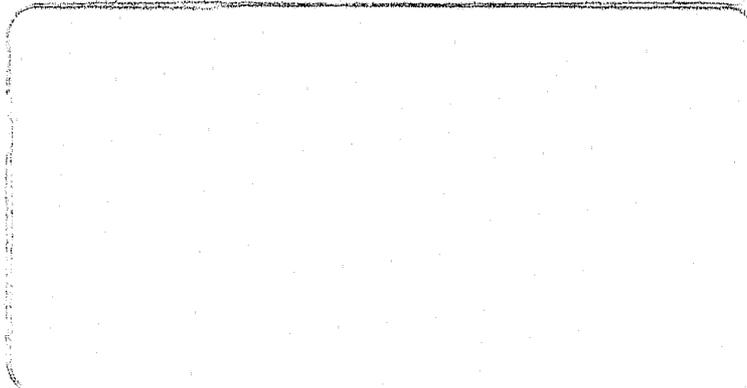




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Police Employee Health

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**Police Employee Health:
A Selective Study of
Mortality and Morbidity,
and their Measurement**

BRUCE SWANTON

AND

JOHN WALKER

Australian Institute of Criminology

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Foreword

This publication addresses a significant gap in our knowledge of the health of police officers. Granted each police organisation in Australia presents annually published public documents, namely their annual reports, wherein some similar data is available to police researchers and administrators alike. However, rarely does one have the opportunity to make cross organisation comparisons now facilitated by this publication.

I have been aware of this project for many months, possibly approaching two years, before the draft was made available to me. It will be obvious to all researchers working in the wide field of police health, that the collation of the information that appears in this volume was most time consuming, both of the researchers and at times, the supplying police organisations. As I previously mentioned, some data were readily available in annual reports, however, other data were not so readily available and so special tables or collections had to be undertaken to make it available.

Regrettably, some departments, including my own were unable to provide certain key items of information. It is hoped that by the second edition, such data will be readily available. I certainly share the authors' recommendation that all agencies will give similar emphasis to the development and analysis of health data generated within their respective organisations. Similarly, I share the authors' regret that due to a lack of data, sick leave/absenteeism could not be addressed. It is further hoped that not only enlarged Australasian, but also further overseas comparisons will become available in future editions.

The use of a ten-year time frame (1976-1985) is laudable, although it may seem to some, unduly historical. However, bearing in mind the fluctuations of small size cells, that are likely to occur due to chance had a shorter timeframe been utilised, the power of the explanation and interpretation would have been substantially diminished.

This publication commands a thorough reading in the first instance, and thereafter it will remain a useful reference resource to address specific questions regarding the state of police health, as required. The range of people who can benefit from this reference source include: personnel managers and other police administrators, health professionals, industrial representatives and researchers.

Enhancements of health data recording within police organisations throughout Australia may appear to be a low priority to some. However, in this time of diminishing budgets (in real terms) for many agencies, the need for greater accountability and better husbanding of all our resources, both financial and human, this provides useful present and future comparisons by which policies and programs designed to minimise morbidity, mortality and medical discharges of our expensively trained police employees may be adjudged.

Christine F. Lidgard
Queensland Police Department

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No study such as this is completed without the co-operation of many people. Assistance was gratefully received from the following sources: New South Wales Police, Victoria Police, Queensland Police, Western Australia Police, South Australia Police, Tasmania Police, Northern Territory Police, Australian Capital Territory Police and New Zealand Police; Victoria Public Service Board, South Australia Commissioner for Public Employment and Tasmania Public Service Board. Ron Wark, Jim Rowan, Tim Anderson, Bill Robertson, I.C. Smith, Ian Lea, Barry Gilbert, G.J. Davidson, Jack Donoghue, Don Hancock, Don Braithwaite, Bert Hutchings, Bob Potts, Alan Swinton, A.A. Grant and Peter Dawson were all helpful in the provision of departmental data and advice. John Black, formerly of New South Wales Police Pensions and Hurt on Duty Section, was particularly supportive and his herculean effort in producing mortality and invalidity data was far and away above and beyond the call of duty. Further assistance was provided by a number of individuals who kindly critiqued earlier drafts.

Lavinia Hill competently and cheerfully keyed in the various drafts of the study and also played a significant role in quality control. Karen Cornish kindly undertook responsibility for accuracy checking.

Christine Lidgard, who has contributed more than any other to the promotion of police health kindly contributed the foreword to this report. The authors are deeply indebted to Christine for her involvement in this project, including her careful review of an earlier draft. The authors alone remain responsible for the deficiencies remaining.

Contents

List of Tables	viii
Preface	xi
Summary	1
Recommendations	5
Measurement and Analysis Related Recommendations	5
Miscellaneous Recommendations	8
Introduction	11
Study Design and Method	12
Terms	13
Murder, Shooting and Bombing	13
Accidental Deaths	14
Other Causes	15
Mortality Generally	15
Assaults	15
Invalidity	15
Absenteeism	16
1. Murder, Shooting and Bombing of Police Officers	19
1.1 Murder	19
1.1.1 Measuring Police Officer Murders	22
1.2 Wounding by Gunshot and Bomb Blast	26
1.2.1 Measurement of Police Officers Wounded by Gunshot/Bomb Blast	28
1.3 Killings and Woundings by Gunshot and Bomb Blast	29
1.3.1 Role of Officer Survival Specialists	31
1.3.2 Correlations with Police Shootings	32
1.3.3 Measurement of Police Officers Shot and Bombed	34

2.	Police Officers Accidentally Killed on Duty	37
2.1	Measurement of Accidental Deaths	39
3.	Death from 'Other' Causes	41
3.1	Measurement of 'Other' Deaths	46
4.	Mortality Generally	47
4.1	Inter-Occupational Mortality Rates	53
4.2	Measurement of Police Mortality Generally	54
5.	Assaults on Police Officers	57
5.1	Measurement of Assaults on Police Officers	62
6.	Premature Termination of Service on Health Grounds	65
6.1	Control of Invalidity	70
6.2	Measurement of Invalidity	72
7.	Health Support in Police Agencies	75
7.1	New South Wales	75
7.2	Victoria	76
7.3	Queensland	78
7.4	Western Australia	78
7.5	South Australia	80
7.6	Tasmania	81
7.7	Northern Territory	81
7.8	Australian Capital Territory	81
8.	References	83

Annex A	Police Officer Populations: States/Territories, 1976-1985	85
Annex B	Resident Populations: States/Territories, 1976-1985	87
Annex C	Police Murders, Police Population, England and Wales, 1976-1985 (excluding London Metropolitan Police District)	89
Annex D	Assaults on Police, Murders, Police Population, London Metropolitan Police, 1976-1985	91
Annex E	Police Murders, Police Populations, Ontario, Quebec, Canada, 1976-1985	93
Annex F	Police Deaths, Police Population, New Zealand, 1976-1985	95
Annex G	Law Enforcement Officer (LEO) Assaults, LEO Murders, LEO Woundings, LEO Population, United States of America, 1976-1985	97

List of Tables

1.1:	Police Officers Murdered in the Course of Duty: Frequency, Annual Average and Rate per 100 000 Officers, States/Territories, 1976-1985	20
1.2:	Murder Rates Per 100 000, Selected Groups: New South Wales, Victoria and Queensland, 1964-1985	22
1.3:	Classification of Circumstances in which Police Officers are Attacked	25
1.4:	Police Officers Wounded by Gunshot/Bomb Blast in the Course of Duty: Frequency, Annual Average and Rate per 100 000 Officers, States/Territories, 1976-1985	26
1.5:	Law Enforcement Officers Wounded by Gunshot and Bomb Blast: Frequency, Annual Average and Rate per 100 000 Officers, United States of America, 1976-1985	28
1.6:	Police Officers Shot and Bomb Blasted: Frequency, Annual Average and Overall Rate per 100 000 Officers, States/Territories, 1976-1985	30
1.7:	Police Officers Shot/Bombed in Line of Duty; Persons Shot by Police: Frequencies and Annual Averages, States/Territories, 1976-1985	34
1.8	Principal Correlations between Police Deaths/Woundings and Reported Crime Rates per 100 000 Population	35
2.1:	Police Officers Accidentally Killed in the Course of Duty: Frequency, Annual Average and Rate per 100 000 Officers, States/Territories, 1976-1985	38
2.2:	Police Officers Accidentally Killed in the Course of Duty: Frequency and Category, States/Territories, 1976-1985	39
3.1:	Police Officers Died In Service Other Than by Murder or Accidental Death in the Course of Duty: Frequency, Percentage and Rate per 100 000, States/Northern Territory, 1976-1985	42
3.2:	Police Officers Died in Service Other Than by Murder or Accident in the Course of Duty: Cause, Percentage of Total Strength, States/Northern Territory, 1976-1985	44

4.1:	Police Mortality: Frequency and Rate per 100 000 Officers, States/Northern Territory, 1976-1985	47
4.2:	Police Mortality: Major Categories by Frequency, Annual Average and Rate per 100 000 Officers, States/Northern Territory, 1976-1985	48
4.3:	Mortality: Frequency and Gender, London Metropolitan Police, 1976-1985	49
4.4:	Law Enforcement Officer Accidental Deaths and Homicides: Frequencies, United States of America 1976-1985	52
4.5:	Police Officer Accidental Deaths and Homicides: Frequencies, States/Territories, 1976-1985	53
4.6:	Employee Deaths: Selected Groups, per 100 000 Employees, Australia, 1982-1984	54
5.1:	Police Officers Non-fatally Assaulted (excluding Gunshot/Bomb Blast) in the Course of Duty: Frequency, Annual Average and Rate per 100 000 Officers, States/Northern Territory, 1976-1985	59
5.2:	Assaults on Police Officers and Citizens: Rate per 100 000, Selected States, 1982	60
6.1:	Police Officers Medically Boarded: Frequency, Annual Average and Rate per 100 000 Officers, States/Northern Territory, 1976-1985	66
6.2:	Police Officers Medically Boarded: Frequency and Rate per 100 000 Officers, Selected Agencies, England and Wales, 1985	68
6.3:	Principal Causes of Medical Boardings: Frequency of Diagnosis by ICD Category, States/ Northern Territory, 1976-1985	69

Preface

The general public has a substantial stake in police health. This interest far exceeds superficial media attention to physical attacks on police officers or accidents involving police, some of which lend themselves to dramatic visual reporting. It goes, too, beyond any general desire the public may collectively possess, as the ultimate employer of public employees, that their workers enjoy humane and satisfying employment. The various governments operating within the Commonwealth of Australia, as agents of their respective publics, expend huge sums of money annually on maintaining police institutions. Roughly 85 per cent of police budgets are allocated to payments of various kinds, principally salaries and allowances, to police employees (Swanton & Hannigan 1985). Thus, in addition to popular and humane considerations, the public has a considerable economic stake in police health. If public employees are injured and medically discharged, if such injuries or conditions are compensable, if they acquire illnesses or other debilitating conditions and are discharged, if they resign prematurely, if they are killed or, if for whatever reason their health is impaired to the extent they operate at less than optimal levels of effectiveness, economic costs are incurred. When one considers those same governments employ some 37 000 sworn police officers between them, it is clear such costs can be substantial. In short, healthy police officers are more cost-effective police officers.

Police officers in recent years have developed a more than passing interest in their own health. Their well-being, psychic and physical, as well as job (and indeed life) satisfaction are now matters of broad concern. There has long been a suspicion within the police service that sworn officers are more disadvantaged in health terms than other workers. Originally based on considerations of physical danger and exposure to the elements round the clock, this perception now has an added element - stress - which has emerged as a matter of concern only over the last decade and one half. As a result, there is now a substantial body of opinion within the police community that police officers comprise a distinctly disadvantaged occupational group in terms of emotional as well as physical health. This publication aims to contribute to a more objective appreciation of the situation by officers, despite the fact that it raises more questions than it answers.

Police health measures are not well developed. Not only are employees' perceptions of their collective health not based on hard data for the most part but those data are in many cases difficult to obtain. That situation cannot change overnight and the present study does the best it can with the data available.

This study attempts variously to show data pertaining to selected dimensions of police health over time and/or compares them with those of other

occupations or other police agencies. The result is a necessarily gross but nevertheless well intentioned attempt to map selected police mortality and morbidity related data in a meaningful way.

Despite its inherent limitations it is hoped this study will serve, along with other work, such as the more finely focused studies undertaken by the Brain-Behaviour Research Institute at La Trobe University, to concentrate the thoughts of police administrators and health professionals on developing occupational health indicators and, as importantly, health and safety programs. The authors recognise a range of efforts are already under way, some of which are referred to at Section 7. However, there is a long way to go before police health programs and their associated information systems are entirely adequate to the purpose.

The stratagem has been adopted throughout the greater part of this study of arranging data within very loose comparative frameworks. The intention is not to attempt an inter-State study but to provide a vehicle through which pertinent data can be simply presented to readers and relevant questions raised in an area lacking detailed data sets. This stratagem enables the authors to inform readers, present gross descriptions of aspects of police mortality and morbidity, highlight areas for future research and formulate a series of policy and measurement related recommendations for consideration by police administrators. The true value of this study lies not in itself but in the reforms and the research it will encourage within individual police agencies over the next five years or so.

Bruce Swanton
John Walker

Canberra
September 1989

Summary

This study considered a range of police employee related health data and measures. They included:

- murder;
- wounding by gunshot/bomb blast;
- killing and wounding by gunshot and bomb blast;
- accidental death;
- death from other causes;
- mortality generally;
- assault; and
- premature termination of service on health grounds.

Sick leave/absenteeism were regrettably not addressed due to lack of data.

A large number of observations and conclusions were made, some of the more important being:

- the rate of police officer murders was low overall during the decade 1976-1985, with three jurisdictions experiencing no murders;
- an average of one police officer per police officer was murdered per year overall;
- Western Australia and New South Wales experienced the highest police murder rates but the small frequencies involved make such rates extremely unstable;
- police officers in Australia were collectively at lesser risk of murder than those of Canada and the United States of America;
- police officers in Australia were collectively at greater risk of murder than those of England and Wales, London Metropolitan and New Zealand; and
- police officers in New South Wales and Victoria were at lesser risk of murder than those of Ontario and Quebec.

Although there is much merit in analysing all police murder data (not all such murders are committed by firearm or bomb blast), a more profitable focus of study is that of shootings/bombings (non-fatal as well as fatal) of police officers generally. It was found:

- Victoria, Western Australia and New South Wales presented as the most dangerous police jurisdictions (Northern Territory is ignored in this context due to the instability of its decennial rate);

- the situation is vastly less serious than that obtaining in United States of America; and
- nevertheless, the incidence of shootings/bombings of police officers in Victoria was high.

The desirability of developing officer survival expertise in police agencies was noted, including investigation of fatal attacks and policy development. A range of benefits could ensue, in particular, the upgrading of members' knowledge in relation to safe practices related to attacks and physical safety generally. In some agencies this approach is well advanced, whereas in others the subject receives considerably less emphasis.

The number of police officers accidentally killed on duty was extremely small and some satisfaction is warranted in Queensland, Western Australia, Northern Territory and Australian Capital Territory on this account, even though there is no indication the low rates recorded reflected focused reductive strategies. Even so, the Canadian rate was well below the overall rate obtaining in Australia and thus scope for remedial action might exist in some jurisdictions.

Greatest loss of police life occurred as a result of illness and non-duty related accidents. The degree of association between such deaths and occupation was not considered due to the complexity of such an undertaking quite apart from the fact that available data would have undoubtedly been insufficient for the purpose, other than to note a connection exists in an unknown number of cases:

- police health generally in New South Wales and Victoria, as measured by disease and accident, was better than that of the male community aged 20-59 years (comparison was not possible in respect of other jurisdictions) but ill-health retirements need to be taken into account when interpreting this statistic;
- major contributions to such deaths included:
 - motor vehicle accidents,
 - ischaemic heart disease,
 - neoplasms (cancers), and
 - suicide;
- four hundred and thirty-five police officers died from all causes throughout the States/Northern Territory during the decade 1976-1985, amounting to 0.15 per cent of police staff;
- the comparable figure for London's Metropolitan Police was 0.10 per cent;

- police deaths resulting from homicide were either equalled or exceeded by accidental deaths, unlike the United States of America where homicides far outweigh accidental deaths; and
- police officers are rare employees in that some are murdered in the line of duty but, in terms of mortality generally, persons working in mining, quarrying, transport and communications, experience substantially higher work-related death rates.

Non-fatal assaults can be non-damaging but, equally, some are extremely damaging, lost eyes and paraplegia being only some of the outcomes.

- For some reason(s) not identified and despite a low reported assault rate in its community generally, Tasmanian police officers appeared to experience a relatively high rate of assault. It seems probable Northern Territory police officers were also subjected to a high assault rate.
- Western Australia, on the other hand, appeared to enjoy a far lower assault police rate. Caution should be exercised in relation to such data due to differences in reporting systems.
- Only in the case of South Australia was a clear increase in assault rate evident over the decade.
- Relative to United States of America:
 - Western Australia police officers enjoyed a low assault rate,
 - New South Wales, Victorian and South Australian police officers experienced a roughly similar assault rate, and
 - Tasmania and Northern Territory police officers appeared to incur a somewhat higher assault rate.
- Police officers in Victoria, Western Australia, South Australia and Tasmania were all shown to experience considerably higher assault rates than members of the community generally.

The number of police officers who die in service is affected by medical discharges. Ill-health retirements amounted to 0.81 per cent of the States/Northern Territory police strengths for the decade:

- ill-health retirements represented the second greatest source of personnel wastage;
- Victoria Police experienced by far the greatest number of invalidity discharges; it has subsequently acted decisively to improve the physical, mental and emotional quality of recruits in order to reduce the problem;

- major reasons for invalidity include (subject to some variation between States):
 - mental disorders (including stress),
 - ischaemic heart disease,
 - hypertension,
 - back and neck problems, and
 - accidents resulting in injury; and

- in no instance did police deaths resulting from homicide exceed those occurring as a result of accidents.

Recommendations

Different police agencies are at different levels of development in respect of the various matters commented upon in this publication. Recommendations and suggestions are thus expressed in very general terms on the understanding that their relevance to individual police agencies is variable.

The full range of data, findings and recommendations, contained in this publication can only be fully appreciated by reading it thoroughly. Thus, police personnel managers, health professionals, various specialists and staff representatives are faced with that task. This short list of selected recommendations is provided for those who do not have time to read the entire publication but who, nevertheless, wish to be informed of some of its principal conclusions.

Most recommendations shown below refer to mortality and morbidity measures and analysis. Those recommendations not directly related to measurement are displayed separately. Some recommendations are necessarily expressed in very general terms whereas others are quite precise. Some overlap with the preceding summary of findings is unavoidable.

The simple measures recommended here provide important indications of police mortality and morbidity but they provide one element of analysis only. It is recognised that all agencies utilise a range of analytical elements including coronial reports and internal investigations, as appropriate.

Measurement and Analysis Related Recommendations

It is recommended that:

- All police agencies develop suitable measures and associated reporting systems with regard to the listed phenomena as impacting their officers:
 - absenteeism/sick leave,
 - murder, by all modalities,
 - killing by shooting/bombing,
 - wounding by shooting/bombing,
 - shooting/bombing generally,
 - accidental death,
 - death resulting from 'pursuits',
 - 'other' deaths in service and off-duty accidents,
 - total police mortality,
 - shots fired at police,
 - non-fatal assaults, excluding firearms and bombs, and
 - invalidity.

