Review of the Queensland Police Service Taser Trial

This is a collaborative report prepared by the Queensland Police Service with the assistance of the Crime and Misconduct Commission.

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Executive summary

The review of the trial of Tasers which concluded on 30 June 2008 has provided an important opportunity to examine the use of Tasers by police officers in Queensland to guide policy and practice within the operational environment. In particular the lessons learnt have helped prepare for the rollout of Tasers to all police officers. On 29 January, 2008, the Former Police Minister, the Honourable Judy Spence MP, announced the rollout of Tasers to all operational police across Queensland. The trial period continued until 30 June 2008 and staged rollout commenced on 1 January 2009.

The review of this trial has been undertaken in consultation with the Crime and Misconduct Commission (CMC). A Taser Trial Evaluation Steering Committee was established with representatives from the Queensland Police Service (QPS) and the CMC (including the Director, Research and Prevention (R&P) and a Senior Research Officer). The Steering Committee developed a review plan and associated review methodology which put forward a number of key questions for the review and established a range of data collection strategies.

As part of the review process the CMC undertook a literature review that summarised the benefits and risks reported to be associated with Tasers, and identified the key issues that needed to be considered by the QPS in the development of policy, procedures and training. This review of the research literature was also published by the CMC as a Research and Issues Paper.

The CMC also assisted the review team by undertaking the analysis of Taser dataport downloads – the electronic record of each time a Taser is activated – that is provided in the risk management section of this report. Taser usage forms were completed for every deployment of a Taser and these were electronically forwarded to members of the review team, including the research officer at the CMC. This allowed the CMC to have the opportunity to be fully appraised of all incidents as they were reported. It is important to note however, that the CMC did not take part in the assessment panel that evaluated the appropriateness of individual deployments during the trial.

Users undertake eight hours of training in the use of the weapon including theory and policy familiarisation, weapon use, scenarios and voluntary exposure. Officers are also required to complete additional pre-course reading and an online examination. Officers need to requalify their training by attending a one day course each year.

Only data from 1 July 2007 to 2 June 2008 was reviewed. From 1 July 2007 to 2 June 2008 there were a total of 170 deployments of a Taser with 41 per cent of incidents requiring only the threat of Taser use in order to successfully resolve the situation. Probe activations were used in a further 25 per cent of incidents and drive stun only activations used in 29 per cent of incidents. International experience suggests that it is the stun drive mode that has the most potential for misuse while the probe mode provides the most opportunity for officers to take control of a violent situation. Consequently, the Service has amended policy and training to ensure clear guidance in appropriate use of the stun drive mode.

Most often Tasers were used in dwellings or on the street and between the hours of 8pm and 4am. Forty-two incidents involved multiple deployments of the Taser, most often this consisted of two deployments though there were 12 incidents in which the Taser was deployed three or

more times against a subject. Subsequently, the training program has been amended to emphasise good situational decision making and threat assessment in relation to the use of multiple deployments.

While three-quarters of subjects were not armed with a weapon, approximately two-thirds of incidents involved a subject exhibiting physical violence towards police officers, others or in one-quarter of incidents towards themselves (i.e suicidal). During the trial Tasers were found to be effective in allowing officers to gain control of the subject or situation, often without injury to themselves or the subject, more than 80 per cent of the time. While 26 subjects received injuries from the Taser these were minor abrasions and cuts. The trial was not able to quantitatively verify whether the use of Tasers actually reduced injury for officers or subjects compared to the likelihood of injury if a Taser had not been deployed. However, this issue will be monitored over time.

The key risks associated with Tasers identified in the literature and by the QPS include:

Taser creep – the risk that, over time, Tasers begin to be used in situations beyond their intended use;

over-reliance – the risk that officers will use Tasers as a weapon of first choice rather than considering other options to de-escalate a situation; and

multiple or prolonged deployments – the risk that officers will apply a Taser repetitively or for extended periods of time.

The trial found that Taser use must be embedded in the operational skills training framework and officers must be reminded of the need to choose the use of force that has most chance of success and is proportionate to the perceived threat. This must be emphasised not only to reduce use of Tasers in non-combative, low violence situations, but equally to give officers confidence to use lethal force if and when the situation requires. Central to the effective and appropriate use of Tasers is the provision of clear policy and procedures underpinned by a strong training program. As a result of the review and in consultation with the CMC, amendments have been made to the policy and procedures on deployment of the Taser. These amendments were aimed at providing clear guidance to officers to assist their decision making. As Tasers rollout to all operational officers the policy and operational guidelines will be continually monitored and if necessary, amended further.

Similarly, opportunities to refine, improve and/or expand specific components of the training were identified through the trial. For example, the training now has a stronger focus on decision making in relation to stun drive and there is continuing emphasis on situational threat assessment and proper consideration of the range of use of force options (e.g. tactical communication, Oleoresin Capsicum (OC) spray, withdrawal from situation etc).

The findings of the review helped in the identification of a number of strategies that have been implemented to manage and monitor officer behaviour including:

1. Taser dataport downloads (the chip that records date, time, length of activation) will be audited;
2. Tasers will be included in Ethical Standards Command audits and inspections of stations;
3. a detailed station register of Taser equipment will provide an audit trail of officers' carriage of Tasers and cartridge use and activations including spark tests for each Taser;

4. Taser usage will continue to be recorded by officers on a Taser Usage Form developed as part of this trial. This will be a valuable research and monitoring tool; and
5. implementation of a Significant Event Review Panel at each region and command to assess every deployment and provide a quick response to issues (e.g. policy, equipment, training improvements; use of force options used by individual officers and trends) if they are identified. These Significant Event Review Panels will be overviewed by the ESC.

Further, the normal complaints mechanisms and overview systems provided by the ESC, the CMC and the Courts remain.

Overall the trial indicated Tasers can provide an important, alternative use of force option for police and has highlighted the importance of establishing rigorous reporting, monitoring and review processes to ensure ongoing appropriate use of Tasers.

The first section of this report outlines the parameters of the taser trial and is followed by a description of the methodology and data collection strategies used for the review of the trial. The next section of the report provides a quantitative analysis of the number, nature and circumstances of Taser deployments. This is followed by analysis of the perceptions and experiences of officers who completed Taser training using information gathered from surveys and interviews of officers. Then assessment of officers' decision making in relation to threat assessments and use of force options is provided. Finally, information from two mechanisms of Taser risk management, complaints of misuse and data from the Taser's internal electronic recording device is examined.

Project description

In March 2007 the former Minister for Police the Honourable Judy Spence MP, and Queensland Police Commissioner Bob Atkinson announced a 12 month trial of Conducted Energy Devices (Tasers). The trial commenced on 1 July 2007.

The Queensland Police Service (QPS) Special Emergency Response Team has used Tasers since 2002, so the aim of this project was to trial the use of the X26 Taser as a less than lethal force option in a general operational environment. The introduction of Tasers within a general policing environment is intended to provide another option to the Service's use of force model. As noted by the Commissioner, first response officers increasingly have to deal with situations that cannot be effectively managed by the currently available use of force options. For example, a violent subject affected by methamphetamine who is impervious to Oleoresin Capsicum (OC) spray and is at high risk of causing serious injury to themselves, officers or the public. Limited use of force options available to police may result in unnecessary injury to officers or the subject, and in the worse case scenario, increase the risk of death or serious injury to all parties involved in a critical incident.

Tasers may offer an option that could result in a range of positive law enforcement outcomes, including fewer fatalities, fewer injuries to officers and subjects, deterrence of violence by subjects, and fewer complaints of excessive use of force by police. It was also envisaged that the use of Tasers may result in improved resolution of violent incidents. However, it is also important to understand any potential limitations of Tasers and ensure appropriate mechanisms are put in place to ensure the responsible and effective use of this particular use of force option.

The trial was initially limited to examining the use of Tasers by District Duty Officers (DDOs) and Regional Duty Officers (RDOs) in Metropolitan South, Metropolitan North and South Eastern Regions. These officers are typically senior operational police, generally of Senior Sergeant or Inspector level and who therefore should have substantial operational experience.

During each shift, a region has one RDO who is on-call to manage major incidents, provide advice, direction and leadership in the deployment of resources within the region to effectively respond to policing activities.

Police regions are divided into several districts. During each shift, every district has one DDO who can be called by officers to assume command and control of major incidents until the matter is resolved or provide advice, direction and leadership in the deployment of resources within the district to effectively respond to policing activities.

RDOs and DDOs are on-road supervisors who may also be the first responder to a call for service if they are the nearest available officer or if information provided by police communications identifies the life threatening nature of an incident.

Following a six-month interim report, a decision was made to extend the trial to all operational officers within a single police division in order to examine the use of Tasers by operational officers at all ranks. On 1 April 2008 all trained, operational officers in Dutton Park Division, Metropolitan South Region were authorised to use Tasers.

Tasers were provided to stations rather than as personal issue and officers were required to sign out the Taser at the beginning of each shift, noting the registration number of the Taser and any charge cartridges they took.

In order for an officer to be authorised to use a Taser, they must have successfully completed training provided by qualified trainers from the Special Emergency Response Team. Training consisted of a two-day course encompassing theory, voluntary exposure, practical demonstrations and application of the Taser in training scenarios. Prior to participation in the training, officers were required to be Operational Skills and Tactics (OST) trained and compliant (this includes both Police Operational Skills and Tactics (POST) and firearms training). In total, 242 officers (216 RDOs and DDOs and 26 officers from Dutton Park Division) were trained. The large number of officers trained (compared to the small number of positions allowed to use a Taser) was due to the high rotation of officers in RDO and DDO positions, with officers commonly acting in the role as part of the development processes used to prepare officers for promotion.

