

Towards Prevention: A Situational Study of Police Deaths on Duty in Queensland

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Introduction

This article presents findings from a study of 45 police deaths on duty in the state of Queensland since 1950. The research identified situational variables that appear amenable to preventive efforts, with direct practical application in the development of protective measures for frontline officers. Overall, it was found that 22.2% of deaths were attributable to an attack by another person, with the remaining 77.7% attributable to accidents. The rate of deaths had declined over time relative to the police population, indicating that considerable improvements had occurred in safety procedures and devices. Most of the accidents involved motor vehicles, including a large number of motorcycle accidents. The circumstances of traffic accidents suggest a strong case for abandoning the use of static radar and interception of vehicles, prohibiting the practice of police approaching stationary vehicles from the driver's side, placing severe limits on the circumstances in which police can exceed the speed limit, and curtailing the use of motorcycles. Among other things, the findings also suggest that high-risk situations such as raids, sieges and roadblocks require an extremely cautious, thoroughly organised, approach: including use of detailed risk management scenarios where possible, clear lines of command and communication, and greater use of protective equipment.

Background

Police work is often considered dangerous, although it is by no means the most dangerous type of work. A study of occupational fatalities in Australia for 1989–92 showed the police rate at 11.3 deaths per 100,000 — just over twice the general workforce rate of 5.5; but much lower than some occupations including commercial pilots, fishermen and forestry and logging labourers (NOHSC 1999a:4, 1998:11, 116–177, 197). However, police were in the top three groups for work-related homicide, along with taxi drivers and security guards (NOHSC 1999b:9; cf Smith & Webster 2005). Policing poses distinctive risks and places officers in dangerous situations — especially from conflict with people, as well as accidents in rescue and pursuit situations. Perceived physical threat is also a major source of stress for police (Savery, Soutar & Weaver 1993).

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Public attention given to police officer deaths demonstrates the important symbolic and practical function of police in the community's sense of safety and justice. Police deaths — especially those deriving from criminal attacks — represent a direct challenge to the rule of law and the authority of the democratic state. Where they involve violations of criminal law they entail questions of crime prevention. At the same time, police deaths are a workplace safety issue that affects criminal justice system productivity. They also leave a heavy personal toll on loved ones and colleagues left behind. Police deaths on duty therefore represent an overlap of issues of security (prevention of crime or deliberate harm) and safety (prevention of accidental harm).

This study was confined to Queensland — given limited resources and the researcher's access to source material — with the intention it should serve as a pilot for a national study. The pilot will test the potential utility of a better resourced study with a much larger sample, and with greater capacity to explore the preventability of types of deaths where there might only be a small number of cases in a jurisdictionally specific study. In the longer term, this research should be extended to include injuries.

Literature Review

Most of the published research in the area of police officer safety is American and tends to focus on non-fatal assaults (e.g., Kaminski & Sorensen 1995). Nonetheless, the small number of studies of fatal attacks has produced useful findings. In a recent review, Mayhew (2001) found that police homicides frequently involved offenders with personality disorders; and officers who were naive about the risks they faced from the offender (relying too much on negotiation) or who breached procedures, such as failing to wait for back-up (cf Chapman 1997; Jose 1995; Kurby 2004). The large majority of police officer deaths from attacks result from injuries from firearms, and occur in situations such as arrests, interdicting in robberies, responding to disturbance and domestic violence calls, traffic stops, and investigating reports of suspicious persons (Carderelli 1968; Edwards 1996; FBI 2004).

There are few studies on accidental deaths of police officers. In one of the most recent studies from the US, Pinizzotto, Davis and Miller (2002) found that vehicle accidents accounted for 63.9% of the 344 accidental police deaths that occurred from 1996 to 2000. The next largest category at 17.5% involved being struck by a vehicle at a traffic stop or roadblock, or while directing traffic or assisting motorists. Accidental shootings accounted for 3.4% of cases. The researchers found that 'diminishing physical skills' was a major contributing factor to accidents, as lessons from academy training gave way to over-confidence and complacency (Pinizzotto et al 2002:10; cf Boylen & Little 1990). High speed pursuits and careless driving — such as speeding unnecessarily and not making adjustments for unfamiliar or adverse conditions — have also been found to be major causes of accidental motor vehicle deaths (Payne & Fenske 1997). A summary analysis of police deaths on duty in New South Wales, including when travelling to or from work, covering the period 1862 to 1982, found there had been 176 deaths. The main groupings were motor vehicle accidents (42.6%), other accidents (28.9%) and deliberate shootings and other attacks (28.4%) (Morris 1985).

Researchers have noted that police deaths in Australia and overseas since the 1960s have tended to remain either at a stable or declining rate despite increases in crime and the availability of firearms, and despite increased high risk activities such as drug raids. It appears that improvements in procedures, body armour and training have contributed to this counter-effect (Brown & Langdon 2001; NIJ 1998; Mayhew 2001; Swanton 1987). One of

the most developed prevention-oriented studies used situational factors in focusing on assaults, rather than deaths, but was relevant nonetheless in showing how such an analysis can assist in prevention initiatives. Kaminski and Sorensen (1995) found, amongst other things, that police were at higher risk of assault when the suspect was already arguing or fighting, or when the suspect was sober. Implications from the findings included correcting officers' misleading perceptions about safety and risk, and improving training in unarmed defensive tactics.

