedometer. The majority of drivers manage this process quite well and, especially on minor roads where 60 mph can rarely be attained safely, the existence of a speed limit plays no part in it. To all intents and purposes, on these roads the speed limit does not exist.
- 11.4 The ABD is pleased that the Government has ruled out a blanket reduction in the national speed limit, having rightly acknowledged that it would have significant economic consequences. However, the ABD does not support the proposal to encourage highway authorities to impose more local speed limits in an attempt to reduce accidents. One of the problems with local speed limits is that they require repeater signs at regular intervals, and these provide a constant reminder to drivers that they are legally allowed to drive at that speed. This can have the effect of subconsciously undermining drivers' responsibility to adjust their speed to the conditions, so they drive at a more constant speed. Paradoxically, therefore, a local speed limit can result in drivers travelling faster at hazardous locations than they would do with the higher, but unsigned, national speed limit.
- 11.5 As explained in paragraph 6.6 above, compliance with speed limits is highest when they are set at the 85th percentile level. If speed limits are reduced below this level, as has already happened in many local authority areas, not only will there be poor compliance, there will also be a greater spread of speeds and greater danger. This comes about because the small minority of

drivers who strictly observe all speed limits, however unreasonable they may be, will create queues of traffic behind them, leading to more overtaking than would occur if drivers were able to travel at normal speeds. Also, where speed limits do not command respect, not only do a significant proportion of drivers exceed them, but there can also be an increase in the number of drivers travelling at the highest speeds.

- 11.6 The ABD is opposed to the proliferation of reduced local speed limits on rural roads and believes they are already having a negative effect on road safety. Instead of encouraging local authorities to introduce even more of these speed limits, the Government should insist that existing local limits be reviewed and removed if there is no demonstrable justification for them in terms of hazard density. They should never be imposed on open rural roads on the assumption that a lower limit will reduce accidents regardless of their cause. The 'evidence' that lower average speeds produce fewer accidents does not stand up to scrutiny, as explained in paragraph 7.4, above.
- 11.7 As well as adopting a general presumption against the use of local speed limits, the Government should, as a matter of urgency, raise the speed limit for goods vehicles greater than 7.5 tonnes gross vehicle weight from 40 mph to at least 50 mph. The 40 mph limit is irrelevant to the performance of modern goods vehicles. When complied with, it causes long tail backs of traffic leading to frustration and more overtaking than would occur if lorries maintained the same speed as other vehicles.
- 11.8 Another major factor in rural road accidents is the lack of investment in main roads since the early 1990s, resulting in many routes now operating at traffic levels in excess of their practical capacity. As flows increase, speeds fall as congestion builds up, and this leads to driver frustration and unreliable journey times. Not only is this bad for safety but has economic consequences as well.
- 11.9 So a significant part of the safety problem on rural A-roads is not too much speed but too little. The inability to make reasonable progress leads to frustration and risk taking. It can also encourage some drivers to divert to less suitable but freer flowing minor roads, increasing accidents there. Reducing speed limits will simply exacerbate these problems.
- 11.10 The much lower accident rates of motorways and dual carriageways, in comparison with single carriageways, is widely acknowledged as having played a significant part in casualty reductions since the 1960s. Road Casualties GB shows that, in 2007, there were 8 accidents per 100 million vehicle km on motorways, compared with 23 on rural A-roads and 40 on other rural roads. The accident rate of dual-carriageway A-roads is not shown separately, but is likely to be only slightly higher than that of motorways. The probability, therefore, is that the accident rate of single-carriageway A-roads is not much different from that of other rural roads.
- 11.11 There is a strong case for believing that a major programme to replace overloaded single-carriageway strategic routes with motorways or dual carriageways would lead to significant reductions in rural accidents. These benefits would extend beyond the routes that were improved, by drawing traffic away from less suitable minor roads as well. These improvements

would also give considerable economic benefits from time savings and greater journey time reliability.

- 11.12 Successive governments in the last two decades have failed to invest adequately in the capacity of the strategic road network, either to save money or, more recently, for ideological reasons. The belief that traffic growth can be constrained by not building roads is demonstrably false: traffic levels change in line with the size of the economy, not the road network. The relatively poor safety record of rural roads is largely the fault, therefore, of Government. Drivers should not be penalised and have further restrictions placed on them in futile attempts to compensate for the Government's failures. A programme of rural road building and widening should be the main focus of future policy to improve rural road safety.

Q.12 How can we most effectively promote the implementation of 20 mph zone schemes in residential areas? What other measures should we be encouraging to reduce pedestrian and cyclist casualties in towns?