Such records could be computerised without great inconvenience and they would quickly indicate problem areas, if any, thus permitting early interdictive measures. Sick leave could usefully be incorporated into such a record system, too.

- Murders of police officers be analysed in terms of: (1) victim, (2) temporal, (3) situational, and (4) offender, characteristics - as indicated at s.1.1.1.
- Homicides of police officers be clearly specified in crude frequencies/rates according to whether they were inflicted by: (1) members of the community, (2) police officers, or (3) self, and published annually in agency reports - *see* s.1.1.1.
- Police agencies calculate a ten-year annual mean for such deaths as a crude base rate and that each year's homicides be incorporated in a ten-year rolling mean to be compared against the said base rate, and such information be published annually in agency reports - *see* s.1.1.1.
- Woundings of police officers by firearm/bomb blast be clearly specified in crude frequencies/rates according to whether they were inflicted by: (1) members of the community, (2) police officers, or (3) self, and published annually in agency reports; and that definitions of firearms be clearly specified in associated criteria - *see* s.1.2.1.
- Agencies calculate a base ten-year annual mean for such woundings as a crude base rate and that each year's woundings from firearm/bomb blast be incorporated in a ten-year rolling mean to be compared with the said base rate; and that such information be published annually in agency reports - *see* s.1.2.1.
- Police agencies develop an intensity scale against which officers' woundings from firearms and bomb blast can be classified - *see* s.1.2.1.
- Police agencies record the number of events in which shots are fired at police regardless of whether officers are struck and that such data be published annually in agency reports - *see* s.1.3.3.
- Police agencies record the number of shots, by firearm category, fired at police, regardless of whether officers are struck, and that such data be published annually in agency reports (the margin for error in such a count is recognised) - *see* s.1.3.3.
- Police agencies record the number of shots fired by police officers, by firearm and situational category, and that such data be published annually in agency reports - *see* s.1.3.3.

- Police agencies record the number of persons, police and non-police, shot by police, and that such data be published annually in agency reports - *see* s.1.3.3.
- Police agencies record the number of explosive devices detonated in the vicinity of police installations, regardless of whether officers are hurt, and that such data be published annually in agency reports - *see* s.1.3.3.
- All accidental deaths of police officers be clearly specified in crude frequencies/rates, by major International Classification of Diseases (ICD) categories, and that such information be published annually in agency reports - *see* s.2.1.
- Police agencies develop classifications of accidental deaths - *see* s.2.1 and s.3.
- Police agencies record crude frequencies/rates of accidental deaths, and that such information be published annually in agency reports - *see* s.3.1.
- Police agencies record crude frequencies/rates of all police deaths, by line of duty/off duty, and that such information be published annually in agency reports - *see* s.4.1. The grossness of this measure is appreciated, but it not only provides personnel administrators and health professionals with a broad trend but, also avoids definitional difficulties, such as whether a particular death was a murder (as defined here) or an accident.
- Police agencies record crude frequencies/rates of all non-firearm assaults on officers, by major category, and that such information be published annually in agency reports - *see* s.5.1.
- Police agencies record whether violence is used against police in respect of each arrest and that such data be collated at local level for utilisation by patrol level officers.
- Police agencies develop an intensity scale in respect of non-firearm assaults.
- Police agencies calculate a base ten-year annual mean in respect of non-firearm assaults on officers and that each year's assaults be incorporated into a ten-year rolling mean to be compared with said base - *see* s.5.1.
- Police agencies record crude frequencies/rates of invalidity discharges, and that such information be published annually in agency reports - *see* s.6.2.

- Police agencies record invalidity discharges, by major ICD category (see Table 6.3), and that such information be published annually in agency reports - see s.6.

Individual police agencies will naturally make their own decisions in respect of those recommendations (or variations thereof) they have not already implemented. The increasing emphasis on 'value for money' in public sector accounting will naturally be present in the minds of administrators, not only in respect of possible benefits but also of the additional resources necessary to enable compliance. Certainly, considerable effort might be necessary to design and implement an effective data collection system. But, once that 'one-off' task is completed a computer program could be written to perform most of the calculations involved in these recommendations. Initial apprehension of possible implementation costs should not be permitted to impede objective consideration of the above recommendations presented in the cause of improved occupational health and safety. One further caution in this regard concerns the computation of costs and benefits. There is a growing awareness of the limitations existing in many costing programs. Thus, as with environmental impact costing exercises, parameters should be set as widely as possible.

Miscellaneous Recommendations

- All police murders and accidental deaths should be the subject of agency internal inquiry:
 - unless a certificate is issued by a nominated officer to the effect a departmental inquiry is not necessary by virtue of reasons specified in the certificate; and
 - officer survival, health and staff representation interests be involved in such inquiries - see s.1.1.1.
- Officer survival resources be developed and utilised at both policy and practical levels - see s.1.3.1.
- Continuous officer survival training be provided at local/district level - see s.1.3.1.
- Officer survival information be continuously disseminated among memberships, e.g. the established danger of placing arms in vehicle windows - see s.1.3.1.
- Police agencies consider development of preventive programs in respect of heart disease, cancer, psychiatric disorders, motor vehicle accidents and stress reduction - see s.2.

The authors recognise that current information systems are not always well suited to the sorts of initiatives suggested here. Increasing computerisation and flexibility of programming will, however, rapidly make such measures easily achievable.

The question also arises of how great a degree of detail should be presented in an agency's annual report. Some prefer overviews while others favour detail. The authors feel that governments and public alike deserve detailed accounts of how their investment in police services is being handled. Thus, in the absence of auxiliary reports, such as statistical reviews of crime, it is felt reasonable to recommend the degree of detail outlined above with regard to annual report entries.

Introduction

Policing is a tough industry. The fact that street police officers are on occasion subjected to severe physical violence has long been recognised in western societies and is well recorded in our social history. In more recent times occupational health researchers have identified emotional and physiological consequences for police officers deriving from workplace stressors. It is evident such stresses occur not only in the streets as a result of danger and the elements but also in offices as a result of unsatisfactory administrative systems and other practices (Swanton 1983).

Television coverage of public violence such as the Russell Street Police Complex bombing and the Hoddle Street massacre in Melbourne, the Hilton Hotel bombing in Sydney, rioting bikers at Bathurst and Aborigines at Moree, for example, provide graphic evidence of some of the dangers and stresses to which police officers are subjected.

There is, too, substantial anecdotal evidence among metropolitan police officers of the east coast States that the streets and other police workplaces are becoming physically more dangerous and emotionally more demanding than previously. Such evidence is offered not only by younger and perhaps impressionable police officers (whose experience of the climate of violence existing in earlier years is in any event limited) but also by experienced, longer-serving detectives and general duty supervisors.

These impressions are difficult to quantify although supported by some evidence. For example, Victoria Police reported an 84 per cent increase in shots fired by criminals in the period 1983 to 1985 compared with the period 1981 to 1983. Not surprisingly, the increased number of shots fired was accompanied by an increase in the number of persons shooting at police. For the same period there was, too, an increase of more than 50 per cent in the number of shots fired by police for whatever reason. Not all shots fired, of course, occur in self-defence situations. The evidence is not confined to Victoria. In South Australia, for example, seven sieges are said to have occurred at Whyalla during a 12-month period. Although, fortunately, no one was hurt during those sieges the potential for injury was constantly present and such experiences contribute to the general sense of risk perceived by local operational officers.

Those who take the trouble to talk to metropolitan field personnel about such matters will hear their concerns eloquently expressed. Perceptions of workplace violence, physical injury and stress lie at the core of such concerns. Newspapers provide plentiful evidence of these expressed concerns in often dramatically captioned articles such as 'Stressed Police are Caged Tigers' (*Herald* 19 May 1986); 'Attacks on Police Officers' Children, conference told' (*West Australian* 21 May 1986); 'Sons and Daughters who Die on Duty' (*Sydney Morning Herald* 23 April 1986); 'Policeman Throttled after Car

Chase' (*Courier Mail* 6 May 1986); and 'Man Fired Twice at Police, court told' (*Courier Mail* 15 October 1986).

Study Design and Method

No satisfactory model of employee health exists within the occupational health discipline. In the absence of such a model researchers are obliged to address a range of measures which are frequently limited in their application and which lack conceptual cohesion. A number of important and discrete measures related to police health are fortunately identifiable. Another constraint imposed on this study was that few relevant data either already existed in tabulated form or were capable of being compiled with little strain on already overtaxed police administrations. Unfortunately, absenteeism data, probably the prime general measure of organisations' health were not available in respect of any police agency. This blank spot in the various personnel information systems has been apparent to administrators for some time and all police agencies are currently attempting to devise adequate sick leave recording systems as well as reducing possible abuses of the privilege.

With these conditions and constraints applying, the following mortality and morbidity phenomena were selected:

- officers murdered on duty;
- officers wounded by gunshot/bomb blast on duty;
- shootings/bombings;
- officers accidentally killed on duty;
- officers dying of natural causes while in service;
- officers' mortality, all causes;
- assaults on officers other than those by gunshot and bomb blast; and
- officers discharged on invalidity grounds.

The various measures, as already noted, do not sum to a conceptual whole thereby allowing broad conclusions concerning the generality of police officer health. Even so, the various findings do permit a fragmented picture of the state of police health during the decade addressed. Post impressionist, perhaps, rather than classical, but nevertheless sufficient to be of utility.

Relevant data were collected from published sources where available. In addition, certain data were requested from individual agencies. Some were provided and some, in a few cases, were not. It has not been possible to check independently the accuracy of police-provided data for the most part, however, a draft of this report was distributed to all concerned police agencies for comment as part of the accuracy checking process.

Data were also obtained in respect of selected other employer groups, police as well as non-police, with a view to providing limited inter-occupational and inter-agency comparisons, where available and appropriate. For the most

part, however, increases or decreases in respect of the various phenomena addressed were measured within agencies over time.

Terms

The terms **police officer**, **officer** and **police employee** as variously employed in the text refer, unless otherwise indicated, to attested members of the following agencies: New South Wales Police, Victoria Police, Queensland Police, Western Australia Police, South Australia Police, Tasmania Police, and Northern Territory Police. Australian Capital Territory Police was amalgamated with other bodies in 1979 and thus data in respect of ACT poses problems. Reference is nevertheless made to ACT police experience, where possible. The terms also apply to police officers qua police officers unless otherwise indicated; for example, police officers shot off duty and in circumstances unrelated to their work do not qualify as being murdered in the course of duty.

For present purposes, the term **police health** is broadly defined as comprising all factors affecting the psychological and physical wellbeing of police personnel, with special - but not exclusive - reference to their ability to effectively perform their assigned duties under normal conditions (Swanton 1979, p. 222). Thus, diseases and conditions discussed in the following pages are not exclusively work-related. This definition is distinct from that of occupational disease in which work constitutes at least one factor in each instance of disease.

In the context of this study, **murder** refers to the deliberate killing of police officers and deaths of police officers resulting from actions capable of random killing, such as bomb blasts.

Murder, Shooting and Bombing

The murder of police officers qua police officers by whatever means and their shooting and bombing represents a nearly unique civil occupational hazard. Gross international comparison of police murder statistics suggest police officers of Australia and New Zealand are positioned close to the median (Zunno & Lester 1982).

Considerable variation exists in police officer shootings between agencies, between regions and between operational specialities. For example, at a national level it can be said that police officers in Australia are statistically at greatest risk of being murdered when engaged in resolving domestic disputes and yet that situation actually only obtains in two of seven jurisdictions over a 20-year period. No murders occurred as a result of 'domestics' in the other jurisdictions (Swanton & Psaila 1985). The nature of the risk clearly varies considerably from agency to agency, thereby making national descriptions concerning such matters misleading. Furthermore, small frequencies result in unstable rates and so further obscure analysis.

Measurement of casualties sustained through shooting and bombing is achieved by frequency counts and the calculation of crude rates. The reportability rate is very high. Measures attempted include murder, wounding by firearm or bomb blast, all shootings and bombings. Comparisons with other groups include prison officers and males in the general community and, woundings of U.S. police officers.

Shootings and bombings of police officers are sometimes random events, in the sense that chance plays a substantial element in determining whether a shot fired actually hits someone, or that persons in the general vicinity of an explosive device are actually close enough to it at the time of its detonation to be harmed. Thus, intent to do harm to particular individuals is not always present in such cases. Practitioners, of course, are aware of their risk, being sensitive to the entire potential for danger rather than just incurred casualties. However, casualties are the physical product of dangerous events and their numbers represent the best measure of risk from murder and wounding by firearm or bomb blast. It is highly desirable that numbers and rates of such occurrences are made available to police employees so as to pitch officers' perceptions of risk as acutely as possible.

The relevance of murder and wounding by gunshot and bomb blast to police health is readily apparent. Murder, that is, mortality, is at the top of the scale. Woundings from gunshot and bomb blast range from severe incapacitation, such as quadriplegia, through severe arterial and organic damage to minor flesh wounds. It has been known for organic damage resulting from gunshot wounds to result in death some years later. The time delay is responsible for at least two such deaths not being classed as murder. All non-fatal shootings and bombings are accompanied by post incident trauma of varying degrees depending on the subject, and which in some cases is seriously debilitating.

Accidental Deaths

Most occupations suffer members' deaths either as a result of their being killed in the course of duty by some misadventure (rather than malice) or in non (at least directly) job-related conditions, even though the means may be sometimes the same, for example, fatal motor vehicle accidents, which can occur both on and off duty. This latter category includes death from disease such as cancer or coronary occlusion, whether or not occurring in duty time. Linkages between job incurred stress and practitioner mortality and morbidity are noted, but were not addressed here for several reasons. In most cases, associated data were not available to the researchers and, in any event, the level of research required would be more detailed than the very general level of analysis applied here. Christine Lidgard touches on the subject in her foreword to this report.

Other Causes

The relationship of 'other deaths' with health is at one extreme of the health scale, that is, mortality. Some deaths, such as motor vehicle accidents, drowning or electrocution, may be closely job-related or they may be random events. Thus measures of 'other deaths' attempted here include both those deaths clearly associated with duty, and those not so clearly associated. Comparative community and public service data are provided where available so as to place levels of mortality risk in wider social and organisational contexts.

Mortality Generally

The opportunity was also taken to consider police mortality generally. A decennial table of crude mortality rates per 100 000 officers was calculated.

Assaults

Being assaulted in the course of one's duty is by no means unique to police work but, assaults are certainly more of a problem to police officers than most other workers. Gross levels of disadvantage can be measured by means of simple rates. It is nevertheless recognised that the defining and recording of assaults is a difficult undertaking in respect of both police and the community generally.

The nexus between assaults and health is wide-ranging. Some assaults although not involving firearms still result in massive physical trauma, ranging from brain damage, through eye loss and multiple incisions, to broken bones, contusions and emotional harm. In short, the products of assaults range from very serious to slight. It should be borne in mind, too, that assaults discussed in this context do not include those resulting in death or resulting from gunshot or bomb blast. All assaults are unpleasant and painful, although not all result in significant post incident trauma. As with shootings, chance plays a major role in determining major or minor injury.

Invalidity

All occupations suffer human fallout resulting from ill health, the police occupation is no exception. The linkage between on-the-job experience, whether in the streets or merely within the organisation itself, and personal health is recognised although not directly inquired into here. Ill health may be experienced by any worker and its determinants are often complex and varied. It may in fact be preceded by assault or shooting/bomb blast or, alternatively, it may be the result of illness that the worker would have suffered regardless of occupation. Thus, the level of organisationally or occupationally specific disadvantage experienced by those police officers required to terminate their careers prematurely due to ill health is difficult to assess. Nevertheless, change over time and inter-group comparison provide

gross measures of increase/decrease and relative advantage. The measure of invalidity employed in this study is that of crude rates of officers prematurely terminating their service on grounds of ill health. Comparative public service data are provided where available so as to place police data within a broader public sector context. Regrettably, many public service personnel data collections are fragmented and only limited use can be made of them. Limited reference is also made to the experience of British police.

The relationship of invalidity separations to mortality is direct in that invalidity involves premature retirement obliged by either physical or psychological conditions sufficiently severe to contraindicate continued employment. Were such officers permitted or required to remain in service a proportion of them would most probably die in service thereby impacting organisational mortality rates.

Absenteeism

One of the deficiencies of this study is its failure to address the issue of absenteeism, principally, sick leave - both uncertified and certified. Regrettably, sufficient base data were not available to permit such study. Sick leave holds profound implications for members' health generally, management practices, job satisfaction and operational effectiveness. A fraction under one-third of police sick leave in Queensland between 1979 and 1988, for example, related directly or indirectly to stress and stress-related symptoms.

All police managements claim serious personnel shortages and yet large percentages of members are absent from duty at any one time due to short term sickness. Chief Inspector B.D. Evans (1987) criticises police in Britain, some of whom apparently take uncertified sick leave days immediately prior to public holidays. Some members closer to home claim they are obliged to take sick leave because obligatory overtime cuts severely into their rest days. Evans took out data relating to selected police bodies in England and Wales and found that sick leave consumed between 5.37 per cent and 9.96 per cent (according to agency) of available working days. Figures of this magnitude require urgent examination. Quite apart from claims of employee abuse, appropriate management practices and administrative procedures can undoubtedly bring about considerable reduction and thereby make a substantial contribution to relieving personnel shortage problems and the consequential stresses on officers. The other side of this particular coin, of course, is to establish the causes of reported ill health - especially with a view to establishing whether police are disadvantaged vis-a-vis other workers.

If State/Territory police experience reflects the British experience, similar attention is indicated here. All agencies are in fact grappling with the problem in their various ways and we await their efforts with interest. There

is probably no more pressing issue in police personnel administration at the present time.

1. Murder, Shooting and Bombing of Police Officers

Murders of police officers are mostly shocking affairs. They tend to adversely affect the emotional climate of police agencies and they worry the public. Some citizens wonder if police officers can be murdered, what chance do non-police persons stand? In short, community fear of violence increases - even if temporarily. It has even been speculated such murders contribute to lowering the threshold of violence in society. Dr Barry Gilbert, Director of Medical Services, Victoria Police, for example, suggests fatal shootings, such as those of two young Constables in South Yarra in October 1988, contribute to a community attitude which accepts extreme violence as an almost regular occurrence in Victorian society.

Most murders of police officers involve use of firearms or bomb blast and during the period covered by this study all fell into this category. The distinction between murders and woundings is a fine one in the context of both firearms and bombs. A few millimetres can make the difference between death and wounding in terms of where a projectile strikes. A few metres in distance between offender (or bomb) and victim can also make the difference between life and death. Legally, of course, the distinction is total. Thus this section addresses three categories of shooting/bombing: (1) murder of police officers qua police officers, (2) woundings of police officers qua police officers, and (3) all shootings/bombings. The third category is undoubtedly the most effective of the three as a measure of police health as it involves shootings of police officers by other police officers but the other two are important in their own ways, especially with regard to establishing levels of occupational risk.

1.1 Murder

A total of eleven police officers were murdered qua police officers in the course of duty in five of the six States for the ten-year period 1976 to 1985 inclusive (*see* Table 1.1) thereby producing an average of 1.10 murders a year overall. When one considers the number of police officers on strength over those years (working three shifts a day, seven days a week) and the sizes of the respective populations they serve, the average annual murder rate in each police jurisdiction can be seen to be mercifully small in absolute terms, that is, 0.40 in New South Wales, 0.30 in Victoria, 0.10 in Queensland, 0.20 in Western Australia, and 0.10 in South Australia. Annual averages in respect of Tasmania, Northern Territory and Australian Capital Territory were zero.

