

Investigation of Road Traffic Incidents (RTI's) involving police vehicles, 1998 – 2001:  
Identifying common factors and the lessons to be learned

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## **FATAL PURSUIT**

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## Executive summary

### Key findings

*To address the marked increases in road traffic collisions referred to the PCA (particularly relating to police pursuits), we investigated 85 cases that occurred between 1998 and 2001 which resulted in a total of 91 fatalities. The main findings were that:*

- *There is inadequate risk assessment taking place in many pursuits/follows resulting in risky decisions taken by police drivers rather than by their control room managers*
- The quality of communication between police vehicle occupants is not satisfactory and specialist training in pursuit commentaries is required for police passengers in particular.
- The incidents covered include pursuits/follows undertaken by unmarked police cars (ie not fitted with concealed warning equipment) and convoys of police vehicles – these are not acceptable and should be explicitly prohibited.
- The current distinction made by police officers and investigators between ‘pursuits’ and ‘follows’ is not helpful and should be discontinued with immediate effect – in the study, no behavioural differences could be identified between events characterised in this way.
- Officers should not engage in chases without a clear, centrally agreed strategy for attempting to stop the fleeing vehicle safely – thus police drivers’ discretion to chase should be reduced and central management and control of incidents increased.

The key conclusion from the study is that the police continue to engage in too many pursuits/follows that endanger public safety and that the most effective way to reduce this is by increasing management control on the evolution of pursuits and reducing officer discretion about both initiating and continuing with pursuits. Forces may need to consider whether officers who pursue without control room permission, or who fail to adequately communicate risk, or who fail to pull over when instructed to call off a chase by the control room, should be at risk of being disciplined as a result.

### *Why is this area worth investigating?*

The push by the Police Complaints Authority to address the issue of road traffic collisions is motivated by the marked increase in voluntary referrals from forces in recent years. In the first nine months of this year there have been a total of 42 incidents (involving 35 deaths and 17 serious injuries), including 30 deaths from pursuits (resulting from 24 separate incidents). Thus the number of deaths from pursuits supervised by the PCA has risen from 9 in 1997/98 to 30 in the first nine months of 2001/2002 (see Figure1).

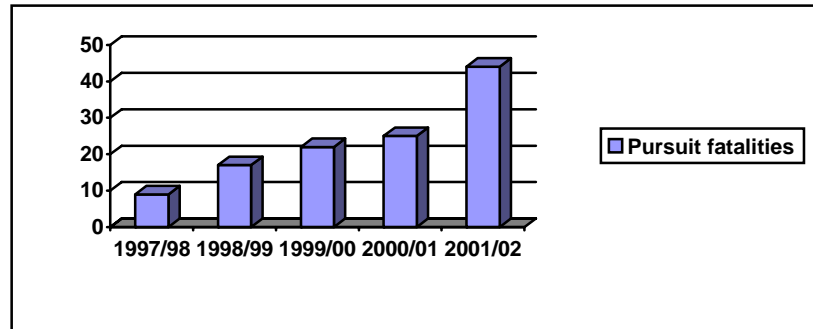


Figure 1: Number of fatalities from pursuits (1997/98-2001/02)

The aim of the current investigation was to look at road traffic collisions referred to the PCA in recent years in a systematic way to assess what patterns emerge and what lessons can be learned that might prevent such incidents from occurring in the future. The evidence presented would suggest that, while the police have some very difficult decisions to make in short periods of time around public safety and the prevention of crime, many of these incidents are potentially preventable, either by changes in force policy or by proactive measures designed to bring out safe and effective resolution of such incidents.

*What is the project building on?*

There has been relatively little systematic research work done in this area, particularly in the UK, and so we are often reliant on making inferences from American research, with all the pitfalls this incurs in terms of reliability and relevance. One of the few UK studies, published by the Home Office in 1997, examined 770 police vehicle accidents resulting in serious injury (39% in pursuits/follows, 29% in routine patrols and 23% in emergency responses). The study found that around one in six pursuits were being undertaken by drivers not trained to that level, and a similar proportion in response situations where emergency equipment had not been used. The authors also found that it was police drivers at the lower levels of training who were far more likely to actually make contact with other vehicles during these incidents. However, this study has been superseded by subsequent policy initiatives (such as the Lind report) and so its current relevance may be limited.

Thus, we have to turn to US research, albeit aware of its limitations, in attempting to provide a more recent evidence base. A policy change in Miami-Dade county in 1992 regarding the regulation of pursuits from 'at the police driver's discretion' to 'for violent felonies only' led to a 92% reduction in the frequency of pursuits within one year, with a commensurate reduction in injuries and no evidence of increase in rates of fleeing or in the total volume of crime. In contrast when Omaha increased the permissiveness of their pursuit policy in 1993 to 'at the police driver's discretion', there was a 600% increase in pursuits within one year – suggesting that there is a close link between officer discretion permitted and the total volume of pursuits. However, it is not possible from these studies to infer what the effects were on the total detection rates of crime or whether this change became public knowledge and so affected the decision-making of criminals and others who may flee.

Further US evidence suggests that the riskiness of pursuits can also be assessed actuarially – and that the risk of personal injury is doubled when more than one police vehicle is involved, and significantly increased for speeds of

more than 65 mph and in built-up residential areas. This is particularly problematic when, as has been estimated, more than 80% of pursuits may result from perceived traffic offences and when more than half of all collisions resulting occur within two minutes of the initiation of the chase. Although it is clear that engaging in police pursuits carries increased risk to the public and those involved, the duty of the police to apprehend criminals and to prevent dangerous driving provides the dilemma that is at the heart of the current research project.

*How was the study carried out and with what objectives?*

The aim of the study was to examine factors that underlie the increase in serious injury or fatal road traffic incidents (RTIs) referred to the PCA between 1998 and 2001. The study takes a sample of 85 cases that have been referred in this period – 64 classified as pursuit/follows and 21 other serious injury RTIs – and examines antecedents to the events (including driving characteristics of each participant), the context of the collision and aspects of the subsequent investigation – to attempt to identify lessons that can be learned, related both to policy and practice, that may help to arrest the worrying and tragic trend that provided the impetus for this work.

*What were the main findings of the study?*

In total the 85 cases involved 91 fatalities although 12 of the incidents were serious injury only, with the majority of the incidents occurring at night in towns and on Saturday or Sundays. The majority of the incidents also occurred in 30 mph speed limit areas and when the road was either quiet or almost deserted. The main differences between the events classed as pursuit/follows (n=64) and the other incidents (emergency responses, standard patrol incidents and officers coming off duty)(n=21) were that the speeds were higher in the pursuits/follows, that the drivers involved had more years driving experience than in the other kinds of incidents and that each event resulted in a greater number of fatalities. The last of these findings may be a consequence of a differential threshold effect for referring cases to the PCA (ie pursuits are only referred if there are fatalities involved, whereas non-pursuits may be referred when less serious injuries occur), or from the lower speeds involved.

In the cases where it was possible to make a distinction between events described as 'pursuits' and those defined as 'follows' by the Investigating Officer (IO), there were very few significant differences, with the most marked mean differences being that, while 'pursuits' had a higher average speed, the mean distance between the vehicles was lower in 'safe follows', that pursuits were more likely to involve stolen cars and that there were attempts to stop the target vehicle. The most striking finding, however, was that there were no identifiable behavioural markers that distinguished the two. Furthermore, it was not possible to make this distinction in a number of cases, and the terms were used interchangeably in a small number of the reports.

The data supported the Home Office work in suggesting that the collisions, when they occur in these incidents, rarely involve police vehicles colliding with other vehicles, with the most frequent outcome that the target car collides with either a fixed object (such as a tree) or with another vehicle or pedestrian. This however, is a double-edged sword for the police – while this means they are well enough trained rarely to collide, it means that this is not a good indicator of the riskiness of the situation. It is the lower skill level, that of the pursued driver, that should be accounted for in assessing risk, not the skills of the police driver. In contrast, for the vast majority of the non-pursuit/follow cases (19/25) the referral results from a collision involving the police vehicle.

With regard to the suspect vehicle in the pursuit/follow incidents, this was stolen in 29/64 incidents, and the car had significant flaws in 22/64 of the incidents. Of the suspect car drivers who were alcohol tested (n=48), 56.3% were over the legal alcohol limit, while around one quarter of those tested (7/30) were positive for cannabis. Forty-five of fifty-one drivers for whom information was available had a mean of 6.3 convictions each, further indicating that this group were often criminally involved, although this often would not be known to the officers at the time of the stop and would not necessarily have been relevant to the reason for the stops. Finally, 30 of 42 for whom the data were available had not been wearing seatbelts at the time of the collision, increasing the risk of injury during the pursuit/follow although this would not necessarily have been known to the police officers, other than the two incidents where this was one of the reasons for initiating the pursuit or follow.

This means that the police were often correct in their suspicions about the behaviour of the suspect vehicle when they failed to stop, and that relatively few involved completely 'innocent' drivers. However, this is a question of proportionality – while the police drivers may well be correct in wishing to stop the suspect vehicle, the extent of this objective should be weighed against the risk to both vehicles and all other road users. For this reason, the report recommends that the decision to initiate a pursuit or follow should be controlled centrally and that risk assessment and decision-making (as evidenced by clear communications with the control room) are explicit and ongoing over the course of the incident. It is not the aim or desire of the authors to end pursuits, rather to reduce the risk to road users by reducing the discretion of individual police drivers and increasing the role of police managers.

Information on the characteristics of the police drivers was gathered far less consistently, possibly because the police vehicles were rarely involved in the actual pursuit/follow collisions, and one of the major recommendations of the study is that this information deficit should be rectified. Where this information was provided, over three-quarters of the drivers in the study follow/pursuits had been pursuit trained and they had been driving police vehicles for an average of 6.4 years. There are similar limitations around the characteristics of police passengers and around the experience, role and training of the control room staff involved, and, more generally, about the nature and quality of communication and risk assessment.

Reasons for initiating the pursuit/follows were grouped into three broad groups – traffic violations (n=36), serious, non-traffic crime (n=22), and other events (n=6), which consisted of believed drunk driving and routine stops. It is of concern that the speeds involved, the distances between the police vehicle and the target vehicle and the number of fatalities accruing did not differ between these events. The fact that the reasons for initiating were so variable, and in many cases led to far greater risk taking on the part of the driver of the target vehicle, provokes questions of escalation and proportionality where for relatively minor offences, major risk-taking behaviours result. In effect, what is demonstrated is that many pursuit/follows involve poorly trained, often unqualified or disqualified drivers, a significant proportion of whom are under the influence of alcohol or illicit drugs, and who feel provoked to engage in high-risk driving behaviours, often for relatively minor traffic offences. Furthermore, their refusal to stop may be taken by the officers, often rightly, as an indication that they have engaged in other forms of criminal behaviour.

## Main recommendations

The main recommendations from the study are that:

1. The current definitions of pursuit/follow are not helpful and can often be misleading and should be scrapped, to be replaced by more behaviourally determined and measurable categories. The definition of an authorised pursuit would be: "Where the police identify a failure to stop, and respond leading to an increase in risk taking (evidenced by breaches of road traffic law) by both police and suspect vehicle, and where emergency equipment is used as part of a clear plan to bring the suspect vehicle to a safe stop. All other increases in risk taking behaviour initiated by police responses will be classed as unauthorised pursuits."
2. Significant increases in police training are required, particularly in the area of communication, and it is recommended that specific training is provided for delivering commentaries for police vehicle passengers.
3. Training and monitoring are required in the adequacy of risk assessment, and its evolution over the course of pursuit/follows. This would help to ensure that escalation of incidents does not occur unnecessarily and that vehicles are not pursued where the risk to road users or the general public is disproportionate to the original reason for attempting to stop a vehicle or emerging reasons.
4. If a pursuit/follow is assessed to be too risky or too disproportionate for the original offence, the driver should pull over to the side of the road and should not continue to follow the target.
5. There is considerable need for Investigating Officers, when producing reports for PCA supervision, to be consistent in the type of information they produce and a pro forma that constitutes a minimum requirement for this is provided as Appendix 2 of the main report.
6. Police force managers need to monitor and manage pursuit/follows more effectively for the centre, increasing levels of control over high-risk drivers and, separately, monitoring the pursuit/follow histories of individual officers.
7. The latter point is linked to a general requirement for forces to improve the quality of their data collection and management in this area – it is most unhelpful that it is not possible to work out the risks associated with pursuit/follows as some forces do not gather or provide information in this area.
8. IOs should be particularly clear that pursuing in convoys or in unmarked (cars which have no concealed emergency equipment) is wholly unacceptable, and exceptional circumstances demonstrated, if this is not to result in disciplinary action for the officers involved.

The cases included in the study clearly indicate that in only a very few cases was there flagrant disregard for the guidance in place – however such instances, involving pursuit/follows in completely unmarked cars or involving more than two police vehicles should not be accepted by the PCA or by police investigators. In the majority of other cases, however, the officers were asked to make complex judgements in a very short space of time, in which the risk to the users of the highway are weighed against the public well-being issues related to crime detection and public safety. The core recommendation of this report is that this decision is, where possible, made explicit and managed by the police control room, to reduce individual officer discretion and to improve the centralised management of police chases. The increase in referred fatal road traffic collisions cannot be reversed overnight but can be achieved through an effective management approach based on adequate communication, risk assessment and evaluation procedure undertaken by officers.