Tasers provide police officers with another use of force option for dealing with combative and physically aggressive people. The popularity of Tasers with law enforcement agencies is increasing, with growing numbers of agencies adopting the technology within Australia and overseas. This is not surprising given the operational benefits afforded to police, such as a high deterrent value, immediate incapacitation of the individual, the ability to deploy at a safe distance, and minimal aftercare requirements, unlike OC spray. An overview of the research literature in relation to Tasers has been produced by the CMC and is provided in Appendix 1.

Tasers however are not without their detractors, and remain a controversial weapon within a use of force framework. There have been concerns about the device's safety and the potential for the misuse of Tasers by officers. This follows reports in overseas jurisdictions that Tasers have been used in situations for which the device was not intended, too early in interactions, has been overused and deployed on people who posed no threat of violence or risk of serious injury. The literature regarding these issues is discussed in section three of this report.

The academic and medical community is also divided in respect to the safety of Tasers. This lack of consensus arises from conflicting research findings and few studies that have adequately tested the device on human subjects. As such, there have been repeated calls for more independent and rigorous research into the effects of Tasers, particularly on vulnerable people and at-risk groups who are more likely to be involved in violent confrontations with police.
The review of the QPS's Taser trial is aimed at analysing the use of Tasers by police officers within the Queensland environment so as to guide the development of appropriate policies and procedures within the operational environment.

On 29 January, 2008, Former Police Minister, the Honourable Judy Spence MP, announced the rollout of Tasers to all operational police across Queensland. The trial period continued until 30 June 2008 and staged rollout commenced on 1 January 2009.

Review methodology

A Taser Trial Evaluation Steering Committee comprising representatives from the Service and the Crime and Misconduct Commission developed and approved a project plan outlining the methodology and data collection strategies for the review of the trial. The review followed an action research approach with information obtained during the trial immediately fed back to project managers to address issues and resolve gaps in policy or practice.

Key review questions encompassed a range of issues associated with the implementation and management of the trial and also a number of outcome measures that sought to assess the use of Tasers in an operational environment by officers.

The key review questions were:

Outcomes

1. How many times were Tasers drawn, aimed at, or used on a subject by officers?
2. Were Tasers used effectively by officers to control and restrain subjects in the trial areas?
3. Were Tasers used appropriately by officers to control and restrain subjects in the trial areas?
4. Are Tasers an effective and appropriate use of force to control and restrain subjects in the general policing environment? and
5. What are the advantages and challenges of using Tasers in a general policing environment?

Process

6. Are the policies and operating procedures governing the use of Tasers suitable?
7. Was the training of officers suitable? and
8. If the use of Tasers by RDOs and DDOs is extended to other operational police, what guidelines, policy and training would be required?

The following quantitative and qualitative data sources were used to answer these questions.

Taser Usage Form – One of the key data collection tools was the Taser Usage Form (TUF) that was developed to capture a range of information relating to the deployment of a Taser. It was required to be completed by the deploying officer on every instance a Taser was utilised. A deployment is defined as an incident in which the Taser was: 1) drawn and subject warned; and/or 2) activated in probe mode; and/or 3) activated in stun drive mode.

Significant Event Message – Officers were also required to complete a Significant Event Message (SigEvent) following each deployment of a Taser. A SigEvent is completed by officers whenever an incident occurs that should be brought to the attention of senior officers and includes such matters as a police pursuit, injuries or death in custody, fatal crashes, discharge of a firearm, use of OC spray or any matter that is politically sensitive or may generate extensive media interest.

Interviews – Interviews were conducted with deploying officers in order to gain additional information about the circumstances involving a Taser deployment. The particular focus of the interviews was to ascertain an officer's threat assessment, their consideration of other use of force options and other factors that influenced their decision to deploy the Taser.

Initially it was intended to conduct interviews with all deploying officers during the trial period. However, due to the number of deployments that occurred and issues associated with staff availability, the decision was taken to interview officers involved in every fifth deployment from 1 July to 31 December 2007. This sampling strategy was chosen to remove any bias in the selection of cases. It was still possible to interview all officers who deployed a Taser between 1 January and 31 May 2008.

A panel of senior QPS personnel who rated each incident against several criteria considered information from these interviews, the TUFs, and the SigEvent Messages. The panel included: Superintendent, Specialist Response Branch; Inspector, Operational Skills and Tactics Program and/or Sergeant, Special Emergency Response Team; Inspector, Operational Research and Advisory Unit; and Manager, Review and Evaluation Unit.

From the triangulation of information, the panel scored each deployment on a range of criteria as detailed below:

threat assessment undertaken;
consideration of situational use of force options;
justification of decision to use a Taser;
deployment within operational and policy guidelines;
was safety to officer enhanced;
was risk of injury to subject reduced; and
outcome/resolution of incident.

It is acknowledged that the information used to assess each incident (TUF, SigEvent, and interview) relies on subjective self reports by the deploying officers. Objective data such as that captured by CCTV footage or interviews with witnesses was not incorporated into the assessment process. Further discussion of the limitations of the methodology is provided on page 10 of this report.

Officer survey – All officers participating in the Taser trial were invited to complete a 21-item survey on their experiences of Taser training and the use of the Taser in an operational environment. The survey also provided an opportunity for officers who had not deployed a Taser to contribute their opinions and experiences.

RDOs and DDOs were sent the survey on 23 May 2008, with four weeks to provide a response. Operational officers from Dutton Park Division were sent the survey on 6 June 2008. In total the survey was sent to 242 officers, including 216 RDOs and DDOs and 26 Dutton Park Division general duties officers. A total of 101 completed surveys were received from 85 RDOs and DDOs and 16 Dutton Park Division general duties officers.

Of the 101 officers who completed the survey, 55 had not deployed the Taser since receiving training. Twenty officers had deployed the Taser just once, and 24 had deployed the Taser on

multiple occasions. Two officers responding to the survey did not indicate if they had deployed a Taser or not. Officers who completed surveys accounted for 107 of the 170 Taser uses during the trial (63%).

Given the inclusion of Dutton Park Division in the trial, approximately one-third of the sample (34 officers) were from South Brisbane District - comprising 18 RDOs/DDOs and the 16 Dutton Park officers. Sergeants (38 officers) and senior sergeants (44 officers) formed the largest group of respondents. Three first year constables and 10 constables also completed the survey. Only 11 female officers provided responses for the survey. The average length of service for respondents is approximately 23 years for RDOs/DDOs and seven years for Dutton Park officers.

Taser dataport downloads - The Taser X26 is equipped with a built-in dataport that is designed to automatically record a range of usage information each time the device is activated or fired[1]. The type of data captured by the device includes the:

- date and time of deployment;
- duration of activation;
- temperature of the Taser; and
- battery capacity.

Information provided by Taser International notes that the dataport capability 'protects officers from claims of excessive use of force', and also provides law enforcement agencies with a 'powerful management tool to trace usage patterns, prevent misuse and develop ongoing training programs'[2]. To this end, the dataport function serves as a potentially useful accountability mechanism to safeguard police officers against malicious or vexatious complaints and to assist management in the investigation of complaints or unreported activation of the device.

All data captured on the eight Tasers issued to Dutton Park police station between 1 April and 19 May 2008 was downloaded. This data collection period reflects the first six weeks of operational use by Dutton Park police officers. Data downloaded from the Tasers were cross-referenced with the QPS Taser Usage Reports and the station's Equipment Register completed by officers during the corresponding period.

Officers complete the Equipment Register each time a Taser is issued to them, and subsequently when the Taser is returned to the station. The register requires officers to detail:

- their name and registration number;
- date and time the Taser was issued;
- Taser serial number;
- Taser cartridge number/s; and
- date and time of return.

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[1] Activation of the Taser includes when the device is 'sparked' (either as a test of the device or a warning to a suspect), discharged in drive stun mode, or fired in probe mode. The Taser X26 does not record any information for deployments that involve the activation of the light or laser only.

[2] Taser International (1998-2006) training presentation, p 95.

The register also includes a field for officers to record other comments such as the serial number of any spent cartridges.

Analysis of the data was undertaken by the CMC and the following assumptions were made during the analysis:

any activation or firing of up to five seconds that corresponded with a date and approximate time recorded in the Equipment Register was categorised as a spark test;
any activation closely following the first spark test was also categorised as a spark test;
any activation that corresponded with information provided on a Taser Usage Form was categorised as consistent with an operational deployment; and
any activation outside of these two categories was classified as "other".

Limitations

Assessment of the decision making processes of officers and ultimate determination of the appropriateness of Taser deployments was reliant on methodology that has inherent limitations. Firstly, the information relied upon to assess the decision of officers to deploy a Taser was provided through officer self-reporting of the circumstances of the incident and description of subject behaviour. Objective and/or alternative perspectives could only have been gained through collection of eyewitness testimony, offender interviews or CCTV footage. Ultimately this would have required an investigation of each incident which was not practicable nor within the scope of the original review plan agreed to by the joint CMC/QPS Evaluation Steering Committee.

Secondly, the panel of QPS officers who assessed many of the incidents used a subjective framework to organise the information from the TUFs, SigEvent Messages and officer interviews. The amount and depth of information entered in these documents by officers varied considerably and often there were gaps in the information despite multiple data sources being used. Consequently the full circumstances of an incident may not have been clearly documented. In these instances panel members were moderate in their assessments and were reluctant to downgrade the threat perceived by the officer without evidence to dispute the officer's threat assessment.

Deployment of Tasers in three QPS regions

This section of the report provides analysis of information about Taser deployments as collected in the Taser Usage Forms (TUF) that were completed by all officers who deployed a Taser during the trial. A deployment is defined as occurring any time the Taser was drawn from the holster in response to an incident and may include simply the threat or warning to deploy, the activation of the Taser probes, and/or the activation of the drive stun.

It was initially intended to conduct separate analyses of the usage forms completed by RDO/DDOs and those completed by operational officers in the Dutton Park Division so as to explore differences that may occur when more junior ranked officers deploy the Taser. However due to the limited deployments by Dutton Park officers (n=7), these two groups have been combined.