When all staff mutations are considered rather than numbers of personnel counted at a particular time each year, the situation is seen to be even more favourable.

TABLE 1.1: POLICE OFFICERS MURDERED IN THE COURSE OF DUTY* : FREQUENCY, ANNUAL AVERAGE AND RATE PER 100 000 OFFICERS, STATES/TERRITORIES, 1976-1985

YEAR	NSW	VIC	QLD	WA	SA	TAS	NT	ACT
1976	0	0	0	0	0	0	0	0
1977	1	0	0	0	0	0	0	0
1978	1	0	0	0	0	0	0	0
1979	0	1	0	2	0	0	0	0
1980	1	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	0	1	0	0	0	0	0	0
1983	0	1	0	0	0	0	0	0
1984	1	0	1	0	0	0	0	0
1985	0	0	0	0	1	0	0	0
TOTAL	4	3	1	2	1	0	0	0
AN. AV.	0.40	0.30	0.10	0.20	0.10	0	0	0
DEC. RATE	4.29	3.88	2.40	7.59	3.23	0	0	0

* Does not include accidentally fatal shootings of one police officer by another.

Source: Police departments

Decennial murder rates per 100 000 officers in those jurisdictions experiencing murdered police officers were 4.29 in New South Wales, 3.88 in Victoria, 2.40 in Queensland, 7.59 in Western Australia and 3.23 in South Australia.

Thus, New South Wales and Western Australia exceeded the national decennial rate of 3.79 per 100 000 officers. Readers should bear in mind that the small frequencies involved result in unstable rates. Thus, although the rates shown here were in fact achieved, one or two murders more or less in all States would have significantly changed the situation, particularly rank ordering of jurisdictions.

In the same vein, it should be remembered periods selected for study may vary substantially in terms of rates from others when frequencies of such smallness are involved. Of particular importance is the fact that such small frequencies make statistical analysis extremely doubtful.

In international terms, over the period 1970-1977 inclusive, Frank Zunno and David Lester (1982) calculated that police officer murders in Australia produced a rate of 4.70 per 100 000, while the comparable figure for New Zealand was 3.33 per 100 000 police officers. In the list of 45 countries for which they calculated police officer murder rates Zunno and Lester ranked

Australia 19th in descending order while New Zealand ranked 22nd - both being close to the median. For the period reviewed here, the decade 1976-1985, the murder rate per 100 000 police officers qua police officers across all States/Territories (making certain assumptions concerning ACT police strengths from 1980 to 1985) was 3.62. The comparable decennial rate for New Zealand was 2.20 per 100 000 officers.

A further point of international comparison is that of Canada. During the same decennial period as that covered in this study, a national total of 36 police officers were murdered in the line of duty giving a rate per 100 000 officers of 6.83, almost twice that of Australia. In Canada's two most populous Provinces, Ontario and Quebec, decennial police officer murder rates were 8.25 and 7.62 per 100 000 officers respectively; both being higher than that suffered by any State or Territory in Australia.

In the United States, 1976-1985, 921 law enforcement officers were murdered, giving a rate per 100 000 officers for the decade of 26.78. The American rate is almost seven and one-half times greater than that for Australia but, it must be remembered the American figure is inflated by an unknown number of non-police law enforcement officers as well as containing a number of deaths only loosely related to duty which facts considerably bolster the American rate. Despite these reservations, the murder rate of on-duty officers in the United States, is undoubtedly far greater than that obtaining in Australia.

A final point of comparison regarding murders of police officers is that of Great Britain. In England and Wales (exclusive of the Metropolitan Police District) the murder rate per 100 000 officers for the same period was 1.43 and in London's Metropolitan Police Force the murder rate was almost exactly double at 2.85. Four States, New South Wales, Victoria, Western Australia and South Australia, exceeded the Metropolitan Police rate.

Police officer murder rates for Australia, New Zealand, Canada, England and Wales, and United States of America correlate closely and positively with homicide rates for those same polities. According to Mukherjee et al. (1987, pp. 20 & 22), Australia's average homicide rate for 1972-1985 was a little below four per 100 000. Canada's rose from about four to almost seven per 100 000 during the same period. New Zealand rates rose from just over one to almost three. The United Kingdom figures ranged between one and two per 100 000, but United States average was around nine per 100 000.

While one recognises other occupations suffer relatively greater losses of life, for instance underground coal mining involves far higher mortality, the critical fact is police are one of the few occupations in which practitioners qua practitioners are subjected to murderous and other malicious attacks.

Police officer murder rates in selected States were compared over a 22-year period with those of: (1) prison officers, (2) all males, and (3) all males 19-

60 years inclusive (*see* Table 1.2). It should be noted when reading the Table that murders of both police and prison officers occurred in only three polities - New South Wales, Victoria and Queensland - over a period of 22 years. The relatively small proportions of females serving in both police and prisons services makes comparison with community male populations more appropriate than comparisons with community generally.

TABLE 1.2: MURDER RATES PER 100 000, SELECTED GROUPS: NEW SOUTH WALES, VICTORIA AND QUEENSLAND, 1964-1985

GROUP	NSW	VIC	QLD
Police officers	6.29	3.32	5.82
Prison officers	8.53	6.79	8.20
All males	2.12	1.80	2.27
Males 19-60 years incl.	2.85	2.44	3.04

Sources: Police departments, Prison departments,
Australian Bureau of Statistics

In all these cases, police officer murder rates per 100 000 for the period were in excess of those for males in the general community, regardless of age composition. Achieved prison officer murder rates were higher than those for police officers, though, in all three jurisdictions. Statistical significance is not claimed in respect of these findings as frequencies of both police and prison officer murders were so small. It will be noted, too, murder rates of police officers over the 22-year period 1964-1985 shown at Table 1.2 were, in all three cases, higher than those shown at Table 1.1 for the decade 1976-1985. Such rates, as already noted, depend to a degree upon the time frame within which they are calculated.

Generally speaking, the larger an agency the greater the number of officers murdered, which is hardly surprising, but the trend does not hold when murders are calculated as rates per 100 000 officers. Bearing in mind the limitations of the frequencies involved, it is nevertheless reasonable to posit police officers are least likely to be murdered in Tasmania, Northern Territory and Australian Capital Territory.

1.1.1 Measuring Police Officer Murders

Murders of police officers require to be measured for several reasons which also apply to other mortality and morbidity phenomena, including the need to record numbers of officers lost by such means for purposes of:

- assessing workplace risks;
- devising remedial strategies, including procedures, equipment design and procurement;
- manpower planning; and

- developing training materials.

Crude measurement of police officer murder rates is achieved by the collection of individual cases but, obviously, associated data are necessary if analysis is to be attempted. A checklist of line-of-duty victim characteristics, for example, temporal, situational and offender is offered below:

- victim -
 - gender,
 - marital status,
 - age,
 - rank,
 - length of service,
 - assignment, e.g. patrol one or two officers,
 - branch,
 - posting,
 - in company,
 - where injured;
- temporal -
 - time of day,
 - day of week,
 - month,
 - season,
 - year;
- situational -
 - weapon/means,
 - own weapon/offender's weapon,
 - in company/not in company,
 - circumstances (see Table 1.3 for categories),
 - distance between officer and assailant,
 - number of shots fired and by whom,
 - illumination,
 - location;
- offender -
 - gender,
 - age,
 - in company,
 - known.

Data collections of this comprehensiveness permit useful descriptions of all shootings and bombings. On top of this, though, every shooting of a police officer should be the subject of a departmental inquiry in which operational procedures, legal ramifications, officer behaviour, training implications, etc. are all explored. Such inquiries are standard procedure in some overseas agencies and might, depending on local arrangements, be undertaken in

close cooperation with coroners' officers (where appropriate) and officer survival instructors. The involvement of officer survival personnel in such inquiries is predicated on the view they should play a key role in the development of remedial strategies and procedures as well as imparting such knowledge to both student and serving officers. More will be said concerning this important issue in subsequent pages.

It is important individual agencies be clear as to the duty status of its murdered officers as the implications of such status for training and policy are considerable.

First, it is widely accepted officers travelling directly to and from duty are considered as being on duty for all practical purposes. Officers who are technically off duty at the time of an event but who make the decision to act in consequence of their oath of office as a constable are also deemed to be on duty for most legal and measurement purposes. It is also reasonable in a measure such as this to include cases of officers who are attacked as a direct consequence of their status as a police officer or who are attacked as a consequence of formal actions taken by them previously. Conversely, an officer shot by a jealous lover should not normally be included in a police officer murder measure due to the irrelevance of occupation to the event, regardless of whether the killed officer was on rostered duty.

TABLE 1.3: CLASSIFICATION OF CIRCUMSTANCES IN WHICH POLICE OFFICERS ARE ATTACKED

Primary categories	Secondary categories
1. Disturbance call	1.1 domestic disturbances 1.2 person with gun, excluding 1.1 calls 1.3 other, brawls, etc.
2. Effecting arrest	2.1 breakings in progress pursuing suspected breakers 2.2 robberies in progress pursuing suspected robbers 2.3 drug-related matters 2.4 escapees (merely because they are escapees) 2.5 other
3. Civil disorder (including mass disobedience, riots, etc.)	
4. Handling, transporting, custody of prisoners	
5. Investigating suspicious persons, circumstances (including building searches)	
6. Ambush	6.1 planned 6.2 unplanned
7. Mentally deranged	
8. Traffic pursuit/stop	

Source: Law Enforcement Officers Killed and Assaulted (LEOKA), modified

Murder as employed in this context is best restricted to malicious fatal attacks on officers in the line of duty by any means. Officers maliciously killed outside these guidelines are best recorded and measured under the category of officers dying from 'other' causes (*see* Section 3).

It is recommended agencies record in their annual reports the number of officers murdered each year. Given the small numbers involved, it is recommended ten-year rates be calculated, as in Table 1.4, and then

employed as bench marks against which ten-year average rolling rates can be compared annually.

1.2 Wounding by Gunshot and Bomb Blast

The numbers of police officers qua police officer wounded by gunshot or bomb blast over the period 1976 to 1985 were greater than those murdered by the same means in all jurisdictions but Tasmania and Australian Capital Territory. Ratios ranged from 10:1 (in the case of Victoria) to 2:1 (in the case of Queensland) (see Table 1.4).

TABLE 1.4: POLICE OFFICERS WOUNDED BY GUNSHOT/BOMB BLAST IN THE COURSE OF DUTY: FREQUENCY, ANNUAL AVERAGE AND RATE PER 100 000 OFFICERS, STATES/TERRITORIES, 1976-1985

YEAR	NSW	VIC	QLD	WA	SA	TAS	NT	ACT
1976	1	1	0	0	1	0	0	0
1977	1	2	1	0	2	0	2	0
1978	5	2	0	0	0	0	0	0
1979	1	2	0	3	1	0	0	0
1980	4	2	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	2	7	0	1	0	0	0	0
1983	2	3	1	1	1	0	0	0
1984	5	3	0	1	0	0	0	0
1985	2	5	0	0	1	0	0	0
TOTAL	23	27	2	6	6	0	2	0
AN. AV.	2.30	2.70	0.20	0.60	0.60	0	0.20	0
DEC. RATE	24.66	34.93	4.79	22.78	19.37	0	37.58	0

Source: Police departments

Woundings vary greatly in severity, ranging from massive physical damage resulting in quadriplegia right through the spectrum to minor flesh wounds. Unfortunately, no classification of severity of woundings by gunshot and bomb blast has yet been devised, which inevitably results in a degree of grossness in the relevant statistics. A great advance would be achieved if a clear distinction could at least be made even between major and minor woundings.

Twenty-three police officers were wounded in New South Wales during the ten-year period and twenty in Victoria. Two Queensland officers were shot and wounded, while six fellow practitioners in Western Australia were similarly injured. South Australia and Northern Territory suffered six and

two shot and wounded officers respectively. No Tasmanian or Australian Capital Territory police officers were wounded by shooting during the period.

It is also seen at Table 1.4 that the annual average number of New South Wales police officers wounded by gunshot or bomb blast over the ten-year period 1976 to 1985 was 2.30, giving a rate per 100 000 of 24.66. In Victoria, an annual average of 2.70 officers were wounded over the period studied, resulting in a rate of 34.93 per 100 000. In Queensland, the annual average was 0.2 and the rate per 100 000 officers was 4.79. Western Australia experienced an annual average of 0.60 wounded officers and a rate per 100 000 of 22.78. An annual average over the period of 0.60 officers was sustained also by South Australia, thereby producing a rate per 100 000 officers of 19.37. In Northern Territory an annual average of 0.20 police casualties over the ten-year period was experienced for a rate per 100 000 officers of 37.58. The decennial rate for all States/Territories was 22.68 and three States exceeded it - New South Wales, Victoria and Northern Territory. Western Australia matched the overall rate. On these data alone it seems Tasmania, Australian Capital Territory and Queensland are the safest jurisdictions for police officers with regard to firearms trauma. The instability of small frequencies is well demonstrated in the data for Northern Territory. A frequency of two woundings, which occurred within the context of a single incident over ten years resulted in the relatively high rate of 37.58 per 100 000 officers. Despite this artifact, Northern Territory is sensibly to be considered one of the safer jurisdictions.

Comparative police data are sparse. An English study by Superintendent R.M. Stobart (1972) conducted in five agencies (including London Metropolitan) found no injuries by firearms over the now distant five-year period 1966 to 1970. Within Australia, only Tasmania and Australian Capital Territory Police matched that record. Compared with more recent United States law enforcement experience, Australasian police officers are shown to suffer relatively few gunshot and bomb blast woundings. Table 1.5 shows law enforcement officer woundings by firearms and bomb blast over the decade 1976-1985 in the United States. The decennial rate per 100 000 of police officers wounded was 177.23. It is emphasised this figure includes non-police law enforcement officers along with police officers. Were the data to exclude non-police personnel the figure would undoubtedly be somewhat lower. The aggregate wounding rate for the decade among the States and Territories of Australia of 22.68 is confined to police officers qua police officers only. The two data sets are not strictly comparable and care must always be exercised when looking at such inter-jurisdictional data. The wounding rates per 100 000 police officers for each State/Territory are shown at Table 1.4. The difference between American and Australian experiences in this regard, even allowing for the qualifications noted above, is massive and indicates very different workplace environments. In short, while the risk to police officers collectively in Australia of wounding by

gunshot or bomb blast was greater than that of some overseas jurisdictions, it was certainly far less than that applying in United States of America.

TABLE 1.5: LAW ENFORCEMENT OFFICERS WOUNDED BY GUNSHOT AND BOMB BLAST: FREQUENCY, ANNUAL AVERAGE AND RATE PER 100 000 OFFICERS, UNITED STATES OF AMERICA, 1976-1985

YEAR	NO.	RATE/100 000
1976	523	179.35
1977	506	157.04
1978	546	157.04
1979	670	196.91
1980	741	214.44
1981	609	182.94
1982	713	223.41
1983	669	177.16
1984	533	143.18
1985	581	149.05
TOTAL	6091	
AN. AV.	609.10	
DEC. RATE	-	177.23

Source: LEOKA.

1.2.1 Measurement of Police Officers Wounded by Gunshot/Bomb Blast

Measurement of the numbers and rates of officers wounded by gunshot or bomb blast is desirable for the same reasons advanced at s.1.1.1. Unlike the murder measure, which includes all means, this measure is restricted to woundings resulting from the detonation of a charge by whatever means. Thus, in addition to pistols, rifles, shotguns, grenades and other explosive devices, woundings resulting from the use of modified starting pistols and staple 'guns' should be included. This study excluded from its gunshot/bomb blast data set the single recorded case of wounding by means of a pellet discharged from an air rifle. It is a matter for individual agencies to determine whether to include missiles discharged from airguns, longbows, crossbows and fishing spears within their 'gunshot' criteria.

In addition to recording individual cases, agencies need to collect the same range of associated data as indicated at s.1.1.1 together with data concerning degrees of injury.

Unlike murder, which is an unambiguous and highly discrete category, gunshot/bomb blast woundings cover a wide range of outcomes - ranging

from mere scratches to massive life-threatening and subsequently crippling trauma. Thus, a measure of degree of physical and/or psychic harm is desirable. Such measures are best devised by individual agencies, meeting the specific needs of their own administrators, legal/industrial requirements and service groups. One possible classification based on loss of duty time is shown below:

Category	Degree of full duty time lost
1	no loss of duty time other than immediate aid
2*	loss of duty time up to five working days
3*	loss of duty time from six to ten working days
4*	loss of duty time in excess of ten working days but member eventually returned to full duties
5	member permanently confined to restricted or light duties
6	unfit for further duty.

*Does not include time spent on 'light' or 'restricted' duty

These categories are not without difficulty. One problem, of course, is that it does not adequately cater for the operational disadvantages associated with 'light duties'. Thus, if such a measure is required for audit or manpower planning purposes, a further measure would be necessary. Also, it is frequently not known at the outset how long a 'restricted' or 'light' duties recommendation might last. Thus, in some cases at least, retrospective adjustments of data would be necessary. Adjustments of personnel records in such a way are usually administratively messy and sometimes are not actioned, thereby leading to poor quality data. However, the development of sophisticated computer software will eventually extinguish this reservation.

In view of the small frequencies involved, it is suggested decennial rates be calculated, as at Table 1.2. A ten-year average rolling rate should then be calculated annually and compared against the bench mark rate for identification of trends.

1.3 Killings and Woundings by Gunshot and Bomb Blast

Killings and woundings of police officers are aggregated in this section on the assumption there is no significant difference between firearm woundings and death in terms of intent. For the most part, chance determines whether gunshot/bomb blast wounds prove fatal. Table 1.6 includes all shootings of police officers in order to provide an estimate of total risk from shooting and bombing and shows a total of 79 shootings/bombings of police officers, that is, murders and woundings resulting from gunshot and bomb blast, occurring throughout the various States/Territories over the ten-year period 1976 to 1985. Data included here incorporate police shooting/bombing deaths and

woundings not incurred qua police officer but arguably as part of the risk of being a police employee, for example, fooling around with firearms in a police station and the eternal triangle existing between police families. Totals were: 27 in New South Wales, 32 in Victoria, three in Queensland, eight in Western Australia, seven in South Australia and two in Northern Territory. These frequencies produce the following rates per 100 000: New South Wales 28.95, Victoria 41.39, Queensland 7.19, Western Australia 30.37; South Australia 22.60 and Northern Territory 37.58. Tasmania and Australian Capital Territory experienced no such traumas.

TABLE 1.6 POLICE OFFICERS SHOT AND BOMB BLASTED: FREQUENCY, ANNUAL AVERAGE AND OVERALL RATE PER 100 000 OFFICERS, STATES/TERRITORIES, 1976-1985

YEAR	NSW	VIC	QLD	WA	SA	TAS	NT	ACT
1976	1	1	0	0	1	0	0	0
1977	2	2	1	0	2	0	2	0
1978	6	2	0	0	0	0	0	0
1979	1	3	0	5	1	0	0	0
1980	5	2	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0
1982	2	8	0	1	0	0	0	0
1983	2	6	1	1	1	0	0	0
1984	6	3	1	1	0	0	0	0
1985	2	5	0	0	2	0	0	0
TOTAL	27	32	3	8	7	0	2	0
AN. AV.	2.70	3.20	0.30	0.80	0.70	0	0.20	0
DEC. RATE	28.95	41.39	7.19	30.37	22.60	0	37.58	0

NB. This Table includes police officers shot by police officers

Source: Police departments

The aggregate rate per 100 000 officers was 27.15. Four polities - New South Wales, Victoria, Western Australia and Northern Territory - exceeded that rate. South Australia was below but close to the mean, while Queensland, alone of the larger States, was well below. The equivalent rate in the United States was 200.75 per 100 000 law enforcement officers. This comparison once again underlines (and bearing in mind all the necessary qualifications concerning such data) the vastly more violent - in terms of firearms use - working environment of police officers generally within America.