## Overview and objectives

In the Chairman's Foreword to the 2000/2001 Annual Report of the Independent Police Complaints Authority, Sir Alistair Graham pointed out that "there has been a 178 per cent increase in fatalities involving pursuits over four years, which is totally unacceptable". While there may be some debate about the provenance of this data, there has been a marked increase in such referred cases, largely resulting from a dramatic increase in the number of police pursuits and chases that result in serious injury or death that are referred to the PCA. He went on to argue that "Police forces must take urgent steps to meet the rising tide of public concern" while the main body of the report asserts that "there are still reports of officers participating in pursuits or responding to emergency calls, with inadequate training and using inappropriate vehicles".

The rise in RTI's generally and in pursuits has continued into the most recent year (2001/2002) in spite of the Chairman's comments, with 44 fatalities resulting from pursuits and follows involving the police. This represents an increase of 489% in the number of deaths resulting from pursuits referred to the PCA in a five-year period (see Figure 1 below). While increased awareness of these issues may have led to changes in reporting practices by police forces, the trend is sufficiently dramatic and the numbers sufficiently large that close scrutiny is required and remedial action urgently needed. It is also worth noting that the number of fatalities from non-pursuits in the same period has remained relatively consistent (between 6 and 9 in each of the last four years), that the rise in pursuit deaths cannot be regarded as reflecting an overall increase in police road use or general reporting of traffic incidents to the PCA.

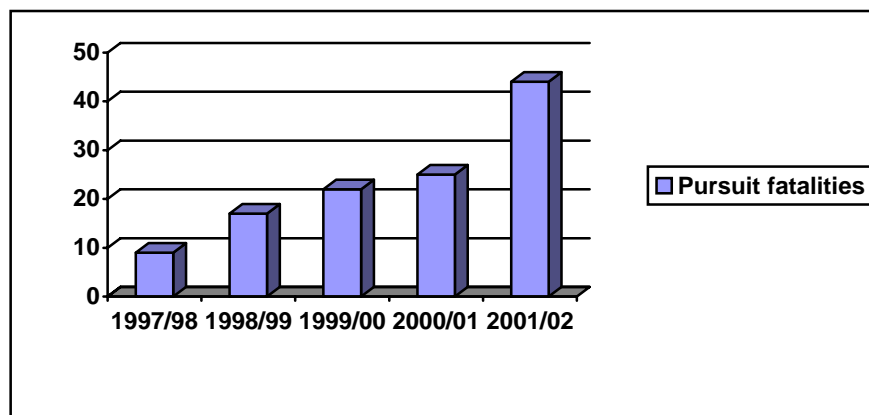


Figure 1: Number of fatalities from pursuits (1997/98-2001/02)

The aim of the current research investigation is an attempt to make sense of these figures and to work out what can be done to arrest this alarming trend which has seen not only an increase in pursuit deaths but an increase at an increasing rate, in spite of the production and implementation of the Lind Report and the subsequent implementation assessment reported in the Cullen Report. The research evidence outlined below is an initial attempt to make sense of this dramatic and unacceptable rise and to offer recommendations on how the current trend can be reversed.

## Literature review

Before outlining the research method and results, it is important to contextualise the project in terms of relevant pieces of research and policy that precede it which have implications either for the definition and understanding of RTI's or which have demonstrated empirical salience to the current research question. Much of the limited research evidence to date comes from the United States. This creates two difficulties – first, that there are major limitations in translating US work to a UK context and second that it suggests that this issue has not been sufficiently prioritised by researchers in the US and the UK. However, the comparative literature does identify important issues that are pertinent to the current investigation.

### *International evidence base*

#### *Risks and dangers associated with police pursuits*

"Research on pursuit policy development, pursuit outcome, evaluation of legal decisions, and civil liability has identified four critical factors on which officers and supervisors must base decisions, to pursue or not to pursue (Alpert 1993, Fridell 1992): the known violation, the area in which the chase occurred, traffic conditions and weather conditions" (Alpert, 1997, p348). As the international literature estimates that 75% of pursuits resulted in the capture of the suspect, 40% in an accident, 20% resulted in an injury and 1% with a death (Alpert and Fridell, 1992; Alpert et al, 1996; Auten, 1994; Falcone, Wells and Charles, 1992), it is critical to consider what the factors are that motivate pursuits and what the implications are for both crime and for the safety of officers, of the offenders and for members of the general public.

Among 5 US studies between 1982 and 1992, the evidence suggests that 68-77% of pursuits ended in the arrest of the suspect. Among those that examined termination factors, 18-36% of the suspects voluntarily terminated by stopping and surrendering. Most of the pursuits were of short duration and distance. The pursuit accident rates ranged from 26-41%, injuries occurred in 9-17% of the accidents and fatalities in 0-3% of cases. In an analysis of rates of injury and fatal accidents in Michigan state police pursuits, Payne and Fenske (1994) reported preliminary findings in one state which indicated that police underreport pursuits by a factor of two and it may be as high as 10 (Payne, 1996). Falcone et al (1992) state that the under-estimations may be by a factor of 5-15 times, which has the paradoxical effect of increasing the perceived riskiness of pursuits by over-stating the ratio of injury to event.

Crew, Fridell and Pursell (1995) report that 38% of the pursuits initiated for a traffic violation result in a crash. The pursuits that have the greatest likelihood of resulting in personal injury or death are pursuits of suspected felons (17%) and drunk drivers (14%). The risk is also mediated by the context of the pursuit - the risk of personal injury was significantly greater according to Alpert (1997) when more than one unit was involved (odds ratio of 2.03); 1.75 times greater for pursuits in commercial rather than residential areas, and 1.78 higher when the speeds exceeded 65 mph. This led Alpert to conclude that "In general, when pursuits involve more than one unit, are in a commercial rather than a residential area, and increase in speed to greater than 65mph, the odds of injury increase dramatically" (Alpert, 1997, p40). Although these findings are dramatic, it is important to reiterate that these findings refer to a country with a different culture, where the physical layout of roads differs, and where police policy and activity are not the same as those in the UK. Furthermore, the studies do not measure nor

account for the increased risk to the public if pursuits are discontinued and either serious criminals are allowed to escape or drunk drivers are not intercepted and arrested.

#### *Definitions and factors around initiation of police pursuits*

A US National Institute of Justice (1996) research brief concluded that "the perceived severity of the offence committed by the fleeing suspect is the major factor in determining whether or not police should engage in or continue a chase. Therefore, policy might focus first on the type of offence and second on risks to the public, especially traffic patterns and congestion. A balance of these variables indicates that an appropriate policy would limit chases to violent felons ...". This approach has been adopted in Miami-Dade since 1992 when Miami-Dade police force restricted pursuits to 'violent felonies only'. The consequence of this policy change was an 82% reduction in the rate of pursuits leading to commensurate reductions in collisions, injuries and fatalities, with no reported increases in either crime rates or the number of suspects fleeing from police. Although anecdotal reports from the UK would suggest that restrictions on pursuits have resulted in problems associated with increased adolescent 'joy-riding', the lack of adequate empirical support for this typifies the inadequacies of a policy that is not shaped by evidence or evaluation.

The USNIJ report also concluded that unmarked vehicles should not be allowed to engage in pursuits – and that they should not be allowed to violate traffic laws. However, one of the major limitations on the research was that it produced no research evidence on what proportion of those directed to stop actually attempt to flee (the 'rabbit theory'). Separately, Canadian courts have also concluded that violation of traffic laws while conducting a pursuit without emergency equipment can constitute negligence.

This is strongly linked to the definition of what constitutes a pursuit and how these issues are defined in policy terms. "A very strong consensus appears to be emerging around the importance of clear and explicit policies to guide pursuit decision making, and training to ensure effective implementation of the policies." (Royal Canadian Mounted Police Report, 1992). International Association of Chiefs of Police (IACP) has issued a model pursuit policy (1989) which requires:

1. purpose
2. policy
3. definition
4. procedures

Alpert and Dunham (1990) recorded the demographic characteristics of pursuit suspects in southern Florida and found that 97% were male, with a mean age of 23.5 years, and that 28% were white, 50% were black and 21% were Hispanic. Brewer and McGrath's (1991) review of police files in south Australia characterised suspects as predominantly white, mainly unemployed or unskilled and had been drinking. Many had extensive criminal records but mainly for traffic, registration and licensing offences. Black (1995), in a review of pursuit suspects in Washington, concluded that "Only 11.8% of arrested suspects had fewer than three prior arrests, whereas 67.3% had more than three felony arrests ... The profile that emerges is that those arrested in pursuits are hard core criminals" (Black, 1995).

Dunham et al (1998) conducted 144 interviews with individuals who had recent experience of being involved in a vehicular pursuit, (94% of this group were male, with a mean age of 26.2 years). From the total of 146 pursuits described, 30% were terminated when the suspect either gave themselves up or stopped and ran on foot, 30% because the suspect's vehicle crashed, 25% reported that they got away at least in the short term and 10% were concluded by police interventions. 42% of the suspects said they were impaired with either alcohol or drugs at the time of the pursuit.

When asked why they had fled, 32% reported that it was because they were driving a stolen car, 27% said they were driving with a suspended driver's license and 27% were running from a crime scene or to avoid an arrest, 21% said they were running because they did not want to face the police under the influence of alcohol or drugs and 21% were afraid of being beaten. Six factors predicted 77% of the variance in suspects' willingness to take extreme risks to avoid the police:

- Previously having been caught by the police
- Thoughts about the punishment
- Concerns for their own safety
- They were driving under the influence
- Concern for the safety of others
- To avoid arrest

The authors concluded that understanding the interaction patterns between officers and suspects becomes central to controlling the negative outcomes of pursuits. Dunham et al (op cit) argued that if the officer continued to pursue, it was likely that the suspect would continue to flee. This then places considerable emphasis on the decision-making skills of individual officers, based partly on training and partly on the policy basis around which these decisions should be made.

#### *Training and policy for pursuits*

There is also clear evidence from British Columbia that refresher training has a significant, although time-limited, impact on officer-responsible accidents, which go beyond those associated with pursuits and follows. Part of this emphasis on training and policy definition is attitudinally focused and recognises the key role the officer plays in enacting the procedure and guidance. As Alpert (1999) has argued, "Police officers must be able to objectively weigh the risks to themselves, the public and the suspect, throughout a pursuit" (Alpert, 1999, p31). Later in the same report, Alpert (op cit) concluded that "pursuit training which balances technical skill with decision-making and risk assessment skills is essential and can be designed to support policy objectives that limit the use of police pursuits" (Alpert, 1999, p33).

What makes this so important is the key question of proportionality - Alpert (1992) estimated that 80% of police pursuits involve only traffic violations, which shifts the calculus about the type and extent of risk taking that is acceptable and the possible consequences for undertaking the pursuit or follow. Given that many of the problems

that arise may result from uncertainties over the creation and implementation of definitions, the prospective and retrospective categorisation of events and the share of responsibility between the individual officer and the police supervisor, the aim of training should be to make explicit these potential areas of concern.

This links closely to issues of command and the US National Institute of Justice – Pursuit Management Task Force (Research Preview, 1998) reported on a survey of 419 heads of law enforcement agencies. This group identified four key phases of a pursuit:

1. Pre-pursuit phase: Time between the officer's decision to stop a vehicle and the officer's recognition of the vehicle's attempt to flee (this is likely to be a key area for future research investigation)
2. Communication phase: Period between the start of the pursuit and the arrival of assisting officers and resources
3. Resources phase: Period between the arrival of assisting officers/resources and an attempt to terminate an in-progress pursuit
4. Post-pursuit phase: Period encompassing any actions that occur after the suspect's vehicle has stopped fleeing or has eluded capture

In a separate piece of work for the US National Institute of Justice on 'Police Pursuits: policies and training', Alpert (1997) gathered data from 308 police agencies on the number of pursuits officers had engaged in during 1993, supplemented by case records of more than 1,000 pursuits conducted by Metro-Dade Police (Florida), 229 in Omaha, Nebraska and 17 in Aiken, South California. They found that more than 50% of all pursuit collisions (as reported by agencies state-wide) occurred during the first two minutes of a pursuit – more than 70% occurred before the 6<sup>th</sup> minute of a pursuit. They found that the best predictors of personal injury were a greater number of police cars involved, involvement of other police agencies, high-speed chases and chases in built-up non-residential areas.

In a factorial analysis of police pursuit driving decisions, Alpert (1998) reported previous work by Falcone (1994) that showed that most officers reported that reasons to terminate a pursuit included traffic conditions, certain speed zones, dangerousness of the offence and weather conditions. He also cites Homant and Kennedy's (1994) study of officers from 7 US states which showed that in those with the most permissive policies, officers were most inclined to pursue, while the more restrictive states had officers less inclined to pursue. Alpert's own research study was a comparison of officers routinely involved in pursuits with those never involved in pursuits and with police managers, across three police departments with varying policies on pursuits – a study of 881 officers and 174 supervisors. The reported differences between officers' and supervisors' attitudes were minor - regardless of the nature of the pursuit policy, officers from the various agencies held similar views about pursuits.

Alpert found that the officers' responses show that they think the nature of the original offence is the most important variable in deciding whether to continue a pursuit. This factor is more than twice as important as the environmental conditions, in determining whether to initiate or to continue a pursuit. Officers were most likely to terminate pursuits voluntarily when it was initiated for suspect vehicles (29%) and least likely in chases initiated for

felonies (16%). The conclusion drawn about the impact of policy change in two of the case study areas was that “when Metro-Dade adopted a ‘violent-felony only’ pursuit policy in 1992, the number of pursuits decreased 82% the following year. In 1993 Omaha changed to a more permissive policy, permitting pursuits for offences that had previously been prohibited; the following year the number of pursuits increased more than 600%” (Alpert, 1997, p4).