Method

The situational aspects of police deaths appear to offer scope for development, especially with reference to 'situational crime prevention', with its focus on 'the settings for crime' and on preventive interventions such as 'target hardening' (e.g., roller doors on shop windows), 'target removal' (e.g., frequent banking of cash from cash registers) and 'rule setting' (e.g., specifying and communicating rules about respect for property in a school) (Clarke 1997; POP Center 2005). The physical setting is viewed as a key source of data about variables that can be modified to reduce opportunities for offences or accidents. This approach is especially important when the agency involved has limited capacity to change the developmental factors affecting offender motivations. A situational analysis of police deaths can be advanced through Poyner's (1986) 'model for action', based on a combination of a 'process model' of criminal events — itself adapted from motor vehicle accident research — and the creation of 'crime sets'. The process model allows for a detailed analysis of the temporal sequence of events (including narrative summaries) and specification of critical junctures. The sets (and sub-sets) allow for separation of different types of events that may be influenced by similar factors: 'the more uniform a set the greater the opportunity for preventive action' (Poyner 1986:47). In the case of police deaths, sets could usefully be used to distinguish between assault-related deaths and accidental deaths, for example; with sub-sets developed from there. Poyner emphasises that the first steps towards the development of preventive models is to 'set down' everything that is known about an incident. For example, a study of police deaths would consider variables such as physical location, time of day, visibility, the incident responded to, offender access and exit routes, hiding places, protective clothing, and types of weapons.

As noted, the current study employed data from a Queensland sample. The Queensland Police Service (QPS) has two lists, one titled 'In Remembrance' and one titled 'Roll of Honour', where it records the names and circumstances of officers officially deemed to have been killed on duty. The 'Roll of Honour' is for those who died while acting with particular bravery. The lists are located at the QPS website (QPS 2005a, 2005b). The lists include each officer's name, rank, last station, date of death and brief description of the circumstances of their death. The lists provided the initial leads to more detailed sources. The major primary source intended for the study was Coroner reports accessed through the Department of Justice and Attorney-General. Coroner inquest files are held in Brisbane. The Courts Strategy and Research Branch of the Department of Justice keeps files from the preceding three years. Files from deaths occurring in the previous 20 years are held in a storage facility. Files prior to that period are held at the State Archives. The inquest files take a variety of formats. More recent ones usually contain the following.

- A document titled 'The Findings', which includes:
- A summary of 'matters of fact',
- A 'Rider', which records the Coroner's recommendations regarding strategies 'to prevent the recurrence of similar occurrences'.

- A transcript of the inquest (including examination of witnesses, and explanations of exhibits).
- Available exhibits, including written statements, diagrams, maps and photographs.
- Police forms, including the particulars of the deceased.
- A police report, consisting of a case synopsis prepared for the QPS.
- A summary of the post mortem examination.

The documents and exhibits, in particular the Findings document, can contain a large amount of information that is potentially useful for identifying situational variables. The Coroner's Rider is also a potentially valuable resource for a study concerned with prevention.

After an initial exclusion of older cases less relevant to modern times (see below), a total of 24 Coroner files were located and utilised for the study. Some files were lost from the State Archives in the 1974 flood. In other cases a police report appears to have been accepted in lieu of an inquest. These materials were supplemented with sources such as trial transcripts, newspaper articles, police journal articles and police annual reports, mostly held in the Queensland Police Service Museum and the State Library. Permission from the Department of Justice and Attorney-General to access Coroner files was conditional on confidentiality of persons named in the files. Consequently, identifying information has been removed and any numeric sequencing of names in the following report does not correspond with the order of the QPS lists.

It should be emphasised that the current study was focused on situational elements in police deaths and the theoretical implications for prevention. The study does not include a systematic analysis of police initiatives to reduce deaths nor of the impact of such measures. This approach is beyond the scope of the study. Consequently the results do not entail any criticism of current or recent police policies nor operational procedures. Most contemporary police services are involved in a constant process of review and modification of procedures. One of the most recent cases of review relevant to this study was a Queensland Crime and Misconduct Commission study of the impact of high speed police pursuits that reported on police safety innovations but also recommended refinements to practice (Hoffman 2003). The current study is intended to be a more general contribution to knowledge about preventing police officer deaths drawing directly from all cases in the half-century sample period. Additionally, it should be noted that police are subject to a much greater number of assaults and accidents that do not result in death. These are also outside the scope of the current study, which forms only one part of what should be a long term policy-oriented program of research on police officer safety in Australia.

Findings

From the first death in 1867, as officially entered on the QPS lists, until the end of 2005, 103 deaths have been recorded. However, up to 1950 many of the deaths were caused by factors that have limited relevance to contemporary policing. There were 50 deaths recorded in this period. Of these, 14 (28%) were the result of an attack by another person, including three cases where the officer was speared by Aborigines. The remaining 36 (72%) resulted from accidents, including bicycle accidents, numerous drownings, dehydration when lost in the bush, snake bite and a tunnel collapse. A large number of accidents were associated with horses (falling off or being kicked). These accounted for 14 (28%) of deaths in this period. It was decided to exclude cases up to 1950, and the initial sample therefore included 53 cases covering a 54 year period from 1951 to 2005.