One proposition advanced in police circles in explanation of the favourable position regarding police shootings/bomb blastings, that is, the absence of obviously increasing shooting rates over recent years, is that the creation of

special weapons squads has reduced the number of situations in which untrained personnel are called upon to deal with desperate offenders. That is to say, the application of greater expertise to the management of violent and potentially violent circumstances has resulted in fewer police casualties in large agencies than otherwise would have been the case. This argument raises the issue of whether in New South Wales and Victoria (the only States in which substantial numbers occur, *see* Table 1.7) a reduction of the numbers of police officers shot has been achieved at the price of police officers shooting more members of the public than otherwise would have been the case. Despite the greater numbers of personnel and events involved in these two States, the available data are insufficient to permit hypothesising. Nevertheless, it is a subject that could be fruitfully explored by officer survival specialists.

Of course, a proportion of shooting and bombing events occur with little or no warning and are virtually unavoidable, regardless of an officer's experience (Swanton & Psaila 1985, p. 52). The move by police agencies to purchase soft body armour for at least some operational officers should eventually reduce risks associated with sudden and unavoidable shooting incidents, always provided such vests are placed on personal issue and are routinely worn when in hazardous areas at times of recognised higher danger and when performing more hazardous duties such as executing warrants. Body armour, of course, offers some protection against weapons other than firearms and explosive devices. A number of officers are known to have escaped serious stabbing injuries thanks to such equipment. The issue of hygiene with regard to soft body armour and vests not on personal issue is critical to their usage and must be borne in mind by supervisors.

The identification of hazardous areas, high danger periods and dangerous duties is a responsibility of local police managers and is central to injury reduction programs.

The recent occurrence in New South Wales of an officer being saved from death/wounding when the notebook kept in his tunic breast pocket prevented a round fired from a pistol from striking him serves to starkly demonstrate the element of chance associated with firearms use.

1.3.1 Role of Officer Survival Specialists

The influence of officer survival specialists (by whatever title) in the various police agencies studied varies greatly. They do not exist merely to teach recruits self-defence and small arms handling. They should also be vigorously utilised in upgrading such skills among serving officers not merely conducting pistol qualification range shoots. More than this, though, their competence should be developed in the policy area to the extent that they advise on appropriate safety practices agency-wide as well as assist in the investigation of fatal shooting events. On top of all this they should be encouraged to periodically disseminate information and advice throughout

their respective agencies. Dissemination media might include fact sheets, videotapes and house journals. They should scan all appropriate sources for relevant information as well as develop new procedures, etc. as a result of their own research.

One instance of safety practices places much of the preceding paragraph in context. Some years ago a well-known Sydney identity closed his car window on a police officer's arm and dragged him some little distance before the officer was released. The event achieved some media coverage. Not long after, the FBI's publication *Law Enforcement Officers Killed and Assaulted* recorded the case of an officer killed as a result of having his arm trapped in a car window and then dragged along. By this time all police officers should have been warned never to place their arms in vehicle windows. Tragically, late in 1988, a Sydney police officer was killed when his arm was trapped in a truck window and he was crushed against a tree. It was a death that received considerable publicity and should never have happened. A few months later, in March 1989, a Melbourne police officer was obliged to fire a number of shots from his pistol after his arm had been trapped in a car window and he was dragged along. Surely, by then, every police officer in Australia should have had it well and truly brought to their notice that they should never place an arm in a vehicle window. If officer survival specialists are encouraged to perform in an advisory proactive, role such events can hopefully be prevented.

1.3.2 Correlations with Police Shootings

It has been suggested the number of police officers killed is influenced by the number of persons killed by police. The point is difficult to establish with regard to killings, especially police qua police killings due to the very small frequencies involved but, given the close connection between killings and woundings, it is better considered in respect of the two largest jurisdictions with regard to all shootings.

Table 1.7 shows all police officers shot and bomb blasted as well as numbers of the public shot by police over the decade 1976-1985. In New South Wales, 31 members of the public were shot by police compared with 27 police officers shot or bombed. In Victoria, 31 police officers were shot or bombed whereas 40 persons (including four police officers, one of whom shot himself - not a suicide) were shot by police. Three police officers were shot in Queensland while five persons were shot by police. In Western Australia, eight police officers were shot and two persons (including one police officer) were shot by police. In South Australia, seven police officers were shot and two persons were shot by police. Tasmania suffered no shootings in either category. In Northern Territory, two police officers and five members of the public were shot. In Australian Capital Territory no police officers were shot while one member of the public was shot. In sum, 78 police officers were shot/bombed over the decade and 81 persons (including five police officers) were shot by police.

Only in Western Australia and South Australia were more police officers shot/bombed than were persons shot by police. Elsewhere, with the exception of Tasmania, numbers of persons shot by police outnumbered shot/bombed police officers. Frequencies are so small in all jurisdictions but New South Wales and Victoria that they permit no discussion other than straight description. However, with regard to those two largest agencies, extremely tentative hypothesising is possible.

When perusing the data for New South Wales it is noticeable the greatest disjunction between frequencies occurred between the years 1977-1978. There then follows a triennium during which the largest number of police in the history of the Force were shot/blasted. It is also noticeable that a marked increase in shootings of members of the public occurred in 1981, the greatest difference between rolling averages and the mean occurred at that point. It could be hypothesised that after such a bad three year casualty count police officers became corporately more prepared to use firearms in order to pre-empt or otherwise counter potentially serious attacks by criminals. If one is persuaded by such an hypothesis then one will reason that the relation existing between police officer and public shootings is such that shootings of members of the public by police is in part a response to their own casualties. Thus, police would be seen to be following rather than leading the trend to increased shootings/bombings.

Conversely, it is arguable and, indeed, has been suggested by a Victoria Police representative, that police experience of high casualties led to improved firearms training, which in turn is thought to have resulted in increased hits as opposed to misses. This point is difficult to sustain, as there may also have been an increase in events precipitating use of firearms by police.

An upsurge in Victoria police casualties occurred in 1982 and a marked increase in citizen casualties followed a year later. Did the experience of 1982 make police officers in Victoria generally more prepared to use their firearms? If that was the case, did that preparedness extend beyond immediate self-defence to apprehending fleeing felons? More recent evidence suggests hatred of police has motivated some criminal elements to employ fatal force against them. Such hatred is not necessarily based on use of armed force by police officers, although one tragic instance has been publicly conjectured as being such. The public furore that has accompanied use of (potentially) fatal force both by and against police officers has resulted in a heightened awareness of the use of firearms among police officers that regrettably could in itself result in their greater use.

Some police administrations might consider it worthwhile to re-examine their instructions to officers on the use of firearms from occupational health as well as other perspectives.

TABLE 1.7 POLICE OFFICERS SHOT/BOMBED IN LINE OF DUTY; PERSONS SHOT BY POLICE: FREQUENCIES AND ANNUAL AVERAGES, STATES/TERRITORIES, 1976-1985

YEAR	NSW		VIC		QLD		WA		SA		TAS		NT		ACT	
	POS	PSP														
1976	1	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0
1977	2	1	2	2	1	0	0	0	2	0	0	0	2	1	0	0
1978	6	0	1	4	0	1	0	0	0	0	0	0	0	1	0	1
1979	1	1	3	0	0	0	5	1	1	0	0	0	0	0	0	0
1980	5	1	2	2	0	1	0	0	0	0	0	0	0	2	0	0
1981	0	4	0	3	0	1	0	0	0	0	0	0	0	0	0	0
1982	2	5	8	6	0	0	1	1	0	1	0	0	0	1	0	0
1983	2	9	6	11	1	1	1	0	1	0	0	0	0	0	0	0
1984	6	4	3	3	1	0	1	0	0	0	0	0	0	0	0	0
1985	2	5	5	9	0	1	0	0	2	0	0	0	0	0	0	0
TOTAL	27	31	31	40	3	5	8	2	7	2	0	0	2	5	0	1
AN. AV.	2.7	3.1	3.1	4.0	0.3	0.5	0.8	0.2	0.7	0.2	0	0	0.2	0.5	0	0.1

POS - Police officers shot/bombed

PSP - Persons shot by police

NB. Police officers shot by police officers are shown in both columns

Source: Police departments, public documents

1.3.3 Measurement of Police Officers Shot and Bombed

The measurement of shootings and bomb attacks generally on officers is important as it brings together murders by gunshot and bomb blast and, woundings resulting from gunshot and bomb blast. Given the difference between death and wounding from gunshot and bomb blast is often a matter of purest chance, this measure provides the best indication of police risk from such means. When considered in conjunction with numbers of shots fired at police and bombs blasted in police presence, as well as the number of events, an even more acute measure of police officer risk becomes possible.

Thus, we have here four measures. First, we have a simple count of police officers shot/bombed each year. Second, we have a count of shots fired at police officers by various firearms, most particularly pistols, rifles and shotguns, regardless of whether they struck a police officer. Third, we have the number of explosive devices detonated in the vicinity of police installations and/or police officers, regardless of whether a police officer was injured. Fourth, and importantly, a simple count of events in which shots are fired at police. Some events may involve the firing of numerous shots, others merely one or two. It takes the number of events to place the number of

shots fired into perspective. As with most matters addressed in this publication, some agencies are already well along recommended tracks and others are not so well advanced or, conversely, prefer a different approach.

Other research into police officer deaths, such as that of Lester in United States, has found significant correlations with such variables as latitude, poverty and proportion of population residing in metropolitan areas. With our much smaller number of jurisdictions available for analysis, together with low frequencies, we are unlikely to find statistically significant relationships between variables such as these. For the record only, then, the data resulted in a positive correlation between proportion metropolitan and frequency of police officers being shot/bombed ($p = 0.70$). A positive correlation was also found between police shot/bombed and members of the public shot by police ($p = 0.56$). Neither were statistically significant at the 0.01 level.

Table 1.8: Principal Correlations between Police Deaths/ Woundings and Reported Crime Rates per 100 000 Population

Variable One	Correlation	Variable Two
Police Wounded by gun/bomb (Table 1.4)	(0.89)	Break and Enter (Dwelling) Rate
Police Accidentally Killed on Duty (Table 2.1)	(-0.91)	Assault (Grievous Bodily Harm) Rate
Police Deaths Other Causes (excl. murder & accident) (Table 3.1)	(-0.85)	Break and Enter (Dwelling) Rate

Even relationships between rates of death/woundings of police officers and rates of crime were absent in relation to aggregated Australian data. Those States with higher rates of violent crime (Mukherjee et al. 1987, p. 94, data relating to January-June 1985), do not necessarily have higher rates of murder of police officers, or shootings/bombings or woundings. The only relationships which appeared to be **statistically significant** (see Table 1.8) have little theoretical value and are most probably purely statistical accidents. They suggest police woundings are **frequent**, and police deaths from causes other than murder or accident are **infrequent**, where the breaking and entering (dwellings) rate is high. The frequency with which police are accidentally killed on duty is **high** where the assault (grievous bodily harm) rate is **low**. While the use of such correlation techniques in the search for causes of police mortality is justified, the results in this case suggest no real insights have been gained.

2. Police Officers Accidentally Killed on Duty

Together with members of many other occupations police officers are occasionally killed on duty in circumstances in which malice is absent. For the most part, such events are acts of misadventure and are to a great extent governed by workplace environments and/or employee alertness. Thus, commercial fishermen tend to die by drowning, transportation workers die in motor crashes, miners die in mine collapses, and aviators die in aircraft crashes. Police, who are to be found driving cars in the streets or saving lives are similarly affected by their work activities.

Numbers of police officers accidentally killed in the course of duty over the period 1976-1985 inclusive are shown at Table 2.1. New South Wales Police lost 16 members by such means and Victoria Police 13. Other agencies lost far fewer members, that is, both Queensland and Western Australia Police lost three members, South Australia Police nine officers and Tasmania five. Northern Territory Police, despite the rigours of Territory life, lost only one member as a result of an accident. The Australian Capital Territory lost no officers. A total of 50 officers were lost in this category across all States and Territories. There is nothing to suggest an increase in the rate of such deaths in any State or territory over the decade reviewed here.

The rate of such deaths per 100 000 officers Australia-wide for the entire period 1976-1985 was 16.84. New South Wales and Victoria, at 17.15 and 16.82 respectively remained close to the average while Queensland at 7.19 and Western Australia at 11.39 were positioned well below. South Australia and Tasmania, 29.05 and 51.41 respectively, were both well in excess of the average. Northern Territory was close to the average with a rate of 18.79. Australian Capital Territory suffered no accidental deaths in the course of duty.

International comparisons are available from America and Canada. In America, over the decade reviewed, accidental deaths of law enforcement officers occurred at a rate of 17.07 per 100 000. Allowing for a non-police element of law enforcement officers included in such a rate, the accidental death rate for police in the United States is probably roughly the same as that in Australia. On the other hand, Canada experienced an accidental death rate for the same decade of 7.97 officers per 100 000, slightly less than one-half that obtaining in Australia as a whole, and bettered by only Queensland and, Northern and Australian Capital Territories.

**TABLE 2.1: POLICE OFFICERS ACCIDENTALLY KILLED IN THE COURSE OF DUTY:
FREQUENCY, ANNUAL AVERAGE AND RATE PER 100 000 OFFICERS,
STATES/TERRITORIES, 1976-1985**

YEAR	NSW	VIC	QLD	WA	SA	TAS	NT	ACT
1976	1	1	0	0	0	0	0	0
1977	3	0	0	2	0	0	0	0
1978	1	1	0	0	0	0	0	0
1979	2	1	0	0	0	3	0	0
1980	3	2	0	0	2	0	0	0
1981	1	4	2	0	3	1	0	0
1982	1	1	1	1	3	1	0	0
1983	2	1	0	0	0	0	0	0
1984	1	0	0	0	0	0	1	0
1985	1	2	0	0	1	0	0	0
TOTAL	16	13	3	3	9	5	1	0
AN. AV.	1.60	1.30	0.30	0.30	0.90	0.50	0.10	0
DEC.RATE	17.15	16.82	7.19	11.39	29.05	51.41	18.79	0

Source: Police departments

Fourteen of the 16 officers lost by New South Wales Police over the ten-year period died as result of motor vehicle accidents either during their shift or travelling to or from duty (see Table 2.2). Accidents incurred while proceeding directly to or from work were treated industrially as being on duty. Of the other two officers, one died from kidney and liver failure, following upon his having been shot some years earlier, and one tragically drowned while attempting to rescue a swimmer in difficulties.

Twelve of the 13 officers lost by Victoria Police died as a result of motor vehicle accidents and the remaining officer was lost due to an accidental shooting.

Of the three officers each lost by Queensland and Western Australia Police, all died as a result of motor vehicle accidents classified as on duty. One of the Western Australian accidents occurred while the officer was driving home from work.

Motor vehicle accidents accounted for eight on duty killings of South Australian police officers, while another died as a result of a fuel explosion in a police motor boat.

Two of the officers lost by Tasmania Police died as a result of conditions following upon assaults, that is, coronary attack and clot on brain, outcomes

which while not intended (and thus not amounting to murder) did involve physical attack. The other three officers died as a result of motor vehicle accidents.

Northern Territory lost one officer as a result of a motor vehicle accident.

Thus, a total of 50 police officers were accidentally killed in the course of duty over the ten-year period 1976 to 1985. This figure is a little more than four times the number of police deaths resulting from homicide and almost five times that resulting from murder/manslaughter over the same period. It constitutes roughly 0.02 per cent of the total police population.

The great majority of these deceased members were uniformed officers. It is not known how many were in company; neither is it known how many deaths occurred in the course of pursuits, although it is known some were pursuit-related. It is reasonable to assume a proportion of the motor vehicle accidents were unavoidable in any practical sense of the term. However, it is equally reasonable to assume a proportion were the result of faulty driver decisions and actions. With this assumption in mind the advisability of researching all such deaths and their circumstances with a view to possible revision of procedures and driver training might be helpful for all jurisdictions, in particular New South Wales, Victoria and South Australia.

TABLE 2.2: POLICE OFFICERS ACCIDENTALLY KILLED IN THE COURSE OF DUTY: FREQUENCY AND CATEGORY, STATES/TERRITORIES, 1976-1985

ICD No.	CATEGORY	NSW	VIC	QLD	WA	SA	TAS	NT	ACT	TOTAL
[869]	Explosion	0	0	0	0	1	0	0	0	1
[994.1]	Drowning	1	0	0	0	0	0	0	0	1
[E810-819]	Motor vehicle accident	14	12	3	3	8	3	1	0	44
[E922]	Complications after shooting	1	0	0	0	0	0	0	0	1
[E922]	Shooting accident	0	1	0	0	0	0	0	0	1
[E966]	Complications after assault	0	0	0	0	0	2	0	0	2
TOTAL		16	13	3	3	9	5	1	0	50

Source: Police departments

2.1 Measurement of Accidental Deaths

Increasing emphasis on occupational health and safety (OHS) in modern organisations requires at the very least that a simple count of all deaths in service, malicious and accidental, be maintained. Unless a reasoned decision not to conduct an internal inquiry into accidental deaths is made by a

delegated officer, an inquiry should be held. Appropriate organisational interests should be represented, such as OHS, industrial, and training - including driver training.

Ideally, a table of accidental death frequencies and crude rates should be presented in each agency's annual report, so as to keep both officers and public informed.

The principal cause of accidental police deaths is clearly motor vehicle accidents in most agencies and particular attention needs to be paid to the measurement of such phenomena, especially if they are pursuit-related. Pursuit-related accidents should be accorded their own causal category distinct from motor vehicle accidents generally.

The following classifications of accidental deaths (based largely on the FBI's classification) provides a potentially useful format for the recording of accidental deaths by police agencies:

- motor vehicle accident (pursuit-related);
- motor vehicle accident (other);
- motor cycle accident (pursuit-related);
- motor cycle accident (other);
- aircraft accident;
- struck by vehicle (traffic stop, road block, etc.);
- struck by vehicle (directing traffic, assisting motorist, etc.);
- accidental shooting (cross-fire, mistaken identity, firearm mishap);
- accidental shooting (training session);
- accidental shooting (self-inflicted);
- drowning;
- electrocution; and
- other.

3. Death from 'Other' Causes

More serving police officers died from so-called natural causes and off duty accidents than were killed directly in the course of duty. Some police deaths arising from such causes were no doubt random, that is, not related to police service, occurring as they do in all populations. Deaths from other causes for the period 1976 to 1985 are shown by year at Table 3.1.

New South Wales Police lost a total of 124 members by such means over the ten-year period and Victoria Police lost 98. Smaller agencies naturally experienced far fewer casualties, although in some cases rates of death per 100 000 officers were higher. Queensland Police lost 74 officers from such causes and Western Australia Police 19. South Australia Police lost 24, Tasmania Police lost 31 and Northern Territory Police, four. Unfortunately, the principal operational backgrounds of deceased officers are not available. It would be helpful to know, at least with respect to the larger agencies, if certain functional groups such as speed detection or vice control, or members with lengthy service in such specialties, for instance, fared significantly differently from others.