#### *Other relevant US evidence on police pursuits*

MacDonald and Alpert (1998) conducted telephone interviews with 255 residents from Aiken County, 300 from Omaha and 169 from Baltimore which indicated that the public overwhelmingly supports pursuits for serious crime, but that this support diminishes with the reduced seriousness of the offence for which the pursuit was initiated. They found that “Support for pursuit is strong and criticism is minimal, if it exists at all when a police officer is shot or a felony committed. Support is minimal, especially under high-risk conditions, when a traffic violation is pursued” (MacDonald and Alpert, 1995, p193).

In a separate study, MacDonald, Alpert and Glover (1997) concluded, based on data from Baltimore (July 1995 – June 1996) and Metro-Dade (calendar year 1996), that the helicopter provides an effective means of apprehending fleeing vehicles. The Metro-Dade helicopters were involved in 43 pursuits, 91% resulting in an arrest (n=39). In comparison, Baltimore helicopters were involved in 89 pursuits, 83% resulting in an arrest (n=74). Although there were accidents resulting from the involvement of helicopters in pursuits (Metro-Dade n=12; Baltimore na), available data indicate that none of the accidents resulted in a serious injury. The use of a helicopter can increase the number of cases an agency can handle due to the flexibility and speed of the aircraft (Hoffman, 1996). Helicopters can handle up to three times as many service contacts as ground units (Simonsen, 1975). The authors concluded that “Departments should examine the level of violent crime in their communities and the number of high-speed pursuits. Departments that rank high on both may see a helicopter as a necessity for both officer safety (violent crime) and civil liability issues (pursuit).” (MacDonald, Alpert and Glover, 1997, p13). However, this may be less beneficial in a UK context where underground car parks and concealed street areas may reduce utility. However, this has not yet been adequately tested.

#### *UK Home Office funded research*

The major UK study of deaths and injuries resulting from police vehicle accidents was undertaken by Rix et al (1997) on behalf of the UK Home Office's Police Research Group (PRG) and involved a study of 770 serious injury and fatal police vehicle accidents between 1990 and 1993, which resulted in a total of 1,117 victims of accident and 92 fatalities. In the study sample, although the police suffered almost half of the accidents, nearly 80% of the fatalities were suffered by members of the public. For the serious injuries, 39% occurred in pursuit/follow situations, 29% in routine patrols and 23% while responding to emergency calls.

Almost  $\frac{3}{4}$  of the police vehicles were travelling at speeds below the speed limit at the time of the accident, while over half (55%) occurred during the hours of darkness. In terms of the circumstances of the incidents, some of the key findings that emerged were that:

- 15% of serious injury/fatal PVA's (police vehicle accidents) occurred during pursuits/emergency responses where neither sirens or lights were in use
- Less than 1/3 of police drivers were breath tested following the PVA (although the policy on this issue has since changed)
- 15% of basic drivers involved in PVAs were participating in pursuits
- 17 (81%) of the 21 pedestrians who died as a result of a PVA had come into contact with a police vehicle

Four police activities accounted for 96% of the fatalities: 41 (45%) died in pursuit/follow situations, 21 (23%) when police vehicles were responding to emergency calls, 18 (20%) when the police vehicle was on duty but unconnected to an emergency and 8 (8%) during training exercises. 205 (27%) of the driving public involved in PVAs were in stolen vehicles.

A second level of analysis was carried out on the police drivers involved. Peak occurs at around 25-29 years – when corrected for police profile, younger officers appeared more likely to be involved in PVAs although they are most likely to be involved in an operational role. Perhaps more importantly for the current research, 36% of the advanced driver group did not make contact with anybody or anything (compared with 18% of standard drivers and 10% of basic drivers). Further only 16% of advanced drivers struck other vehicles during the PVA compared 23% of standard drivers and 32% of basic drivers, which may have implications for who should be allowed to take part in particular kinds of police driving behaviours. This may be linked to training and pragmatic issues as Rix et al (op cit) also found that standard drivers were least likely to be using both sirens and lights at the time of the accident, while advanced drivers were most likely to have been doing so.

Among other relevant information that was gathered in the research related to specific aspects of police driving, 233 (28%) of the drivers had previously been involved in a PVA, and 27% involved vehicles at speeds in excess of the speed limit.

Rix et al reported that 55% of the incidents occurred during the hours of darkness (compared to 27% for national average of all accidents), and that the incidents peak (32.7%) between 6pm and midnight, while 28% took place between midnight and 6am. The highest frequency of accidents appears to be on a Friday night - while 12% of all accidents occurred on Mondays, 16% occurred on Fridays.

In terms of the actions taken following police vehicle accidents, 375 (48%) driving members of the public were reported for offences following the PVA – 23% for not having valid insurance and almost 20% were reported for theft of a vehicle. 122 (16%) members of the public were reported for careless driving and 110 (14%) for dangerous driving. Breath tests were requested from 248 (32%) drivers – of these, 187 (75%) proved negative, 46 (19%) positive and 15 (6%) failed to provide a sample. Police drivers were suspended from driving in 156 (24%) of cases, while 61% of police drivers were exonerated without any further action. 51 (7%) of police drivers were held to be blameworthy – 10 were subsequently removed from police driving duties and the remaining 41 were re-trained and 41 police drivers were referred to the CPS. Of these, 26 cases were supervised by the PCA – 18 police officers received a criminal sentence, four received another penalty and two received a driving suspension.

### *UK policy evidence*

The most important recent policy review was the ACPO report on Police Pursuit Driver Training ("The Lind Report", September 1998) whose aims were to review police pursuit driver training and to develop a set of national core competencies for advanced and standard police driving.

The Lind Report (ACPO, 1998) makes clear the distinction intended by the police between pursuits and follows, citing Horner (1995) who defined a pursuit as "where appropriately trained officers in suitable vehicles, pursue a fleeing vehicle with the intention of safely causing it to stop". In contrast, Horner (op cit) defines a follow as occurring "where a police officer safely monitors the progress of a target vehicle, with the objective of appropriately trained officers undertaking a "pursuit of that vehicle"". The report also cites the ACPO (1989) report in defining pursuits as "when police attempt to stop the driver of a motor vehicle and the driver refuses to obey the officer, following which the police give chase for the purpose of stopping the fleeing vehicle". As with the Horner definition the key terms are "fleeing vehicle" and "attempt to stop".

The report contains a total of 33 recommendations that are divided into sections on training, operational issues, technology and administration. Among the most important recommendations are that pursuits should "be subject of vigorous control and only undertaken by trained personnel", that "risk assessments should identify areas of organisational and individual responsibility", that attitudinal training should be included in training courses, that periodic assessment of driving skills should take place between each 3-5 years and that there should be co-ordinated national quality procedures.

The report also recommends that driver training should be taken forward nationally with three core courses – Basic (training to fulfil a patrol function), Standard (which extends the basic training to include emergency responding and night response driving) and Advanced (to enable pursuits and high speed response driving). Further, there is the recommendation that all vehicles that engage in pursuits and emergency responses should be equipped with both sirens and emergency lights, and that these vehicles should have the capacity to communicate during pursuits and emergency responses in hands free mode.

Commander Cullen's follow-up to the Lind Report (November 2000) indicated that 86% (n=37) of police forces in England and Wales have conducted a risk assessment of operational police driving. However, attitudinal training is only automatically included in driver training courses by 10 forces (24%) and only 11 forces (25%) re-assess all drivers every 3-5 years. Crucially, only 36 (84%) of forces follow the recommendations set out in the joint PCA/ACPO report. Furthermore, there are considerable question marks over the methods employed by Cullen and the adequacy of the evaluation of implementation – which was largely based on self-reported questionnaires from each force with no external or independent evaluation.

On more operational issues, 67% (n=29) of forces provide training in the hours of darkness to all drivers with two forces not providing any night-time driving. In 25 forces (58%), controllers receive regular hands-on pragmatic pursuit training management. Similarly, in 40 forces (93%) all vehicles used in emergency response work are fitted

with sirens and blue lights, while 41 forces (95%) use HOSTYDS (stinger<sup>1</sup>) in at least some circumstances. Finally, 38 forces (88%) operate a system that allows for the identification of 'high risk' drivers.

Most recently, ACPO has issued the "Road Death Investigation Manual" (December 2001) which sets out with the aim of ensuring of "further(ing) the interests of justice by assisting the police to deal fairly, impartially and thoroughly with road death" and constitutes further evidence of police recognition of the importance and gravity of this issues and the need to allocate appropriate resources to the investigation of serious road traffic incidents. The report points out that "if there is uncertainty over whether a particular complaint will be referred to the PCA, it will generally be appropriate to let the PCA decide the issue" (p114) and that the same principle should apply to cases involving 'serious injury'. The report also lists the types of incidents which might constitute a police-related road death, included in which are deaths of officers or others conveyed in police vehicles, deaths involving collision with a police vehicle, "death resulting to another road user from collision involving a vehicle being followed by police" and death resulting from other police activity on the road. This manual constitutes a clear policy statement by ACPO that the issue of RTI's is a significant one that the police treat with the utmost priority and that requires the highest level of independent investigation.

## Method

According to the Lind Report (1989) "Police vehicle accidents resulting in death or life threatening injury or where the circumstances may be a matter of public interest have normally been voluntarily referred to the PCA under Section 88 PACE Act 1984. Such openness is to be applauded and is recommended as good practice".

The current report examines cases referred in this way and accepted by the Police Complaints Authority for supervision. The inclusion criteria for the study were that the case occurred between 1998 and 2001 and that, even if the case had not been completed by the time of writing, the Investigating officer's report had been received. The cases included in the study are those received by the PCA and coded on the PCA database as RTI's (Road Traffic Incidents) or which have been identified by the research team as such during the data trawl component of the study. In terms of the timing of the incidents – 16 were drawn from 1998, 21 from 1999, 26 from 2000 and 22 from 2001 – however, this refers to completed cases and so this is not a comprehensive total for 2001. However, in spite of the Lind comment above, concerns remain about inconsistencies in the number of cases referred to the PCA and in the number of serious injury cases that are not accepted for supervision by the PCA. This creates uncertainty over the representativeness of the sample, although it is unlikely that any deaths will have been excluded in this period.

The rationale for the study was, in the light of the reported increase in fatal RTI's in the PCA Annual Report, to examine the factors that surround the referred cases in terms of:

- Environmental factors
- Characteristics of the driver of the victim or pursued vehicle
- Characteristics of the police driver (and police passenger where this is appropriate)

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<sup>1</sup> A device for halting fleeing vehicles which uses hollow spikes to deflate the tyres and bring them to a safe halt.

- Quality of communications and supervision
- Rationale for undertaking the pursuit/follow or response
- Typical speeds and distances between the vehicles where this is relevant
- Issues around the investigation of incidents and the outcome
- Identifying the lessons to be learned

To achieve this, an initial set of 5 files were identified and examined by the research team and a pro forma for data collection was developed on the basis of material available in the files and the key questions identified in the examination of the policy and research literature. The method was mixed with a primarily quantitative social research database (subsequently entered on SPSS v10) supplemented by brief synopses of each case to supplement the quantitative data. One of the major aims of the project was, unusually, to identify the levels of missing data for particular topics to assist in the standardisation of future data collection during the course of subsequent research projects.

The primary source of data – the PCA case file – consists of the police investigation of each incident and a correspondence file between the relevant parties which outline the PCA action on the case and the aetiology of the decision-making around investigation and subsequent discipline if this is relevant. Inevitably there are inconsistencies within reports (for instance, between witnesses about the distance between vehicles during the course of pursuits and about the speed they were travelling at), in which case the data recorded is that indicated by the IO, if any indication of this is given in his or her report. It is also worth noting that, with the increased piloting and availability of IDRs ('black boxes'), some of these issues may, in time, be resolved technologically. Where this is not available, the witness testimony is used with a simple averaging process having been employed where ranges are offered by one or more witnesses. Where the data is too inconsistent or unreliable the variable has been coded as missing. In the discussion section, the limitations of the research design are discussed.

Inferential statistics have been included to designate whether differences between groups can be regarded as being reliable. The convention of 95% confidence has been used; therefore, where a test is designated 'ns' (not significant), this means that there is more than a 5% possibility that the result occurred by chance. For those differences designated as significant, three codes reflecting confidence in findings are used:

1.  $P < 0.05$  – less than a 5% chance that the difference is a result of chance alone
2.  $P < 0.01$  – less than a 1% chance that the difference is a result of chance alone
3.  $P < 0.001$  – less than a 0.1% chance that the difference is a result of chance alone

## Results

### *Note on measurements used:*

One yard = 92 cms

1 mile = 1.6 kilometres

The study consists of 85 supervised road traffic incidents (RTIs) that occurred between 1998 and 2001 and which were referred to the PCA for supervision. The breakdown of these cases is 64 pursuits/follows (this distinction is considered at length in the discussion section), 14 emergency response incidents, 4 standard patrol incidents, 2 incidents involving officers coming off duty and one possible suicide. The strategy for analysis will be to consider the total number of 85 incidents as a group and then to focus on the pursuit/follows as a specific group.

The severity of the cases is indicated by the fact that the 85 incidents resulted in a total of 91 fatalities – although 12 of the cases were serious injury only, 61 involved the death of one individual, 7 involved two deaths, 4 involved three deaths and one of the incidents resulted in the deaths of all four occupants of a vehicle. Both the rates of referral and the style of investigations vary between forces – with the majority of the investigations having been undertaken by officers from professional standards departments (n=62), while 10 have been investigated by traffic departments and 13 of the investigations have been led by officers from other departments (including road policing and operational command). The investigations were generally overseen by chief inspectors (n=34) or superintendents (n=28), although a smaller number were led by inspectors (n=20) and 3 by chief superintendents. In all but four of the 85 cases, the investigation was conducted by the home force, with only four investigations conducted by external forces.