The initial sample was analysed using Poyner's concepts of sets and narrative sequences, with situational elements described in the method section – such as physical location, time of day, the incident responded to, protective clothing, etc. It soon became apparent that there were cases that were not suitable for inclusion. These were instances where the officer was not officially rostered on duty and not engaged in police duties. For example, an off duty officer in his residence came to the aid of a neighbour who was electrocuted. The officer was also electrocuted. There is nothing to suggest that the officer's action was related to his employment, but instead was the action of a private citizen acting as a 'good Samaritan'. It was therefore necessary to exclude this case from the final sample. Most of the other excluded cases concerned officers who died in car crashes while travelling between work and home before beginning, or after finishing, a shift. The reason for the inclusion of these cases in the official list is explained by a note in one of the police documents. In 1949, State Cabinet approved, 'that when a member of the Police Force is injured whilst on his way to commence duty or proceeding home after the termination of duty, he be considered to have been injured on duty'. It was felt, nonetheless, that the deaths could not be related specifically to police work, and these cases — a total of eight — were excluded.

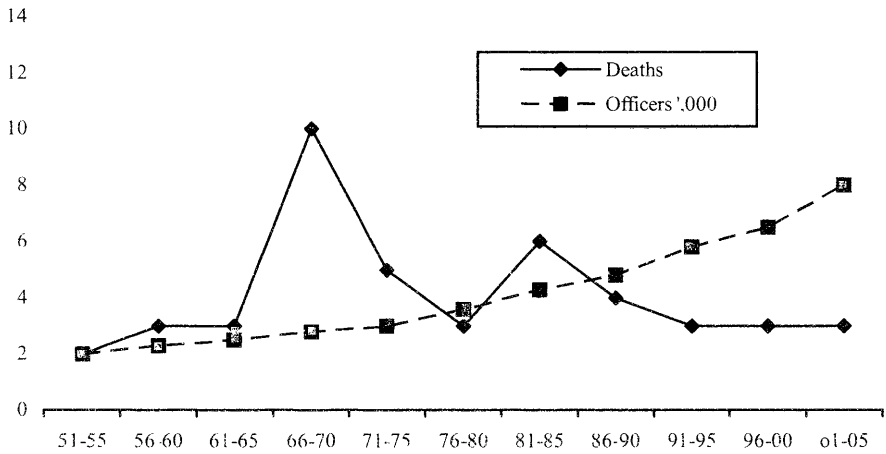
Table 1 shows the results of the analysis of the final sample of 45 cases, with two main sets emerging. Thirty-five deaths (77.7%) were considered accidental. The remaining 10 deaths (22.2%) were attributable to an attack by another person. The analysis of all cases included factors such as time of day, regional or urban location, and rank and sex of officers. Overall, none of these factors appeared to fall into any patterns that were clearly relevant as contributing factors: for example, 46.6% of deaths occurred in the daytime, 37.7% at night, 4.4% on the cusp of day and night, and 11.1% lacked information on time. In some cases, darkness may have been a factor in reducing visibility, but other factors appeared more important. The fact that most officers were male, in their twenties or thirties, and of Constable or Sergeant rank simply reflects the realities of the demographics of the police workforce and deployment to frontline duties where the greatest hazards occur, as identified in the literature (Mayhew 2001). A trend analysis is shown in Figure 1, contrasting the number of deaths over time with the population of sworn officers. The figure shows deaths declined while the police population increased. However, the spread of types of deaths has remained fairly stable, as shown in Table 2.

Table 1: Summary Findings

Key Factors	Number	% of Total
Total considered 'on duty'	45	100.0
Accidents*	35	77.7
traffic/vehicle related*	30	66.6
vehicle driven by police officer	27	60.0
motorcycle	13	28.8
car (including 4 wheel drive)	14	31.1
single vehicle	14	31.1
multi-vehicle	13	28.8
lost control of vehicle	14	31.1
vehicle pursuit	5	11.1
rushing to a call	2	4.4
officer speeding	9	20.0
officer influenced by alcohol	6	13.3
dangerous road conditions	4	8.8
other driver clearly at fault	3	6.6
officer probably at fault	11	24.4
officer possibly at fault	9	20.0
vehicle stop/roadblock*	3	6.6
collapse (health-related complications following a scuffle)*	2	4.4
accidental shooting* (self inflicted/no protective vest)	1	2.2
drowning/injured while attempting a rescue in a flooded river*	2	4.4
Attacks*	10	22.2
shot by an offender*	9	20.0
ambush	4	8.8
shot in an incident related to a domestic dispute	7	15.5
shot during a raid*	1	2.2
shot in chest area with no protective vest	5	13.3
offender probably mentally ill	4	8.8
run down by vehicle at roadblock*	1	2.2
Across Sets		
traffic/vehicle related	31	68.8
firearms related*	10	22.2
vehicle stop/roadblock	4	8.8
shot in chest area with no protective vest	6	13.3

* Headings used in findings section.

Figure 1: Police Deaths and Sworn Officers, 1951–2005



Note: Police numbers are for the following reporting years: 1950/1, 55/6, 60/1, 65/6, 70/1, 75/6, 80/1, 85/6, 90/1, 95/6, 2000/1. Source: Queensland Police annual reports.

Table 2: Police Deaths by Type, 1951–2005

Years	Attack	Traffic Accident	Other Accident
51-55		2	
56-60		2	1
61-65	2	1	
66-70	2	6	2
71-75	1	4	
76-80		2	1
81-85	1	5	
86-90	2	2	
91-95		3	
96-00	1	1	1
01-05	1	2	

Accidents

Within the set of accidental deaths, a number of sub-sets could be identified (Table 1). These were health-related collapses, a drowning and associated accident in a river, an accidental shooting and — the largest category — traffic/vehicle accidents (including a sub-set ‘vehicle stop/roadblock’).