- 12.1 It has already been explained that speed limits are only of any value if they are set at levels that command the respect of drivers, and it is more important that drivers adjust their speed to the conditions rather than unthinkingly comply with a rigid and arbitrary speed limit. As is the case with all speed limits, there will be times when it is dangerous to drive up to a 20 mph limit and times when it is safe to exceed it. Compliance will be poor if drivers do not see the limit as reasonable.
- 12.2 The ABD does not object to all 20 mph zones and speed limits in principle, but would oppose their blanket imposition on residential roads over wide areas, regardless of the characteristics of individual streets. Roads suitable for 20 mph limits will be those where traffic speeds are already close to that level, in which case any safety 'benefit' will be more psychological than real. Claims about the effectiveness of reducing accidents in 20 mph zones are generally based on schemes where speeds have been forced down by traffic calming, which has led to many drivers finding other routes. For the most part, therefore, accidents have been displaced rather than eliminated.
- 12.3 The ABD is opposed to most traffic calming schemes, especially those involving vertical deflections, due to the damage they cause to vehicles, discomfort and possible injury to vehicle occupants, delays to the emergency services, and the detrimental effect they often have on the street scene. There may be some residential streets, however, where schemes based on the shared-space principle could complement the introduction of 20 mph zones. Every case must be considered on its merits.
- 12.4 Claims about the proportion of pedestrians killed at various speeds are disingenuous because they fail to mention that, in the vast majority of cases, impact speed is much less than approach speed. Road Casualties GB shows that, in 2007, 646 pedestrians were killed out of 30,191 injured, equating to 2.1 per cent of the total. Given the underreporting of non-fatal accidents, the real proportion will be even lower. It is clear from these figures that average impact speeds must already be well below 20 mph.

- 12.5 Nor is there any straightforward relationship between approach speed and impact speed. An alert driver travelling at 30 mph might well spot a pedestrian acting erratically in plenty of time to stop and avoid an accident altogether. A driver travelling at 20 mph, not paying attention and lulled into a false sense of safety by complying with the speed limit, might not notice the pedestrian until too late to avoid a collision. It is much better to avoid hitting pedestrians at all than to hit them slowly.
- 12.6 As with other aspects of road safety, the best way to improve pedestrian and cyclist safety in towns is through the correct type of education of all road users. Pedestrians and cyclists have some responsibility for their own safety and should not be allowed to shift all the blame onto drivers for the results of their own reckless actions. Drivers must, of course, take account of the likely errors that other road users might make. The greater use of 20 mph zones could encourage pedestrians and cyclists to take less care, with possible negative consequences for safety.

Q.13 How can we provide better support to highway authorities in progressing economically worthwhile road safety engineering schemes?

- 13.1 Paragraph 5.2 of the consultation document makes the case for appraising local safety schemes over their whole life rather than on a first year rate of return basis, and the ABD supports this. It also agrees that account needs to be taken of regression to the mean, which has sadly been absent from the procedures used to justify speed cameras to date.
- 13.2 The ABD also supports the measures in paragraph 5.31 of the consultation document, although there is some concern that the third proposal, regarding whole-route treatments, could be taken as promoting negative measures such as local speed limits and traffic calming.
- 13.3 Local safety schemes should not be used as cheap, ‘patching-up’ alternatives to the comprehensive upgrading needed on overloaded strategic routes.

Vehicles

Q.14 What should Government do to secure greater road safety benefits from vehicles?

- 14.1 In the consultation document it is stated that the UK's vehicle fleet takes 12–15 years to turn over. Recent Government actions in increasing Vehicle Excise Duty (VED) on new cars according to their CO₂ emissions, including one-off new car fees, are active discouragements to buying new vehicles. To increase the turnover rate, the Government should consider reversing these measures, reducing VED (which is a tax on ownership, not use) and possibly waiving VED altogether for the first year of ownership of a new vehicle.
- 14.2 There is no doubt that both the active and passive safety of vehicles has increased significantly in the last fifteen years. The resulting casualty savings have partly offset the failure of the Government's road safety policies and its lack of adequate investment in the road network. The consultation document recognises that further improvements in vehicle design will be driven largely by EU and international regulations, so national governments can only hope to influence those regulations. Such influence that the Government may have should be directed to promoting positive safety features and not those that take control of a vehicle from its driver.

Q.15 Do you agree that, in future, crash avoidance systems will grow in importance and will have the potential to greatly reduce accidents?