### Locations

There was no clear pattern to the forces involved in the supervised cases – of the 43 police forces in England and Wales, 31 forces that have been included in the study. The forces that referred the greatest number of RTI's that have been included are the Metropolitan Police Service (n=12), West Yorkshire (n=11), Greater Manchester Police (n=9), Sussex (n=6) and South Yorkshire (n=5). None of the other forces included referred more than three cases that have been included (for full list of locations see Appendix 1).

The majority of the incidents (defined as the scene of the major collision) occurred in towns (n=70), with 14 taking place on country roads and one on a motorway. Fifty-one of the incidents occurred on A roads, 9 on B roads, 23 on roads not classified and 2 on other types of highway. The majority of incidents (n=63) were on single carriageway roads with a further 15 on two-lane or dual carriageway roads, 5 on 3-lane roads and 2 on 4-lane roads.

The average distance to the nearest junction was 61 yards, although this data point is skewed by the fact that 35 of the incidents took place at junctions. The closest junction to the incident was most commonly either a T-junction (n=29) or an access road (n=27), with a further 8 incidents occurring at or near crossroads, 6 at or near lights, 6 at or near roundabouts, 4 at or near pedestrian crossings and the remaining 5 near other forms of junctions. Of those

incidents that did not happen at junctions, 28 occurred on bends and 22 on straight sections of road. In 23 of the incidents the collisions occurred on sections of road that had road calming measures.

### Other environmental factors

In terms of natural lighting, 56 of the incidents occurred after dark with 4 during dusk or dawn and 25 during daylight hours. Of those that did not happen during daylight, there was full artificial lighting in 36, partial light in 8 and no lighting in 16. In the majority of cases the road was described as 'quite quiet' (n=40) or 'almost deserted' (n=26), with only 15 incidents occurring when the road was either 'busy' or 'very busy'. The vast majority of incidents (61/85) occurred in 30 mph speed limit zones.

Surprisingly, the majority of incidents occurred in dry weather (n=64), 14 in light rain or wet road conditions, 4 in heavy rain and 3 in other weather conditions (fog, ice or snow). Most commonly the incidents occurred during the night (between midnight and 6am)(n=38), then in the evenings (between 6pm and midnight)(n=25) with a further 16 occurring in the afternoons (between midday and 6pm) and 5 in the mornings (between 6am and midday).

There was not an even spread of incidents across the week with more incidents occurring at the weekends (22 on Sundays and 15 on Saturdays) than on weekdays (11 each on Mondays and Wednesdays, 10 on Fridays, 9 on Tuesdays and 6 on Thursdays).

### Comparisons of pursuit/follows and the other files included in the study

While there are fundamental difficulties in making comparisons across categories of events, the most straightforward comparison was between the police drivers involved in the 64 pursuit/follows and the 21 drivers involved in other police-related road traffic incidents. The basic differences are shown in Table 1 below:

	Drivers involved in pursuit/follows (n=64)	Drivers involved in other police RTI's (n=21)	T, significance
Number of fatalities	1.2 per incident	0.6 per incident	T=3.85, p<0.01
Police record of speed at impact	65.1 mph	40.7 mph	T=5.00, p<0.001
Police driver age	34.3 years	34.4 years	T=0.04, ns
Driver years in police	11.6 years	7.6 years	T=1.99, p=0.05
Time since last training course	2.5 years	3.7 years	T=1.09, ns

Table 1: Differences in driver characteristics of RTI involving pursuit/follows and other types of incidents

There are clear differences in the recorded police speed at the point of impact, with pursuit/follows having a significantly higher mean speed at impact than the other RTI's included. It is perhaps also worth noting that the number of fatalities involved in the pursuits/follows is higher than that noted in the other police RTI's. While this may result from the fact that the greater speeds means that individuals are more likely to be fatally injured, it may also be the case that this reflects a differential referral policy, in which non-fatal pursuits are less likely to be referred to the PCA (and so less of them are available for inclusion in the study) than other forms of RTI. However, as with all of the findings reported in the study, as a result of the small sample size and because of force variations

in referral policy, it is impossible to make definitive inferences as a consequence of the sampling frame employed. What it may also indicate is that police activities that take place at higher speeds (such as pursuits), carry with them a fundamentally greater risk for occupants of any vehicles involved in collisions.

### Examination of the pursuit/follows

The Lind Report (ACPO, 1998) makes clear the distinction intended by the police between pursuits and follows, citing Horner (1995) who defined a pursuit as “where appropriately trained officers in suitable vehicles, pursue a fleeing vehicle with the intention of safely causing it to stop”. In contrast, Horner (op cit) defines a follow as occurring “where a police officer safely monitors the progress of a target vehicle, with the objective of appropriately trained officers undertaking a ‘pursuit of that vehicle’”.

However, for the purposes of the initial analysis, these events will be grouped together before an analysis of the classification is undertaken. The 64 pursuit/follows resulted in 78 fatalities (a mean of 1.2 per incident) although three incidents were serious injuries without any fatalities occurring. As far as the investigators’ classification of the event 24/64 are referred to as pursuits, 29/64 as follows, the terms are used variously about three of the incidents, in two neither term is used and for the remaining 6 this taxonomy is not clearly delineated in the Investigating Officer’s report. This is a clear indication that this distinction is not satisfactory and is not even sufficiently understood by those responsible for leading the investigations. The IO’s categorisation was then used to compare the pursuits and follows on a number of core variables that are shown in Table 2 below:

Variable	Pursuits (n=23)	Follows (n=29)	T, significance
Distance police car away at collision point	264.7 yards	172.1 yards	1.17, ns <sup>2</sup>
Police record of speed immediately prior to impact	70.4 mph	61.8 mph	1.61, ns
Number of other police vehicles involved	0.8 per incident	0.3 per incident	1.42, ns
Number of occupants in target vehicle	2.9	2.2	1.61, ns
Age of police driver	34.1 years	35.3 years	0.41, ns
Time since last training	1.7 years	3.5 years	0.96, ns
Time as police driver	6.5 years	7.7 years	0.43, ns
Average number of reasons for the stop	2.4 per incident	2.1 per incident	1.63, ns
Duration of incident (time)	3.2 minutes	3.0 minutes	0.15, ns
Duration of incident (distance)	3.1 miles	2.4 miles	0.68, ns
Average speeds noted during incident	70.7 mph	62.6 mph	1.47, ns
Number of fatalities resulting	1.3	1.2	0.24, ns

Table 2: Differences in key incident features by whether the event is classed by the IO as a pursuit or a follow

<sup>2</sup> ns means that the mean difference did not attain statistical significance.

As can be seen clearly from the above table, there are no significant differences in any of the key variables, only a small part of which can be attributed to the relatively small sample size. With regard to mean differences, it is not surprising that events classed as 'pursuits' have a higher mean speed, but it is perhaps worrying that events classed as 'follows' involve shorter mean distances between the vehicles (for the purpose of monitoring (Horner, 1995)) than those events classed as 'pursuits'. The failure to evidence any behavioural distinction between the classes of events further challenges the functionality of this distinction. However, the attempt to assess typical speeds and distances was made problematic because of the nature of events that may involve dramatic increases in speed over their brief course, with the reliance of recall and witness evidence for the incidents in which IDR's or mounted videos were not available and because of the lack of consistency in the reporting of these key measures across the cases included in the study. The PCA will work with forces to ensure that higher quality data is captured in future and that larger sample studies are employed to increase reporting confidence.

There were however two significant differences between the groups – in 33.3% of the events classed as pursuits, there was an attempt to stop the target vehicle, which was only the case for 6.8% of the follows (in spite of this being beyond the remit of what is defined as a follow) Similarly, a markedly higher proportion of the pursuits involved stolen cars (56.5%) than of cases defined as follows (37.9%). There was no difference between the classifications in the likelihood of communicating with the control room before initiating the event, nor in the likelihood that the driver was pursuit trained (which was the case in 68.2% of 'pursuits' and 82.4% of the events described as 'follows'). Similarly, in none of the events described as pursuits did the IO recommend any disciplinary action against the driver, and this was the case in only one of the 'follows', where advice was recommended (in each case this was agreed by the PCA supervising member). In contrast, of the 25 other incidents (primarily emergency responses or standard patrols), three IO's recommended that officers were given advice, two that admonishments were given and two faced criminal charges as a result of the incidents. Thus, there appears to be no clear rationale for the distinction between describing events as pursuits or follows, and it is not at all clear what benefit accrues from this distinction.

The nature of the collision for each of the three classes of event (excluding the six cases which are undefined as pursuits or follows), by the classification of the collision for the first two collisions are given in Table 3 below:

	Collision 1			Collision 2 <sup>3</sup>		
	Pursuits (24)	Follows (29)	Other (25)	Pursuits (24)	Follows (29)	Other (25)
Target hits victim vehicle	11	9	2	1	2	1
Target hits stationary object	10	17	3	4	4	1
Target hits pedestrian	1	2		3		
Target hits police vehicle	2		1			
Police vehicle hits pedestrian	-	-	11			
Police vehicle collides with victim vehicle	-	1	8	1		

Table 3: Categorisation of incident by nature of the collision

<sup>3</sup> Collision 2 refers to incidents in which there was a second collision.

Perhaps the most striking conclusion that can be drawn from the above table, in pursuit/follow incidents, there were only two collisions between the police vehicles and another vehicle, suggesting strongly that adverse outcomes in these incidents are rarely the result of direct or physical involvement on the part of officers. This does not imply that the officers involved are without a contributory role and emphasis should be placed in assessing culpability on whether the actions of the officers have been enabling conditions in the genesis of the incident. There seems to be strong evidence that police drivers who engage in pursuits and follows have skill levels far in advance of those they attempt to stop. What we can conclude from this is that it is not issues of police driving competence that has to be examined as much as the risk-inducing effects of the police attempts to stop the suspect vehicle.

In none of the incidents did the incident terminate as the result of a collision between the target car and the police vehicle. The mean estimate of the distance from the police car to the suspect car was 254.4 yards ( $\pm$  390.9 yards, range = 5 yards to 1.4 miles) at the time of impact, while the mean speed at impact of the suspect vehicle was 65.1 mph ( $\pm$ 18.6, range = 27-100 mph). In other words, while the police car tended to be a considerable distance from the suspect vehicle at the point of impact, the speed at impact, which earlier aspects of police involvement may have caused to escalate.

In 44 of the 64 cases only one police vehicle was involved, while in 13 there were two police vehicles, in 5 there were three, in one there were four and in one there were seven police vehicles involved in the follow/pursuit. Where more than one police vehicle was involved, the distance between the police vehicles averaged 236.5 yards ( $\pm$ 173.3). There can be no justification for pursuing or following in convoys and clear justification for the involvement of more than one car must be offered. In 60 of the 64 pursuit/follows the lead police vehicle had full markings, in three unmarked vehicles were involved and in one report this is not stated. The lead vehicle was most often a traffic or response car (50/64), but a number involved standard patrol cars (n=7) or police vans (including a dog van)(n=5).

One of the key recommendations from this report is that IOs should be particularly clear that pursuing in convoys or in unmarked (cars which have no concealed emergency equipment) is wholly unacceptable, and exceptional circumstances demonstrated, if this is not to result in disciplinary action for the officers involved.

#### Pursued/followed car and its occupants

With regard to the car followed/pursued, this was stolen in 29 (45.3%) of incidents, although this was not necessarily known by the officers at the time. In 25 of the 64 incidents, there was only the driver in the 'target' car, in 15/64 there was one passenger, in 13/64 there were two passengers and in the remaining 11 incidents there were between three and eight passengers in the car – the mean number of occupants was 2.3. The number of occupants is critical in calculating the risk of pursuing a vehicle, particularly in any of those involved are minors or are not wearing seatbelts – as will be the case if there are more than three rear seat passengers. In 22 of the 64 incidents there were significant faults with the pursued/followed car before the collision – 12 relating to the state of the tyres, 3 to the brakes, 4 to the lighting system and three to other kinds of mechanical problems. Eleven of the

drivers had no insurance, 7 had no MOT and 3 had no tax (this does not include stolen vehicles), while one motorcyclist was not wearing a helmet.

The average reported speed during the pursuit/follow was 64.3 mph ( $\pm 18.7$  mph, range = 20-120 mph), although the speed is unlikely to have been constant in any of these events and the reliability of the sources of data were variable. It is also worth noting the marked variation included in this average. The mean age of the driver was 24.0 years ( $\pm 8.4$ , range = 14-54 years), with all 64 drivers being male. In terms of ethnicity, this was not stated in five of the cases, but in the remainder, 47 were white, 7 were black, 4 were Asian and one was from another ethnic group. Of the 56 for whom information on driving status was stated in the IO's report, 14 (25.0%) had valid driving licenses, 23 (41.1%) were disqualified and 19 (33.9%) did not have a driving license. In other words, many of the drivers involved may feel that they had something to lose by being stopped and so had to make a decision about whether they should try to avoid the stops.

While breath tests were not conducted on fifteen of the drivers (most commonly because they were on their way to hospital or because the data was not provided in the report, possibly because the test was negative) and on one driver who refused, breath tests or post mortem blood alcohol tests were available on 48 of the drivers of cars that were pursued or followed. Of these, 27 (56.3%) were positive while at least two of the drivers who were not tested because of reasons of hospitalisation were known to have been drinking before arrest. Drug tests were carried out less frequently – this occurred most commonly in reports when reported in the toxicological examination of fatal RTI victims, as the power to require blood tests for drugs would not permit this in many of the cases included. Of the 30 individuals who were tested, 12 showed no evidence of illicit drug use and 18 tested positive for at least one illicit drug (results are shown in Table 4 below):

Substance	Number tested	Number (%) testing positive
Alcohol	48	27 (56.3%)
Cannabis	30	7 (24.1%)
Ecstasy	30	3 (10.0%)
Benzodiazepines	30	2 (6.9%)
Cocaine	30	2 (6.9%)
Opiates	30	1 (3.4%)
Amphetamines	30	1 (3.4%)

Table 4: Number of pursued/followed drivers' blood or breath tested and results by substance

Furthermore, the one individual who was classed as having used opiates (heroin) was also 'body-packing' wraps of heroin which he had concealed under the foreskin of his penis.