During the period from 1 July 2007 to 2 June 2008 there were a total of 171 incidents recorded[3]. One incident, an accidental discharge of the Taser by an unqualified general duties officer, has not been included in the analysis. Of the 170 remaining incidents, two related to deployments against animals. These have been included in the analysis, although have been excluded when considering subject characteristics or subject injuries.

About the incident

Type of deployment

Of the 170 incidents, there were 70 incidents in which the subject was threatened (drawn and aimed, but not fired) with the use of a Taser. In other words, in 41 per cent of instances the presentation of the Taser and verbal warning was sufficient to resolve the situation. There were 43 probe only activations (25%) and 49 drive stun only activations (29%). In eight incidents (5%) both the probe and drive stun modes were used on a subject (see Figure 1).

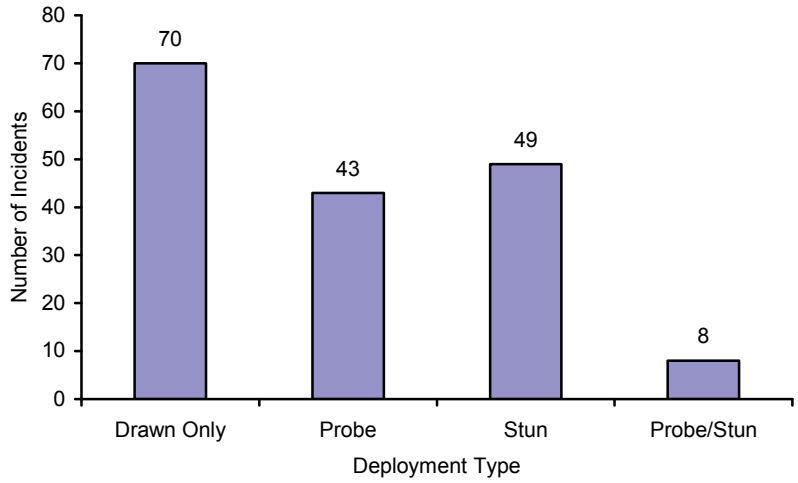

Figure 1. Number of incidents by deployment type

[3] The data collection period for the analysis of Taser deployments for this review report was from 1 July 2007 to 2 June 2008. Between 1 July 2007 and 30 June 2008 there were a total of 188 Taser deployments including 9 deployments for Dutton Park Division officers.

Location

Deployments across the three trial regions were evenly spread. South Eastern Region accounted for 36 per cent of incidents (n=62) followed by Metropolitan South Region (n=55, 32%) and Metropolitan North Region (n=51, 30%). Two deployments occurred in the North Coast Region (Redcliffe District), which was outside the trial area. In these two incidents, the subject was only threatened with the Taser.

The Gold Coast District recorded the most deployments among districts, accounting for a quarter of all incidents (n=42, 25%). This was followed by Brisbane Central District (n=29, 17%), Wynnum District (n=25, 15%), South Brisbane District (n=22, 13%) and Logan District (n=20, 12%). See Figure 2 below.

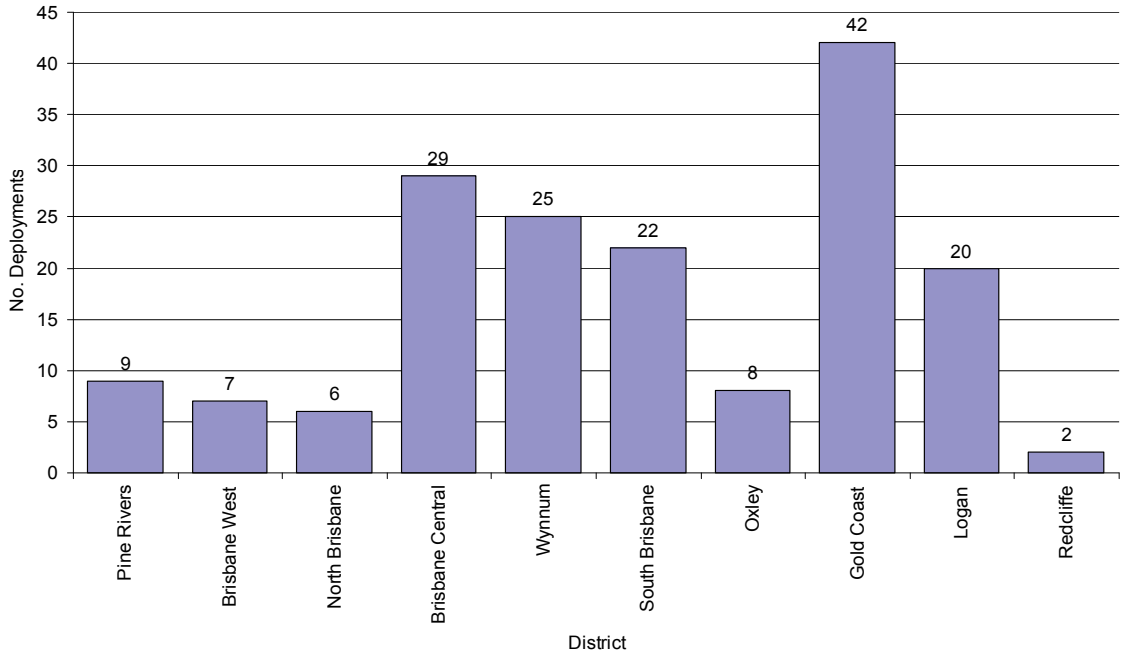

Figure 2. Deployments by district

General duties officers in Dutton Park Division accounted for seven deployments. Two of these deployments related to the activation of the Taser in the drive stun mode with the remainder being threatened use only.

Approximately 40 per cent (n=71) of Taser incidents occurred in a dwelling while 22 per cent were reported at street locations (n=37). Twenty-three deployments occurred at police stations or watchhouses, with the majority of these being threatened use only (n=14). It can be seen from Figure 3 that a high proportion of street deployments were drive stuns. This finding, in combination with the high proportion of drive stuns that involved a multiple deployment (see following page) resulted in changes to Service policy and guidelines relating to the use of drive stuns at the mid way point of the trial. These changes clarified good practice and good decision making for officers in terms of choosing to use drive stun mode as opposed to probe mode, and considerations for activating the Taser multiple times on the one subject.

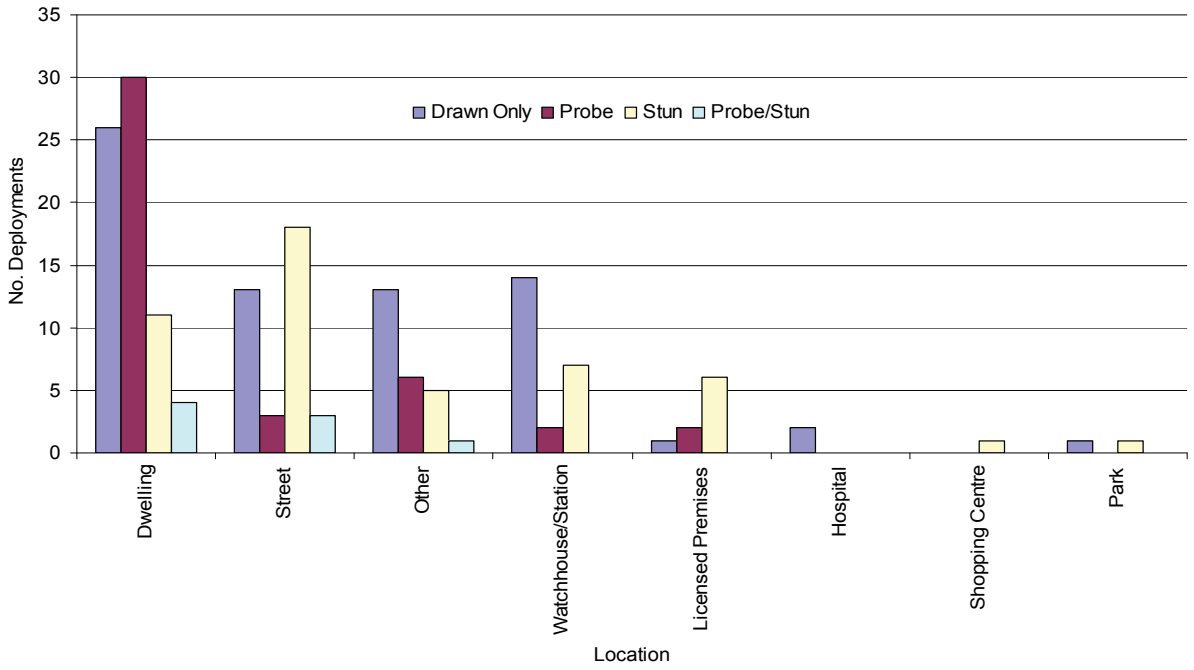

Figure 3. Location of deployment by type of deployment

Half of all Taser incidents occurred between 8pm and 4am (n= 87, 51%), and one-quarter of deployments occurred on Sunday (n= 43, 25%).

Multiple activations

Forty-two incidents involved multiple deployments of the Taser. Most commonly this involved two deployments on the one subject (n=30, 71%). From Table 2 it can be seen that two of these multiple deployments involved presentation only, eight involved the probe mode, and 17 involved the stun drive mode. In 12 incidents, the Taser has been deployed three or more times against a subject and all but one of these have involved activation in the drive stun mode.

Although most multiple deployments occurred relatively close together, there are some incidents where deployment may be minutes or even hours apart. For example, the first activation may have occurred at the place of initial contact with the subject and the second activation then occurred some time later at the watchhouse[4]. In other instances a drive stun was used following failure of a probe deployment to achieve full incapacitation of the subject. The use of the stun drive in this manner is consistent with training and policy.