- 15.1 The ABD agrees that certain systems designed to promote active safety by preventing accidents from happening have the potential to reduce accident numbers significantly. Of particular value are systems, like electronic stability control (ESC), that reduce the likelihood of a driver losing control of a vehicle in extreme circumstances. As the cost of these systems comes down and they are fitted more widely, their impact on accident numbers should increase.
- 15.2 The ABD does not favour systems that take over one or more control functions from a driver, such as the brakes or accelerator. However thoroughly such systems have been designed and tested, in the complexity of real-world driving conditions there are likely to be occasions when the system could take over in an unexpected and possibly inappropriate way, creating danger rather than preventing it. Not only would the driver be helpless to avoid the consequences, but other drivers could be confused and lose control if another vehicle did something unexpected. As the consultation document recognises, there is also the danger that drivers could become dependent on such systems and might be unable to react in time if they failed.
- 15.3 The proposal of greatest concern to the ABD is Intelligent Speed Adaptation (ISA). For all the reasons already given, the Government's obsession with speed limit compliance is detracting from, rather than improving, road safety. ISA would compound the damage done to Britain's road safety culture by further promoting the false message that safe driving means blindly obeying speed limits rather than adjusting speed according to changing conditions. Drivers would hand their responsibility for speed selection to the ISA system,

which would encourage foot-to-the-floor driving. Simulator trials have shown that drivers are more likely to indulge in dangerous practices, such as following too close and driving too fast in poor visibility, because they expect ISA to do their thinking for them. The following quote comes from a paper presented by Dr Oliver Carsten to a DETR seminar on speed in February 1999:

“The drivers with a speed limiter system feel that the responsibility for indicating an appropriate maximum speed has shifted from the driver to the system. The system should know what is appropriate for the conditions and therefore, if the system does not force them to slow down, they need not do so. The results indicate that there may be problems if a speed limiter system does not take account of weather and road surface conditions. Drivers expect the system to be ‘all knowing’.”

- 15.4 The alleged benefits of ISA are entirely theoretical and are based on the claimed relationship between average speeds and accidents which, as explained in paragraph 7.4 above, does not withstand scrutiny. The report published in 2008 on the results of the Leeds ISA trials produced a mixed reaction from the drivers who took part, most of whom were volunteers and therefore not representative of the driving population as a whole. The ABD believes that the imposition of ISA would have strong negative effects on road safety and should be abandoned forthwith.

Q.16 How can we best encourage consumers to include safety performance in their purchasing decisions?

- 16.1 Vehicle buyers have different priorities when making their purchasing decisions, whether new or second-hand. Provided full, accurate and understandable information on the relative safety performance of different vehicles is made available, consumers should be trusted to make their own decisions about the vehicles that best suit their needs.

Behaviours

Q.17 We have highlighted what we believe to be the most dangerous driving behaviours. Do you agree with our assessment?

17.1 Once again, the consultation document reveals the Government's ignorance of the role of speed limits and exaggerates their importance. Paragraph 7.5 not only repeats the discredited claim of a link between average speeds and accident numbers, but includes the following statement:

“Speed limits are set at a level to maintain public safety, and we need to improve compliance with limits if we are to improve our casualty record.”

17.2 Neither part of this statement withstands scrutiny. Even when correctly set in accordance with the 85th percentile principle, speed limits are not an absolute guide to what may be a safe speed at a particular location or under changing conditions. In the last 10–15 years, speed limits on many roads have been reduced by 10, 20 or even 30 mph, even though nothing else about the road may have changed. These reductions have been implemented by local councillors with no knowledge of the correct use of speed limits, and have been encouraged by the Government publishing manufactured ‘evidence’, such as the claimed average speed/accident relationship. Furthermore, widely varying policies on speed limit setting have been adopted by different highway authorities, so that a driver travelling from one county to the next may find roads of similar character with very different speed limits. It is not surprising, therefore, that speed limits have lost credibility and drivers have become cynical about them.

17.3 As already explained, there is a substantial difference in road safety terms between a statutory speed limit and a speed appropriate to the prevailing conditions. Compliance with the former does not ensure achievement of the latter. Indeed, the overemphasis on compliance with speed limits detracts from drivers' understanding of the need to assess a safe speed for themselves.

17.4 Instead of its fixation with speed limits, the Government should be focusing on the reasons for inappropriate speed. As explained in paragraph 6.3 above, this is a symptom of an underlying failure to correctly identify or respond to a potentially hazardous situation. Where drivers exhibit such failures, remedial training in hazard awareness would be far more effective than punishing them for exceeding arbitrary speed limits that have been set too low.