Numbers of deaths resulting either from disease or off duty activities are small in absolute terms. Tasmania was the only jurisdiction to exceed one-quarter of one per cent of its officers dying by such means. It is difficult to know whether this finding reflects a State-wide condition or merely an organisational one. The data are too few to permit resolution of the question. No other jurisdiction even approaches that level. Expressed as deaths per hundred thousand members the following rates were calculated. New South Wales police experienced 132.93 deaths per 100 000 sworn officers, Victoria 126.77, Queensland 177.30, Western Australia 72.14, South Australia 77.47, Tasmania 318.77 and Northern Territory 75.16. The average rate of 131.37 per 100 000 officers was well exceeded by Queensland and Tasmania. New South Wales and Victoria clustered around the mean while Western Australia, South Australia and Northern Territory fell well below.

The decennial (1976-1985) rate of New Zealand police officer deaths from 'other causes' per 100 000 officers was 125.84, close to New South Wales' and Victorian rates as well as the average for all States and Northern Territory. Another point of international comparison is provided by London's Metropolitan Police. The mortality rate from 'other' causes in that Force for the period 1976-1985 was 95.81 per 100 000 officers. Female officers comprised roughly 10 per cent of the Metropolitan's total strength but their 'other' causes mortality amounted to only 3.1 per cent of the whole which suggests they are well under-represented in that regard. The greater turnover of female officers no doubt partly explains the phenomenon. Western Australia, South Australia and Northern Territory 'other' causes mortality rates were superior to those of London's Metropolitan Police while New South Wales, Victoria, Queensland and Tasmania were inferior. It is surprising the 'other' causes mortality rate of Britain's largest police agency

was lower than that of New Zealand Police and the largest police agencies in Australia. It may be police health selection standards in London are higher than those of some Australasian agencies while it might also, of course, reflect more general community health characteristics. But, we recognise that other factors could be also involved including promotional norms, pensionable age and inter-force mobility.

The 'other' causes mortality rate of police officers in Tasmania is of particular interest given that Tasmania comprises one of the country's relatively less taxing police jurisdictions. The percentage of such deaths amounted to 0.32 per cent of that Force's strength for the decade.

TABLE 3.1: POLICE OFFICERS DIED IN SERVICE OTHER THAN BY MURDER OR ACCIDENTAL DEATH IN THE COURSE OF DUTY: FREQUENCY, PERCENTAGE AND RATE PER 100 000, STATES/NORTHERN TERRITORY, 1976-1985

YEAR	NSW	VIC	QLD	WA	SA	TAS	NT	TOTAL
1976	18	8	8	2	2	4	0	42
1977	16	10	7	4	1	4	0	42
1978	8	7	9	1	2	1	1	29
1979	5	6	13	2	2	3	0	31
1980	11	18	8	1	5	6	0	49
1981	19	7	6	2	2	3	1	40
1982	14	11	9	1	3	5	0	43
1983	12	9	7	3	2	2	1	36
1984	12	10	3	0	4	2	1	32
1985	9	12	4	3	1	1	0	30
TOTAL	124	98	74	19	24	31	4	374
AN. AV.	12.4	9.8	7.4	1.9	2.4	3.1	0.4	37.4
DEC. RATE	132.93	126.77	177.30	72.14	77.47	318.77	75.16	131.37

Source: Police departments

The majority of deceased officers were uniform wearers but that fact merely reflects the reality of police organisations. One broad and obvious pattern was that heart attack and cancer victims were all middle aged, while motor vehicle accident victims tended to be younger although there was also a sprinkling of middle aged accident victims. It is apparent larger agencies experience higher mortality rates than smaller agencies, with the single exception of Tasmania. It is tempting to speculate upon the hazards of metropolitan life in this context, but given lack of data concerning deceaseds' postings the temptation could not be indulged.

New South Wales understandably lost by far the greatest number of officers from 'other' causes. All were male. Fourteen per cent were commissioned officers, that is, mostly managers. Seventeen per cent were from support/administrative positions, while the remainder were field officers. Only seven officers (six per cent), according to available data, were Criminal Investigation Branch members at the time of their demise. Some 74 per cent of the deceased were operating in the Sydney Metropolitan area. Average age of the deceased officers was 48.6 years.

Victorian deceased officers were over 98 per cent uniformed, four per cent were female and their average age was 41 years. Non-commissioned ranks were responsible for 85 per cent of deaths, which fact considerably over represents commissioned officers in these mortality data.

Deaths from 'other' causes in Western Australia occurred mostly in the metropolitan area, by a ratio of 5:1. The spread between field personnel on the one hand and administrative/support officers on the other was, interestingly, even, but deaths in the uniformed ranks outweighed those of plain clothes by 4:1. Commissioned officers accounted for roughly one-fifth of such deaths and the average age of the deceased was 46.5 years. All deceased officers were males.

In South Australia, the broad structural picture of 'other' causes mortalities was that metropolitan deaths outnumbered country deaths roughly 3:1, that uniform wearers outnumbered plain clothes personnel approximately 2:1 and, that operational members outnumbered administrative/support personnel by nearly 2:1. All were male. Average age of deceased officers was 41 years. Non-commissioned ranks outnumbered commissioned ranks by about 5:1. The over representation of commissioned officers, that is, managers, in these ranks was even greater than that apparent in the case of Victoria.

Commissioned officers in Tasmania accounted for 6.5 per cent of deaths from 'other' causes. Operational ranks accounted for 87 per cent of deceased members in this category, the great majority of whom were general duty personnel. Average age of the deceased was 45 years, only one female member (three per cent) was included in their number.

Of the four such deaths in Northern Territory, all were male, three were uniform wearers, two were non-commissioned officers and their average age was 44.5 years.

TABLE 3.2: POLICE OFFICERS DIED IN SERVICE OTHER THAN BY MURDER OR ACCIDENT IN THE COURSE OF DUTY: CAUSE, PERCENTAGE OF TOTAL STRENGTH, STATES/NORTHERN TERRITORY, 1976-1985

ICD No.	CATEGORY	NSW	VIC	QLD	WA	SA	TAS	NT
I	[037] Tetanus	0	0	n/a	0	0	1	0
	[038] Septicaemia	1	1	n/a	0	0	0	0
II	[140-208] Malignant neoplasm	29	24	n/a	8	0	2	0
	[210-229] Benign neoplasm	4	2	n/a	1	0	0	0
III	[571.2] Cirrhosis	0	0	n/a	0	0	1	0
	[585] Renal failure	0	0	n/a	0	0	1	0
VI	[322.9] Meningitis	1	0	n/a	0	0	0	0
VII	[410-414] Ischaemic heart disease	52	25	n/a	6	10	8	3
	[430-438] Cerebrovascular disease	0	2	n/a	0	0	1	0
	[453] Thrombosis	1	1	n/a	0	0	2	0
VIII	[480-486] Pneumonia	2	1	n/a	0	0	0	0
	[492] Emphysema	0	0	n/a	0	0	1	0
	[493] Asthma	0	2	n/a	0	0	0	0
XVII	[799] Asphyxia	1	0	n/a	0	0	0	0
	[E810-E819] MV accident	10	28	n/a	3	5	7	0
	[E843] Aircraft accident	1	1	n/a	0	0	0	0
	[E922] Firearm accident	0	1	n/a	0	0	0	0
	[E950-E959] Suicide	10	6	n/a	1	3	1	0
	Other accidents	4	4	n/a	0	1	3	1
	Other/unknown	8	0	n/a	0	5	3	0
TOTAL		124	98	74	19	24	31	4
PERCENTAGE OF TOTAL STRENGTH		0.13	0.13	0.18	0.07	0.08	0.32	0.08

n/a Not available.

Source: Police departments, special collection

It is assumed at least some deaths in service in all occupations flow with varying degrees of directness from the sum of stresses experienced by workers, such as shift work, danger, poor nutrition, destructive inter-personal relations and so on. Some conditions such as off-duty motor vehicle accidents, suicide, ischaemic heart disease and cancer are widely considered to be stress (including work) related, although the degree of association is often impossible to determine. Police deaths from 'other' causes are shown by cause at Table 3.2 for the period 1976-1985 inclusive.

The main causes of police officers' deaths, exclusive of murders and line of duty accidents, are clearly identified for most agencies by these data although caution must be exercised in respect of smaller jurisdictions due to the extremely small frequencies involved. Even so, with the exceptions of

Northern Territory and South Australia with regard to cancer, major mortality causes are apparent: (1) ischaemic heart disease, (2) malignant neoplasms, and (3) motor vehicle accidents. The incidence of suicide overall is also worth noting. All police agencies studied now offer psychological counselling whether by way of employed psychologists and social workers or referral. It will be interesting to see if these measures eventually impact agency suicide and nervous illness rates.

It is recognised that the examination of pathological phenomena such as cancers and cardiac disease within an age frame of 20-59 years is unsatisfactory but, small frequencies and lack of age data in some jurisdictions made analysis employing smaller age interval groups impossible.

The small frequencies evident in most cells of Table 3.2 make comparison with community rates impossible in most respects. However, some comparisons are possible in respect of New South Wales and Victoria Police mortalities and male community deaths 20-59 years. Male community mortality rates exceeded those of police officers in all cases but one.

With regard to deaths resulting from malignant neoplasms over the period 1976-1985, the New South Wales police mortality rate was 31.09 per 100 000 officers; whereas the relative death rate for all males 20-59 years was 84.07 per 100 000. This disparity was similar in the case of ischaemic heart disease. Police mortality in that category occurred at a rate of 55.75 per 100 000 officers while within the male community 20-59 years, the rate was 105.63 per 100 000. New South Wales police officers died as a result of motor vehicle traffic accidents (both on and off duty) at a rate of 25.73 per 100 000 officers. All males 20-59 years died from the same cause at a rate of 37.63 per 100 000. Finally, the suicide rate of New South Wales police officers was 10.72 per 100 000 officers. The male community rate was roughly double that of police at 21.86 per 100 000. Thus, it will be seen in respect of these four categories, police death rates were below community rates for males of similar age. Of course, one needs to bear in mind the numbers of officers medically boarded out of the service, especially for mental disorders, when interpreting such comparisons.

The crude mortality rate of Victoria's police officers from malignant neoplasms, 31.04 per 100 000 officers, was very close to that of their New South Wales colleagues. The death rate of Victoria males aged 20-59 years, 87.39 per 100 000 was also similar to that which obtained in New South Wales. Victorian males (20-59 years) suffered ischaemic heart disease at a rate of 94.98 per 100 000 a greater rate than that of New South Wales males even though New South Wales has been described as the heart attack State, while Victoria's police officers died from the same disease at a rate of 32.34 per 100 000 officers. Victoria's police officers died at a rate of 51.74 per 100 000 officers from motor vehicle traffic accidents (both on and off duty), double the rate for New South Wales officers. Victorian males perished from the same cause at a rate of 32.12 per 100 000. Thus, in this instance,

Victorian police officers died at a greater rate than their non-police counterparts (males 20-59 years). Suicides among police officers in Victoria occurred at approximately one-third the rate of males (20-59 years) generally, that is, 7.76 per 100 000 officers generally v. 22.54 per 100 000 males. Thus, in three out of four categories the police death rate was below community rates for males of similar age. Again, caution is recommended in interpreting these findings due to medical boardings pre-empting at least some deaths.

Improved health-screening and maintenance programs together with, perhaps, refresher driver-training courses might reduce losses. Some agencies, such as Queensland Police, already have in place programs in which officers possessing unsatisfactory driving records are identified and provided remedial training. Some agencies, such as Victoria Police, already have a cardiac health-screening program available to members and all have introduced critical incident stress debrief programs. All agencies now inoculate at least some members against hepatitis B infection. There is certainly a feeling abroad in occupational health circles that the most effective prevention route is to target employees in their work settings but, even so, a close eye must be kept on considerations such as value for money, especially with regard to those conditions strongly subject to a range of life style risk factors.

3.1 Measurement of 'Other' Deaths

Measurement of police officer deaths other than by murder or on duty accident, especially at the three digit level, is highly desirable. Recording by ICD category offers administrators a clearer picture of mortality causes, and provides a better evaluation measure for cost-benefit purposes.

Crude frequency/rates of 'other' deaths should be published in annual reports and compared against those of previous years. There seems little advantage in calculating bench mark and rolling rates. A table, such as that at Table 3.2, seems best suited to police administrators' needs. Where necessary, trends in respect of particular categories, such as malignant neoplasm or ischaemic heart disease, should be calculated.

4. Mortality Generally

One useful measure of police mortality is that of all deaths in service. A particular virtue of this measure is that it is discrete and permits inter-occupational comparison.

A breakdown of all police deaths for the period 1976-1985 is provided at Table 4.1 for each year in each jurisdiction. Both frequencies and rates per 100 000 officers are displayed. In no case was there evidence of increased mortality with the decade's passing.

TABLE 4.1: POLICE MORTALITY: FREQUENCY AND RATE PER 100 000 OFFICERS, STATES/NORTHERN TERRITORY, 1976-1985

YEAR		NSW	VIC	QLD	WA	SA	TAS	NT	TOTAL
1976	freq.	19	9	8	2	2	4	0	44
	rate	224.0	138.74	223.34	87.41	78.13	426.44	0	177.74
1977	freq.	20	10	7	6	1	4	0	48
	rate	235.18	146.65	186.97	255.86	35.96	424.63	0	187.60
1978	freq.	10	8	9	1	2	1	1	32
	rate	110.98	110.53	234.86	40.16	68.49	105.71	212.77	118.93
1979	freq.	7	8	13	4	2	6	0	40
	rate	77.00	105.69	333.16	156.37	63.80	627.62	0	144.15
1980	freq.	15	20	8	1	7	6	0	57
	rate	162.60	255.95	199.00	37.84	217.46	616.02	0	200.57
1981	freq.	20	11	8	2	5	4	1	51
	rate	213.74	136.65	184.42	76.28	153.85	410.68	181.82	175.01
1982	freq.	15	13	10	2	6	6	0	52
	rate	159.78	156.59	230.15	74.27	183.54	607.90	0	175.97
1983	freq.	14	12	7	3	2	2	1	41
	rate	142.68	145.31	155.07	106.23	60.66	203.67	168.92	135.41
1984	freq.	14	10	4	0	4	2	2	36
	rate	140.70	120.09	85.36	0	121.73	198.61	336.13	114.47
1985	freq.	10	14	4	3	3	1	0	35
	rate	95.60	165.80	83.77	100.60	91.94	93.14	0	110.90
TOTAL	freq	144	115	78	24	34	36	5	436
DEC.	Rate	154.37	148.76	186.88	91.12	109.75	370.18	93.95	153.15

Source: Police departments

The same data are aggregated and presented by major category at Table 4.2. It is seen total police deaths in New South Wales over the period 1976 to 1985 amounted to 144 which produced an annual average of 14.4 deaths and a decennial mortality rate per 100 000 police officers of 154.37. This rate is

very close to the total police population mean of 153.15. Police deaths over the same period in Victoria totalled 115, giving an annual average of 11.5 deaths and a rate per 100 000 officers of 148.76. Seventy-eight Queensland police officers died over the decade, which figure provides an annual average of 7.8 deaths and a rate per 100 000 officers of 186.88. In Western Australia, 24 police officers died, giving an annual average over the ten-year period of 2.4 deaths and a rate per 100 000 of 91.92. South Australia Police lost 34 officers from all causes, with an annual average of 3.4, thereby giving a rate per 100 000 officers of 109.75, well below the mean rate for the police population as a whole. Police deaths in Tasmania for the same period amounted to 36, thereby producing an annual average of 3.6; the mortality rate per 100 000 Tasmanian police officers being 370.18, well in excess of the general police population rate. Northern Territory Police suffered five dead officers over the period 1976-1985, with an annual average of 0.5 officers and a rate per 100 000 of 93.95.

No significant relationships exists between agency size and total mortality rate (Spearman Rank Order Correlation $\rho = 0.32$).

TABLE 4.2: POLICE MORTALITY: MAJOR CATEGORIES BY FREQUENCY, ANNUAL AVERAGE AND RATE PER 100 000 OFFICERS, STATES/ NORTHERN TERRITORY, 1976-1985

CATEGORY	NSW	VIC	QLD	WA	SA	TAS	NT	TOTAL
Line of Duty:								
Shooting/bombing	4	4 *	1	2	1	0	0	12
Accident	16	13	3	3	9	5	1	50
Other:								
Disease, off-duty accident	124	98	74	19	24	31	4	374
TOTAL	144	115	78	24	34	36	5	436

* Includes two cases not counted as police qua police murders at Table 1.1.

Source: Police departments

It is apparent in regard to all jurisdictions, the greater proportion of deaths in service was not directly job-related. In fact, in any absolute sense, decennial crude line of duty mortalities were low, amounting to 0.15 per cent of members overall. Indirect contributions of agency membership to off-duty disease and accidental deaths have not been examined in this report, that being a matter for more focused research within individual agencies. One landmark case, though, serves to highlight the fact that even some of these deaths are likely to be associated with occupational factors. The case in point was one in which a malignant melanoma in the vicinity of an officer's shoulder was ruled to have been contributed to through friction created by a pistol holster.

London's Metropolitan Police records total deaths of police officers annually. Details are shown at Table 4.3. The agency's mortality rate for the decade 1976 to 1985 was 98.6 per 100 000 officers or just under 0.01 per cent of members. Crude police mortality rates in Australia for the same period showed only Western Australia and Northern Territory Police as having superior rates, although the rate for South Australia Police was only marginally greater. All other agencies, however, were greatly in excess. Tasmania Police, with a nine-year rate per 100 000 officers of 370.18 was almost four times as great.

TABLE 4.3: MORTALITY: FREQUENCY AND GENDER, LONDON METROPOLITAN POLICE, 1976-1985

YEAR	MALE	FEMALE	TOTAL
1976	33	0	33
1977	30	0	30
1978	20	0	20
1979	20	2	22
1980	23	0	23
1981	20	0	20
1982	23	0	23
1983	25	3	28
1984	24	2	26
1985	17	0	17
TOTAL	235	7	242
ANN. AV.	23.5	0.7	24.2
DEC. RATE			98.6

Source: London Metropolitan Police annual reports.

We should bear in mind that deaths in service are influenced by numerous factors including average age of members, retirement ages and the extent to which medical discharges are available. London Metropolitan Police personnel become eligible for pension after 26.5 years service, although they are encouraged to serve longer due to staff shortages. Thus, it is possible Metropolitan Police' average age was rather lower than that of most agencies in Australia.

Female officers comprise approximately ten per cent of the Metropolitan Police total strength. Their mortality rate, at 3.1 per cent, was well below their numerical representation in the organisation. The greater turnover of female officers operates to reduce the average age of female officers and their under representation in mortality rates is no doubt at least partly

explained by that factor. Nevertheless, turnover is not assumed to be the sole determinant of relatively lower mortality rates for female members. Lower exposure to high risk duties might also prove a significant variable. Individual agencies will wish to consider their own experiences in this regard. Overall, London Metropolitan Police suffered an annual average mortality figure of 24.2 members and a decennial rate per 100 000 officers of 98.6.