Collapse (Health-related Complications Following a Scuffle)

Of the 35 accidental deaths, two were from a health-related complication. Both of these involved a heart attack during a scuffle. One — a commissioned officer — had an ECG two

years previously that revealed a heart condition. He had been diabetic for many years and had been under 'emotional and physical stress' just before his death. The officer was called to a disturbance at a residence where a search warrant was being executed for suspected illegal radio equipment. The suspect attacked the officers, and the commissioned officer came to their assistance, helping subdue the man. The 'heavily built man of about 6'2" in height, was carried from the house' and placed in a police vehicle. As the officer was being driven from the scene he collapsed and died. The cause of death was certified as '1. (a) Myocardial Infarction [heart attack] (b) Coronary Artery Disease, 2. Diabetes Mellitus'. The second officer physically intervened to break up a fight involving four people. A taxi was called and the officer applied force to put one of the persons in the taxi. He then collapsed and died. The officer was being treated for high blood pressure. His death, according to the Post Mortem Examination, resulted from 'Coronary occlusion' and 'Atherosclerosis'. The police report concluded that the officer's death 'resulted from natural causes aggravated and accelerated by his having to engage in a struggle'.

Drowning/Injured while Attempting a Rescue in a Flooded River

There was one drowning. The police report contained conflicting evidence about the officer's swimming ability. He was on flood duty beside a swollen river and had been drinking alcohol with a group of people, although it was not clear if he was intoxicated. Some time around midnight four of the group linked arms and walked across a submerged bridge. The bridge was an 'invert' with no rails. On the way back the officer was swept away. In the second, related, case, two police officers in a row boat were attempting to help an intoxicated person who had gone swimming in a flooded river. When an oar broke, one of the officers dived into the river and struck his head on a submerged piece of concrete. He was brought alive to the river bank but died in hospital from the injury.

Accidental Shooting

One accidental death resulted from a self-inflicted gunshot. The plain clothes officer was part of an evening drug raid on a flat. He chose not to wear a protective vest as he was designated to search the premises and was not part of the entry team. At the time of entry he remained outside nearby. There were no witnesses to his death. It is possible that the screaming of the occupant caused him to draw his gun and that the gun accidentally discharged into his chest as he 'inadvertently took hold of the draw string or toggle attached to [his] anorak'. The anorak was open. There was no evidence to support murder or suicide. It was noted that the officer was right handed but the holster was for left hand use. The gun was excessively loose in the holster, the holster was loose on the belt, and the officer wore the holster on the inside of his trousers (between the trousers and his shirt). The officer was qualified in the use of the handgun and had recently passed a refresher course. The relevant police manual stated officers 'should' wear a vest when 'responding to' incidents where weapons are likely to be present. But in this case the officers were initiating an action, not 'responding'. The Coroner's rider (related to future prevention) made recommendations for detailed risk assessments before raids and more developed procedures for determining when weapons are required.

Traffic/Vehicle Related

There were 30 accidental deaths involving a motor vehicle. Of these, there were 27 where a police officer was the driver (including motor cycles). Of these, 14 were single vehicle accidents and 13 involved two or more vehicles. Across these two categories, five cases involved an officer pursuing or probably pursuing a fleeing driver. A further two cases involved an officer rushing to an incident or call for assistance. In one case the matter was

relatively minor — a burglary — while the other was more serious — alleged child molestation. But in neither case was evidence presented that speeding was essential. There were several cases where the evidence indicated the police officer must have been driving above the speed limit but without any apparent cause. There were 11 cases where there was a clear implication that the police driver was at fault. Specific factors included speeding unnecessarily, crossing the path of another vehicle, failing to give way, failing to pay due care and attention, being affected by alcohol, or some combination of these. There were five cases — between 1951 and 1982 — where the officers' blood alcohol concentration was recorded. These were all well above the legal limit of 0.08, introduced circa 1968, and 0.05, introduced in 1982. There were a further nine cases where the officer was possibly at fault but there was insufficient information to make a clear determination. Two examples illustrate this. In one case an officer should have given way but the Give Way sign was well back from the intersection. In the second case an officer was weaving through traffic with the siren activated. He presumably expected drivers could hear him and get out of the way. The driver he struck claimed not to have heard the siren. Three multi-vehicle accidents involved an action by another driver — such as crossing a centre line — that the police officers could not evade.

Of particular note was the large number of single vehicle accidents (14 or almost half of the 30 accidents involving a vehicle). Of these, six involved the driver failing to negotiate a curve or turn. There were 14 accidents across both single and multi-vehicle accidents where the driver lost control. In numerous single vehicle cases there were no witnesses and no evidence as to the immediate cause. In some cases the Coroner or police investigator speculated that the officer may have swerved to miss an animal on the road or fallen asleep. There was one case where an officer may have fallen asleep as a symptom of malaria. Also of note was the large number of motorcycle deaths: 13 in all — or 43.3% of all vehicle related accidents. The question of helmets received very little attention in the reports. There were only six cases where it could be deduced with some confidence that the officer was not wearing a helmet and suffered head injuries. In one case the officer had an open face helmet with the chin strap fastened but the strap had broken. Seatbelts also received very little attention in the reports. There were only four cases where the officer was reported as not wearing a seat belt. There was one case where the officer had probably placed the seatbelt buckle in the wrong socket and had been thrown from the vehicle. There were another six cases where it is probable the officer was not wearing a seatbelt. Four cases involved hazardous weather conditions — such as strong winds, rain and debris on the road — or conditions such as a possible oil spill. In one case it is possible that the wind blew a motorcyclist's tie into his face. In another case it is probable that heavy rain and debris were critical factors in an officer losing control of his vehicle.