Table 2. Number of times used on an individual subject by deployment type

	Drawn Only	Probe	Stun	Probe/Stun	Total
One	68	34	26	-- [a]	128
Two	2	8	17	3[b]	30
≥ Three	0	1	6	5	12
Total	70	43	49	8	170

a. NB. By definition, probe and stun deployments are multiple uses of the Taser.
b. In these three incidents the probe was used once and drive stun was used once.

[4] In one incident the Taser was deployed in drive stun mode against an individual subject up to 10 times following a failed probe deployment.

Nature of the incident

When officers filled in their TUF they were required to select from a drop-down menu the category that they believed best described the type of incident. Officers were able to select multiple descriptors. Officers were able to indicate whether the incident involved: a suicidal individual; a violent subject; a disturbance; domestic violence; a barricaded subject; a hostage; a prisoner escort, and an 'other' option (see Figure 4). Approximately two-thirds of incidents (n=115, 68%) involved a violent subject. Just over one-third of incidents related to a disturbance (n=62, 36%). One quarter (n=40, 24%) involved a suicidal subject. Thirty-one incidents related to a domestic violence situation.

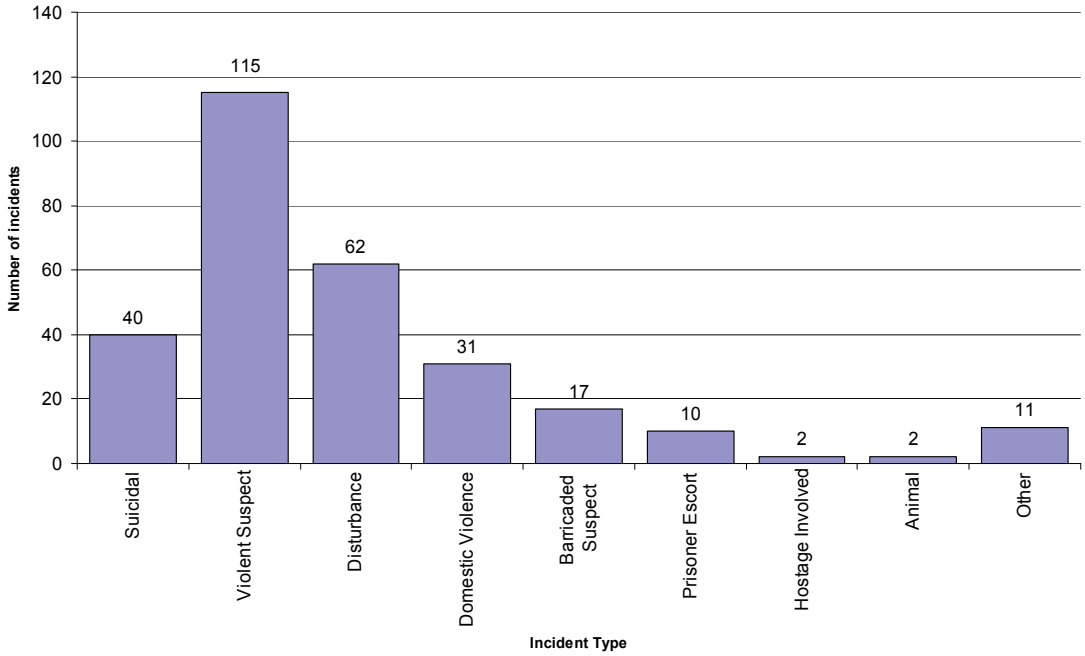

Figure 4. Type of incident[5]

Warnings given

Officers are required where possible to provide a warning prior to activation of the Taser, though it is acknowledged that in some circumstances this is not operationally possible. Officers reported that in 86 per cent of incidents (n=146) a warning was given to a subject about the officer's intention to use the Taser. Conversely there were 24 (14%) instances where an officer did not issue a warning prior to deploying a Taser. In 10 instances where a warning was not given but a weapon was present, officers deployed the Taser in probe mode on seven occasions and drew the Taser on three occasions. In the 12 instances where a warning was not given and a weapon was not present, the officer deployed the Taser in probe mode on five occasions, drew the Taser only on four occasions and used the Taser in stun mode on three occasions (Table 3). In two instances it is unknown whether a weapon was present.

[5] One animal was an escaped deer and the other incident was against aggressive dogs. Due to the multiple response nature of this item, incidents within the category of 'other' were also identified by officers as being within another response category. For example, 'suicidal' and 'other'; domestic violence and 'other'.

Table 3 Nature of incidents where a warning was not given

	Deployment Type			Total
Weapon present (n=10)	Probe	Stun	Drawn only	
Firearm	1	0	0	1
Knife	6	0	2	8
Other	0	0	1	1
Weapon not present (n=12)	5	3	4	12
Unknown (n=2)	1	1	0	2
Total	13	4	7	24

Weapons involved

The majority of subjects were not armed at the time of the incident (n = 126, 74%). However in 41 (24%) incidents the subject was armed when the Taser was deployed. Most commonly subjects were armed with a knife (n=28, 16%), although there were a number of incidents involving improvised weapons such as broken glass, a screwdriver, a butcher's steel, etc. In a further 19 per cent (n=33) of incidents officers noted that the subject had access to weapons, even though these were not in the physical possession of the subject at the time of the deployment.

Table 4. Weapons in subjects' possession by type of deployment

	Deployment type				
	Drawn Only	Probe	Stun	Probe/ Stun	
Weapons in subjects' possession	n (%)	n (%)	n (%)	n (%)	Total
Armed	12 (7)	25 (15)	3 (2)	1 (1)	41 (24)
Club	1 (–)	1 (–)	2 (1)	–	4 (2)
Knife	8 (5)	18 (11)	1 (–)	1 (–)	28 (16)
Firearm	–	1 (–)	–	–	1 (–)
Other/Improvised Weapons	3 (2)	5 (3)	–	–	8 (5)
Unarmed	57 (34)	17 (10)	45 (26)	7 (4)	126 (74)

Other use of force

Officers are guided by the Service's Situational Use of Force Model (2008) which has recently been amended to include 'Conducted Energy Device' (Figure 5). This model assists the police officer to select the most appropriate option(s) to resolve an incident. The Situational Use of Force Model is not a hierarchical or escalating decision making framework and is not restrictive in that police officers may select multiple use of force options during their response to an incident to escalate or de-escalate the situation as necessary. Officers must however select a use of force option in which they have been trained.

The TUF required officers to record use of force options used prior to, or following the deployment of the Taser. In the majority of incidents officers reported that they used presence (n=130) and tactical communication (n=123) in an attempt to de-escalate the situation prior to deployment of the Taser. Presence is not simply that police officers were present at the scene but is considered a use of force option when officers use their 'professional presence', including their physical appearance, verbal and nonverbal communication, and authority to take control of a situation to achieve rapport and/or behavioural change from the subject. The reason 'presence' was not recorded in all instances may be due to officers other than the deploying officer being the first response to an incident. These officers would have used their presence to

attempt to control the situation and when this was not possible called for the assistance of a RDO or DDO.

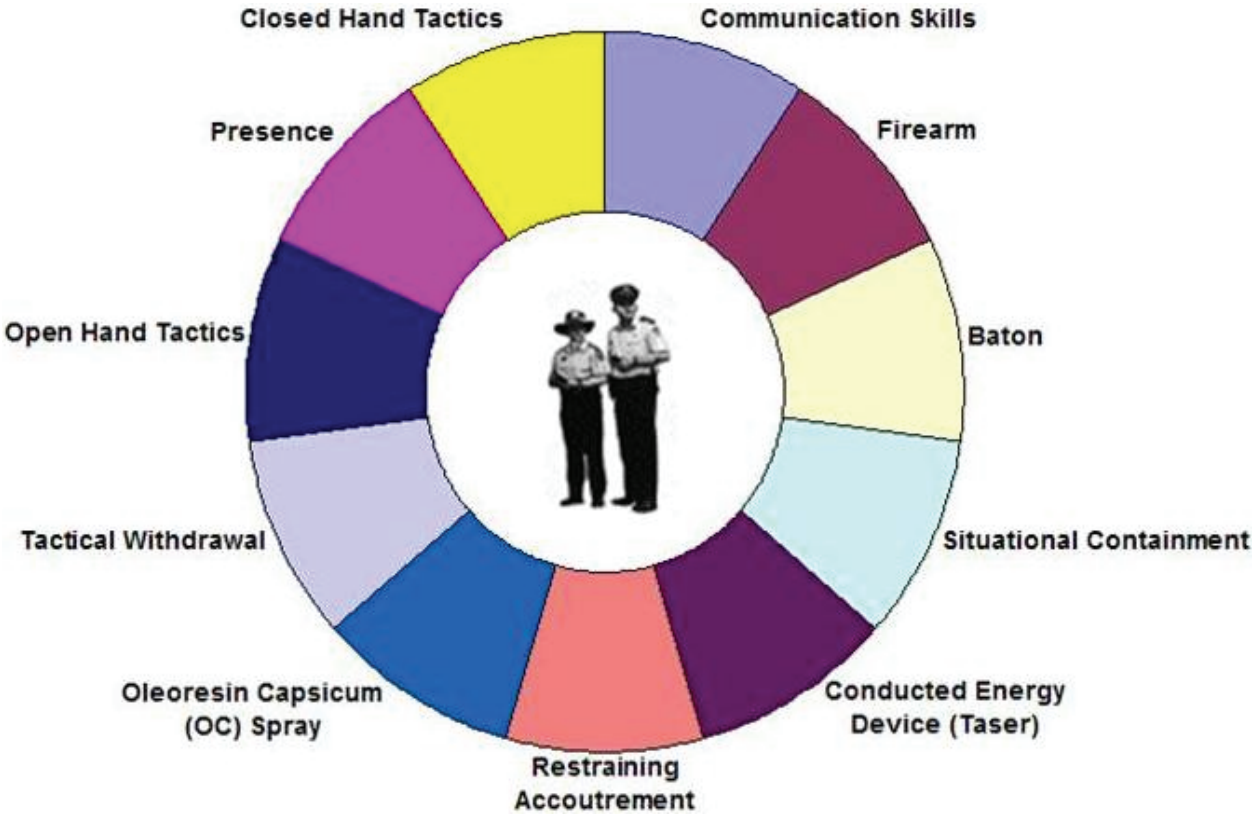

Figure 5. Situational Use of Force Model (2008)

In 17 per cent of incidents (n=29), subjects were handcuffed prior to deployment. Further examination of the nature of these instances found that in 10 of the 29 instances subjects were only threatened with the Taser and it was not activated. In 15 instances the Taser was deployed in stun drive mode and in four instances the probe mode was used. From the précis provided in the TUF it was found that in all instances officers described continued violent behaviour by the subject that prevented officers from effectively controlling the subject. For example, in four instances the subject was actively self-harming after being handcuffed (e.g. violently banging head on car door) and in five instances officers referred to spitting and/or the presence of blood with associated risks of contamination leading to the Taser being used.