17.5 Concerning the other behaviours identified in the consultation document, the ABD agrees that driving while impaired by drink or drugs are dangerous behaviours that must be discouraged. Enforcement against them, however, needs to be targeted and proportionate, and the majority of responsible drivers should not be subject to undue harassment in order to catch the few.

17.6 The Government should certainly continue to encourage vehicle occupants to comply with the seat belt laws, especially those relating to the restraint of children. Adults who fail to wear a seat belt are not creating a risk to people outside the vehicle, so this behaviour is less serious than those that put other road users in danger.

- 17.7 Careless and dangerous driving have been lumped together, but they need to be treated separately. Deliberately reckless and sustained, unsafe actions warrant enforcement sanctions, but careless driving covers a wide spectrum of behaviours, from a one-off error of judgement to persistent failure to give due care and attention to the driving task. The latter is bordering on dangerous driving and may deserve enforcement action, but simple errors do not. The consultation document recognises that everyone makes mistakes occasionally, and human fallibility cannot be eliminated by legislation. Careless driving can only be tackled by trained police traffic officers, who should generally offer advice to drivers making simple errors and reserve penalties for those at the other end of the scale.
- 17.8 Apart from poor hazard awareness skills, a major cause of accidents is lack of due attention while using the roads. If all road users, including pedestrians and cyclists, gave their full attention to what they were doing, accident numbers would fall significantly. The Government should mount an education campaign, explaining to people that road use should not be regarded as a secondary activity but requires their undivided attention.

Q.18 What more can be done to persuade the motoring public that illegal and inappropriate speeds are not acceptable behaviours?

- 18.1 Referring to illegal and inappropriate speeds in the same sentence reveals, yet again, the Government's failure to understand the difference. The oft-stated desire to make 'speeding' as socially unacceptable as drink-driving is doomed to failure, as the public rightly recognises the significant differences between these behaviours.
- 18.2 Most people accept that, beyond a small level of alcohol consumption, a driver's judgement is likely to be sufficiently impaired that they will become less safe. Consequently, the laws on drinking and driving are broadly supported. The situation with speed limits is quite different, as people do not accept that exceeding a speed limit is always dangerous. Almost everyone exceeds speed limits sometimes, even if only briefly and by small amounts, and in the vast majority of cases no danger is caused.
- 18.3 Speed limits in the UK are set in round-number multiples of 10 mph, apply mostly on a 24/7 basis and, to avoid frequent speed limit changes, often remain the same along sections of road with different characteristics. Thus the arbitrary and inflexible nature of speed limits is apparent to everyone, and has become more so as many have been reduced at the whim of local councillors, often under pressure from vociferous residents. If someone has been driving along a particular section of road for many years at a safe and legal speed of, say, 40 mph, and the next day finds the speed limit has been reduced to 30 mph, if they continue to drive at 40 mph they are suddenly branded as dangerous criminals. This is clearly nonsensical and brings the whole system of speed limits into disrepute.
- 18.4 Most people are able to adjust their speed according to the conditions quite well, which is why the 85th percentile principle was for decades accepted as the basis of setting speed limits – in effect, drivers set the limits themselves.

The Government and local highway authorities now appear to believe, however, that people are incapable of making their own decisions and must be told what to do all the time. This presumption is quite false, causes resentment and leads to worse, not better, standards of driving.

- 18.5 Most speed limit enforcement is undertaken on sections of road where a significant proportion of drivers exceed the limit. The fact that they do so is an indication that the speed limit is unnecessarily low at that point and can be exceeded safely. Speed limits are rarely enforced in the centres of towns and cities because there is no need: drivers recognise the greater hazards and slow down of their own accord.
- 18.6 The more that Government focuses on reducing and enforcing speed limits, the more the system will fall into disrepute. Compliance with speed limits will then only be possible with draconian enforcement methods that should have no place in a supposedly free society.
- 18.7 Inappropriate speed is a completely different issue and, as already explained, represents a failure of hazard awareness and response, possibly coupled with inattention. In most cases the correct remedy is education, not enforcement, which should be reserved for those deliberately acting in a dangerous way.

Q.19 What more can be done to encourage safe and responsible driving?