There were very few recommendations for prevention made in the traffic cases. One Coroner's rider recommended a road camber be changed where a motorcyclist lost control, but this was rejected by the local Council after tests showed the road was safe at normal speeds. Another recommended refresher training in motorcycles and greater training in the nuances of the handling of different machines. The latter case involved a motorcycle where there were claims of fishtailing at high speed and difficult gear changes on curves. There was also a suggestion that another type of motorcycle — that appeared to have locked brakes when the rider braked at speed — should have been fitted with anti-locking brakes.

Vehicle Stop/Roadblock

There were three accidental deaths involving motor vehicles where a police officer was on foot talking to the driver of a stationary vehicle. One occurred at a roadblock that was part of a search for an escaped prisoner. The incident occurred very early in the morning when it was possibly still dark. The officer was talking to a truck driver through the driver's window when struck by a vehicle coming from the opposite direction. The truck was stopped on the carriageway. The officer was standing somewhere around the centre line and had a torch and hat with a reflective band. The officer had tried to locate a reflective jacket in the police vehicle but could not find one. Among other things, the Coroner recommended the use of improved lighting and signage at roadblocks, inclusion of two reflective safety jackets in every police vehicle, and implied that police should not approach vehicles from the carriageway and driver's window.

In the second case, the officer was booking a motorist while standing about a foot onto the carriageway at the rear of the vehicle. The officer and motorist had been discussing the vehicle's signalling device. The incident occurred in the afternoon in a well lit location. The driver of the vehicle that hit the officer was convicted of dangerous driving. In the third case, the officer was hit by the side mirror of a truck after intercepting a vehicle while conducting static radar duty during daylight on a 110kph stretch of highway. The truck driver claimed not to have seen the officer. The Coroner concluded that, 'In my opinion police service training in the interception of motor vehicles particularly on high speed roadways is inadequate and substantially deficient'. He made 12 recommendations, including improvements to training and police officer visibility. Arguably the two most important recommendations were to replace static radar with speed cameras on roads with an 80kph or higher speed, and to prohibit police officers standing on the carriageway and communicating through the driver's window. Another key recommendation was that if police do operate static radar and then intercept vehicles then the interception point, out of sight of the radar, should be clearly marked with warning signs.

Attacks

As noted, 10 deaths (22.2% of the 45 cases in the sample) were attributable to an attack by another person. One involved an officer at a roadblock deliberately hit by a driver. In the remaining nine cases the officers were deliberately shot.

Run Down by Vehicle at Roadblock

In this case the officer was called out to intercept two offenders who had stolen a keg of beer and escaped in a car. The officer stopped his vehicle on the road, left the headlights on dim, stepped onto the oncoming carriageway and attempted to wave down the offenders with a torch. The police vehicle did not have flashing lights and there were no reflector vests available. Testimony from the passenger indicated the driver deliberately hit the officer, although the driver was acquitted of murder and convicted of manslaughter.

Shot by an Offender

The other nine cases of attack involved a firearm. Of the nine officers killed:

- One was shot when responding to a dispute between neighbours over theft of property,
- Seven were shot attending to domestic (or probable domestic) disturbances or assaults, and
- One died during a raid to apprehend a dangerous felon (see separate analysis below).

Of the nine deaths involving deliberate shootings, four were either officially declared as ambush or strongly appeared as ambush situations. One case occurred in bushland close to

houses. The offender had a history of making threats of murder-suicide and was mentally disturbed. On the day of the shooting he had an argument with his father and stormed out of their house. The father attended the local police station to report the matter. In the meantime police were contacted by a man who had been walking his dog in the bushland area. The man had encountered the offender who told him he had a rifle and was going to kill police and commit suicide. From that point, considerable confusion ensued about who was in charge of the multi-officer operation and where the offender was located. The immediate circumstances of the officer's death were that he appeared to have tried to search for and retrieve the gun, believing the offender was elsewhere. In the process he moved to higher ground to use his mobile phone to contact the station for an update. At that point he was shot by the offender who was in hiding. The offender then shot himself dead. The officer was hit by two shots. One 'penetrated the vest and one struck him in an unprotected area'. The Coroner was highly critical of police procedures and resources. There were insufficient hand held radios and radio channels for all officers to be in continuous contact and centrally managed. At one point three different officers could claim to have been in charge. Procedurally, officers should not have entered the bushland area because of the considerable risks and uncertainty about the offender's location. But the Incident Command System had apparently only been taught to senior sergeants taking a management training course with a view to promotion. The offender was not eligible for a weapons licence, but the rifle had been stolen. However, the Coroner noted that the ammunition may have been purchased legally and that a review should be conducted of this aspect of weapons legislation.