Data on previous convictions were not provided in the IO report on 13 of the 64 drivers of target vehicles. For the remaining 51 target vehicle drivers, only six had no previous convictions with a mean of 6.3 convictions per driver ( $\pm 8.6$ , range = 0-56). Finally, for 42 of the 64 pursuit/follows, data were provided on whether the driver was wearing a seatbelt (in one case this was not applicable as the individual was on a motorbike and for one it was not

possible to work this out). Of the 42 for which this was known, 30 (66.7%) were not wearing seatbelts at the time of the collision. A summary of the main characteristics of the driver of the target vehicle is shown in Table 5 below:

Characteristic	Number for whom data available	Outcome
Gender	64 (100%)	100% male
Ethnicity	59 (92.2%)	79.7% white
Age	63 (8.4%)	Mean = 24.0 years
Driving status	56 (87.5%)	25% full intact license
Alcohol tests	48 (75.0%)	56.3% alcohol positive
Drug tests	30 (46.9%)	58.6% positive for at least one illicit drug
Previous convictions	51 (79.7%)	Mean = 6.3 convictions

Table 5: Characteristics of driver or pursued/followed vehicle

With regard to the passengers in the target vehicle, data was available on the front seat passenger's age for 36 cases with a mean age of 19.6 years, and on gender for 39 passengers (28 males and 11 females). A mean of 2.9 convictions were reported for 20 of this group, while 19/27 for whom this information was available were not wearing seatbelts while at least one more passenger was initially wearing a seatbelt but had taken it off before the collision to facilitate making a getaway. From the above table it is clear that many officers face a dilemma – they have a duty to protect the public and to intervene when they believe crimes are being committed (as in many of the cases), yet they also have a duty to preserve life and to ensure their own safety and that of the suspect occupants they pursue or follow. The aim of the report is not to challenge the right of officers to carry out their duties but to ensure that the methods they use are not intrinsically dangerous, and disproportionate to the activities they are attempting to manage.

#### *Characteristics of police drivers and passengers involved in pursuits/follows*

There was, typically, far less information available on the drivers of the police vehicles involved in pursuit/follow collisions and extremely little on the police passengers. Furthermore, there were marked inconsistencies both within and between forces in the amount of information available, although it should be borne in mind that the data covers a period of longer than three years and so practices and policies may have changed within the period of the study window. It is worth pointing out that the Lind Report was published during the window of investigation here and so many of the cases may precede its publication or at least occurred before its recommendations could be implemented.

The basic characteristics of the police drivers are shown in Table 6 below again with emphasis on the proportion of cases for which this information was provided:

Police driver characteristic	Number of cases data available	Salient result
Age of police driver	30 (46.9%)	Mean = 34.3 (range – 20-52)
Ethnicity	4 (6.3%)	100% white
Gender	64 (100%)	Male – 58 (90.6%)
Length of time in police	30 (46.9%)	Mean = 11.6 years (range 4-27)
Was driver pursuit trained?	48 (75.0%)	Yes – 37 (77.1%) 39 (83.1%) – advanced 9 (16.9%) – standard
Time since last training course	28 (43.7%)	Mean = 2.5 years (range = 1m-18y)
Type of last training	24 (37.5%)	Refresher (n=8) Response (n=8) TPAC <sup>4</sup> (n=4) Standard (n=3) "Full" (n=1)
Time as police driver	27 (42.2%)	Mean = 6.4 years (range = 9m-21y)
Length of time at current training level	29 (45.3%)	Mean = 5.4 years (range = 3m-21y)
Was alcohol test carried	44 (68.7%)	28/44 tests carried out - 100% negative
Time on shift at time of incident	28 (45.7%)	Mean = 4.8 hours (range = 1-9 hours)
Number of accidents as police driver	8 (12.5%)	Mean = 4.2 (range = 0-15)
Time since last eyesight test	17 (26.6%)	Mean = 1.4 years (range = 0-6 years)
Time since last accident	5 (7.8%)	Mean = 1.8 years (range = 6m – 6y)
Number of substantiated complaints	15 (24.4%)	None recorded in any of the 15 cases

Table 6: Characteristics of police drivers involved in follow/pursuits in lead car

As is evident from the table, there is no clear pattern of recording of information by IOs of the characteristics of the police drivers in pursuits, with almost no demographic characteristics recorded other than sex, and even inconsistencies in the recording of information about the driving histories of the officers involved. For more than half of the incidents included in the study it is not possible to determine the driver's level of training and the length of time since their last training course which is highly unsatisfactory and makes the systematic assessment of risk considerably more difficult. Appendix 2 contains a list of the minimum information that the PCA would request to be systematically included, ideally in the form of a grid about each RTI that is referred. This list may also assist IOs in shaping their investigations in this area.

<sup>4</sup> Tactical Pursuit and Pursuit (TPAC) is a means of halting vehicles using methods devised by Surrey Police.

However, from the data that is available, it is clear that virtually all of the drivers for whom information is stored are experienced drivers trained to at least a standard level (appropriate for emergency responding), but there are many instances of pursuit/follows also being undertaken by this group. Similarly, that there are no instances of positive breath tests provided by officers, and that none of the officers for whom this is specified have substantiated complaints would also seem highly encouraging. However, this does prompt the suggestion that in cases where the information is not recorded, there may be such issues that have not come to light, leaving considerable question marks over the inferences drawn and the capacity to learn lessons. Similarly, that there are incidents included in the study in which the report does not refer to the level of training achieved by the lead driver is not a satisfactory state of affairs prompting questions about the adequacy of the investigations. To ensure that public confidence in the investigation of these incidents is maximised, far greater and more systematic reporting of the driving characteristics of those involved is strongly recommended. From the data that is provided, the officers involved appear suitably experienced and qualified – a general assessment and recognition of this fact will only assist in promoting openness and confidence in officers.

The situation with reporting on the passengers in police vehicles was even more limited. While in 54 of the incidents there was at least one other officer in the vehicle, nine of the police drivers involved in pursuit/follows were alone, and in one case it is not clear whether there was another occupant in the police vehicle. On the seven occasions where ethnicity is stated, the passenger is white and in 44/54 reports the passenger is male. The mean length of police service reported is 8.7 years (n=12) and the average length of time on duty at the point of the incident is 4.7 hours (n=22). None of the 10 officers for whom it is reported have had any substantiated complaints and only one officer is reported to have had disciplinary action taken against him which resulted in a reduction in driving status. While the significance of reporting on passenger characteristics may appear less salient, the passenger is in a critical position to influence the police driver's behaviour and to act as the commentator for the control room via radio equipment. For this reason, it is critical to both the evidence base and to the investigation of RTI's operationally that this information be collected and systematically recorded. At the moment, it is impossible to draw clear inferences as a result of the paucity of the information base.

This is particularly clearly indicated by the attempts to record the adequacy of the commentary provided by the police vehicle occupants. While many final investigating reports contain transcripts of the radio transmissions, this is not universally the case and for 24/64 cases it is not possible to evaluate the commentaries. While it must be borne in mind that many of the incidents are over very quickly, it is worrying that in five cases there is no attempt at providing a commentary, in 27/44 the commentary is limited and in only 8/44 can the commentary be described as comprehensive. This is an area that needs to be addressed both by improving the quality of the equipment on which commentaries are provided (and making sure it works!), and by examining issues around the training of passengers, in particular, in providing adequate commentaries to enable the control room to make satisfactory decisions about continuation or desistance.

### *Environmental conditions in which the pursuit/follows took place*

In 46 (73.0%) of the pursuit/follows, the relevant speed limit was 30 mph, while it was 40 mph in 5 (7.9%), 50 mph in one (1.6%), 60 mph in 7 (11.1%) and 70 mph in four (6.3%) (one missing case in which the speed limit was not provided). The road where the collision occurred was described as very quiet or quiet in 48 (80.0%) incidents, and busy or very busy in 12 (20.0%) – for four cases the traffic conditions are not adequately described. The majority of the pursuits took place either at night (n=33, 51.8%) or during the evening (n=19, 29.7%) with relatively few occurring in either the afternoons (n=9, 14.1%) or in the mornings (n=3, 4.7%). Pursuit/follows were most likely to occur on Sundays (n=18) and least likely to occur on Thursdays (n=3) with either 8 or 9 incidents having occurred on each of the other days. The weather conditions were dry and clear in 83.1% of the incidents, the majority of which took place in darkness (n=43, 67.2%).

### *Classifications and event descriptions*

The labelling of the incidents by investigating officers was not always entirely clear – of the 64 incidents, 24 (37.5%) were consistently referred to as 'pursuits', 22 (34.4%) as 'follows', in 3 both terms were used almost interchangeably, and in the remaining 15 the IO does not make this distinction explicit in his report. The issue is examined in greater depth in the discussion section of the report, where the utility of the classification is discussed and some of the consequences of using this taxonomy are outlined. The labelling of the event as a pursuit or follow does not appear to be consistently related to the reasons for the initiation of the contact which are outlined in Table 7 below – the reasons given here, with up to three recorded for each of the incidents, are based on either the IO's description of the event or the statements or interviews provided by the officers after the incident. Nor does there appear to be a clear link between the categorisation of the event as a 'pursuit' or 'follow' and the officers' plan for what they intend to do, although this is not explicitly stated in many of the incidents.

One of the main concerns that emerges from a number of the incidents reported is that there does not appear to be a clear plan for the safe termination of the incident. In very few of the incidents are stingers or stop sticks deployed, or is the helicopter on the scene in time, and there appears to be the assumption that the incident will terminate either when the suspect vehicle stops (for the occupants to give up or continue to flee on foot) or when the suspect vehicle crashes. This is not a satisfactory state of affairs and the management of such incidents should include a clear indication of how the event will be proactively concluded by police action. This may involve tactical deployment of vehicles and stopping devices, or the use of helicopters, but high-speed follows and pursuits should not be engaged in by officers who do not have or who do not rapidly develop (ideally through the control room supervisor) a clear and explicit plan for achieving a safe termination.

However, it is recognised that there is a clear pay-off when police officers make this kind of decision. On the one hand, there is the risk associated with engaging in high-risk driving behaviours, particularly when the original reason for the stop may have been as mundane as speeding or not wearing a seatbelt. On the other hand, one of the key roles of the officer is the detection of crime and many officers will reasonably assume that, if a driver fails to stop when required to do so by the police, it is because they have something to hide. This something may relate to use of alcohol or illicit drugs, vehicle-related crime, other forms of crime and so on. However, the officer must be clear that their grounds for suspecting such activities are commensurate with the risks taken in initiating a pursuit

or follow. There is no simple solution to this issue but the loss of life reported in this study would suggest that the onus should be on individual officers and forces to justify the grounds for such a high-risk undertaking. In the table below, the reasons given for the original attempts to stop are given, although it is likely to have been the failure to comply with this instruction that may have led to the decision to pursue or follow.

	First reason given	Second reason given	Third reason given
Speeding	12 (18.8%)	8 (14.5%)	2 (9.5%)
Erratic/dangerous driving	13 (20.3%)	5 (9.1%)	2 (9.5%)
Running red lights	1 (1.6%)	4 (7.3%)	1 (4.8%)
Failing to stop	-	28 (50.9%)	11 (52.4%)
Routine stop	4 (6.3%)	-	-
Report of crime/stolen car	21 (32.8%)	3 (5.5%)	-
Not wearing seatbelt	4 (6.3%)	-	-
Defective lights	2 (3.1%)	-	-
Suspected drink driving	2 (3.1%)	1 (1.8%)	-
Driving on wrong side of road	1 (1.6%)	-	1 (4.8%)
Total number	64	53	21

Table 7: Reasons for attempting to initiate contact that preceded the pursuit/follow

In other words there were a total of 138 reasons given for attempting to make the initial contact that resulted in the pursuit/follow. Some of the reasons given in only one incident ranged from 'having earlier rammed a police vehicle in an earlier pursuit' to the poor state of the car, not indicating, turning out of a bus lane, 'a screeching noise coming from the tyres or the brakes' and the driver talking to a known prostitute. While it may appear disingenuous to include 'failed to stop' within this coding, it does represent one of the main indicators of a decision point for officers who, having identified a reason for wanting to pull the vehicle over, then are in a position of shaping a response to the failure of compliance by the target vehicle. However, it is important to acknowledge the secondary nature of much of the data – this is the researcher's interpretation of the IO's conclusion, particularly if the officers involved have given 'no comment' interviews. This is the reason this is included not as the first reason but as a subsequent decision factor in the pursuit/follow. It is also important to note that only around one-third of the initial reasons for attempting to stop the vehicle are not related to driving offences, and can be described as criminal offences, although this category does include knowledge that the car is stolen. However, in many of the pursuit/follow incidents, it is an initial driving violation that leads the officer to identify and target a vehicle, whose failure to comply with the instruction to stop creates suspicion in the minds of the officers that a more serious offence may have occurred, and this provokes the decision to pursue or follow.