- 19.1 Driver education and training are key to improving the standard of driving, but will be undermined if the Government persists in trying to micromanage use of the roads with more laws and penalties. All drivers and other road users must be encouraged to take responsibility for their decisions and actions. They should not rely on adherence to the law or technology to keep them safe, or expect other road users to take responsibility for them.
- 19.2 Teaching the key attitudes, beliefs and risk management skills for safety must become the core of driver training, both while learning to drive and for any subsequent remedial courses. Internalising a safety culture within a driver's mind is much more effective than trying to impose it externally.
- 19.3 The current focus on enforcing inflexible rules provides little incentive to develop the attitude and approach to driving that enables the best drivers to complete their journeys in safety. There is no doubt that advanced driver training and testing significantly reduces accident involvement among those who undertake it. People who voluntarily take advanced driver training or testing are demonstrating that they have a responsible attitude to using the roads through their desire to improve their skills. Yet the majority of drivers see little benefit from taking further training, apart from the possibility of a reduction in insurance premiums. Most people regard passing the standard test as the end of their formal driving education, when it should really be seen as just the end of the beginning.
- 19.4 The Government should do more to publicise the benefits of additional training, perhaps in association with the insurance industry.

Q.20 Should more be done to reward good driving? If so, what?

- 20.1 Following on from Question 19, one way of encouraging more people to take advanced driver training could be to introduce a system of positive points, which would be awarded to those who successfully complete approved training schemes beyond the standard driving test. The positive points would help offset any penalties incurred for minor offences, and more positive points could be earned throughout a driver's career for undertaking further training or retesting.

Annex A

Suffolk Coroner's verdict concerning a fatal accident in November 1996

This is the Coroner's Verdict re Frank Gray deceased. I accept Dr Biedrzycki's report as to the medical cause of death and it follows from that that I find that the injury causing death is: "1(a) Multiple Injuries".

I now come to the most important part of my Verdict and that is the legal cause of death, what is called on the Verdict form "Conclusion of the Coroner as to the Death". Quite plainly, I only have one reasonable Verdict open to me there and that is one of Accidental Death. Part 3 of my Verdict which I have deliberately skipped until now is the time place and circumstances at or in which the injury was sustained, I find that that was between 6 and 6.10am on the 4th November 1996 on the A134 road at Bradfield Combust, circumstances: "due to a road traffic accident".

I have had reported to me three fatal accidents on this road and these three fatal accidents follow very shortly after certain speed limits have been imposed on this road at Alpheton, Bradfield Combust and Sicklesmere.

I think that there is a very high probability indeed that this tragic fatality has the speed limits as a contributory cause. I say no more than "contributory" and I made a similar finding on the first of the three Inquests that I have held. First of all, if we look at the speed limits themselves, there is a 30 mile an hour speed limit through Sicklesmere, a 40 mile an hour speed limit through Bradfield Combust and a 30 mile an hour speed limit through Alpheton.

I am going to deal with the speed limit at Bradfield Combust first. I think almost anybody would agree that it is thoroughly reasonable to restrict cars to 40 miles per hour as they negotiate the double bend which is, coming from Sudbury, just beyond the Bradfield Manger. Not only is there a double bend there but also there is a road junction. However, I think that the 40 mile an hour speed limit extends too far in either direction from there and I think that it would be more reasonable and that more drivers would keep to the limit if where the 40 mile an hour signs are at the moment, that is at the ends of the speed limits, there were 50 mile an hour signs and a bit later on the legal speed was reduced to 40 miles an hour.

In respect of the speed limits through Sicklesmere and Alpheton, I don't think there can be any doubt whatsoever that 30 miles an hour is ridiculously slow to compel drivers to go through those two villages.

Speed limits which are unduly restrictive are harmful for many reasons but of course I'm only really concerned, and I've only got the right to mention, those respects in respect of which unnecessary speed limits are detrimental to safety. Unnecessary speed limits are detrimental to safety for various reasons: they reduce the opportunity to overtake, thereby making drivers try harder at other times, they cause traffic to bunch, they cause frayed tempers, they cause delay which makes drivers try harder at other times to make up time that they have lost. Another unfortunate effect that they have is that each unnecessary speed limit leads drivers to think that speed limits are imposed arbitrarily and therefore makes drivers less likely to observe speed limits when they ought to. Furthermore, speed limits can lead to road rage. I know of at least one incident concerning the Alpheton limit where exactly that happened.

None of the factors which I have mentioned are things which can be measured statistically and of course there is no way where a speed limit contributes to an accident can excuse a mistake by a driver, particularly in regard to matters concerning frayed tempers or road rage. A driver with a frayed temper is not going to drive anything like as well as a driver who is calm and relaxed. Similarly and obviously a driver suffering from road rage is a hazard. Drivers should of course concentrate on staying calm and relaxed and they are at fault if they do not do so but none of that alters the connection that there can be between an accident and an unnecessary speed limit and usually where there is such a connection, I suggest it's undetectable either statistically or any how else.