In the second ambush the circumstances were ambiguous. The offender called 000 requesting assistance in relation to an alleged assault against his wife. When police arrived at the flat the officer in front knocked on the door and was fatally wounded from a shot fired through a glass window or door. The motive was not identified in reports. There was a female in the flat, but the alleged assault may have been a ruse to lure police. The second officer came to the aid of the stricken officer and there was an exchange of shots with the offender. Soon after, the offender shot himself dead. It was discovered that he had been wounded by a shot from the second officer. The deceased officer was not wearing a protective vest and was shot in the chest at close range.

The third ambush case occurred around 9.30 p.m. after the officer attended a domestic dispute at a property where shots had been fired. When the offender fired a shot, a friend ran to a neighbour and called police. Police set up a cordon and began negotiating with the gunman. They believed the man was in the house when he shot the officer from close range after creeping up on police in the dark. The deceased officer was wearing a protective vest but was shot in the groin and died from blood loss from an artery. He lay where he fell for three hours before his body could be retrieved with the aid of an armoured vehicle. The gunman surrendered after a seven hour stand off. He had a licence for the weapon but also held unlicensed weapons.

The fourth ambush followed a dispute between a farmer and his employee. The employee locked himself in his farmhouse. After being called to the scene, the police officer approached the building with the farmer. As the officer walked up the front steps he was shot without warning from a window. He retreated wounded but was shot again and died soon after in hospital. The officer was not wearing a protective vest and the fatal shot entered through the upper part of his torso. The offender had previously been in a mental hospital for four years. He was acquitted of murder on grounds of insanity.

There was one case where an officer attended a house in relation to an investigation or call for assistance of a more routine nature: a dispute between neighbours involving damage and theft of property. The officer, who was not wearing a protective vest, knocked on the door of the suspect's home. The door was 'flung open' and the officer was shot in the chest. The offender was apprehended after being wounded in a shoot out with a second officer who came to the scene. The offender was an immigrant who had been traumatised in World War Two and had once attempted suicide. Psychiatric evidence however failed to prevent a murder conviction.

There were seven domestic disturbance cases. Three were discussed above in relation to ambushes. In the fourth case, the officer attempted to remove from a property a woman and children who had been assaulted by the woman's spouse. The offender ordered the officer off the property and a mild scuffle ensued. The offender then went into the house, picked up a rifle he had loaded and hidden behind a lounge chair, came outside and repeatedly ordered the officer to leave the property. The officer tried to negotiate with the offender but was shot dead. The offender then decamped and surrendered to police the next day. The offender had a history of violence, although it was not made clear if this was known by police prior to the incident.

Another domestic disturbance case was somewhat similar to the previous one. The officer accompanied a woman to her home while she packed clothes and prepared to leave her male partner. The woman informed the officer that her partner had a gun and the officer apparently accompanied him to the bedroom to retrieve it. The offender was agitated and argumentative. In the bedroom the offender produced a rifle from under the bed and shot the officer in the head.

In a further case, police were called to 'a serious domestic dispute' in which shots had been fired, including a report that two people had been shot. The offender had 'armed himself with a high powered rifle' and 'began firing indiscriminately into the street'. The plainclothes officer and his partner parked two car lengths behind a traffic branch vehicle that was parked approximately ten metres from the entrance to the units where the incident was in progress. The officer in question was not wearing a protective vest. He alighted from the vehicle and took several steps forward when he was struck in the chest by a bullet. His partner, who could not see where the shots came from, was wounded in the head from a bullet graze. The offender killed his young daughter and himself.

Shot During a Raid

The final shooting case involved a pre-dawn raid on the hideout of Queensland's most wanted fugitive. The man was also wanted for numerous armed robberies across Australia that included shooting and crippling a security guard. He was also suspected of another shooting, and was responsible for a vicious assault during an escape from Long Bay Gaol. The trail he left over years on the run revealed he was constantly prepared for police raids, with escape routes, obstacles and hidden weapons. Intelligence indicated he held a firearm beside his bed and was willing to shoot police.

The offender resided with a woman and two children. Police received information from the children's nanny, including the fact that firearms were hidden around the house. Police were able to make a detailed map of the house, and the plan was to break-in while the occupants were asleep and overwhelm the man. The entry route was through the backdoor, then through the kitchen and dining room to the main bedroom. The backdoor was smashed open but, contrary to intelligence, the door had been modified to open outwards and this made for a delay of 4–5 seconds. Officers yelled 'Police!' as they moved through the house.

A diversion was created by police outside throwing a stepladder through a window in the main bedroom. As the assault team approached the bedroom the offender began to fire a powerful cut-down rifle. The officer in question was in the lead and was shot through the bedroom door. He continued forward, opened the door and entered in the face of 'heavy calibre gun-fire coming from the centre of the bedroom'. There was an 'intense exchange of gunfire'. The place was completely dark until the torch on one of the officer's machine guns was activated. While the gun battle ensued a screaming woman was removed from the room and the bedroom light was switched on. When the firing ceased, one officer was mortally wounded, one officer was wounded from a bullet that entered his lower abdomen below the protective vest, and the offender was dead. The mortally wounded officer died in hospital from five bullet wounds. Four of the bullets had penetrated his protective vest. The Coroner made no recommendations, but concluded:

The police officers involved in this matter adopted a course of action in the planning and execution of this operation that was least advantageous to their safety, with the safety of the two small children and the adult female being obviously of paramount importance. The fact the operation was completed without any loss of life or injury of these innocent bystanders is commendable.