For the purposes of analysis, the reasons for the stop were recoded in two ways. First, the cases were divided into three groups – traffic-related violations only (n=36), reports of crimes (n=22) and other cases involving either routine stops by officers or suspected drunk driving (n=6). Second, the total number of reasons has been calculated – in 14.1% (n=9) one reason is given, in 54.7% (n=35) two reasons are given and in the remaining 31.3% (n=20) three reasons are given, as a means of assessing whether more reasons were associated with

more urgent responses or with different classifications of the event. There are no significant differences in the typical speed of the follow/pursuit, in the number of people that have died or in the distance that was covered as a function of the number of reasons for initiating. Naturally, for virtually all of the incidents included, the decision is predicated on a failure to stop. However, for inclusion in the Table 8 below gives the relationships between the type of reason for the stop and both length and distance of the pursuit and the number of resulting fatalities:

	Traffic violation (n=36)	Serious crime (n=22)	Other (n=6)	F, significance
Total time of pursuit/follow	3.0 minutes	4.0 minutes	2.7 minutes	F=0.40, ns
Total distance of pursuit/follow	2.9m	4.0m	1.8m	F=0.49, ns
Typical distance between cars	254.5y	136.8y	318.7y	F=0.89, ns
Typical speed of cars	69.1mph	65.6mph	67.0mph	F=0.21, ns
Number of fatalities	1.1	1.3	1.3	F=0.52, ns

Table 8: Reason for initiating the pursuit/follow by the number of fatalities resulting and the time taken and typical speeds

As can be seen clearly from the above table, there is no clear relationship between the reasons for the stop and any of the risk-taking indices included in the study – police drivers following or pursuing traffic offenders are no less likely to travel at speed, nor do the events continue for less time or over shorter distances and, for the cases included, they are no less likely to end in fatalities. There would appear to be greater distances involved for traffic offences, although a larger sample would be required to attain statistical verification of this effect. This lack of difference would suggest that once the decision to follow or pursue has been taken, the same police driving behaviours appear to occur, although some of the variables, such as typical speeds may be determined by the suspect driver rather than the police officer. While the current study is based on a small and selective sample, in the absence of adequate data, this suggests a worrying precedent.

While it is generally the case that the officer in the following car will not know why the target vehicle has failed to stop, and will therefore be suspicious of the motives for this action, officers must be clear about the pay-off between the grounds for suspicion of other crimes and the immediate risk generated by engaging in a pursuit or follow. This should be uppermost in the minds of the officers as the incident unfolds – the process of escalation (with increased risks taken by the target vehicle) is not a sufficient motive for continuing the pursuit or follow and the officers must be aware of their responsibility in risk management and the dynamic nature of risk associated with the decision to abandon or continue the chase. Apart from the strength of the initial suspicion that a crime has been committed, the officers must be clear that stopping the target vehicle will not generate a risk greater than the continuation of the pursuit.

This is reflected in the fact that, in only one of the cases is there a clear statement that the driver of the target vehicle was known to officers while in two others there is some indication that at least a partial identification had been achieved before the initiation of the pursuit/follow. In the remaining 56 cases for which there is data, there is no suggestion that the driver of the target car was known to officers. This makes it rather surprising that there is

very little evidence reported by IO's of attempts to check via the radio for offences or to clarify details of the target vehicle – in only 2/23 cases where this can be assessed does this appear to have been done and in only one of these is there evidence that this has been followed up. However, in a number of the cases the Police National Computer (PNC) check may have occurred before the recording of the transcript, although this does not apply in all cases. While again recognising that these incidents tend to be very brief, it would seem critical that the management of high-risk incidents involve a two-way exchange that maximises information flow between the officers in the police vehicle and the control room, and that this exchange of risk assessing information be systematically coded and recorded by RTI police investigators.

One of the methods intended for assessing the shift in risks associated with follows/pursuits was to attempt to identify the level of risky driving engaged in by the pursued driver prior to the initiation of the police contact. However, for reasons that are in part practical and in part to do with reporting practices, it was not always possible to clarify driving activities for the period prior to police contact so that the list shown in Table 9 may well underestimate the level of risk prior to initiation of the follow/pursuit.

Activity	Number	%
None	14	21.9
Speeding	21	32.8
Erratic or dangerous driving	7	10.9
Running lights	2	3.1
Car theft	3	4.7
No seatbelt	4	6.3
Reports of earlier crime involvement	4	6.3
Defective lights	2	3.1
Drunk driving	2	3.1
Missing	6	9.4

Table 9: Evidence of driving or criminal activity prior to the initiation of the pursuit/follow

The key point from this table is that there were relatively few instances of significantly dangerous driving behaviour or risks to other road users that were clearly identified for the period prior to the initiation of the pursuit/follow and in many cases it was the awareness of police engagement that was associated with an increase in escalated risk behaviour by the driver of the suspect vehicle. However, irrespective of the grounds for initiating the police response, there is clear indication of an 'escalation' in risk-taking behaviour once the police initiate either a 'follow' or a 'pursuit' (see Table 10)

	By target vehicle	By police vehicle
Speeding	59	58
Erratic or dangerous driving	20	1
Running lights	17	9
Driving on wrong side of road	6	4
Ramming police vehicle	2	NA

Table 10: Traffic violations by target car and by lead police vehicle during the course of the pursuit/follows

While the police have a clear duty to arrest dangerous behaviour when they are faced with it, the evidence from Table 7 clearly indicates in the sample cases, which are likely to under-estimate the extent of traffic violations by all of the participants, that the activity of initiating a follow or pursuit is to escalate the extent of risk-taking behaviour occurring in that driving environment, a risk that is further increased if more than one police car is involved. Although the collision rarely involves the police vehicle engaged in the response, the police action, whether described as a 'pursuit' or a 'response' augments risk in two (unequal) ways – first, by increasing the number of vehicles engaged in transgressions of the Highway Code and, second, by escalating the behaviours of the driver of the target vehicle and precipitating the increases in risk-taking driving behaviour engaged in by the target car. As will be made clear in the discussion section, the key inference to be drawn from this is that pursuits and follows generate risk to all of the participants and to any other road users in the area and, as such, there must be a clear and justifiable rationale for engendering this form of risky behaviour, particularly in the light of the trend data made explicit in the 2000/2001 PCA Annual Report.

#### CASE STUDY: A TRAFFIC OFFENCE THAT ESCALATED INTO A FATAL PURSUIT

A 14-year old boy was killed in a collision with a traffic bollard having been followed by the police. The reason for the original decision to intervene, described throughout the driver's witness statement as a 'follow', was that the driver of a Reliant was not wearing a seatbelt. The police vehicle followed the target along a motorway at a distance of 150-200 yards until the Reliant turned off the motorway and went through a set of lights at red. At this point the police drivers activated the emergency equipment, but the driver of the target vehicle failed to stop. The speeds increased to 90 mph as the vehicle returned to a motorway (having previously been travelling at between 30 and 50 mph) and, in attempting to exit the motorway at an exit, the driver lost control, colliding with a traffic calming measure, resulting in his death.

#### LEARNING THE LESSON

The two most important issues emerging from this case relate to proportionality and escalation. There is no clear indication from the case that the driver of the Reliant (albeit as an under-age driver) was a danger to himself or to any other road user in the period prior to involvement with the police. However, once the police had become involved, the risks taken escalate in a step-wise fashion intimately linked to the activities of the police car. At each escalation by the police driver – following, going through red lights, then activating emergency equipment, and finally closing the distance – the police driver is effectively raising the stakes (and the pressure) on the decision-making of the pursued driver. While many of these drivers may abandon the escape attempt at this point, for those who do not do so there is a clear magnification of risk, which is particularly problematic when the reason for the attempted stop is something as minor as not wearing a seatbelt.

Further there is the irony of wishing to stop a driver because of concerns over their safety, and then engaging in a 'chase' thereby markedly increasing the risk associated with the reason for the stop in the first place. This does, however, illustrate the difficulty officers face – although the original reason for the stop was a fairly minor traffic violation, the failure to stop and the subsequent failure to stop at red traffic lights would increase police suspicions that other crimes may be involved and that the target driver has a reason for not stopping (such as alcohol intoxication). Under such circumstances, the police driver has a difficult choice to make, but one that must be framed in the context of general risk taking.

#### *Speeds and distances involved in pursuit/follows*

All of this is made much more difficult for the officers involved by the short duration of the incidents involved. For the 47 cases for which times have been calculated, the mean length of time to the first collision is 3.2 minutes ( $\pm 5.0$  minutes) with 27/47 lasting for under two minutes before at least one collision has occurred. Similarly, when calculating the total time between the initiation of the pursuit/follow and the collision that ultimately ended the incident, for which 51 cases have data, the mean pursuit length is 3.3 minutes ( $\pm 3.8$ , range = 0.2-19 minutes), with 25/51 'chases' concluded within two minutes. The distances involved were similarly short, for the 42 cases that this was calculated, with a mean total distance for the follow/pursuit of 3.2 miles ( $\pm 3.8$ , range = 400 yards – 20 miles), and with 15 of the incidents lasting for one mile or less.

In 56/64 of the incidents there was only one police vehicle involved at the start of the pursuit/follow, in 6/64 there are two police vehicles, in one there are three police vehicles involved and in one case it is not clear. This has not changed markedly by the time of the collision, with two instances where the IO asserts that no police vehicles are involved, 46 (73.0%) involve only one police vehicle, 9 (14.3%) involve two police vehicles, and the remaining six for which data are available involved more than two police vehicles. Although a police helicopter was involved in eight of the incidents, for six of these it did not arrive until after the collision so only played any kind of material part in the resolution of two incidents.

Crucially, it was also possible to establish some kind of typical speed and distance for the majority of the pursuits/follows (typical distance estimates could be calculated in 57/64 cases and typical speeds in 60/64 of the incidents). The average speed during the incident for the target vehicle was 67.1 mph ( $\pm 19.3$  mph, with a range of 20-120 mph) while the estimated average distance the police car was behind the target vehicle was 219.7 yards ( $\pm 343.7$ , range = 15 –2500 yards). The latter average is skewed as a result of one case in which the officers were estimated to be around 1.5 miles behind the target vehicle at the point of collision. While it is important to note that 26/60 police vehicles were within 100 yards at the time of the collision, there is only one clear instance of the police vehicle colliding with the target vehicle, and this occurred after the initial contact between the target vehicle and another vehicle on the same road. On the other hand, given the typically high speeds and the high proportion of police vehicles within 100 yards at the time of the collision, there are grounds for suggesting that, in many of these incidents, the police were very much involved in the collision and its consequences. The role of the police vehicles has generally been to act as the catalyst for high-risk driving by the suspect and to engage in a dynamic interaction with the driver of the suspect vehicles that leads to ongoing escalation of risk-taking decisions that may result in collisions resulting in serious injury or death.

While there is a positive correlation between the typical speed involved and the distance between the police vehicle and the target vehicle ( $r=0.30$ ,  $p<0.05$ ), the association is a relatively weak one. However, it may be more surprising that there are positive associations between the typical speed and both the length of the pursuit in distance ( $r=0.19$ , ns) and in time ( $r=0.21$ , ns). This would suggest that while pursuits/follows are inherently dangerous there is a gradual increase in risk and speed over the duration of the event. One of the main incidental factors that may also be associated with this escalation is the practice of officers of closing up on the target vehicle to read the number plate, for communication purposes (although the communication evidence suggests that this happens relatively rarely in practice).

#### CASE STUDY: CLOSING THE GAP BETWEEN VEHICLES TO READ THE NUMBER PLATE

Early on a Saturday morning, the police received two witness phone calls about a car being driven erratically, apparently by juveniles, leading to a police vehicle being called out. Shortly after, the vehicle was spotted by a patrol car and failed to stop - the control room supervisor then authorised the car to follow but not to pursue. Complaints of poor quality radio reception meant that the supervisor was not aware that the driver's advanced authorisation had lapsed - yet after this was clarified and with the awareness of possible juveniles on board the decision was not made to call it off. The police driver accepts that he closed the distance to clarify the registration plate but claims that he maintained a safe following distance. However, the surveying passenger in the pursued car claims that the driver believed the police car was closing the distance and so was not willing to stop, whether this perception was accurate or not. The typical speed of the vehicles was 60-70 mph and the distance varied between 100 and 400 yards. As two other police vehicles appeared from the opposite direction the pursued car failed to negotiate a bend and hit an agricultural vehicle.

#### LEARNING THE LESSON

As with many of the incidents, it is not the technical driving capabilities of the officers that are in question. It is the impact of their behaviour on the significantly less experienced and capable driver in the target vehicle that is the issue - particularly, as in this case, where the target vehicle driver is an adolescent, who obviously lacks the requisite road craft and experience. This is made manifest in the closing of distances, where the pursued driver is effectively forced to make a choice - either to give up or to respond to this escalation by an increase in his own risk-taking behaviour. The case also highlights the communication issues around risk and the need for police vehicles to be equipped with equipment that is capable of facilitating distal risk assessment.

#### Relationship between pursuit/follow variables and characteristics of the drivers

The first characteristic that was assessed in this way was the driving status of the pursued/followed car and the length, speed and distance of the chase (see Table 11 below):

	Intact (n=14)	Disqualified (n=23)	No license (n=19)	F, significance
Length of pursuit (time)	2.1minutes	3.8 minutes	3.6 minutes	F=0.67, ns
Length of pursuit (distance)	2.1 miles	5.1 miles	3.9 miles	F=0.60, ns
Distance between cars	128.8 yards	205.5 yards	168.6 yards	F=1.61, ns
Typical speed	62.1 mph	67.6 mph	69.9 mph	F=0.62, ns

Table 11: Driving status of pursued/followed driver by incident factors

As can be seen from the above table, although there are no statistically significant differences between the groups, it was drivers whose licenses were intact who had the shortest time and distance before the final collision and who were most closely followed by the police. This would suggest that the drivers without intact licenses were not intrinsically less capable drivers (as they managed to engage in the pursuit for longer and over greater distances, while at similar speeds), although it may also indicate that they were less likely to give up than those with intact licenses. Considerably more research on successfully resolved pursuits and follows is required to address this question satisfactorily. The above analysis was then repeated for whether the car was stolen (see Table 12 below):

	Stolen (n=29)	Not stolen (n=35)	T, significance
Length of pursuit (time)	2.8 minutes	3.3 minutes	0.20, ns
Length of pursuit (distance)	2.7 miles	3.1 miles	0.14, ns
Distance between cars	181.8y	158.0y	0.52, ns
Typical speed	66.7 mph	69.0 mph	0.20, ns

Table 12: Status of target car by incident factors

As can be seen from the above table there were no marked differences in pursuit variables as a function of whether the car was stolen or not.