In addition, prior to deployment of the Taser, nine per cent of subjects (n=16) had been sprayed with OC spray which had been ineffective in controlling the situation. Firearms were drawn but were not discharged in five (3%) incidents.

After deployment, officers often continued to use presence (n=78) and tactical communication (n=80) to control the incident. Six incidents involved the use of a police dog and two incidents involved the use of OC spray following deployment.

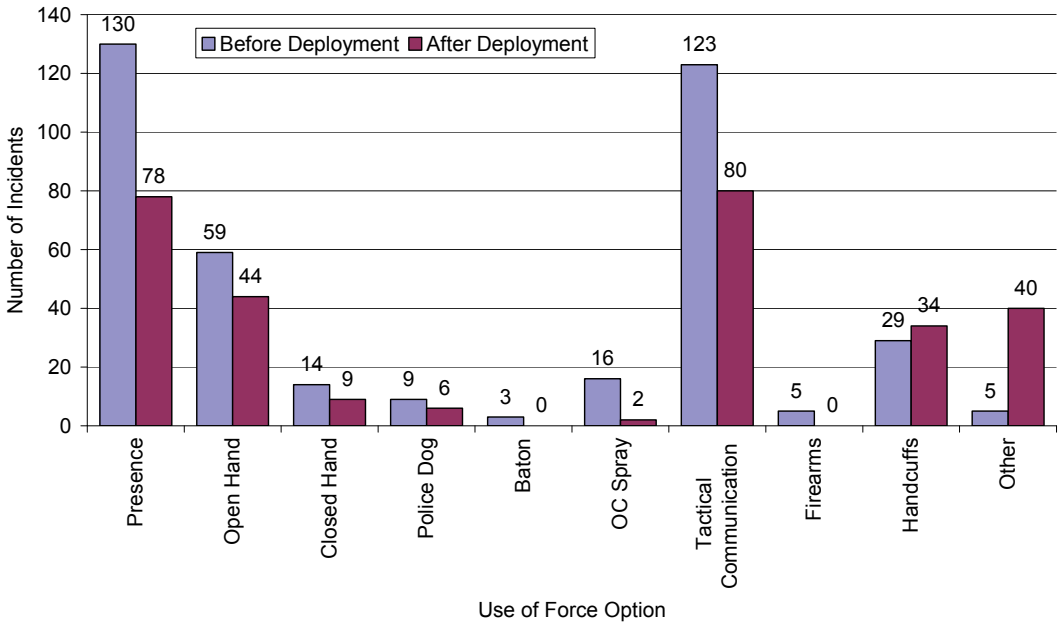

Figure 6. Use of force options used before and after Taser deployment

Actions *(since 1 July 2007)* resulting from incident

Approximately 88 per cent of incidents (n=149) resulted in a charge being made against the subject. In 21 instances no charges were laid and this was due to a number of factors such as no complaint being made by the victim, or the subject was self harming and laying charges would not have been the most appropriate action to take. In these circumstances more appropriate action such as transporting the subject to a hospital or safe location was taken by officers. For example twenty-eight incidents (16%) resulted in an individual being subject to an Emergency Examination Order (EEO) to address identified mental health issues. Twenty-seven incidents (16%) resulted in either a Breach of a Domestic Violence Order or an application for a Domestic Violence Order (see Figure 7).[6]

The most common offences for which subjects were charged included: obstruct police (n=50, 29%); public nuisance (n=40, 24%) and disobeying a police direction offences (n=13, 8%).

Thirty-three incidents resulted in one or more assault charges including:

six incidents that resulted in at least one charge of common assault;
seven incidents with at least one charge of assault occasioning bodily harm;
14 incidents with one or more charges of serious assault; and
12 incidents where the subject was charged with assault police (PPRA).

[6] In a number of instances were a EEO or DVO was issued, charges or other action was also taken.

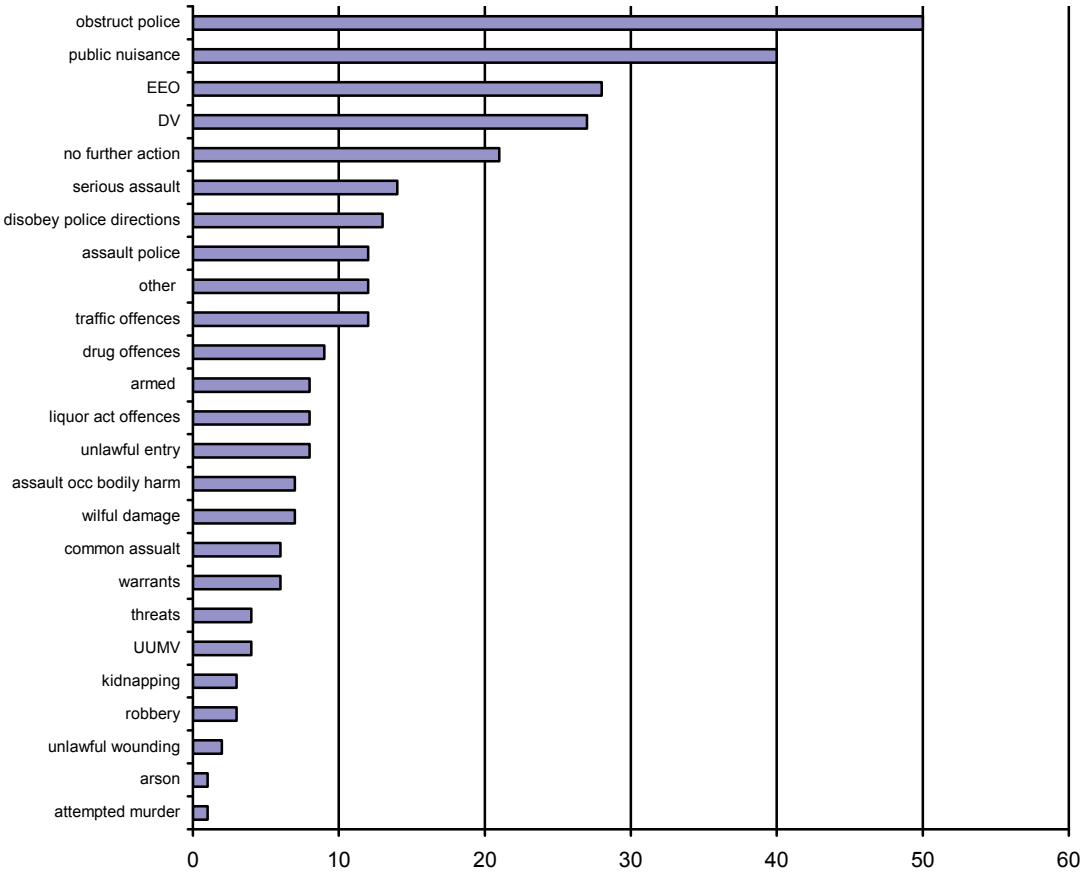

Figure 7. Actions taken by police following a response to an incident involving a Taser deployment

Subject Characteristics[7]

The Taser Usage Form allowed officers to document characteristics of the subject upon which the Taser was deployed (see Table 5).

Table 5. Characteristics of individuals involved by deployment type

	Deployment Type				
	Drawn Only n (%)	Probe n (%)	Stun n (%)	Probe/Stun n (%)	Total n (%)
Gender					
Male	69 (99)	34 (81)	47 (98)	8 (100)	158 (94)
Female	0 (0)	8 (19)	1 (2)	0 (0)	9 (5)
Race					
Caucasian	55 (79)	39 (93)	41 (85)	7 (88)	142 (85)
A&TSI	9 (13)	1 (2)	3 (6)	0 (0)	13 (8)
Other	5 (7)	2 (5)	4 (8)	1 (13)	12 (7)
Age					
15-19	10 (14)	0 (0)	8 (17)	0 (0)	18 (11)
20-29	34 (49)	14 (33)	20 (42)	3 (38)	71 (42)
30-39	15 (21)	15 (36)	14 (29)	3 (38)	47 (28)
40-49	9 (13)	7 (17)	5 (10)	2 (25)	23 (14)
50-59	0 (0)	4 (10)	0 (0)	0 (0)	4 (2)
60+	0 (0)	1 (2)	0 (0)	0 (0)	1 (1)
Mean age	*28.6*	*35.8*	*28.5*	*32.6*	*30.6*
Pre-existing medical conditions					
Mental illness	11 (16)	16 (38)	7 (15)	4 (50)	38 (23)
Physical condition	2 (3)	4 (10)	0 (0)	1 (13)	7 (4)
Developmental disorder	1 (1)	0 (0)	1 (2)	0 (0)	2 (1)
Mental illness & physical condition	1 (1)	1 (2)	0 (0)	0 (0)	2 (1)
Not specified	3 (4)	1 (2)	1 (2)	0 (0)	5 (3)
Substance used					
Nil	12 (17)	7 (17)	5 (10)	3 (38)	27 (16)
Alcohol	31 (44)	16 (38)	29 (60)	1 (13)	77 (46)
Alcohol & illegal	8 (11)	7 (17)	5 (10)	1 (13)	21 (13)
Alcohol & prescription	3 (4)	3 (7)	2 (4)	2 (25)	10 (6)
Illegal	11 (16)	3 (7)	4 (8)	1 (13)	19 (11)
Illegal & prescription	3 (4)	1 (2)	0 (0)	0 (0)	4 (2)
Prescription	1 (1)	5 (12)	1 (2)	0 (0)	7 (4)
Other	0 (0)	0 (0)	2 (4)	0 (0)	2 (1)

Note: Percentages may not add up to 100% due to missing data.