I personally use this road often and have taken a special interest in what percentage of drivers observe the speed limit. I know that when I go through one of these speed limits, I am not talking about the one at Bradfield Combust but the speed limits at Sicklesmere and Alpheton at 30miles an hour, and I mean real 30 miles an hour not an indicated 30 miles an hour, because I am one of those few drivers who knows what the errors in his speedometer are.

Any time I do that I collect a queue behind me and it seems that those drivers who are keeping to the limit is mainly because they are in a queue. When a high percentage of drivers ignore a particular speed limit, and I am not talking now about these particular limits themselves, I am speaking generally, when a high percentage of drivers ignore a speed limit everyone says how terrible that is and how awful drivers are. None of them stop to think, or if they do stop to think they don't say so publicly, if say 80 percent of drivers ignore a speed limit, there might be something wrong with that speed limit itself.

In fact, if a high percentage of drivers ignore a speed limit it means that more than that high percentage disagree with the speed limit because of those drivers who keep to the limit it could be one of several other reasons. For instance, and the most important one perhaps, is fear of prosecution and points on their licence. It can be because the driver is in a queue as I've already mentioned where the leader is observing the speed limit or it could be, thank goodness, some people are just plain dutiful. So where we have a majority of drivers who ignore a speed limit it means that not only do those drivers disagree with the speed limit but a high proportion of those that keep to the speed limit disagree with it.

I believe that the A134 from Bury St Edmunds to Sudbury would become more reasonable and safer if the speed limits through Alpheton and Sicklesmere were increased to 40 miles hour, preferably with a 50 mile an hour lead in from where the existing signs are and that the Bradfield Combust speed limit should have its 40 mile an hour section made shorter, replacing the existing end signs of the limit with a 50 mph lead in.

Annex B

A Statistician's Comments on the Transport Research Laboratory Project Report PR58 "Speed, Speed Limits and Accidents" (1994)

The above paper sets out to investigate three topics drawing upon a number of studies from a variety of countries. These include:

1. A link between individual mean driving speeds and the likelihood of being involved in an accident.
2. The effects of changes in posted speed limits and actual changes in mean driving speed.
3. The relationship between both the above and actual accident frequency.

The problems associated with this paper fall into two areas. Those associated with methodological weaknesses in the original studies, and those that relate to the actual method and analysis presented in the review. It is not possible to comment on weaknesses in the original studies without investigating the relevant primary source material. So comments here will be confined to the method and analysis employed in this paper.

General Issues associated with the Paper's Methodology

Perhaps one of the most striking problems with this paper concerns the lack of inclusion criteria associated with the main dependent variable used in all analysis. Criteria are not established at the outset regarding the accident frequency measure employed in the analysis. That is to say although the authors discuss the validity of different measures of accident rates (page 5 and 6) they fail to establish which measure they have decided to use. This choice is mainly between the accident base rate (absolute frequency of accidents) and an accident frequency rate per distance driven. The authors dismiss a distance adjusted measure as potentially flawed given that an imperfect relationship may exist between this measure and traffic flow (page 6).

This is a very surprising approach to take at the outset of the report, but it does allow the inclusion of almost any study however seriously flawed the main dependent variable may be. Clearly, accident frequency by distance driven does at least make some adjustment for traffic flow (number of users on the road), whereas base rate raw accident frequency cannot adjust for this component. Put simply, using any study that simply measures and compares the frequency of accidents alone may essentially just be measuring the number of vehicles present in a given location. Changes in the number of vehicles using a given stretch of road will vary over time and location, and will be directly proportional to the expected accident rate. If fewer people use a stretch of road there will be fewer accidents, compared with elsewhere.

The problem here is that when speed limits have been changed traffic flow (i.e. road use) may vary, and this alone may account for changes in accident base rates. The authors fail to explore this issue in any detail, or provide any evidence that the accident frequency base rates employed in some of the studies which were included in their analysis do not reflect simple changes in road use. Indeed one of the other reasons for setting up study inclusion criteria at the outset of a review paper is to avoid selecting articles for inclusion whose results happen to support study predictions.