*Use of lights and sirens and reported attempts to stop the target vehicle*

Data are available on the use of lights and sirens for 62/64 incidents. Sirens were used at some point during the pursuit/follow in 48/62 and emergency lights in 60/62 incidents. Sirens were most commonly activated at the breach of the traffic regulations or at the recognition of a failure to stop (n=27), but were activated on sight of the vehicle in 11 cases and during the pursuit/follow in 5 cases. There is data on the time of switching off the sirens in 45 cases – 39 after the point of collision, 5 at various points during the incident and once at the point the officers were called off.

For the emergency lights, they were also most commonly used at the point of initial breach of road traffic regulations or the failure to stop (n=29), or at the sight of the target vehicle (n=16) and during the course of the pursuit/follow (n=8)(data not available for 9 cases). In 53/57 cases the light were switched off after the collision, with three vehicles having switched them off at various points during the follow/pursuit and one switching off the emergency equipment when the pursuit/follow was called off by the control room.

In only nine of the 64 cases was there any clear evidence of a concerted attempt to stop the target vehicle beyond the initial 'failure to stop' or fleeing at sight of the police car. It should be borne in mind that all of these interventions, by definition, ended in failure so that where they were attempted they all failed to prevent the collision that led to the incident being included in the study, either because there was insufficient time to implement them adequately or because they were unsuccessful. The nine attempts were four by blocking or obstructing the car (all failed), TPAC (which could not be adequately implemented), use of the helicopter which on no occasion

arrived in time to influence the pursuit, the use of boxing and the use of the Stinger device (which could not be rolled out in time).

#### CASE STUDY: DISPROPORTIONATE RELATIONSHIP BETWEEN REASON FOR FOLLOW AND OUTCOME

The case involves three short and abandoned pursuits of a 40 year old male driving a stolen Proton car which the owner spotted and had then informed the police that it had been stolen. The driver, who was disqualified, drove the car in a reckless and dangerous manner through the town centre of Heywood (including driving on the wrong side of the road and briefly mounting the pavement). It is slightly disturbing that the first follow is described as being undertaken "for no particular reason" but the officer radioed it in for speeding prior to losing the car. The car was then spotted by a by a second police vehicle several minutes later and a pursuit started at speeds of around 60 mph at distances of 150 yards that the police vehicle closed to 70 yards. Again the vehicle was lost but picked up shortly later by a traffic car which followed at around 50mph and at a distance of between 60 and 100 yards – as the pursued car turned a corner it hit the victim as she was trying to get into her husband's car. She later died of her injuries - the driver was jailed for 7 years for causing death by dangerous driving, theft of the vehicle and driving while disqualified. All officers were exonerated of blame.

#### LEARNING THE LESSON

The outcome of the follows and pursuits, the collision resulting in the death of an elderly woman returning from a shopping trip, is completely inconsistent with a series of follows and pursuits that originally had no clear purpose – it was not known at this stage that the vehicle was stolen or that the driver was disqualified. Furthermore, the fact that the driver is subsequently convicted has no bearing on the justifiability of the officers' actions – they were materially involved in a series of high-risk engagements in a busy town centre, with the consequent risk and tragic outcome completely disproportionate to the original motivation for following the target car. The concept of proportionality between the reason for the initial stop and the evolution of risk should be paramount (and communicated) in the decision-making practices of both the officers in the police vehicle and those in the control room. This was also an incident where the co-ordination of police vehicle activity appears to have been limited and the use of central co-ordination of information and strategy unsuccessful. This case is a clear indication of a 'system failure' where a suspect driver is rightly convicted for wrong-doing but insufficient learning of the lessons by a police force whose systems and methods were a material component of the tragic death of a woman who had nothing to do with the pursuit but who was put at risk by a series of follows and pursuits whose escalation led to increasing risk-taking by the suspect.

### *Quality of communication*

There was considerable difficulty in attempting to classify the communication for incidents where there was no transcript of the radio communication. In very few cases was there any comment (far less systematic analysis) of the role, training or perceptions of the control room operator or supervisor, and attempts to calculate risk assessment on the part of either the police vehicle occupants or the individuals involved in the police control room were opportunistic.

For 43 of the 64 cases it was possible to calculate whether and what kind of risk assessment took place – from the transcripts it is clear that there was no communication that represented any kind of risk communication in 23/43 cases, in 12/43 cases there was an immediate communication with the control room, in seven the first communication took place during the pursuit/follow and in one the communication was initiated within 10 seconds of initiating the follow. The main factors that were mentioned in this communication are listed in Table 13 below:

Risk communication	Number (%)
To follow not to pursue	5 (21.7%)
To obtain authority for the follow/pursuit	4 (17.4%)
Communicating the failure to stop	3 (13.0%)
Communicating running red lights	2 (9.7%)
That there were few cars or pedestrians around	2 (9.7%)
To call for assistance	2 (9.7%)

Table 13: Types of information provided in the initial contact with the control room

Some of the other types of requests at this stage were for Stinger to be deployed, one to discuss safety issues and one to communicate the speed of the target vehicle. In 24 cases the communication suggests that a decision to either follow or pursue has been taken – but in 17 of these this is taken by the occupants of the police car and in only 7 is the decision taken by the control room. Furthermore, in only six cases is there any evidence of a second assessment of risk, in which changes in either road conditions, driving behaviour or other aspects of the risk calculus are provided by the police driver or communicated by the control room supervisor.

While this is an issue for investigating officers in compiling their reports, a more important question surrounds the training of officers in cars and in control rooms about the transmission of commentaries that communicate levels of risk and how these change over the course of the incident. The inconsistency of information provided and the lack of evidence of supervision from the control room in the majority of cases make this a key issue in the attempt to reduce the number of adverse outcomes. The emphasis is on rapid and effective risk assessment and communication, particularly given the brief duration of most pursuit/follows, as is illustrated in the example below:

#### CASE STUDY: THE PROBLEMS OF 'SAFE MONITORING' IN FOLLOWS

The incident involved a stolen Metro, the occupants of which had been known to have been involved with at least two other stolen cars over the course of the day. The incident occurred at 3.20 am when two officers in an unmarked car were observing another stolen Metro in a car park. The stolen car pulled into the car park at high speed and pulled up along side the other Metro, only then observing the officers (one of the occupants said subsequently that they had recognised them instantly as police officers) and immediately they drove off at high speed. The unmarked police car followed (although without lights or sirens available as the car was a hire car) with the passenger requesting the intervention of a marked traffic vehicle. Although police, witnesses and CCTV evidence indicate that the gap between the vehicles is 100-200 yards, the perception of the survivors from the pursued car, that it was much less, may have been relevant to their actions. In total the incident lasted just over one minute and for 0.9 miles before the driver of the pursued car (who is 16, had no licence and had cannabis in his bloodstream) collided with a lorry at a T-junction, a collision that resulted in his own death.

#### LEARNING THE LESSON

One must again question the worth of the distinction between pursuits and follows when the occupants of the pursued vehicle were clear that they were being chased by the police, with obvious impact on their driving behaviour. Furthermore, while the officers did request the involvement of a traffic car, they should not have engaged in significant breaches of traffic regulations (particularly speeding) if they were not in an appropriate vehicle. There is also no attempt at ascertaining training or risk when the request for other vehicles came in over the radio. Given the short duration of so many of these incidents, particularly when the driver is drug-impaired and under-age, officers who attempt to 'follow' or 'pursue' when not authorised must seek appropriate permission from the control room and must not engage in behaviour that is likely to increase the risk taking of the driver in the target vehicle. Furthermore, it is fundamentally unacceptable and indefensible that pursuit/follows be undertaken in unmarked vehicles that do not have concealed emergency equipment. Regardless of the driving level attained by the police driver, this creates a significant risk, and denies the police driver a clear way of indicating to the suspect vehicle or other road users their police status.

#### *Policy compliance and investigation outcomes*

While the attempt to assess the level of concordance between driving behaviours and policy is contingent on a clarity in policy and a consistency in reporting, that are subject to interpretation and the uncertainty of post-hoc reconstruction, it was possible to make some assessment of the level of agreement with the Lind Report in 60 of the 64 cases assessed. Adopting a strict adherence to policies identified in the report, 29 (48.3%) of the follow/pursuits included can be regarded as having been fully compliant in all aspects, while a further 20 (33.3%) were at least partly in agreement with these principles. However, there were 11 cases (18.3%) where the recommendations of the Lind Report were clearly contravened (although again it is worth pointing out that many of the incidents are likely to have occurred before Lind was effectively implemented in all forces). For this reason it is perhaps surprising that in only 2 of the 62 cases for which recommendations were available, was there a

recommendation of disciplinary action and in only two further cases did the PCA disagree with the decision of the IO to recommend no action. This is an area that may require considerably greater scrutiny in future investigations and in their subsequent supervision by the PCA.

#### CASE STUDY: SAFE DISTANCES AND NUMBERS OF VEHICLES

The driver of a vehicle passed an unmarked police car while doing 50mph in a 30mph area. The officers managed to stay in visual contact with him in spite of the fact that he drove through red lights. He then stopped the car and ducked out of view but when the officers approached the car he started the engine and drove off at speed. Local officers were then alerted and a pursuit began involving 3 police vehicles with lights and sirens going at speeds of between 60 and 70 mph with the lead car, according to the account of the lead pursuit driver, around 3-4 car lengths behind. The chase was terminated when the pursued vehicle lost control while going over the hump of a railway bridge crossed to the wrong side of the road and collided with a van travelling in the opposite direction. The driver died as a result of the injuries he sustained and while it is not clear why he chose to flee, he had been drinking, may have had no insurance and had a long history of police involvement. While the IO completely exonerated the officers involved, there are considerable question marks around the effect of the distance the lead police car was away and about the number of cars involved in the pursuit in a convoy.

#### LEARNING THE LESSON

The US published evidence makes it clear that having more than two police cars involved in a pursuit, at speeds greater than 65 mph are both factors that increase the risk of serious injury – factors that are likely to be compounded when the lead car is so close to the target vehicle. The psychological factors likely to impact upon the driver of the target vehicle almost certainly will include the cognitive burden of attending to the visual and auditory stimuli of the pursuing cars, the arousal effects of the pursuit, lack of training and experience at driving at speed, as well as the deleterious effects of the alcohol. While in one sense the pursuit is justified because of the alcohol level discovered and because of the criminal history and lack of insurance, the logic is the same as surrounds pursuing juveniles. If it is dangerous for people who have been drinking to drive, this danger will be significantly compounded by the slowed reaction times and impaired and disinhibited judgements that alcohol is likely to induce. This is significant for police drivers who wish to ensure public safety by stopping such a vehicle, but it is imperative that their actions maximise safety and do not simply involve pursuing in a high-risk manner a driver whose ability to make rational judgements is significantly disrupted.

## Discussion/recommendations

The evidence presented above constitutes a powerful endorsement of the comments made in the 2000/2001 Police Complaints Authority Annual Report, expressing concern at the increase in the rate of RTIs involving the police, particularly those that can be categorised as pursuits and follows. While the data clearly demonstrate that many of those driving the target cars pursued or followed by the police do not have intact driving licenses, are under the influence of alcohol or illicit drugs, are not wearing seatbelts, the reason for initiating the police response often relates to infringements of traffic law, with only around one-third of the pursuit/follows included in the study having been initiated for what would be regarded as non-traffic crimes. This means that the critical point for risk assessment is likely to be the initial point where the officer identifies a 'failure to stop' and then has to decide on the costs and benefits associated with pursuing the vehicle. While the aim of the report is not to abolish pursuits or safe follows, it is imperative that the risks of such activities are acknowledged, and are taken into consideration in the management and conduct of all such police activity.

There are also problems with data interpretation that stem from two issues – one, the relatively small sample size and two, the problems of contextualising the information presented. The latter problem arises as a result of variations over time and between forces in the cases that are referred to the PCA and also resulting from the lack of comparison data about the total number of pursuit/follows undertaken in the period, with linked data on the number of non-injury and minor injury collisions. The difficulty this creates is that it is not possible to determine the representativeness of the events described or the rates at which they occur as a function of all 'chases' involving police vehicles. There are two key research questions that must be addressed as a matter of priority to permit an assessment of the general level of risks associated with police pursuits:

1. What is the total number of pursuits undertaken in any given force and what proportion of them result with some form of collision, either involving minor injury or, as in the current study, serious injury or fatality?
2. What are the risks of abandoning pursuits/follows? Only by carrying out systematic assessments of changes in force policies or by examining cases of discontinued or never started pursuits, will it be possible to relativise the risk by examining the levels of injury and loss of life in cases where the police officers make the decision that pursuit is not an acceptable option.