One further point of police international mortality comparison is provided by New Zealand Police which achieved a mortality rate of 128.58 per 100 000 officers for the decade 1976-1985. On this evidence, New Zealand's police mortality falls approximately halfway between those of London and the States/Northern Territory collectively.

Comparisons between organisations and occupations, if they are to be rigorous, require certain levels of structural and functional similarities. To compare the mortality and morbidity associated with, say, SAS troopers and librarians is tantamount to comparing apples and pears - it cannot be done. Efforts to acquire comparative data in respect of other 'para-military' organisations across the range and time frame attempted here were unsuccessful. However, at an admittedly low level of rigour, it is not unmeaningful to compare the respective lots of, for example, police officers and public servants. In fact, public servants comprise the functional group with which police officers generally are most likely to compare themselves. In terms of stereotype, at least, police officers are perceived as action oriented, decisive people while public servants are seen as passive and desk bound. In terms of mortality, does one group fare better than another even allowing for very different organisational and staffing structures? It was, unfortunately, only possible to obtain incomplete comparable public service data in respect of Victoria, Tasmania, South Australia and, internationally, New Zealand.

Victoria's public servants died at a rate of 173.13 per 100 000 public servants during the period 1977-1985. Female deaths comprised 20 per cent of the total although, unfortunately, the proportion of female public servants overall is not known. Over the same period, Victoria's police officers died at a rate of 147.41 officers per 100 000. Female deaths amounted to 2.63 per cent of police mortalities. Despite the hazards and stresses of the job, police officers died at a somewhat lower rate than public servants although intuitively one would have expected to find a greater difference in favour of police officers. Both groups are required to meet minimum medical standards on entry to their respective services in order to satisfy superannuation scheme requirements and both are covered by invalidity provisions; although it is assumed the aggregate health and physique of police officers at entry is considerably superior to those of public servants. How, then, is it the balance favouring police officers was so slim? Deaths resulting from firearms/bombs do not greatly influence the issue. Such matters are better pursued within individual jurisdictions where cooperative arrangements concerning data generation are more easily established. Even

so, the relatively slight disadvantage experienced by Victoria's public servants vis-a-vis police officers in terms of mortality is very definitely worth pursuing.

Tasmania's public servants died at a rate of 204.47 per 100 000 public servants during the period 1978-1985. Over the same period, police officers died at a rate of 356.92 per 100 000 officers. This comparison is of particular importance because had Tasmania's public servants perished at the same high rate as police officers, the police mortality rate may have been in fact measuring some Tasmania-wide rather than purely police phenomenon. Despite assumed superiority of police officer health and physique at entry, police officers clearly died at a considerably greater rate than public servants, unlike their Victorian counterparts who died at a lesser rate. The relative disadvantage experienced by police officers according to these data is not evident in the other jurisdictions discussed here.

South Australia's public servants died during the decade 1976-1985 at a rate of 125.64 per 100 000 public servants. Female deaths comprised 14.9 per cent of the total although females constituted approximately 38 per cent of public servants. The lower female mortality rate might well be influenced by a younger average age due to greater turnover, rather similar to the position posited earlier in respect of London's Metropolitan Police. Police officers in the same state died at a rate of 109.75 officers per 100 000. The difference in favour of police officers is not great although marginally better than that calculated in respect of Victoria, albeit in respect of a slightly different time frame. There were no female deaths in the police figure.

In New Zealand, public servants died at a rate of 196.02 per 100 000 public servants during the decade 1976-1985. Female deaths amounted to 15.4 per cent of the whole although females comprised 34.5 per cent of the New Zealand public service. The comment made in the previous paragraph concerning female mortality quite possibly applies here also. New Zealand Police mortality rate for the same period was 125.92 per 100 000 officers but the proportion of female mortalities is not known. The degree of relative advantage attaching to police in these data was greater than that shown in respect of Australian jurisdictions.

No generalisations are possible on the basis of these slender data. New Zealand Police seem substantially better situated vis-a-vis that country's public servants. Conversely, Tasmanian police officers seem substantially disadvantaged with regard to their public service counterparts. Death rates in that State are not reflected in assault rates generally. Victorian and South Australian police officers enjoy an advantage over public servants in their respective States of extremely modest proportions, lacking significance. Questions such as the relative contributions of gender, the stresses and strains of police life, health support systems, etc. are best considered by individual agencies.

Cardarelli (1968) posited that police officers die more frequently by homicide than by accident. His finding was based on United States data for the period 1961-1963, and so is now dated. However, the proposition has stood the test of time because when data were collected in respect of United States law enforcement officers for the period 1976-1985 (see Table 4.4), it was found homicides were more frequent than accidental deaths and occurred more frequently in every year but 1984.

TABLE 4.4: LAW ENFORCEMENT OFFICER ACCIDENTAL DEATHS AND HOMICIDES* : FREQUENCIES, UNITED STATES OF AMERICA, 1976-1985

	Form of death	
	Homicide	Fatal Accident
1976	112	29
1977	93	32
1978	93	52
1979	106	58
1980	104	61
1981	91	66
1982	92	72
1983	80	72
1984	72	75
1985	78	70
Total	921	587

*excludes suicide

Source: LEGKA.

The proposition was tested in respect of police in Australia. Table 4.5 shows a comparison of total police officer accidental deaths and homicide data for the period 1976-1985.

It is seen from the Table that in no instance do deaths by homicide exceed deaths by accident. In the cases of the two Territories, zero figures in both categories are observed and in the case of Western Australia homicides are exactly balanced by fatal accidents. But, in the remainder of cases, fatal accidents outnumber homicides. The fact that suicides are included in all data sets but Queensland makes the proposition even less tenable in most of Australia. The usual caution concerning the difficulty of basing firm conclusions on such small frequencies, of course, applies. These data rather suggest the relationship between police officer homicides and fatal accidents is a more variable phenomenon than Cardarelli assumed.

TABLE 4.5: POLICE OFFICER ACCIDENTAL DEATHS AND HOMICIDES: FREQUENCIES, STATES/TERRITORIES, 1976-1985

	Form of death	
	Homicide*	Fatal Accident
NSW	14	16
VIC	9	13
QLD	1	3
WA	3	3
SA	4	9
TAS	1	5
NT	0	1
ACT	0	0
Total	32	50

*includes suicide

Source: Police departments

4.1 Inter-Occupational Mortality Rates

Occupational mortality remains a little researched field. Most research conducted to date deals only with occupational aggregations, that is, broad occupational categories employed by the Australian Bureau of Statistics. Such aggregated studies are of no utility to individual industries, let alone organisation-based industries such as police. To make matters worse, such studies are largely confined to national findings, which makes for results of even lesser utility.

One recent study of work-related fatalities in Australia, for the period 1982-1984, undertaken by the National Institute of Occupational Health and Safety attempted to calculate deaths per 100 000 employees per annum (Harrison et al. 1989). These data are combined with the collective police death rate per 100 000 officers for the same period and rank ordered at Table 4.6.

TABLE 4.6: EMPLOYEE DEATHS: SELECTED GROUPS, PER 100 000 EMPLOYEES, AUSTRALIA, 1982-1984

INDUSTRY GROUP	RATE PER 100 000
Mining, quarrying	69.85
Transport, communications	38.00
Farming, fishing, hunting, timbergetting	22.09
Police	20.46
Trades, process work, labouring	9.07
Provision of services, sport, recreation	5.51
Sales	2.77
Professional, technical	2.33
Administration, executive, managerial	2.03
Clerical	0.38

Source: Harrison et al. 1989

4.2 Measurement of Police Mortality Generally

While it is necessary for police administrators, trainers and, health, psychological and welfare service providers generally, to be cognisant of the various elements of police mortality, it is desirable they also appreciate the broad picture. Control of police mortality is not entirely within the ambit of employing agencies, but effective policies and procedures can surely help reduce deaths. A general measure of police mortality will provide a gross indicator of the effectiveness of such efforts.

Care should be exercised to avoid double counting as well as excluding deaths, for example, those murders not effected by firearm or bomb. Such a measure should distinguish between line of duty and off duty statuses and, each of those two categories require subdivision somewhat similar to that shown previously at Table 4.2. A general mortality measure might be structured thus:

- line of duty:
 - murder by shooting/bombing,
 - murder by other means,
 - accident (this category could be broken down further, if required);
- off duty (or, non-line of duty):
 - disease,
 - accident.

Annual frequencies of all police mortalities are mercifully small, the highest annual average during the period reviewed being 14.4 members. It is thus recommended decennial rates be calculated and used as a bench mark against which a ten-year rolling average is compared annually. General mortality frequencies and rates should be published in annual reports.

5. Assaults on Police Officers

Non-fatal assaults on police officers, exclusive of gunshot and bomb blast, run the gamut from extremely serious and crippling to minor bruising, from simple to complex and unbelievably malicious to mindless violence. Weapons range from firearms (used as clubs), axes, knives, motor vehicles, underwater fishing spears, stones, boots and fists. The function is constant, only the means vary. The assault involved the stabbing of a New South Wales police officer by a drug addict with a hypodermic syringe, as a result of which the officer was provisionally diagnosed as suffering from hepatitis B. More serious non-fatal assaults on police officers over the years have resulted in an eye gouged out in a wild struggle, massive multiple stabbings, fractured skulls, and brain, kidney and liver damage.

Research conducted by Victoria Police (1979) clearly showed the great majority of assaults on police officers in that State were executed by hand or foot, as did earlier English research (Stobart 1972). It has been reasonably argued such assaults indicate the unpremeditated nature of many assaults on police officers (Jager 1984, p. 18).

Many minor assaults on police officers are not recorded as they are considered part of the 'game' by the officers concerned. Most serious assaults on police are reported, though, not only in order that offenders may be charged, when apprehended but also for reasons of possible compensation in the event of disability occurring. The Australian Bureau of Statistics (1979) found a somewhat similar situation of under-reporting in the community generally, with fewer than 50 per cent of assaults by police on citizens being reported, for instance.

There was a time when assaults were considered so integral to street policing that pertinent statistics were not maintained. Nowadays, with increasing emphasis on occupational safety and health and, development of management information and accountability systems, most police forces do record assaults. Such indices are unfortunately gross, as it is difficult to gauge levels of seriousness, quite apart from the fact that great differences exist among individual officers, as to the degree of battery (or whatever) they will tolerate before formally reporting an assault. However, even such gross data can and do provide meaningful measures of assaults as well as indicating the lot of police officers on the streets. Indeed, it is not an exaggeration to assert that assault and absenteeism provide the two most significant indicators of police physical and emotional health.

There is anecdotal evidence that at least some east coast field officers perceive considerable growth in attacks on police officers. Perhaps their perceptions are based in part on the recognition of a greater potential for violence existing among currently active offenders, as much as the actual violence they experience. It may stem in part from a generalised impression of increasing violent crime as evidenced (in Victoria at least) by the marked

recent increase in gunshots referred to earlier, increased number of sieges, etc. It is possible, too, that while assaults on police in some jurisdictions are not increasing in number, they may be increasing in ferocity, in respect of particular operational personnel, such as patrol groups, drug and vice squads. Perhaps differences between perception and recorded data are partly the result of unreported violence.

Finally, it is probably true to say, an expectation of greater public violence among at least some field officers has led to improved apprehension techniques, which have in turn reduced assaults even though they do not relieve the potential for violence, which is ever present for officers in certain operational categories and certainly does not reduce the emotional tension experienced by officers. In fact, if a smaller number of specialist officers undertake an increased number of incidents, the strain on the few will be far greater.

Nevertheless, a strong need remains to improve measures of assaults on officers. Measures do not need to be standardised for all agencies as the most effective comparisons will be those over time within agencies. In addition to simple frequencies, assault measures should capture intensity, degree of injury, duty time lost, weapon, operational specialty of victim, temporal and situational detail. Only by careful analysis of such data as well as the improved training that should develop from such analysis, will the rate of assaults be reduced.

Data in respect of those jurisdictions recording police assaults are shown at Table 5.1. In Victoria, some 12 837 assaults were recorded for the decade 1976-1985, producing a rate per 100 000 officers of 16 605. Western Australia police officers reported 2802 assaults over the decade, which translated into a rate per 100 000 officers of 10 638. Officers in South Australia experienced 5216 assaults judged worthy of reporting which resulted in a rate per 100 000 officers of 16 837. Police in Tasmania reported 1991 assaults giving a rate of 20 473. Northern Territory assault data incorporate resist arrest charges and are therefore a different measure from those employed elsewhere. Three thousand three hundred and fifty-eight reports were recorded leading to a rate per 100 000 officers of 63 097.

Ten annual datum points provide insufficient data to permit trend analysis of any rigour. It is merely observed here that the assault rate trend line over the decade 1976-1985 in respect of Victoria declined slightly. No such pattern was evident in respect of Western Australia, although an incline was evident in respect of the decade's final three years. In South Australia, on the other hand, the trend line clearly indicated an overall incline in assault rates. Tasmania and Northern Territory data were so unstable as to preclude the possibility of identifying even tentative trends.

TABLE 5.1 POLICE OFFICERS NON-FATALLY ASSAULTED (EXCLUDING GUNSHOT/BOMB BLAST) IN THE COURSE OF DUTY: FREQUENCY, ANNUAL AVERAGE AND RATE PER 100 000 OFFICERS, STATES/NORTHERN TERRITORY, 1976-1985

YEAR	NSW	VIC	QLD	WA	SA	TAS	NT ¹
1976	n/a	1 334	n/a	319	283	218	247
1977	n/a	1 192	n/a	304	241	221	398
1978	n/a	1 495	n/a	272	301 ²	168	272
1979	n/a	1 413	n/a	228	330 ²	111	364
1980	n/a	1 098	n/a	290	628 ²	161	308
1981	n/a	1 167	n/a	225	681	201	296
1982	n/a	1 372	n/a	190	651	226	415
1983	n/a	1 323	n/a	263	688	257	299
1984	n/a	1 078	n/a	310	794	221	343
1985	n/a	1 365	n/a	401	619	207	416
TOTAL	n/a	12 837	n/a	2 802	5 216	1 991	3 358
AN. AV.	n/a	1 283.7	n/a	280.2	521.6	199.1	335.8
DEC. RATE	n/a	16 605.01	n/a	10 638.22	16 836.67	20 473.01	63 096.58

n/a Not available

¹Includes resist arrest charges

²Distortion occurred due to data processing delays

Source: Police departments

New South Wales Police instituted an assault data collection during 1985-1986. Data recorded to date suggest teething problems with the collection. However, the number of assaults recorded on police officers for the year 1985-1986 was 1796, giving a rate per 100 000 officers of 16 876.53.

Available international comparisons include London's Metropolitan Police, which recorded a rate per 100 000 officers of 14 412 for the same decade, while law enforcement officers in the United States experienced a slightly higher rate of 15 661 per 100 000. The lower London assault rate is certainly consistent with the higher public respect for police reportedly obtaining in that jurisdiction but, the correlation coefficient achieved in respect of the various States/Territories suggests public respect for police is not a pertinent variable in explaining assault levels.

Judged by these two foreign rates, Western Australia police officers appear to enjoy a relatively low assault rate. New South Wales, Victoria and South Australia seem to be roughly on a par with American experience, while Tasmania and Northern Territory police officers apparently incur substantially higher rates of assault. However, one must constantly bear in mind the various assault reporting systems are not identical (and neither

should they be) and that different counting criteria produce differences which may or may not exist to the same extent in the workplace. Thus, rates calculated here should be taken as extremely rough guides only.

Data pertaining to Australia for the most part lack additional details of assaults including weapons employed. Such additional data are highly desirable to permit realistic reviews of police officer survival training and behavioural science programs.

Another gross measure of relative disadvantage is to compare the percentage of police officers assaulted with the percentage of persons assaulted in the States and Territories (*see* Table 5.2). The Australian Bureau of Statistics conducted a victim survey in 1983. Considerable variation was found in the assault rates in the various polities. There are, of course, methodological difficulties associated with such a comparison. Rather than compare police assaults data for the year 1982 with community data for 1982, it was decided to compare decennial police data for 1976-1985 with the 1982 community data. It was felt the decade rate was more stable than that of a single year in respect of such relatively small frequencies. Even then it was found inappropriate to include Northern Territory data due to the 1982 assault datum being unacceptably distant from the trend line for the decade.

Data in respect of both police and community assault rates concerning Victoria, Western Australia, South Australia and Tasmania only are displayed at Table 5.2. The vastly greater disadvantage of police officers vis-a-vis the public generally in the four jurisdictions shown, with respect to non-gunshot/bomb blast assaults is clearly revealed, even taking into account the fact that the citizen rate includes 15-18 year olds, which the police rate does not. Considerable disparities exist between States with regard to State/citizen assault rates. Disparity was least in Western Australia and greatest in Tasmania. In Victoria and South Australia, the degree of disparity was less extreme.

TABLE 5.2: ASSAULTS¹ ON POLICE OFFICERS AND CITIZENS: RATE PER 100 000, SELECTED STATES, 1982

POPULATION	VIC	WA	SA	TAS
Rate/Police	16 526	7 055	19 914	22 898
Rate/Citizens ²	3 900	4 400	4 100	1 400

¹Excluding sexual assaults

²Excluding persons under 15 years of age

Sources: Australian Bureau of Statistics 1986; Police departments

The various differences are attributable to a range of factors including, as we have previously cautioned, different counting criteria and different organisational ethos' with regard to officer tolerance of minor assaults.

Levels of officer training in inter-personal relations and self-defence are also highly pertinent considerations. Constituencies are also relevant. One would expect agencies possessing large non-urban areas to experience lower assault rates than those possessing high urban responsibilities.

Other factors may be associated with assaults on police, such as time of day, day of week, month, one or two officer patrols. For example, in America, FBI data concerning injury to law enforcement officers reveal officers operating singly are at greater risk than two officer patrols. There is other evidence which suggests the contrary. This widely disputed issue is of considerable importance to all police agencies and it cannot be adequately addressed (quite apart from a plethora of intervening factors) in the absence of careful data collection and analysis. It would be irresponsible of the authors to leave this issue without noting, too, the desperate need for field experimentation within agencies. Another consideration apparent in United States data is the greater rate of assaults on police during spring. Thus, seasonal factors also need to be examined to establish if similar factors operate elsewhere.

Police officers in Western Australia, according to the data, were least disadvantaged. Victoria and South Australia police officers occupied the middle ground, being over four times at greater risk of assault than members of the community generally. Tasmania police officers were at far greater risk relative to their colleagues in the other jurisdictions listed. Of course, were the community comparison confined to males 18-60 years rather than the entire community, the relative disadvantage of police officers would be considerably less.

Community assault rates were not greatly dissimilar in Victoria, Western Australia and South Australia. However, a substantially lower rate was recorded in respect of Tasmania. Therefore, it is all the more surprising that police officers in Tasmania, according to the data, experience the highest rate of assaults on police. One should not neglect to consider reporting criteria and recording processes in searching for an explanation.

It is possible a greater number of minor assaults on police are included in Tasmania Police data than other States. It is possible, too, policing styles in Tasmania are more conducive to physical (but not firearm) assaults (although all anecdotal evidence suggests the contrary). What can be said, though, is that in-house research is highly desirable to explain, at least to the extent that police officers themselves, individually and corporately, influence their own victimisation, why the apparently least violent community (of those listed) exercises most violence (exclusive of firearms and bombs) against its police officers. It may be, for example, that certain offences involving potential for violence, e.g. drunkenness, are more rigorously policed in Tasmania. Other social phenomena, such as unemployment may also play a part. One point does seem clear, though, and that is the relatively high assault police rate is not based on a broad anti-police sentiment. Surveys

suggest public respect for police in Tasmania is average as are perceptions of undue use of force by Tasmania police (Swanton et al. 1988).