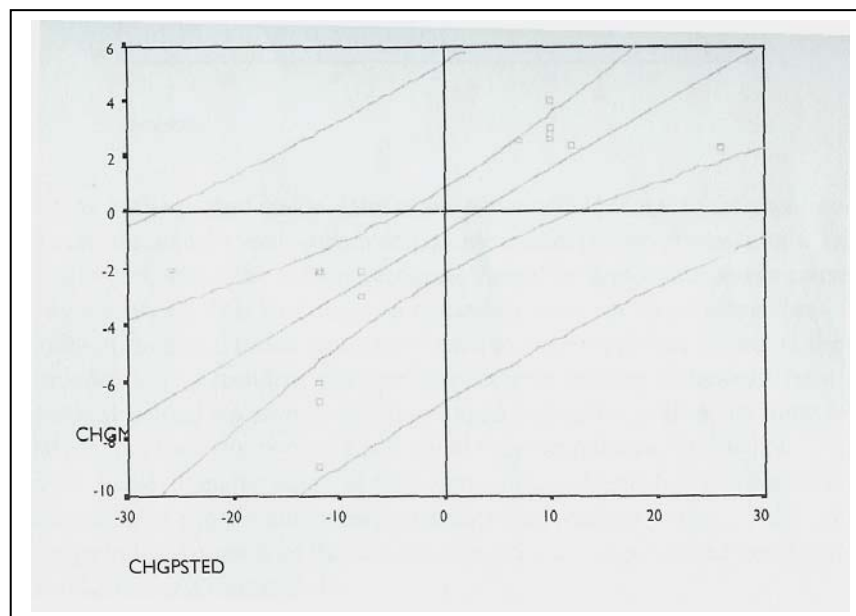
The foregoing points perhaps cast the most serious doubt over the paper's conclusions as a whole. That said, further examination of the analysis undertaken indicates other areas of weakness that are worth exploring.

The paper undertakes statistical analysis of different papers without attempting to obtain a standardised metric for effect, or give weightings for sample size by study. These and other aspects of meta analysis techniques are simply not addressed. This may partly have arisen because the paper does not appear to have been formally peer reviewed. This is standard practice before an article can appear in a scientific journal and provides a safeguard against spurious findings. The TRL publication procedure may be quite rigorous but a report from this organisation may not be subject to the same conventions found in peer-reviewed scientific journals.

A Reanalysis of the Paper's Main Claims

One of the most concise claims made relates to the content of Fig 3. This plots the changes in sign posted speed limits against changes in actual mean speeds driven. The authors report a best fitting regression equation that indicates that for every unit change in speed limit imposed a corresponding 0.25 change in actual mean speed driven is expected. The problem with this is that the data used includes five studies which fall outside standard error confidence limits for inclusion in this analysis (as data represented a summary mean from each study standard error limits should be imposed to excluded outliers). The graph (1) below shows their original analysis without confidence limits.

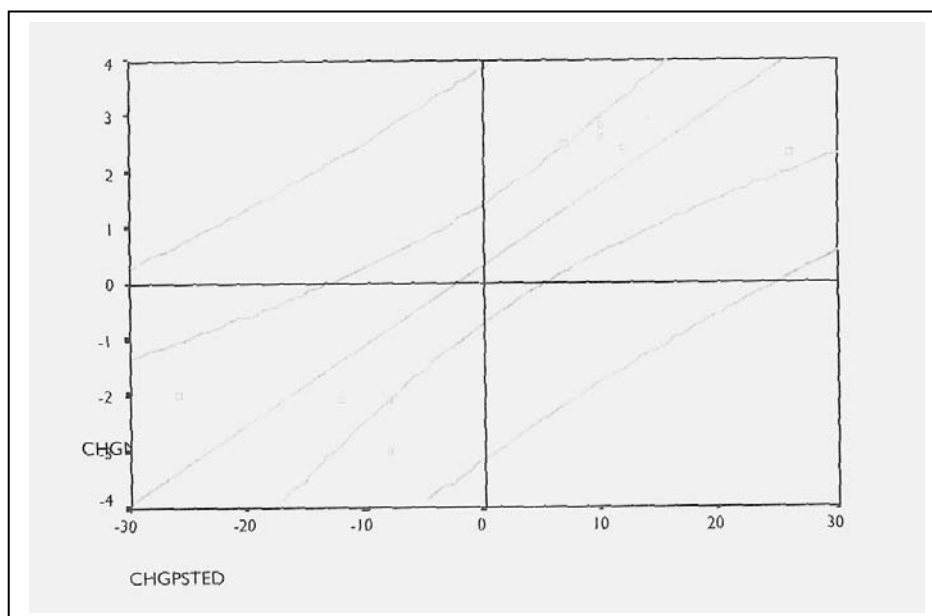
Notice that those data points that fall beyond the inner curved lines ought not to have been included in the regression. They represent studies whose results are so significantly different from the rest that they ought not be included in the analysis.