However, the data represent only the first stage in the development of a PCA database of referred RTI's and the work reported here will be followed up using larger numbers of cases as the database develops both with new cases and further back in time permitting a trend analysis that is not possible here. What is presented above are the results of 85 supervised investigations, 64 of which refer to pursuit/follows, the primary focus of the report. The numbers of serious injuries and fatalities reported here are not acceptable – without sound empirical evidence that can overcome the limitations of the current study (for which the Home Office and the police service must take the lead), the level of risk for follows and pursuits undertaken is not acceptable and must be addressed by significant changes in police policy and practice.

Some of these concerns will be addressed by technological advances, including the widespread introduction of IDR's and mounted video units in traffic vehicles which will enhance both the quality of investigations for incidents that have taken place and, more importantly will increase the capacity of the forces to manage officers who are inevitably at some distance from the control room. Furthermore, the implementation of safe stopping methods such as HOSTYDS and stop sticks may be key components in the quest for fast and effective methods of stopping suspect vehicles. It is critical that all of these technological developments, along with the use of helicopter have as their primary objective the maintenance of public safety and their effectiveness should be considered in terms of the total number of collisions, injuries and fatalities that occur as a result of pursuits and follows, as well as their impact on the detection and prevention of crime. These are not mutually exclusive objectives and all policy and practice changes should be considered in terms of marrying these dual requirements.

The main recommendations derived from these cases are presented below.

### Recommendations

- **Definitions:** The data provided would suggest that there are no satisfactory behavioural indicators that lead to certain events being classified as pursuits and others as follow. What in effect is happening is often Procrustean in nature – events are retrospectively classified by the driver or the IO to ensure that there are no disciplinary implications. Thus, if the police driver is standard trained or not in an appropriate vehicle, then the event will be described as a 'follow' regardless of the reason for the initial attempt to stop the vehicle, the speed of the incident, the distance between vehicles or the outcome. It makes little difference, if the public consider an event to be a pursuit, that witnesses and occupants of the target vehicle refer to it as a chase, whether the police choose to call the event a 'follow' or indeed a waltz. This is not a question of technical expertise, but of disingenuity, and one that serves only to cloud some of the key issues of prevention and training involved. This is made more confusing when the definition of a pursuit uses the concept of a failed attempt to stop the vehicle following which the "police give chase for the purpose of stopping the vehicle" (ACPO, 1989) yet many events classed as pursuits and as follows are initiated by a failure to stop and it is not clear what actions by police forces and individual drivers constitute subsequent attempts to stop – eg use of emergency equipment. The use of these terms should be discontinued and replaced with categories that relate to breaches of road traffic law and the use of emergency equipment. Issues of driver training should be a second level of assessment of decision making around infringements of regulation and the requirement of control room authorisation.
- A second issue that arises is in the variation between forces in the levels of training and refreshers that lead to inconsistencies in what constitutes advanced, standard and basic police driving. This is particularly confusing where officers move between forces and so there may be issues around their suitability for particular kinds of response that cannot be resolved in the course of incidents. These would be resolved by the establishment of standardised competencies.
- **Communication:** One of the major weaknesses identified in the cases examined relates to the quality of the commentaries and the adequacy of the resulting risk assessment. In many of the cases included there was little evidence of adequate communication between the control room and the police vehicle. Although many of

the incidents are of short duration, the moment there is a failure to stop that is responded to there should be the provision of ongoing commentary by the police vehicle occupants to enable the control room supervisor to make adequate managerial decisions. For this reason, it is recommended that specific courses are run in the provision of commentaries during pursuits, ideally provided by the police passenger on hands-free sets that will enable the police driver to concentrate on the immediate task while the passenger provides all key information about environmental risk factors (weather, how busy the road is), speeds, estimated distances, traffic infringements by all involved vehicles and an assessment of the driving standard of the target vehicle.

- **Risk assessment:** The need for satisfactory commentary – provided on satisfactory and functioning equipment – should be part of a broader commitment to improving the quality of risk assessment undertaken by police vehicle occupants and by control room staff. Many of the incidents included in the study involve pursuit/follows where all of the decisions are taken by the police vehicle occupants, with little or no input from the control room who should have a series of standardised prepared questions about whether the target driver is known, is a juvenile, about the driving style and speed, about the police driver training and vehicle suitability. Other than the most urgent high priority crime pursuits, and those pursuits undertaken by advanced drivers in appropriate marked vehicles, all other instances should involve control room authorisation before initiating a 'follow' or a 'pursuit'. Furthermore, if there is clear evidence of escalation in risk during the pursuit/follow (such as marked increases in speed, driving on the wrong side of the road, or driving into a busy area), the driver should withdraw, not by pulling back or by de-activating the emergency equipment, but by visibly pulling over to the side of the road.
- **Management:** The key managerial task with regard to pursuit/follows is to ensure that the risks taken during such incidents are proportionate to the outcomes achieved and that police officers, other road users and the occupants of pursued vehicles are not subjected to inappropriate risk. This is partly to do with the issue of proportionality – if police forces are to engage in activities that result in a number of vehicles exceeding speed limits, driving through red lights and breaking traffic regulations – then there must be clear and justifiable grounds for so doing. While the question of pursuing an individual under the influence of alcohol should be the subject of policy review, there can be no justification for pursuit when the original reason for the stop is speeding, not wearing a seatbelt, or any minor traffic violations. The forces also have a duty of oversight of pursuit frequency at the level of individual drivers as well as by divisions and to review their outcomes as a function of the risks taken. There is a clear need to develop the work on officer training, particularly around communication but also to extend attitudinal training to ensure that the evolution of risk is paramount in the decision to initiate and/or continue with pursuit/follows.
- **Investigation:** The PCA would endorse the widespread use of the Transport Research Laboratory (TRL) in a significantly greater number of police-related RTI's for two reasons – one operational, and the second related to the availability and accessibility of systematic management and measurement of RTI's using multi-disciplinary methods and systematic procedures for data collection, recording and use.
- **Investigating Officers' Reports:** While Appendix 2 outlines the main information that the PCA members should be provided with for all pursuit/follows that are referred, it is imperative that the criteria for referral are consistent across forces. As the PCA itself has recently done, there is also a recognition that, in line with the ACPO Road Death Manual, forces are increasingly aware of the scale and scope of this problem – the police are now involved in more than 1% of all road fatalities in the UK – and systematic recording of all key

personal, contextual and event-based factors is critical. We would also request that final reports always include full transcripts of the radio transmission, training details for the police driver and passengers and for all relevant control room staff and full driving histories on the police drivers. There should also be a consistent record kept of seatbelt wearing by occupants of all vehicles, all blood, urine and breath tests taken from any participants, and a clear indication of how the incident conforms to both the force policy and to the recommendations of the Lind Report.

- **Research and information needs:** While the PCA will continue to develop a research strategy in this critical area of work, and will liaise with the researchers at TRL in so doing, there is much work that can be done by individual forces to enable us to quantify the risks associated with police driving – in particular, in the areas of follows and pursuits, in England and Wales. It is critical that forces are able to assess the numbers of pursuit/follows they undertake, what the outcomes of these are in terms of collisions, injuries (of all kinds), arrests and convictions. At present, we are in the terrible position of saying that we do not know what the pay-off is for this activity and with the main evidence coming from reports such as this, the cost should be recognised as enormous, with little systematic evidence on the benefits that accrue to public safety from stopping drivers who flee. The main empirical evidence is very powerful - when Metro-Dade adopted a 'violent-felony only' pursuit policy in 1992, the number of pursuits decreased 82% the following year. In 1993 Omaha changed to a more permissive policy, permitting pursuits for offences that had previously been prohibited; the following year the number of pursuits increased more than 600%. The evidence is also clear that when you reduce the pursuits, you decrease the number of incidents and injuries with no clear evidence of increasing the frequency of fleeing or the total volume of crime. However, until we have such empirical evidence in the UK our main statistic will be that more than 1% of all those who die on the roads are in some sense involving the police and that this proportion is rising. It is against this evidence that the imperative around improved police data collection on pursuit/follow frequency and outcomes must be considered.

## Appendix 1: Location by Force

	<b>Number of incidents</b>
<b>1. Avon &amp; Somerset</b>	<b>1</b>
<b>2. Bedfordshire</b>	<b>1</b>
<b>3. Cumbria</b>	<b>2</b>
<b>4. Derbyshire</b>	<b>1</b>
<b>5. Dorset</b>	<b>1</b>
<b>6. Durham</b>	<b>1</b>
<b>7. Essex</b>	<b>1</b>
<b>8. Gloucestershire</b>	<b>1</b>
<b>9. Greater Manchester</b>	<b>9</b>
<b>10. Gwent</b>	<b>1</b>
<b>11. Hampshire</b>	<b>1</b>
<b>12. Hertfordshire</b>	<b>1</b>
<b>13. Kent</b>	<b>3</b>
<b>14. Lancashire</b>	<b>2</b>
<b>15. Leicestershire</b>	<b>2</b>
<b>16. Lincolnshire</b>	<b>1</b>
<b>17. Merseyside</b>	<b>3</b>
<b>18. Metropolitan</b>	<b>12</b>
<b>19. Norfolk</b>	<b>3</b>
<b>20. Northumbria</b>	<b>1</b>
<b>21. North Wales</b>	<b>2</b>
<b>22. North Yorkshire</b>	<b>1</b>
<b>23. Nottinghamshire</b>	<b>1</b>
<b>24. South Wales</b>	<b>3</b>
<b>25. South Yorkshire</b>	<b>5</b>
<b>26. Staffordshire</b>	<b>2</b>
<b>27. Sussex</b>	<b>6</b>
<b>28. Thames Valley</b>	<b>2</b>
<b>29. Warwickshire</b>	<b>1</b>
<b>30. West Mercia</b>	<b>3</b>
<b>31. West Yorkshire</b>	<b>11</b>

## Appendix 2: Suggested Information Collection for RTI investigation reports

### Police Drivers

Rank

Sex

Age

Length of time in force

Ethnicity

Level of driver training achieved

Date achieved this level

Most recent type of driver training and date

Training materials issued at last course

Date and type of last eyesight test

Number of collisions as police driver and date of most recent accident

Number of complaints made (and number substantiated) about driving behaviour

Alcohol test and result

Driver wearing seatbelt? Y/N

Time on shift

Shift pattern over previous week

Assessment of stress

Personality assessment (if appropriate)

### Police passenger

Rank

Age

Sex

Ethnicity

Length of time in force

Driving status and date achieved

Training in providing pursuit commentaries

Adequacy of commentary provided

Frequency of risk assessment

Accuracy of risk assessment

Number of complaints made and substantiated

Passenger(s) wearing seatbelt?

**Police vehicle**

Type of markings

Type of vehicle

What warning equipment was fitted?

Is vehicle fitted with hands-free communications? Y/N

Is vehicle fitted with black box? Y/N

Number of occupants (and seating positions)

Number wearing seatbelts

Defects known at start of pursuit/follow

Any additional defects resulting from pursuit/follow

**Characteristics of pursued driver**

Age:

Sex

Ethnicity

Number of previous convictions

Was suspect known to police? Y/N

If so, when did they become known?

Reasons for follow/pursuit:

(1)

(2)

Why was immediate action necessary?

Was suspect driver alcohol tested? Y/N

If so, what was the result?

Was suspect driver drug tested? Y/N

If so, what was the result?

Reason for not stopping (if known)

**Characteristics of pursued vehicle**

Type of vehicle

Make and size of engine

Was it stolen? Y/N

If so, when did this become known?

Number of occupants

Defects to vehicle prior to pursuit

Damage to vehicle after collision

When and how was number plate identified?

**Pursuit/follow characteristics**

Number of police vehicles involved at start  
(and estimated distances away)  
Source of distance estimates and reliability assessment  
Estimated minimum distance (and source)

Number of police vehicles involved at time of collision  
(and typical distances)  
Source of distance estimates and reliability assessment  
Estimated maximum speed (and source)

Was helicopter used? Y/N  
If so, when did it arrive at scene?

Typical speeds  
Speed of target vehicle at point of impact  
Locations  
Total distance covered  
Time in target vehicle before collision (s)  
Time between start of pursuit and first collision  
Time between start of pursuit and final collision  
Breaches of traffic laws by each vehicle before the pursuit/follow  
Breaches of traffic laws by each vehicle during the pursuit/follow  
Reason for initial stop  
Details of fail to stop  
Total number of collisions – and details (including time gaps)  
Assessment of risk

**Environmental conditions**

Distance final collision occurred from junction  
Type of nearest junction  
Weather  
Natural lighting level  
Artificial lighting  
Type of road  
How busy was the road  
Time of day  
Day of week  
Is CCTV evidence available? Y/N  
If so, what evidence does it provide?

**Outcome factors**

Number of individuals injured

Number of individuals killed

Did the investigation comply with Road Death Investigation Manual? (justify)

Any evidence of ramming?

Details of any attempts to stop car (whether successful or not)

How was ID confirmed?

How were next of kin informed?

Were details of complaints procedure provided to families of victims?

    If so, when and by whom?

Was FLO appointed?

    If so, when and with what effect?

Is there a complaint?

    If so, what is the nature of the complaint?

**Key documents to be included**

Complete transcript of radio communication

Driver's most recent training and eyesight test details

Force policy on pursuits/follow

Police vehicle(s) maintenance record

Details of qualifications of police driver, police passenger(s), control room supervisor, control room operator

Qualifications and status of IO

Experts used in investigation and reasons for use

**Summary**

	Police officers	Occupants of pursued/ followed vehicle	Pedestrians	Other Road users
Number Of Fatalities				
Number of serious injuries				
Investigating Officer Name and Rank				
Investigating Officer Department				
Investigating Officer Force				
Traffic Investigator name and rank				
Traffic Investigator Department				
Traffic Investigator Force				

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The inclusion of photographs on the front cover does not imply that Police officers were necessarily at fault in any way.