Age

A large proportion of subjects (42%) were aged between 20 and 29 years (n=71) with 81 per cent of subjects being less than 40 years. Three subjects were juveniles (all aged 16 years) with two being males who were only threatened with use of the Taser. The third incident involved a female and the matter was subsequently investigated following a complaint made against the

[7] All percentages reported in this section exclude the two animal-related incidents.

deploying officer (see p. 53). The youngest subjects were 16 years (one was armed with a knife) and the eldest 69 years (armed with a knife).

Regardless of deployment type, those aged between 20 and 29 years of age were more frequently subject to a Taser deployment than any other age group (χ^2= 28.6 p>0.05, df=18). However, for those incidents in which the probe or both probe and stun modes were used, there were an equal number of 30-39 year olds and 20-29 year olds subject to these types of deployment. That is, the high frequency of deployments against subjects aged 20 to 29 years appears to be due to the high proportion of stun drives.

Gender

Subjects were nearly always male (n=158, 94%) with only nine females subject to a Taser deployment. Of the females, eight were the subject of a probe deployment and one was the subject of a drive stun deployment. Six of the females were armed with a knife and five of these had a pre-existing mental illness. In four of these cases, the female subject was actively self-harming or attempting to self-harm with the knife. All eight incidents involving the deployment of Taser in both the probe and drive stun modes were against male subjects.

Race

The majority of subjects were Caucasian (n=142, 85%) and thirteen subjects (8%) were identified as Aboriginal and/or Torres Strait Islander (A&TSI). Of those thirteen Indigenous subjects, the Taser was only activated on four occasions with the remaining nine subjects only threatened with the Taser. Based on 2006 Census figures, the indigenous population in the trial area was approximately 28,000 which represented approximately 1.5 per cent of the total population of the nearly two million residents[8]. Overall, approximately 3-4 per cent of persons that come into contact with police within the trial area will be indigenous[9]. Therefore proportionally the number of indigenous subjects was over-represented. However, the rate of activations against Indigenous persons was no higher than the rate of activations against Caucasian persons.

Substance use

In total, 140 subjects were suspected of being under the influence of alcohol and/or another drug (see Table 5). The most common type of substance affecting subjects was alcohol. In 18 per cent of incidents (n=31) alcohol was used in combination with illegal drugs (n=21) or with prescription drugs (n=10). Therefore, in total, 64 per cent (n=108) of incidents involved alcohol. This compares to 26 per cent of all incidents (n=44) involving illegal drugs (alone or in combination with alcohol or prescription drugs) and 12 per cent of incidents (n=21) involving prescription drugs. There was no significant difference in the type of Taser deployment (presentation, probe, drive stun) on intoxicated subjects.

Medical condition

Twenty-four per cent of subjects (n= 40) were identified by officers as having a mental illness and a further two subjects had a developmental disorder. Often the information reported in the

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[8] Source: Australian Bureau of Statistics (2007). 2006 *Census of Population & Housing.* Australian Bureau of Statistics: Canberra.

[9] Source: QPRIME (NB. These figures do not represent official QPS statistics).

TUF did not specify the specific type of mental illness though the most common illnesses reported were depression or bipolar disorder. Forty subjects were suicidal or engaging in self-harming behaviours. There was no difference found between the reported injuries of subjects with a pre-existing medical condition compared to subjects with no pre-existing medical condition.

Previous criminal history

From 2 April 2008 the TUF enable officers to record if the subject had a previous criminal history. In the 26 incidents that occurred since that date, 15 subjects were not recorded as having a previous criminal history. Ten subjects had a previous history of violent offending and one subject had a record of a street offence. Four subjects were under parole or bail conditions at the time of the incident.

Officer Characteristics[10]

Seventy six (28% of those trained) officers deployed a Taser during the trial period (see Table 6). The majority of deploying officers were either Sergeants (n=20, 26%) or Senior Sergeants (n=44, 58%) and most officers were performing duty in the role of DDO (n=63, 83%). Given their late inclusion in the trial, only seven Dutton Park Division general duties officers had deployed a Taser.

Almost all of the deploying officers were male (n=67, 91%) which is likely due to a higher proportion of male officers in the higher ranks who perform the functions of a DDO or RDO. Officer ages ranged from 28 to 59 years, with the average age of officers being 43 years. Officer length of service ranged from three to 39 years. Average length of service for officers who deployed a Taser is 21 years.

[10] Because the Taser trial initially only included officers performing RDO and DDO functions, factors such as officer age and length of service will be skewed by the relatively late inclusion of junior officers from Dutton Park Division.

Table 6. Officer characteristics

	Number	Percent
Officer Gender		
Male	69	90.8
Female	7	9.2
Age		
20-29	2	2.6
30-39	23	30.3
40-49	35	46.1
50-59	15	19.7
Mean age= 43		
Length of Service		
0-5	6	7.9
6-10	2	2.6
10-19	26	34.2
20+	41	53.9
Mean= 21yrs		
Duty		
RDO	6	7.9
DDO	63	82.9
Dutton Park	7	9.2
Officer Rank		
Constable	6	7.9
Senior Constable	0	0.0
Sergeant	20	26.3
Senior Sergeant	44	57.9
Inspector	6	7.9

Note: Percentages may not add to 100% due to data missing from the Taser Usage Forms

Injuries sustained during incidents

One of the proposed benefits of having the Taser as a use of force option is that it has the potential to rapidly de-escalate a situation with a consequent reduction in injury to both the subject and to officers.

Injuries to subjects

In three quarters of all deployments (n = 126, 74%) the subject received no injuries from the deployment of the Taser. Twenty-six subjects received Taser-related injuries with a further 19 receiving injuries from other causes such as self harm or from other use of force options. An injury was deemed to be Taser-related if it was directly due to the Taser activation (e.g. bruise or burn from the probes) or if the injury was directly attributable to the effect of the Taser (e.g. subject falls hitting their head on the ground).

> *"the use of the taser (sic) enabled the subject to be taken into custody without a struggle…Due to the state of mind of the subject person there is no doubt that injuries to police, including significant bodily fluid exposure would have resulted from this incident. Without doubt the subject person would have also sustained injuries due to the presence of glass and the confined area that a struggle would have occurred in..."* Deploying officer.

Overall, injuries were relatively minor in nature, with most Taser-related injuries as reported by deploying officers being: abrasions (n=11); lacerations (n=10); bruising (n=4); and abrasion and lacerations (n=1).

Twenty-nine subjects received medical attention with 14 receiving treatment at the incident scene and 15 transported to Accident & Emergency. Eight of the 26 subjects with injuries attributed to the Taser were given medical attention compared to 14 of 19 subjects who received injuries from some other cause. Three subjects were taken to hospital. All of these three subjects were self-harming/suicidal and two were taken to hospital for a psychiatric admission as well as medical admission. One person received lacerations from glasses that were broken during the fall as a consequence of the Taser deployment.

Following the resolution of the incident, 38 subjects were admitted to hospital with the majority of these admissions for psychiatric admission (n=31). Two subjects were admitted to receive further medical attention, one of whom was admitted for injuries sustained from the Taser use. This subject was alcohol affected, armed with a knife and received lacerations from the deployment.

Table 7. Summary of injuries sustained by subjects

	Frequency	Percent
Summary of subject injuries and identified cause		
Total Injured	**44**	**25.9**
Taser	*20*	
- Probe	*15*	
- Stun	*2*	
- Probe & Stun	*3*	
Other Causes	*18*	
Both Taser & Other Causes	*6*	
Total Not Injured	**126**	**73.8**
Medical treatment required (of 44 subjects injured)		
Yes	**26**	**59.1**
At scene	*13*	
Accident & Emergency	*13*	
No	**18**	**40.9**
Incidents in which subjects were admitted to hospital and admission type (n=170 incidents)		
Yes	**38**	**22.1**
Medical	*2*	
Psychiatric	*31*	
Both	*5*	
No	**132**	**77.6**
Injury sustained (Taser-related)[a]		
Bruising	4	2.4
Abrasions	11	6.5
Lacerations	10	6.0
Abrasion & Laceration	1	0.6

a. NB. Count includes injuries suffered in which the cause was considered the result of 'Both Taser and Other Causes' (n=6).

Injuries to officers

Thirteen officers sustained an injury during their resolution of the incident at which the Taser was deployed with injuries resulting as a consequence of the struggle with the subject prior to

deploying the Taser. Six officers required medical treatment for their injuries and five were taken to Accident and Emergency to receive medical attention. Only one officer required a medical admission to hospital.

While this review has been unable to quantifiably document the impact of Tasers on officers' injury rate, anecdotally a number of officers have referred to how the availability of a Taser has prevented the need to go 'hands on' or use other use of force options that have potential to cause physical injury (e.g. baton).