American occupational victimisation data suggest police, sheriffs officers and bailiffs are victimised by assault at a rate far in excess of other occupations (Block et al. 1985). Despite their desirability, similar occupation based data are not available in any State or Territory.

5.1 Measurement of Assaults on Police Officers

Assaults on police officers have been treated as two discrete categories in this study. One, assaults by means of firearms and bombs; and, two, assaults by all other means. The reason for this distinction is self-evident. The great majority of fatal assaults are committed by firearms and bombs. Such means also suggest a degree of forethought not so evident in relation to other means. In addition, there is a widespread concern among police officers in some States, with regard to the use of firearms against police which, while associated with a more general concern about assaults with club, boot and fist, is quite distinct.

A circumstantial framework such as that shown at Table 1.3 provides a classification well suited to the recording of assaults against police officers. The classification is equally well suited to firearm and non-firearm attacks, as well as fatal and non-fatal attacks. Other dimensions of measurement could include simple dichotomies such as placed on sick list/continued on duty (London Metropolitan) and total assaults/assaults with injury (FBI).

Even so, a particular failing of such dichotomies is, that while they convey more information than mere crude frequencies, they fail to convey any meaningful comprehension of the intensity of such assaults. There are two basic approaches to measuring intensity. The first is to order data according to absence from duty criteria, which nicely accommodates convalescence outside hospital, such as that shown at s.1.2.1. The second is to assign a physical seriousness score, such as:

- no significant injury;
- minor physical injury - no hospital admission;
- moderate physical injury - hospitalisation up to one week;
- major physical injury - hospitalisation in excess of one week, but not resulting in permanent disability;
- permanent disability - duty continued; and
- permanent disability - discharge/fatal.

It is realised no measure is ever perfect and, also, that individual administrators might wish to modify some of these categories to suit their respective departmental record systems and planning needs.

Weapons usage is necessary to the analysis of assaults and the following weapon classification represents an absolute minimum:

- Firearm:
 - pistol,
 - rifle,
 - shotgun,
 - other;
- bomb or other explosive device;
- knife or other cutting instrument;
- other dangerous weapons, e.g. hammers, baseball bat, etc.; and
- personal weapons, e.g. boots, fists.

As with murder analysis, it is important assaults be recorded by type of assignment, as well as whether assaulted officers were in company at the time of their being assaulted. This point has special relevance, as mentioned earlier, to patrol manning levels. Similarly, temporal and situational data are necessary for analysis. Such analysis is most useful at local level. It is the task of local commanders to determine high risk locations, times, seasons and events. Decisions concerning minimum strengths, crewing, armament and the wearing of body armour are at least in part dependent upon such analyses.

One useful measure of violence experienced by police officers is the simple recording of whether arrests were accompanied by significant resistance or attack upon officers by offenders or others. Recording of such violence would depend upon reporting and recording systems in place in particular agencies but require minimum effort, perhaps the mere checking of a box upon an apprehension report. Data of this nature collated monthly can provide a quite sensitive measure of violence, as it impacts police officers over time in the workplace. They can also identify those officers who encounter greater violence than their peers and who may be in need of counselling or retraining.

All police agencies now record assaults on police, although such was not universally the case during the period reviewed in this study. The important thing now is to ensure sound operational application of such data. South Australia and Victoria Police have both indicated their capacity in this regard, especially their capacity to analyse aggregated information.

It is recommended as an absolute minimum that police agency annual reports reveal crude rates of assaults (some agencies already do so), together with a breakdown of weapons used, including firearms/bombs, together with estimates of lost working days.

6. Premature Termination of Service on Health Grounds

It was remarked previously that numbers of deaths in police service are partly a function of the numbers of members medically boarded. Thus, in terms of organisational health measurement, the two measures need to be read in conjunction.

Numbers of practitioners boarded out of police agencies during the ten year period 1976 to 1985 inclusive are shown at Table 6.1. New South Wales Police boarded 716 members giving an invalidity rate per 100 000 officers of 768; Victoria lost 1073, thereby producing a rate per 100 000 of 1388, significantly greater than that of New South Wales; Queensland lost 123 officers at a rate per 100 000 of 295. Western Australia lost 69 officers at a rate of 262 boardings per 100 000 officers; South Australia lost 177 officers resulting in an invalidity rate of 571 per 100 000; Tasmania lost 24 officers for a rate of 247 officers per 100 000; and Northern Territory lost 42 at a rate of 789 per 100 000 members. The average rate per 100 000 officers overall was 781, that is, 0.78 per cent of total police strength. It was exceeded by only Victoria and Northern Territory (barely), although New South Wales achieved an almost similar rate.

These rates are characterised by their wide range, with Victoria having the highest rate and Tasmania the lowest. Public service invalidity data are not available in respect of New South Wales but the Victoria Public Service experienced an invalidity rate of 612 per 100 000 members for the same period, less than half that for police officers. Thus, with regard to Victoria, at least, we do not seem to be encountering a broad based Victorian phenomenon, but rather a Victoria Police characteristic. Former Chief Commissioner of Victoria Police, Mick Miller, noted this relatively high rate in 1984 when he commented on ill-health retirements in his Force in the following terms:

The matter of ill-health retirements on the grounds of stress-related illness is a continuing problem. Increasing vocational pressures and greater accountability require a high sense of commitment and motivation on the part of our people. Regrettably, there are those who succumb to the pressures of over-exposure and over-work.

On the other hand, there are those inadequate personalities who ought not to have been recruited in the first place. Elimination of psychologically inferior candidates for appointment to the Force, at point of entry, would result in considerable savings to the government. Those who become superannuants in

the very early stages of their service represent an enormous drain on the State Superannuation Fund for many years (*Victoria Police Annual Report, 1984, p. 2*).

The question remains, of course, of suitable psychological screening instruments. Selected items of the Minnesota Multiphasic Personality Inventory are generally thought to be the most effective but, no single instrument addresses all relevant dimensions of personality and attitudes. Expert interviewing is also necessary despite the strain such a measure places on resources. One important remedial factor Chief Commissioner Miller did not comment upon was that of the structuring of the workplace. More effective structuring of the officers' workplace will undoubtedly contribute to fewer health problems, both physical and emotional.

TABLE 6.1 POLICE OFFICERS MEDICALLY BOARDED: FREQUENCY, ANNUAL AVERAGE AND RATE PER 100 000 OFFICERS, STATES/NORTHERN TERRITORY, 1976-1985

YEAR	NSW	VIC	QLD	WA	SA	TAS	NT	TOTAL
1976	32	100	29	4	3	4	4	176
1977	27	109	23	1	15	1	6	182
1978	41	89	13	8	12	0	6	169
1979	48	107	7	8	22	5	3	200
1980	43	122	10	9	17	2	1	204
1981	102	136	3	2	19	1	3	266
1982	161	126	3	7	12	2	2	313
1983	111	105	4	15	25	2	4	266
1984	63	92	2	9	29	3	6	204
1985	88	87	29	6	23	4	7	244
TOTAL	716	1073	123	69	177	24	42	2224
AN. AV.	71.6	107.3	12.3	6.9	17.7	2.4	4.2	222.4
DEC. RATE	767.58	1387.95	294.7	261.97	571.34	246.79	789.18	781.2

Source: Police departments, annual reports

Agencies enjoying lowest invalidity rates were Queensland, Western Australia and Tasmania. No comparative data were available in respect of the public services of Queensland and Western Australia; but, it is possible to calculate invalidity rates for Tasmania's public service over the period 1978-1985 inclusive. That rate was 482 per 100 000 public servants, almost double that of the police service, the reverse of the situation obtained in Victoria.

South Australia's public service invalidity rate for the decade 1976-1985 was 274 per 100 000 public servants, less than one-half that of the State's police department, similar to the position in Victoria.

This situation regarding Victoria and South Australia is the opposite of what one would have hypothesised given the assumption that police physical and emotional selection criteria are more exacting than those applied to public servants. Is the nature of police work so demanding in those States that it offsets the advantage physically superior police officer (in aggregate) would otherwise enjoy? If so, how does one explain Tasmania? Certainly, it is reasonable to assume the police workplace is perhaps less exacting in Tasmania, in very general terms, although one needs to ignore the apparently high rate of assaults against police in the island State. But, could that assumed advantage be sufficient to completely reverse the situation? There are, of course, too many unknowns in these various questions, including precise characteristics of the various reporting procedures, to permit answers. Subtle and unique factors, including willingness to permit boardings at a political level, also operate in jurisdictions and agencies, and which are known only to members thereof. For these reasons alone it is desirable that invalidity analysis be conducted within the various agencies. One might bear in mind, too, the finding of the Williamson survey of stress experienced in the New South Wales Police radio operations room. It was found *inter alia*, that police officers performing the same duties as public servants took more sick leave than their public service colleagues. There is anecdotal evidence of a similar situation existing in another agency, too. However, caution needs to be exercised in analysing such complex phenomena. Different life style factors, in particular, need to be taken into account.

A further point of comparison is provided by selected data from England and Wales (Evans 1987) for the year 1985 (*see* Table 6.2). Medical boardings vary from year to year due to administrative reasons and thus a single year's data does not provide a sound basis for analysis. However, the author assures his readers (writing in 1987) that 1986's figures would exceed those of 1985. Assuming these data paint a reasonably typical view of the invalidity picture obtaining in the agencies listed, we find a wide spread of rates per 100, ranging from 0.62 per cent in the case of London Metropolitan Police to a relatively high 2.51 per cent for Leicestershire. The wastage rate for all agencies was 1.05 per cent, it being slightly higher than the average for the States/Northern Territory, that is, 0.78 per cent. Thus, compared with the agencies shown at Table 6.2, police invalidity rates in Australia are marginally superior. However, this advantage is countered in part by a marginally inferior mortality rate.

TABLE 6.2 POLICE OFFICERS MEDICALLY BOARDED: FREQUENCY AND RATE PER 100 OFFICERS, SELECTED AGENCIES, ENGLAND AND WALES, 1985

AGENCY	FREQUENCY	RATE PER 100
North Wales	18	1.41
London Metropolitan	166	0.62
Lancashire	29	0.96
Greater Manchester	131	1.93
Leicestershire	44	2.51
Merseyside	76	1.68

Source: Evans 1987

Conditions identified by agencies as causing police invalidity discharges were too gross to permit listing in the detailed fashion adopted at Table 3.2, for example. Thus, ICD major categories (one digit) were utilised. There is an unfortunate loss of quality in such aggregation, but that can be offset to a degree with supplementary data in respect of selected categories.

Principal causes of invalidity discharges for all jurisdictions, other than Queensland and ACT are shown at Table 6.3. A broad pattern is apparent, especially in respect of New South Wales and Victoria in which conditions associated with: mental disorders, diseases of the circulatory system, and diseases of musculoskeletal system and connective tissue, account for the preponderance of medical boardings. The small number of neoplasms is a matter of surprise given it was a major cause of death in service (*see* Table 3.2). On the other hand, the considerable number of heart conditions responsible for discharges would have reduced the number of deaths in service from ischaemic heart disease.

One explanation offered in respect of the relatively low rate of medical discharges from cancer in New South Wales is reflected in the number of deaths in service from that cause. It is posited that for the most part sufferers of malignant neoplasms are older officers, often holding management positions, who are deeply dedicated to their work. Such members often prefer to risk dying 'in harness' rather than obtaining a medical boarding. New South Wales Police is sympathetic to such motivations and is prepared, subject to some modification of work loads, to allow officers so afflicted to continue to serve.

TABLE 6.3: PRINCIPAL CAUSES OF MEDICAL BOARDINGS: FREQUENCY OF DIAGNOSIS¹ BY ICD CATEGORY, STATES/NORTHERN TERRITORY, 1976-1985

ICD CATEGORY	NSW	VIC	QLD	WA	SA	TAS	NT
II Neoplasms	14	0	n/a	3	0	0	1
III Endocrine, nutritional, metabolic diseases, immunity disorders	35	1	n/a	3	2	2	0
V Mental disorders	324	580	n/a	19	0	9	23
VI Diseases of nervous system/ sense organs	87	12	n/a	3	0	1	1
VII Diseases of circulatory system	215	57	n/a	30	22	9	4
VIII Diseases of respiratory system	22	0	n/a	0	0	2	1
IX Diseases of digestive system	18	9	n/a	0	0	0	0
XIII Diseases of musculoskeletal system/connective tissue	374	111	n/a	9	10	3	11
XVII E800-E888 Injuries/accidents	53	87	n/a	3	4	3	7

¹Frequencies of diagnoses do not sum to total of discharges due to multiple causes.
n/a Not available.

Source: Police departments

Frequencies, in respect of medium and small-sized agencies are insufficient to warrant much comment, but there are some differences existing between New South Wales and Victoria diagnoses which inter alia might serve to indicate some of the vagaries of invalidity related research.

Firstly, we notice Victorian diagnoses involving mental illness are far more numerous than those offered in respect of New South Wales, despite the fact that New South Wales ill-health retirement records involve a far higher rate of multiple diagnoses. Is the difference one of record-keeping or medical practice only? Have Victoria Police selection procedures been relatively deficient with respect to psychological and psychiatric testing in the past, as seems possible from former Chief Commissioner Miller's comment quoted earlier? Victoria Police has been active over recent years in strengthening its performance in this respect. The data suggest for a number of agencies that stress is a substantial problem, even allowing for the subjective nature of such diagnoses. Agency ethos' are thought to impact such phenomena in unique ways and only in-house research into morbidity and invalidity can take such factors adequately into account.

Diseases of the circulatory system include a wide range of conditions, but the prevalent ones in terms of invalidity are ischaemic heart disease and hypertension. Although ischaemic heart disease is a significant killer of police officers in service, the number of boardings provides clear evidence, especially in the case of New South Wales, of pre-emptive attention. The number of discharges in New South Wales for hypertension appear to account for the absence of discharges on grounds of stroke.

A recognised subjective category of medical boardings, as well as compensation claims, is back injury. The very high number of neck and back injuries, again mostly identified in respect of New South Wales, raises the question of such subjectivity into high relief. Musculoskeletal problems may also reflect the relatively larger stature of police officers. Apart from an association with neurotic conditions, spinal injuries appear to stem from two primary sources, motor vehicle accidents and inter-personal violence, such as struggling to subdue a prisoner. In addition to discharges, they also account for a good deal of sick leave.

Injuries resulting from motor vehicle and other accidents account for a very much smaller proportion of boardings overall. As with transportation fatalities, some non-fatal motor vehicle accidents are unavoidable but, equally clearly, a number are avoidable. There are unfortunate examples of officers responding over enthusiastically to radio taskings and as a result being involved in accidents. The human and economic costs of such behaviour require close in-house scrutiny in all agencies. Reductive strategies need to be widely developed, implemented and enforced.

One public servant with a close knowledge of police invalidity and absenteeism suggests lower quality recruits, in aggregate, offered during the years 1968-1973. This is assumed to be due to widespread public objection to involvement in the Vietnam War and a consequential reluctance to serve with authoritarian agencies. These cohorts are now in the NCO ranks and are thought generally to be coping only with difficulty. They are said to be over represented in sick leave taking as well as invalidity data. This line of speculation is certainly worthy of follow-up by health professionals in the various agencies. Dr Tim Anderson, Director of Medical Services, New South Wales Police, makes the point that a considerable number of Vietnam War veterans joined the police service upon their discharge from military service. It has been widely asserted by veteran representatives that as a group they have suffered higher rates of psychological problems and morbidity than the male population generally. The Royal Commission investigating such claims *inter alia* found otherwise. The question thus arises: do Vietnam veterans in aggregate complement the posited low calibre personnel offerings of those years or do they balance it? That is, of course, if the original predicate is valid. But, the question of the mental and physical wellbeing of Vietnam veterans remains and may warrant monitoring for deviations from agency norms. Evidence of deviations may indicate the desirability of special support programs.

6.1 Control of Invalidity

Medical boardings provide police agencies with both advantages and disadvantages. On the credit side, members whose health has suffered as a result of their employment are justly permitted to retire with dignity. Their longevity and general health may benefit as a result and efficiency may increase with the departure of members no longer fully effective. On the

other hand, a degree of experience is lost with each member's departure, with additional costs involved in respect of both recruiting and training. Other substantial and largely unrecognised costs, are incurred as a result of officers preparing for or awaiting ill-health retirement.

No doubt the great majority of members medically boarded behaved with great propriety and yet managers are from time to time heard to express suspicions of particular cases - especially if a boarded member is found to be performing another job within a short space of time following discharge. Given the undoubtedly considerable, although admittedly unspecified, costs associated with invalidity discharges, it is entirely reasonable for management to closely monitor such matters.

B.D. Evans (1987), a serving police officer, suggests pertinent discharge criteria be examined to ensure justice is done to all parties. Some British police forces have adopted a policy of periodically checking invalided members, to see if they have sufficiently recovered their capacity to return to work. Some years ago the Milwaukee Police Department required invalided members who had commenced regular employment to either return to police duty or forego their pension. Certainly, it would be reasonable to specify what sorts of subsequent employment, if any, would be acceptable to members' previous employing agencies (or pension-paying bodies), any breach of which would see either a complete loss of pension or a portion thereof. Naturally, such provisions would need to be thoroughly explored by agencies, staff associations and respective award granting authorities. Comments such as these do not apply in those agencies in which boarded members receive full payouts rather than pensions.

There are, of course, members who are essentially 'burned out' prior to retirement age and who no longer wish to work as police officers. Disillusioned though they may be, there is little economic option for many such members but to attempt a medical boarding, given present conditions of service. Contract service has been one option ever since Ralph Tremethick raised the subject in the police context in 1979. The RCMP has always employed the contract system of engagement. One model commonly discussed is an initial term of ten years, followed by subsequent engagements in terms of five years. Termination of service at the expiry of a contract period would attract a gratuity (hopefully tax free), the amount increasing with service. In States, such as Queensland, in which total superannuation payouts are made upon retirement, officers would greatly benefit from contract engagements. The situation is more complex in States which pay (and continue to pay?) a police pension. Any system 'incorporating these principles, would go a long way toward reducing the frustration and 'semi-medical' issues of disillusioned police trying to get out of the job', according to Dr Tim Anderson.

It will be readily seen from Table 6.3 that factors such as physical fitness and nutrition are of prime importance, especially the three categories most

responsible for invalidity discharges. Lifestyle and motivation also bear heavily upon such phenomena. Police agencies are increasingly promoting health and fitness within their ranks, both directly and indirectly. Even the conducting of Police Games is relevant in health promotion terms. It is essential that employees and their industrial representatives cooperate with such measures rather than oppose them, such as objecting to weight and fitness testing for promotion. On the other hand, it is essential that agencies take staff associations into collaboration in respect of such matters.

6.2 Measurement of Invalidity

All police agencies currently record and present in their annual reports crude numbers of invalidities, that is, medical discharges. Internally, departments generally record considerably greater data, such as causes and whether conditions were thought to be work-related.