Firearms Related

Overall, 10 cases (22.2%) involved a firearm. The firearms cases provide few patterns with major prevention implications. Only two of the reports contained any information on the legality of ownership of the guns involved. Of the nine offenders involved, only four had histories of violence or mental illness. However, there were six cases where the officer was shot in the chest area and where it can be fairly safely assumed they were not wearing a protective vest. Only one officer was shot in the head.

Implications

The main findings of the study support the general findings of the literature: that most police deaths on duty are not the result of attacks by offenders but are accidental, and most accidental deaths involve motor vehicles. The findings also support Poyner's contention that situational prevention strategies can be usefully identified by analysing crimes and accidents in terms of 'sets' and 'scripts'.

As noted in the method section, the current study was confined to the immediate circumstances of the 45 police deaths on duty in Queensland since 1950. The scope of the study did not allow for analysis of changed procedures and their impacts. Review and modification of procedures are standard in modern police practice. It is therefore likely that some or many of the recommendations arising from the current study have already been put into practice with beneficial effects. In these cases, the findings are likely to support the continuation of such policies, pending closer analysis. This view is also supported by the data in Figure 1, showing a trend towards reduced deaths since the 1960s against a large increase in police numbers. It is also apparent that some of the more obvious preventive implications have been overtaken by wider changes such as the availability of full face helmets and compulsory wearing of seatbelts. However, these relationships were difficult to explore because of lack of data. For example, compulsory wearing of seatbelts was introduced in 1972 but there were only four cases where it was clear the deceased officer had not been wearing a seatbelt — two before 1972 and two after. Nonetheless, the current study has yielded a variety of potentially useful recommendations with general application. In addition, policy and practice are not always congruent. In such cases, policies need to be reinforced. For example, in 2003 a Queensland Government Workplace Health and Safety

Inspector shutdown a police radar trap located on the median strip of a major highway. The trap was set up without a site safety plan, and officers were waving down vehicles and then approaching the drivers in a way that was considered dangerous (Dickie & Brown 2003).

From a situational perspective, prevention initiatives in the traffic area relate largely to creating defensible space, target removal and rule setting. One obvious implication relates to officers on foot communicating with drivers who have been pulled over. The study indicates that it can be confidently asserted that police should not approach a vehicle from the driver's side when the vehicle is stopped on a road or verge; nor should police on foot attempt to halt vehicles from a carriageway. These are clear, hardly questionable, implications; supported by two Coroners' riders — although the Coroners also recommended much more systematic use of reflective vests, vehicle emergency lights and cones; and much more developed training in vehicle stops and roadblocks. These riders should be adopted, but it appears drivers can be blinded to the exact location of an officer in their path even with safety devices in operation. There was also the recommendation that speed cameras be used in place of static radar on roads with an 80kph or higher speed. This could in fact apply across the board. The practice of police clocking speeding motorists and then questioning them face-to-face seems completely outdated. Drivers can dispute the charge following receipt of a ticket by post, as with red light tickets.

There were other implications that could be drawn from the vehicle-related deaths. Target removal is the most relevant situational prevention strategy here. The high rate of fatalities involving motorcycles underscores the vulnerability of two-wheeled vehicles. Motorcycles have advantages, such as the ability to move through blocked traffic to an accident scene, but it is possible that the large number of deaths of motorcycle drivers means their use should be severely curtailed. This was strongly implied in the New South Wales study reported in the literature review (Morris 1985). Target hardening, through devices such as roll bars in vehicles, is also a possible way of saving lives that unfortunately was never considered in the reports.

The large number of vehicle-related deaths where there appeared to be some degree of lack of care on the part of the police driver underscores the need for police to conform to general road safety principles, such as sobriety and not driving when fatigued. Police work may call for high speeds at times, but the recent study of high speed pursuits by the Queensland Crime and Misconduct Commission marshalled evidence that most of the initial violations that trigger pursuits — such as traffic violations — are not of sufficient gravity to justify the high number of resulting deaths and injuries incurred by police and the public. The report recommended a much higher threshold of grounds for pursuit, a lower threshold of grounds for terminating a pursuit, an absolute speed limit of 140kph, and supervision of drivers by a senior officer via radio. It also recommended refresher training every two years that included research findings that contradict myths about the value of pursuits (Hoffman 2003). These recommendations resonate most closely with the situational prevention principle of rule setting and strengthening formal surveillance, as well as reducing emotional arousal (POP Center 2005). More generally, refresher training in procedures for risk situations was also strongly supported from the literature.

There were very few deaths where equipment problems were identified, but even these had implications. There was one issue with a hand gun that was not properly fitted to a holster, with the holster also not being properly fitted to the officer's belt. There were also some possible issues with the need for anti-locking brakes on motorcycles and bikes that handled better at speed (although this begs the question of justifiable speeding). There was also a clear need for wider availability of protective vests (target hardening) and reflective

vests, and adequate hand held radios and radio channels to allow all officers involved in critical incidents to stay in continuous communication.

The number of police deaths was relatively small in domestic disturbances and related siege situations triggered by disputes (eight of 45 cases). But these remain an area of considerable unpredictability and risk. There were only four cases where the offender had a history of violence or mental illness that may have justified a more cautious approach — although it appears from the reports that this information was probably only found out after the event. It is possible though that lives could have been saved by a more developed system of risk assessments whereby police constantly exploit developments in technology so that all known aspects of a call are linked to intelligence about suspects held in electronic databases. Routine use of protective vests might also aid prevention here. More broadly, the early identification and treatment of mental illness could contribute to reducing police deaths.