> *"The constables were in trouble when the DDO arrived at the scene. They had not been able to call for backup as the offender had been 'punching on' with officers. Offender had been capsicum sprayed with no effect. The Taser was then deployed which made the offender comply with police directions and the offender was able to be handcuffed and restrained. The Taser saved any further injuries being incurred by the officers involved."* Deploying officer

> *"It [the Taser] was extremely effective. The chief advantage is that it prevented the violent and prolonged struggle that often accompanies such incidents and incites civilians against the Police. The suspect was quickly restrained and incarcerated without injury to any person."* Deploying officer

Taser effectiveness

Officers were able to indicate on the TUF whether they considered the deployment to be effective. While officers were not provided with a definition of 'effective', interviews with officers suggest that a deployment was generally considered effective if it allowed the officer to gain control of the subject or the situation. In some circumstances this would involve complete incapacitation of the subject as a result of probe activation, but in others it may simply be that the presence and threat of Taser activation resulted in the subject ceasing aggressive behaviour, and allowing the officer to gain control. From the analysis of officer responses in the TUF, the deployment of a Taser was considered effective in 92 per cent of cases (n=157). Failure was generally related to either one or both probes making insufficient contact with the subject to complete the circuit either because the officer missed the target or the subject was wearing thick clothing.

Summary

The Taser was deployed 170 times during the trial with 41 per cent of these deployments involving presentation of the Taser only, without the need for activation. Activations of the Taser were almost evenly split between drive stun and probe mode. In response to concerns about the high proportion of stun drive activations, the Service instigated a review of the policy, guidelines and training provided to officers in preparation for the rollout of Tasers to all operational police. Consequently the data collected for first three months of the Taser rollout has demonstrated a substantial change in deployment patterns with drive stun activations accounting for only four per cent of all deployments[11]. Perhaps most encouraging is that 79 per cent of all deployments involved the presentation and threat of Taser use, supporting the claim that Tasers can provide

[11] Period 01/01/09 to 07/04/09 – 143 deployments of the Taser with 113 presentation and threat of use, 24 probe activations and 6 drive stun activations.

a visual deterrent to de-escalate a volatile situation without the need to resort to physical use of force.

During the trial forty-two of the 170 deployments involved the use of the Taser more than once against a subject. Often multiple deployments were the result of an initial failure to achieve control of the situation using the probe mode. The failure of the probe was attributed to one or both probes not achieving sufficient contact with or near the skin, or the physical size or clothing worn by the subject preventing the required contact for the Taser to work as intended. The proportion of multiple activations has decreased since the rollout to operational police commenced on 1 January 2009, perhaps due to the decrease in stun drive (which was more likely to result in a multiple activation) or due to improved training and monitoring mechanisms.

Many of the incidents involved subjects who were violent and/or under the influence of alcohol and/or other drugs; creating a situation which had potential for injury to the subject or police officers. Approximately one-quarter of subjects were armed with a weapon. Given the potential these types of situations have for injury to officers or subjects, the injuries reported were few and relatively minor. Many of the injuries reported related to either self-inflicted injuries or injuries sustained during the struggle with police either prior to, or following deployment of the Taser. There were no reported complications associated with excessive alcohol or drug use or with pre-existing medical conditions.

All injuries recorded for officers related to the struggle with the subject either before or after deployment of the Taser. Like the subjects, these injuries tended to be minor in nature. As the proportion of Taser trained officers within any location was very small it has not been possible to demonstrate a quantifiable impact on injury rates of police officers and persons police come into contact with. This issue will be the subject of ongoing monitoring.

Given the nature of the incident types that resulted in the deployment of the Taser, subjects were often young males aged between 20 and 29 years.

Officer survey

As described in the methodology section of this report, all officers who had been trained in the use of a Taser were invited to respond to a brief questionnaire which asked about their experiences of the training, their deployment of the Taser (or non-deployment), and the perceived advantages and disadvantages of Tasers.

Training

Officers were asked to indicate the extent to which they agreed or disagreed with a series of statements about the sufficiency of information they received and the skills they acquired during Taser training.[12] These results are shown in Table 8.

Nearly all officers 'agreed' or 'completely agreed' that the information they received in training about how the Taser works, its usage modes, its affect on people and factors that might complicate the use of the Taser such as positional asphyxia or excited delirium was sufficient. However, two officers completely disagreed that there was sufficient information on the risks associated with Taser use.

Similarly, almost all officers 'agreed' or 'completely agreed' that the Taser training had provided them with sufficient skills to use the Taser in an operational environment.

It is important that training in the use of the Taser is related to previous training received on use of force and threat assessment, as this forms the basis for many of the decisions officers will be faced with in the field. Table 8 shows the majority of officers indicating that Taser training supported previous training in relation to the Situational Use of Force Model, the Consider all Options, Practice Safety (COPS) model, the POP (Person, Object, Place) threat assessment process and Police Operational Skills and Tactics (POST).

[12] Response options included: 1 – completely disagree, 2 – disagree, 3 – neither disagree or agree, 4 – agree, and 5 – completely agree.

Table 8. Officer opinions on Taser training offered

	Completely Disagree	Disagree	Neither	Agree	Completely Agree
Sufficient information provided on –					
How a Taser works	0	0	0	48	53
Risks of Taser use	2	1	1	45	52
How to use Taser in probe mode	0	0	0	40	59
How to use Taser in drive stun mode	0	1	0	41	58
How Taser affects people	0	1	1	39	59
positional asphyxia & excited delirium	0	2	2	50	46
QPS policy and Good Practice Guide	0	0	4	51	46
Sufficient skills provided on –					
communication	0	0	0	58	43
handling & using a Taser	0	0	0	51	50
safety precautions	0	0	0	52	49
providing aftercare	0	0	1	54	45
reporting Taser incidents	0	1	2	60	38
directions to other officers when deploying	0	2	0	59	40
use of Taser within the situational use of force model	0	1	0	58	41
Supports past training in –					
the situational use of force model	0	0	5	51	45
COPS model	0	0	2	51	47
POP threat assessment process	0	1	4	52	43
police operational skills & tactics (POST)	0	0	2	50	47

Note: May not total 101 (total number of officers responding to the survey) due to missing data

Changes to training

Officers were asked to consider a number of components of the training course and to consider if any of these should be further expanded or reduced so as to better assist officers in an operational environment. These components were: scenario based training; refresher training; practical demonstrations or exercises; information about Tasers; and information about policies. The results are shown in Table 9.

Table 9. Officer opinions on changes required, if any, to Taser training

	More (%)	Less (%)	No change (%)
Scenario based training	35	1	64
Refresher training	53	4	44
Practical demonstrations & exercises	28	5	66
Information about Taser	14	3	83
Policies & Procedures	18	3	79

Note: May not total 101 (total number of officers responding to the survey)due to missing data

Approximately 80 per cent of respondents thought that information about the Taser and associated policies and procedures was sufficient and did not require change.

The most common change officers would like is to have more refresher training (53%) with one-third indicating that there should be more scenario-based training (35%). In addition approximately one-quarter of respondents wanted more practical demonstrations and exercises (28%).

Effectiveness of Tasers

According to information that officers provided in the TUF, the deployment of a Taser was considered effective in 92 per cent of cases. The survey also asked officers to indicate how often the deployment of the Taser assisted in detaining the subject. Response options were: every time; most times; on occasion; never. Of the 44 officers who reported deploying the Taser, 86 per cent (n=38) indicated that the Taser was effective in detaining the subject every time it was deployed. Only one officer said that the use of the Taser did not result in the subject's detention.

> *"Having possession of the Taser allowed me to have contact with the subject person with an option other than the possible use of lethal force. I could negotiate with him in relative safety knowing that I had a less than lethal option should he have attacked me or tried to harm himself. The use of the Taser in the surrender plan, combined with the option of another officer being able to utilise lethal force if necessary, allowed me to effectively deal with a situation which would have, by necessity, had to escalate to another level should I have not had the Taser option. This is an extremely effective tool." Deploying officer*.

Advantages and disadvantage of Tasers

Officers were provided with a list of potential advantages of the Taser and were asked to indicate their agreement. As can be seen in Table 10, officers most commonly identified the lower risk of injuries to officers and subjects and the deterrence of violence as an advantage of Tasers. It was also the opinion of the majority of officers that Tasers meant less aftercare, easier means to achieve compliance and the improved resolution of a violent incident.

Table 10. Advantages and disadvantages of the Taser

Advantages	N (%)	Disadvantages	N (%)
Lower risk of injuries to officers	100 (99.0)	Unable to use in certain situations	57 (56.4)
Lower risk of injuries to subjects	95 (94.1)	Potential for ineffectiveness	52 (51.5)
Deterrence of violence/resistance	93 (92.1)	Over-reliance on Taser	49 (48.5)
Less aftercare	91 (90.1)	Negative public perceptions	35 (34.7)
Easier to achieve compliance	85 (84.2)	Potential for misuse by officers	25 (24.8)
Improved resolution of violent incidents	84 (83.2)	Greater risk of injuries to subjects	1 (1.0)
Deters behaviour of others	82 (81.2)	Greater risk of fatalities	0 (0.0)
Incidents resolved quickly	77 (76.2)	Greater risk of injuries to officers	0 (0.0)
Lower risk of fatalities	76 (75.2)	No disadvantages	16 (15.8)
Lower risk of complaints	51 (50.5)		
No advantages	0 (0.0)		

The two most frequent disadvantages reported by officers were that it is unable to be used in certain situations and there is potential for it to be ineffective. These should not necessarily be considered a disadvantage but rather highlights the fact that Tasers are not the most appropriate use of force option for all situations.

A number of officers (n=49) also identified the potential for officers to become over-reliant on the Taser and/or fail to consider other use of force options prior to deploying the Taser. Approximately one-quarter of officers thought there may be potential for misuse of the Taser. The potential for 'taser creep' and misuse has been identified in the research literature as requiring vigilance by police services. Consequently the QPS, in preparing for the rollout of Tasers to all operational police, have developed a number of accountability and monitoring mechanisms to provide the ability to identify 'taser creep' or misuse. The conclusion chapter of this report details the monitoring strategy that was implemented.