Graph 1. Change in Mean Speed by Change in Posted Speed Limit

When these studies are excluded and the data reanalysed it is clear from graph 2 the much quoted link between speed limit changes and actual mean driving speed becomes much more modest. Now for every unit change in speed posted, the actual

observed speed change is near to 0.120. This is basically half the figure cited in the paper (although $R_{srd}=0.7145$, $P>0.02$ is still positive and significant) and suggests that the link between posted speed limit changes and actual compliance may be even weaker than the authors claim.



Graph 2. Change in Mean Speed by Change in Posted Speed After Outliers Removed

Turning to the second major claim of the paper, which relates to the association between the actual speeds driven and accident rates (however measured). This is a crucial link which the authors recognise cannot be demonstrated as a causal link in their analysis. This introduces an interesting problem for all researchers, and a variety of statistical techniques can be used to improve claims regarding the causal antecedents to a dependent measure (like accident rates by distance). These include structural equation modelling, staged regression models, and time series analysis, but the authors do not use any of these techniques. This is not unreasonable given the data that they work with, and essentially causal inferences are a matter of experimental design not statistical analysis, but nevertheless, perhaps too little is made of the fact that the associations presented throughout are not evidence of a causal chain.

Where regressions are presented which relate to the key link between actual road speed and accident rates problems appear with the presentation. For example, on page 16 the results of regressions undertaken by Fieldwick and Brown (who are themselves citing earlier work!) do not accord with the textual claims made, and in the case of the second regression equation on that page are missing the beta weight, and have involved the use of a % variable which violates assumptions of normality in regression modelling. Basically the link between speed and accidents present on page 16 is not clear. Indeed in the one multiple regression (Garber and Graham 1990) in which many predictors were entered increasing speed limits from 55 to 65 mph only accounted for 15% (of I assume variance in the overall model which uses fatalities as a dependent measure).

The problem here is that changes in traffic flow over the duration of the study are not entered as a covariate. So again even the modest 15% figure quoted may have been due to the general increase in road usage that coincided with the increases in speed

limits (this would also explain the accident spill-over effect into roads with unchanged speed limits during the same period).

Turning to the data presented in figures 5a and 5b. Although a shortage of time prevents the reanalysis of this data, a couple of points are worth noting. Figure 5b highlights the much cited 1mph reduction in speed results in a 5% reduction in accidents. The logistic function provides little additional power over the linear model, and this despite constraining an asymptotic effect at the upper and lower bounds. The point to note however is that the simple 1mph/5% claim is not related to the logistic function. Because of this although the logistic function can be criticised without even reanalysing the data, I shall deal with the linear regression that underpins the 1mph/5% claim.

Notice that the graph plots only to -50 on the y axis and -10 on the change in mean speed x axis. These cut-off points give a hint as to the problem with this simple statistic. Suppose that a change in mean speed of 20mph in either a positive or negative direction could be engineered. This would mean that for a fall in speed of 20mph the linear model would predict that no accidents should occur at all (i.e. -100% on the y axis). This is blatantly absurd, as are some of the implications of the logistic model.

The basic problem is one of data presentation and analysis. In order to reach a sensible conclusion regarding the potential relationship between speed and accident rates, a linear model should relate to the actual speed from which change will occur. For example, the effect of a 10mph change in speed is likely to be different depending upon whether it is a change from 30 to 20...or 40 to 30...or 50 to 40 etc.

The problems that arise with the models presented and so often quoted arise because I believe they are an inappropriate summary that disregards the absolute speed in question in favour of speed change alone. This may provide a simplistic but misleading sound bite, but it gives little clear indication of the likely effects of speed limit changes from current actual speed limits. Not only that, but the relationship between posted speed limits and mean driving speeds seems (as above) to be in the ratio of around 1 to 0.12. This means that to obtain any of the benefits implied by the speed-accident relationship suggested in fig 5b, an 8-fold reduction in actual posted speed limits would be required for every 1mph of driving speed reduction and the purported 5% decrease in accidents.

This is probably a much weaker finding in relation to speed limit effectiveness than is often either claimed or might be believed based on this paper, and even then this relationship would only hold across a certain range of absolute speeds but it is not possible to say what these might be exactly, given the type of analysis which was presented in the paper. Finally, even this conclusion only holds for as long as the base rate accident measure used throughout the paper can be seen as valid rather than simply an indicator of levels of road usage.