It must be said that there were clearly degrees of contributory negligence on the part of the deceased officers. The reports appear reluctant to make explicit comments in this regard in many cases. But consistent with the findings of some previous studies, in a substantial number of cases — up to 20 cases, or 44.4% of all deaths — there were strong indications that the officer may have been involved in unjustifiable risk-taking behaviour such as speeding or not paying due attention. Alcohol may have been a contributing factor in at least six cases. There were other cases where an officer's course of action was at least questionable from a safety point of view, such as trying to negotiate face-to-face with an agitated gunman or diving into a flooded river. It is possible that more information about police deaths in initial and in-service training may assist in curbing any tendencies towards over-confidence and a sense of invulnerability. Drug and alcohol testing has been introduced in several police departments in Australia and might be of benefit in preventing accidents ('control drugs and alcohol' in situational prevention terms).

A variety of additional preventive measures can be deduced from this study, including the following.

- Officers with any form of heart condition or other medical condition should be kept off frontline duties where conflict could trigger a heart attack or collapse (entry screening) (cf Morris 1985).
- Gun control legislation should cover access to ammunition ('controlling tools/weapons').
- High risk situations such as sieges or raids might call for more extensive use of protective gear including armour that covers a wider area of the body (target hardening) (see NIJ 1998:38–39).
- In situations where there is prior warning of weapons being involved police may need to stop at a greater distance from the location, allowing for greater protection from rifles and ambush ('conceal targets', target removal).
- In similar situations there needs to be better communication of risk and less effort in face-to-face negotiation. Procedures need to emphasise the importance of separating likely offenders from weapons ('set rules', 'reduce emotional arousal', 'post instructions', 'controlling tools/weapons').
- In the same situations there might also be a case for greater delay associated with the call out of SWAT teams ('extend guardianship', 'utilise place managers').
- All officers should receive equal levels of training in critical incident command and management, with clear rules about the location of overall command.

One difficult issue concerns the precedent set by one case: an officer's death during a raid to apprehend a serious violent offender. As noted, the Coroner did not question police tactics in this case. In a detailed account of the offender's criminal career and the final raid, a former NSW senior police officer and Special Weapons and Operations Squad (SWOS) team member vigorously defended the methodology of the raid against published criticisms from a former army officer. Tees (1995) argued there was no other way to capture the offender without endangering the woman and children in the house:

Entry at dawn into suspects' homes has been, and still is, the most successful method of catching a criminal. Generally, in almost every case the criminal is taken by surprise — before he can react. From my experience I can say that some of the worst criminals in NSW have been taken by resorting to this method (Tees 1995:203).

However, neither this report, nor the Coroner's, systematically analysed alternative scenarios, including whether or not there were any times when the man was home alone. The main concern of the planners was that the occupants might be taken hostage. But, given that it was known the offender had a gun beside his bed, it is also arguable that the time taken to get to him, even without the delay at the door, allowed too much scope for him to wake up and start shooting. Tees (1995:202, 173) in fact argued that 'speed and complete surprise' were essential to success, but also stated that the offender would have been alert from the moment police attacked the backdoor. The offender's space for action also may have been enlarged by officers yelling 'Police!' as they raced through the house. It was also noted that a stepladder was thrown through a window into the target's bedroom as a distraction. But the evidence indicates this was done at the same time as the door break occurred and the action may have aided the target in waking up in time to grab the gun and start shooting. The use of tear gas was rejected because of the supposed risk to the children. But there was no evidence presented that the children slept in the same room as the offender, and this is the type of information the nanny would presumably have provided. (No mention was made of stun grenades.) In short, it is not clear from the evidence available that all alternative strategies were properly considered. What the best option was will always be debatable, but the tactic of a frontal charge cannot be accepted as the only option from the evidence on the public record; particularly given it turned out to be a tragic failure with two deaths and one serious wounding.

As noted in the background section, this study is intended as a pilot for a national study on police safety, covering injuries and deaths on duty. A national study would provide a much larger sample, with better information for targeting particular preventive efforts. Specifically in relation to fatalities, it is likely that incidents involving motor vehicles would emerge as the major area requiring attention, but there may be better information in areas with only a small number of cases in the Queensland sample — areas such as ambushes and pre-existing health conditions. The Queensland study also yielded very little information on legal and illegal gun ownership in cases of shootings of police. A national study could yield more data on this and the possible effects on police officer safety of the 1996 federal government initiatives on gun control ('controlling tools/weapons').

Conclusion

The above study reported a decline in police deaths relative to police numbers over a 50 year period. This suggests that preventive strategies have been put into effect as lessons are learnt from tragedies. Nonetheless, there is still a need in Australia to systematise knowledge about the nature and causes of police deaths. The present study identified a range of specific approaches to reducing deaths that are likely to have wide application,

given the near universal nature of modern police work. Overall, the findings show the need for an extremely cautious and meticulously planned approach by police, wherever possible, to specific high-risk situations such as raids, sieges, roadblocks and vehicle pursuits. But the findings also show the importance of greater caution in more routine activities, such as speed detection, approaching stationary vehicles and driving to non-urgent calls for assistance.

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