Invalidities represent the second greatest cause of wastage, resignations being the greatest single cause of separations in all States/Territories. However, although crude rates possess some value, especially to manpower planners, more detail is necessary. First, administrators and others need to know principal causes. Causes are most conveniently classified according to ICD categories and, in some cases, subcategories. For example, the recording of medical discharges due to cancer is sufficient at the single digit level, the same probably applies to diseases and conditions associated with Classes III, VI, VII and IX. But, breakdowns of mental disorders and diseases of the circulatory system are clearly desirable. In the latter category, distinctions between ischaemic heart disease and hypertension, for example, are highly informative. With regard to musculoskeletal conditions, distinctions between lower back and neck conditions, in particular, are of special interest to police medical and, occupational health and safety services. Similarly, breakdowns of accidents are also necessary. A clear idea of the various contributing conditions is absolutely essential to the development of effective remedial measures.

With respect to annual reports, it is suggested crude frequencies and rates be recorded in addition to a breakdown by ICD categories (as qualified in the preceding paragraph) by age interval groups.

Given the small frequencies associated with invalidities, it would be reasonable for all agencies to calculate a decennial rate, as was done at Table 6.1 and then use it as a bench mark for use in conjunction with a rolling ten-year average. Ideally, this practice should be utilised in relation to crude rates as well as individual category/subcategory rates.

These and other suggestions, of course, all involve additional resources. Hard-pressed police personnel and health and safety officers are generally unlikely to command such resources. Thus, the sorts of increased emphases outlined in the foregoing pages are only possible if a clear decision is made

to strengthen those administrative areas. Preliminary cost-benefit projections would be necessary, even though costing of some assumed benefits, such as retention of experience, would necessarily be fraught with difficulty.

7. Health Support in Police Agencies

All police organisations provide a degree of health support to their members. The degree of support offered varies between bodies according to needs and resources. There is a growing commitment in the health community to workplace intervention and, in addition, an appreciation among administrators of the need to protect expensive investments. These twin concerns ensure continued development of police medical services.

This section summarises the medical support services offered in each police jurisdiction at the time of writing. Given the dynamic nature of police medical services development, the levels of service offered may well have altered substantially by the time the reader peruses these pages. Readers will also notice the emphasis in this section on phenomena such as AIDS and hepatitis B, pathologies not evident in the health data which constitute the bulk of this publication.

In recent years emphasis on stress experienced by police officers has achieved a great deal of attention and concern. There is some evidence of the consequences of stress in the preceding pages, such as some forms of nervous disorder, but essentially the sorts of data which record the principal impacts of stress, such as sick leave, are not dealt with here. Researchers considering further quantitative and broad based studies of police health might well consider looking in that direction now that police administrations are beginning to come to grips with the problems of sick leave recording and analysis.

7.1 New South Wales

The objectives of New South Wales Police' Medical Program are to:

- promote a fitter, healthier police service; and
- promote preventive medicine through training and education on AIDS, Health and Safety, stress control, nutrition, fitness, wellbeing and resuscitation.

Medical Directorate Strategies designed to achieve these objectives as at 1989 include:

- expanding existing medical examination procedures to include fitness tests for all promotions;
- extending existing forensic medical practice in order to provide forensic expert advice in cases of physical violence;
- provide training, education and advice on health issues such as nutrition, fitness, resuscitation and stress control;
- provide psychology services;
- develop a stress management program;
- provide emergency health services;

- provide an AIDS counselling service;
- develop a health education unit;
- provide health and welfare services for members experiencing alcohol-related problems; and
- provide refresher resuscitation training to all members at six-monthly intervals.

The Force Medical Directorate comprises:

- seven medical practitioners;
- two psychologists;
- two alcohol counsellors;
- twelve welfare officers;
- three full-time senior Chaplains; and
- forty part-time Chaplains.

Support staff are provided as shown:

- two nurses, Medical Branch;
- seven staff, Occupational Health and Safety Unit;
- fifteen clerks, Workers Compensation Claims Management Unit;
- two staff, Rehabilitation Unit; and
- five staff, Health and Fitness Education Unit.

7.2 Victoria

In recent years Victoria Police has seen a complete re-organisation of its health support services. The broad focus is placed on physical, psychological and social wellbeing of police officers into the 1990s.

Victoria Police supports a number of health-related units and officials:

- Director of Health Services -
 - coordinator police hospital, psychologists, social workers, welfare, chaplaincy, and police surgeons;
- Physical Health Unit - Training Academy:
 - provides physical assessments of recruits and measures health of serving members;
- Sports and Recreation Officer - Training Academy:
 - researches police health requirements;
- Police Hospital:
 - provides health care and advice to both in- and out-patients,
 - provides dietary advice to members and families,
 - conducts health related research;

- Police Surgeon's Office:
 - provides 24-hour clinical/forensic service to on-duty members;
- Police Personnel and Amenities Officer:
 - investigates and conciliates complaints concerning work conditions;
- Police Psychology Office:
 - conducts critical incident stress debriefs,
 - provides counselling, psychotherapy and crisis intervention,
 - screens recruits and candidates for special squads;
- Police Welfare Office:
 - provides counselling, advice and support to members on extended sick leave, members experiencing personal problems and former members separated on health grounds;
- Police Social Work Office:
 - provides clinical/counselling to members and families;
- Police Chaplaincy:
 - members are affiliated with Inter-Church Trade and Industry Mission, non-denominational;
- Health Screening:
 - provides coronary risk advice; and
- Immunisation Programs:
 - all recruits and operational members are immunised against hepatitis B.

Victoria Police also has a research program which includes the following health-related topics:

- Occupational Health and Safety programs for managers;
- negative stress reactions;
- dangerous goods;
- communicable diseases;
- Legionnaires disease;
- resignations;
- rehabilitation;
- absenteeism;
- 4-10 roster;
- Walsh Street incident; and
- officer survival, firearms.

7.3 Queensland

Queensland Police has two standing committees possessing health support responsibilities: (1) AIDS Advisory Committee, and (2) Stress Management Committee.

The Department's Personnel/Welfare Section maintains a watching brief on associated issues and developments. Among other initiatives, it operates the agency's Incident Trauma Program. The program's purpose is to examine police officers medically and provide counselling (including family members if considered necessary), in the wake of any traumatic occurrence.

A retired inspector has been retained on a contingency basis to provide confidential counselling and assistance to police officers, spouses and other family members, having drinking problems or who think they might have a problem.

Chaplains are appointed throughout the State to minister to the spiritual and social needs of officers and to provide support to the Department's Welfare Officer.

An AIDS education program is in operation and it is intended every officer will have attended an AIDS seminar by mid-1990.

A hepatitis B vaccination program is also under way. It is intended all Departmental employees, attested and unattested alike, will be vaccinated by mid-1990.

The Department's Industrial Relations Unit provides an advisory service on occupational health and safety issues.

7.4 Western Australia

Western Australia Police maintains an Occupational Health and Safety Unit which variously provides and coordinates a number of services:

- hepatitis B inoculation program -
 - all recruits inoculated,
 - other members and spouses (providing Matron type services),
 - infectious diseases awareness program,
 - dissemination of written materials, including instructions/guidelines,
 - follow-up of 'at risk' injuries;
- post-incident debriefing -
 - post-trauma counselling,
 - peer counselling;

- District Medical Officers, community nurses;
- paid sick leave at Commissioner's discretion; and
- payment of work-related medical expenses.

Certification is required for each day of sick leave and there are no workers' compensation provisions.

The Occupational Health and Safety Unit possesses the following support staff:

- health and welfare advisers (occupational therapist, critical incident stress debriefing counsellor) -
 - instituted Employee Assistance Program and Rehabilitation Program;
- Welfare Officer -
 - mental, physical, financial, marital, family counselling,
 - investigates low productivity, absenteeism;
- Chaplaincy -
 - State-wide network of welfare and counselling services;
- Employee Assistance Program counsellor -
 - provides empathetic and confidential environment to resolve issues affecting quality of life;
- Safety Officer -
 - reviews work practices, injury work environment assessments, equipment, clothing, plant, accident investigation, hazard exposure, infectious diseases, chemicals;
- Health and Fitness Officer -
 - provides health/fitness assessments, information and advice re lifestyle, diet and exercise;
- Rehabilitation Officer -
 - provides assessments, gradual work return, ergonomics; and
- Sick Leave Evaluation Officer -
 - provides early intervention in long-term sick leave to provide rehabilitation, termination of services on health grounds.

7.5 South Australia

South Australia Police provides a balanced range of services and in recent times has emphasised occupational health and safety strategies. Particular resources and services provided, include:

- full-time Police Medical Officer who services -
 - Departmental employees,
 - victims of crime,
 - recruit standards;
- Psychology Unit, which provides -
 - personal counselling,
 - operational support,
 - advice to management;
- full-time rehabilitation coordinator, who coordinates -
 - management of workers compensation claims,
 - rehabilitation of sick and injured members;
- Health and Safety Training Unit, incorporating -
 - driver training section,
 - health and fitness section,
 - operational safety section;
- full-time Occupational Health and Safety Coordinator who -
 - develops occupational health and safety policies, programs, procedures,
 - coordinates implementation of same; and
- Occupational Health and Safety Strategy Committee, initiatives include -
 - immunisation of all operational members against hepatitis B,
 - medical assistance/procedure if exposed to hepatitis B,
 - medical assistance/procedure if exposed to AIDS,
 - minimum equipment and handling procedures when members involved with prisoners suffering communicable diseases,
 - trauma policy when members encounter emotionally disturbing experiences,
 - no smoking police in all police premises.

7.6 Tasmania

Tasmania Police has a Critical Incident Stress Debriefing Program, supported by psychologists and other counsellors.

A Force Chaplain is available for pastoral and social counselling and a Welfare Officer with a State-wide brief is also available.

These services are considered adequate in the light of present needs but the situation is constantly monitored.

7.7 Northern Territory

Northern Territory Police has a Medical Officer who attends Headquarters weekly.

A health program is under development. It aims at a holistic approach to employee health, incorporating general fitness and lifestyle measures. The program's final form will be negotiated with the staff association.

The Northern Territory Government is, at the time of writing, shortly to sign an occupational health and safety agreement with all government departments enabling each to develop its own occupational health and safety program.

All members receive hepatitis B injections. Families at remote locations are also inoculated.

Post-incident stress debriefing and trauma counselling is under negotiation with the staff association at the time of writing.

7.8 Australian Capital Territory

The Australian Capital Territory Police is a component of the Australian Federal Police and Territory police officers utilise the medical and health services provided by the parent body. These services are coordinated by a Medical Service Adviser.

Services provided members within the agency's Occupational Health and Safety Program include:

- medical examinations;
- cardiac risk factor program;
- preventive strategies against physical and mental illness accidents;
- clinical service for detection and surveillance of illness and injuries;
- and
- first aid services.

The agency maintains an Occupational Health and Safety Policy Committee as well as conducting a critical incident debriefing program.

All members are immunised against hepatitis B.

A non-smoking policy is proposed with effect from 1 January 1990.

8. References

- Australian Bureau of Statistics 1986, *Victims of Crime Australia 1983*, Cat. no. 4506.0, ABS, Canberra.
- Australian Bureau of Statistics 1979, *General Social Survey: Crime Victims, May 1975*, Cat. no. 4105.0, ABS, Canberra.
- Block, Richard et al. 1985, 'Crime Victimization Rates for Incumbents of 246 Occupations', *Sociology and Social Research*, vol. 69, no. 3, Apr., pp. 442-51.
- Cardarelli, A.P 1968, 'An Analysis of Police Killed by Criminal Action 1961-1963', *Journal of Criminal Law, Criminology and Police Science*, vol. 59, no. 3, pp. 447-53.
- Evans, B.D. 1987, *The Health of the Police Service - Cause for Concern?*, Police Staff College, Bramshill, UK.
- Harrison, J.E. et al. 1989, 'Deaths as a Result of Work Related Injury in Australia 1982-1984', *Medical Journal of Australia*, vol. 150, 6 Feb., pp. 118-23.
- Jager, Joachim 1983-84, 'Assaults on German Police Officers', *Police Studies*, vol. 6, no. 4, Winter, pp. 18-21.
- Mukherjee, S.K. et al. 1987, *The Size of the Crime Problem in Australia*, Australian Institute of Criminology, Canberra.
- Stobart, R.M. 1972, 'Serious Assaults on Police', *Police Journal*, vol. 45, no. 2, April-June, pp. 108-26.
- Swanton, Bruce 1983, *Protecting the Protectors*, Australian Institute of Criminology, Canberra.
- Swanton, Bruce 1979, *Police Institutions and Issues*, Australian Institute of Criminology, Canberra.
- Swanton, Bruce & Psaila, Trish 1985, *Descriptions of Police Officer Murders and Woundings by Shooting and Bomb Blast 1964-1983*, Australian Institute of Criminology, Canberra.
- Swanton, B., Hannigan, G. & Psaila, P. 1985, *Police Source Book 2*, Australian Institute of Criminology, Canberra.
- Swanton Bruce, et al. 1988, Trends and Issues No. 11, *How the public see the police: an Australian survey - I*; Trends and Issues No. 15, *How the*

public see the police: an Australian survey - II, Australian Institute of Criminology, Canberra.

Victoria Police 1979, *A Study of Assaults on Victoria Police*, Victoria Police, Melbourne.

Zunno, Frank A. & Lester, David 1982, 'The Risk of Murder for Police', *International Criminal Police Review*, no. 354, Jan., pp. 6-8.

The following publications were also referred to for the years covered in this study:

Australian Bureau of Statistics, *Year Book Australia* (annual).

Police Department *Annual Reports* for the following jurisdictions -

New South Wales

Victoria

Queensland

Western Australia

South Australia

Tasmania

Northern Territory

Australian Federal Police.

United States Federal Bureau of Intelligence, *Law Enforcement Officers Killed and Assaulted*, FBI, Washington, D.C. (annual).

Police Officer Populations: States/Territories, 1976-1985

Year	NSW	VIC	QLD	WA	SA	TAS	NT	States/ NT	ACT	All States/ Territories
1976	8 482	6 487	3 582	2 288	2 560	938	418	24 755	551	25 306
1977	8 504	6 819	3 744	2 345	2 781	942	451	25 586	551	26 137
1978	9 011	7 238	3 832	2 490	2 920	946	470	26 907	575	27 482
1979	9 091	7 569	3 902	2 558	3 135	956	538	27 749	583	28 332
1980	9 225	7 814	4 020	2 643	3 219	974	524	28 419	616	29 035
1981	9 357	8 050	4 338	2 622	3 250	974	550	29 141	649	29 790
1982	9 388	8 302	4 345	2 693	3 269	987	566	29 550	683	30 233
1983	9 812	8 258	4 514	2 824	3 297	982	592	30 279	692	30 971
1984	9 950	8 327	4 686	2 894	3 286	1 007	595	30 745	704	31 449
1985	10 460	8 444	4 775	2 982	3 263	1 019	618	31 561	716	32 277
1976-85	93 280	77 308	41 738	26 339	30 980	9 725	5 322	284 692	6 320	291 012

Source: Police Departments, annual reports

Resident Populations: States/Territories, 1976-1985

Year	NSW	VIC	QLD	WA	SA	TAS	NT	ACT
1976	4 959 600	3 810 400	2 092 400	1 178 300	1 274 000	412 314	98 200	207 700
1977	5 003 200	3 837 500	2 132 400	1 204 800	1 286 000	415 000	102 200	213 700
1978	5 049 800	3 863 700	2 177 500	1 230 900	1 297 000	417 600	107 000	218 000
1979	5 103 300	3 883 200	2 223 200	1 254 100	1 301 800	420 800	111 400	220 800
1980	5 165 200	3 809 800	2 275 400	1 273 500	1 308 700	423 600	115 200	224 300
1981	5 237 100	3 948 600	2 345 300	1 299 100	1 319 300	427 224	122 800	227 600
1982	5 307 948	3 994 122	2 419 570	1 336 911	1 328 738	429 800	129 429	231 900
1983	5 354 915	4 034 632	2 473 037	1 363 239	1 340 398	432 600	134 041	236 600
1984	5 412 040	4 078 458	2 507 049	1 383 665	1 353 917	437 371	138 826	244 600
1985	5 474 288	4 121 456	2 546 442	1 407 451	1 362 876	442 111	143 801	253 085
1976-85	52 067 391	39 381 868	23 192 298	12 931 966	13 172 729	4 258 420	1 202 897	2 278 285

Source: *Yearbooks Australia; Australian Demographic Statistics Quarterly*

Annex C**Police Murders, Police Population,
England and Wales, 1976-1985
(Excluding London Metropolitan Police District)**

Year	Police Murdered	Police Population
1976	0	86 332
1977	1	85 315
1978	1	86 261
1979	1	89 912
1980	0	92 926
1981	2	93 594
1982	5	93 797
1983	1	93 421
1984	2	92 956
1985	0	93 157
Total	13	907 671

Source: *Her Majesty's Inspector of Constabularies Annual Reports*

Annex D**Assaults on Police, Murders, Police Population,
London Metropolitan Police, 1976-1985**

Year	Assaults	Police Murdered	Total Deaths			Police Population
			Male	Female	Total	
1976	3550	0	33	0	33	22 430
1977	4030	0	30	0	30	22 239
1978	3955	0	20	0	20	22 197
1979	4185	0	20	2	22	22 786
1980	3123	1	23	0	23	23 691
1981	4444	0	20	0	20	25 161
1982	3141	0	23	0	23	26 350
1983	3150	3	25	3	28	26 806
1984	2765	1	24	2	26	26 844
1985	3009	2	17	0	17	26 783
Total	35 352	7	235	7	242	245 287

Source: *COPOM Annual Reports*

Annex E

**Police Murders, Police Populations,
Ontario, Quebec, Canada, 1976-1985**

Year	ONTARIO		QUEBEC		CANADA	
	Police Murdered	Police Population	Police Murdered	Police Population	Police Murdered	Police Population
1976	0	17 919	2	14 847	3	51 193
1977	2	17 755	2	14 797	5	51 778
1978	2	17 846	0	14 589	6	51 716
1979	0	17 984	1	14 539	1	52 018
1980	2	18 040	0	14 611	3	52 922
1981	2	18 187	2	14 558	5	53 689
1982	1	18 529	0	14 289	1	53 663
1983	1	18 543	0	14 097	1	53 177
1984	5	18 481	1	14 059	6	53 102
1985	0	18 461	3	13 893	5	53 464
Total	15	181 745	11	144 279	36	526 722
Rate per 100 000		8.25		7.62		6.83

Source: *Homicide in Canada, 1987*

Annex F**Police Deaths, Police Population,
New Zealand, 1976-1985**

Year	Police Deaths	Police Population
1976	8	4 332
1977	3	4 466
1978	8	4 700
1979	7	4 806
1980	10	4 961
1981	4	4 946
1982	3	5 000
1983	5	4 014
1984	6	5 088
1985	7	5 129
Total	61	47 442

Source: Police Department

Annex G

**Law Enforcement Officer (LEO) Assaults,
LEO Murders, LEO Woundings, LEO Population,
United States of America, 1976-1985**

Year	LEO Assaults *	LEO Murders	LEOs Wounded		LEO Population
			Firearms	Bombs	
1976	46 311	112	523	4	291 610
1977	46 347	93	506	0	322 205
1978	53 065	93	546	0	347 681
1979	55 794	106	670	1	340 764
1980	54 552	104	741	0	345 554
1981	53 786	91	609	0	332 901
1982	53 133	92	713	0	319 141
1983	59 257	80	669	0	377 620
1984	57 499	72	533	0	372 268
1985	58 931	78	581	0	389 808
Total	538 675	921	6 091	5	3 439 552

*Excluding firearms/bombs

Source: LEOKA



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