Experiences of officers who had not deployed a Taser

Most commonly officers responding to the survey who reported they had not deployed a Taser (n=55) indicated it was because of operational reasons such as not attending an incident in which the use of the Taser could have been justified (n=27, 49%) and/or they were only acting in a role which was authorised to use the Taser for a short period of time (n=16, 29%). It was also common that incidents were resolved by the use of some other use of force option (n=15, 27%) or by virtue of some other means prior to the arrival of the Taser-trained officer (n=11, 20%).

Forty-two officers indicated that they had been present at incidents where the use of the Taser was considered among other use of force options to resolve the situation, but not actually used. In these situations officers reported:

- other use of force options were more appropriate (n=23); and/or
- the environment was not conducive to the use of the Taser (n=6); and/or
- the actions of other officers at the incident location prevented the deployment of the Taser (n=5).

Among incidents in which Tasers were considered, but not actually deployed, it was reported these situations were resolved through the use of tactical communication (n = 30) and officer presence (n = 21). Restraining techniques (n = 17) and open and closed hand tactics (n = 14) were also used to resolve the situation as an alternative to the Taser (see Table 11).

Table11. Other use of force options used

Other use of force options	N (%)
Tactical Communication	30 (71.4)
Presence	21 (50.0)
Baton	1 (2.4)
Police dog	3 (7.1)
Firearms	1 (2.4)
Handcuffs	11 (26.2)
OC Spray	5 (11.9)
Restraining techniques	17 (40.5)
Open/Closed hand tactics	14 (33.3)

Note: Does not total 100% because this is a multiple response variable.

Officer decision making

The determination as to whether a Taser, or indeed any use of force, has been used appropriately in a particular situation must consider a range of factors associated with the incident, including contextual factors, the behaviour of the subject, the threat posed to the officer, the subject and others, and the alternative choices to Taser deployment. The number of substantiated complaints relating to Taser deployments also provides information about the appropriateness of the use.

In order to assess and make an overall determination of whether Tasers were used appropriately by officers during the trial, a number of deployments were examined in detail through drawing together information from the SigEvent message, the TUF and from one-on-one interviews with deploying officers.

From 1 July to 31 December 2007, the officer responsible for every fifth deployment was interviewed. In addition, for the period 1 January to 31 May 2008, officers involved in every deployment were interviewed. This meant that a total of 75 incidents were explored in detail. This sample did differ from the population of incidents in that they were much more likely to have involved an actual activation of the Taser as opposed to only threatened use. During the trial, 41 per cent of total incidents were threatened use only whereas for the sample 16 per cent of deployments were threat only; 25 per cent of total incidents were probe activation whereas for the sample probe activations accounted for 39 per cent of deployments; 29 per cent of total incidents were stun drive activation and the sample accounted for 39 per cent of stun drive activations; and five per cent of total incidents were stun/probe activation compared to 7 per cent of the sample).

As indicated in the methodology section of this report, a panel of QPS officers reviewed all the information for each particular incident to score the actions taken on a number of elements that cumulatively led to a determination regarding the appropriateness of deployment.

Threat assessment

The first of these elements is the threat assessment undertaken by the officer upon arrival at the scene and during the incident. The threat posed by a subject is assessed in terms of gender, size, mental state, physical ability, whether the subject is under the influence of drugs or alcohol, and demeanour of the subject. Also the subject's possession of a weapon or whether they have easy access to a weapon is a key factor in determining the threat to an officer.

In approximately 70 per cent of incidents in the sample it was determined that the officers undertook a comprehensive threat assessment, with a further 29 per cent undertaking a satisfactory or good threat assessment[13]. Only one officer was believed to have performed poorly on this element in that the subject person was believed to be armed with a firearm and

[13] As indicated in the methodology section of this report, determinations made by the panel relied upon information provided by deploying officers which varied in the level of detail and the officer's perception of the level of threat posed by the subject. An objective measure of threat was unable to be ascertained and determination of threat is based on a subjective assessment.

therefore the threat of lethal force was present which may have meant the selection of a Taser was not the most appropriate option.

Use of force options

The second element is consideration of the range of use of force options that are available to officers. As shown in the Situational Use of Force (SUOF) Model on page 16 of this report, officers have a number of options available to them when confronted with an incident. An officer is required to consider which option or combination of options, based on a threat assessment, is the most appropriate and likely to be the most effective option in each specific circumstance. While a Taser may well assist officers to gain control in many circumstances, officers should consider other options that are more proportionate to the threat being faced. For example, if a subject is unarmed and not aggressive in his/her demeanour and offering passive resistance it would not be considered appropriate to deploy a Taser. Similarly if a subject is armed and threatening an officer it would not be appropriate to deploy a Taser.

In approximately 65 per cent of cases examined in the sample, officers' consideration of SUOF options was rated as comprehensive[14]. For example, an officer would indicate a baton could have effectively brought the subject under control but given the subject's strength and aggression would have resulted in significant physical harm to the subject and possibly the officers. Similarly, in a number of incidents where the stun drive mode was used OC Spray was considered but due to a number of other officers engaged in hands-on contact with the subject, OC Spray would have resulted in secondary exposure.

Approximately 32 per cent of sample cases were rated as having satisfactory or good consideration of SUOF options and a further three per cent were rated as poor. The fact that one third of officers were undertaking a situational use of force assessment that reflected only satisfactory understanding highlighted the need for the Service to emphasise the importance of good decision making around use of force options to ensure officers make the most appropriate choices. Consequently this has been incorporated into the training of officers in the use of Tasers.

One of the two incidents rated as poor was the matter that scored poorly on threat assessment in which the subject was believed to be armed with a firearm and therefore the officer could have been justified in choosing a firearm as a proportionate use of force option.

The other incident which scored poorly for SUOF involved a situation in which the subject was contained in a small building and it was determined that the tactics could have been better considered with more reliance placed on maintaining the containment of the subject and continuing negotiation. Rather, the officer took a more active approach that placed them at increased risk of injury whilst not offering an opportunity to use the Taser effectively.

[14] In some instances officers clearly indicated in either the TUF or during interview that they considered another use of force but discounted it for specific reasons. In other circumstances the expert opinion of the police officers on the panel was used to conclude whether the best SUOF was chosen based on the situational factors at the time of the incident.

Justification of deployment

Given the full circumstances of each incident the panel determined that in all instances that were sampled, officers were justified in their decision to use force. However the Taser might have not always been the most appropriate or effective option given a comprehensive assessment of threat or consideration of SUOF options was not always undertaken.

Two incidents were categorised as not being within the Service's operational and policy guidelines. One of these incidents involved the use by a DDO who had undertaken the first day of training prior to deployment but had not yet completed the second day of training. Although not within policy, the deployment was justified given the circumstances of the incident and threat assessment. The officer's decision process was sound and based on a comprehensive threat assessment of the situation. Another officer attending the incident had drawn their firearm and the ability of the DDO to deploy the Taser is believed to have resolved an incident which otherwise could have resulted in use of lethal force. It is not considered that the potential use of a Taser by a non-trained officer will be an issue with the state-wide rollout as all officers will be trained.

The other incident was a deployment outside of the designated trial area but was considered by the panel to be tactically sound and justified. In this instance a formal request was made for a Taser trained officer to attend an incident in a neighbouring district as the offender had a history of violence and in particular violence towards police. The presence of the officer with a Taser was sufficient to diffuse a volatile situation and the matter was resolved without activation of the Taser.

Risk of injury

The panel considered whether the use of the Taser, in the sample of incidents examined in detail, enhanced the safety of the officer or reduced the risk of injury to the subject. These questions proved difficult to definitively answer given they require supposition of what would have occurred in the absence of the Taser. In considering these questions the panel considered what other SUOF options would have been used if the Taser was not available and the likely outcome of that use. This was also balanced with the fact that very few (n = 20) subjects received injury from the Taser and generally these injuries were minor.

Similarly, it cannot be quantitatively determined whether fewer officer injuries resulted from deployment of Tasers, but it was hypothesised that if the deployment of the Taser prevented officers having to go 'hands on' (i.e. open hand, closed hand, baton, physical restraint) then the potential for enhancing officer safety was present.

With these limitations in mind, it was determined that in the majority of incidents (96%) in the sample, the deployment of the Taser reduced the risk of injury to the officer and the subject.

Resolution of incident

Finally the panel considered all aspects of each incident in the sample and rated the outcome/resolution on a scale of 1 = below acceptable standard to 5 = best practice. Seven incidents were believed to rate only '2'. In several of these instances the reason for the low rating was that it was believed that probe activation would have been a better choice than the

stun drive that had been used. Three of these particular incidents involved males who were drug/alcohol affected, of large build and who appeared to be overcoming other use of force options being applied. In these incidents the use of the drive stun appeared to prolong the incident and physical interaction with the subject which may have been better resolved with the use of the probe mode for incapacitation of the subjects.

The other instances were rated low due to decisions being made to deploy based on poor or only satisfactory threat assessments and/or choice of SUOF options that resulted in a poor resolution of the incident. These incidents involved an over reliance on the Taser in situations which involved persons who were armed with knives and one other person who was believed to be armed with a handgun. These particular instances highlighted the need for officers to undertake a thorough threat assessment and an appropriate consideration of use of force options when dealing with incidents.

Taser Dataport analysis

The Taser X26 is equipped with a built-in dataport that is designed to automatically record a range of usage information each time the device is activated or fired[15]. The type of data captured by the device includes the:

date and time of deployment;
duration of activation;
temperature of the Taser; and
battery capacity.

Information provided by Taser International notes that the dataport capability "protects officers from claims of excessive use of force", and also provides law enforcement agencies with a "powerful management tool to trace usage patterns, prevent misuse and develop ongoing training programs".[16] To this end, the dataport function serves as a potentially useful accountability mechanism, not only in safeguarding police officers against malicious or vexatious complaints but in assisting management to identify suspicious or unreported uses of the device.

Therefore, the purpose of examining information available through the dataport feature of the Taser X26 was two-fold. First, was to assess the capability of the Taser dataport to confirm known uses of the device (such as those reported in the TUF, SigEvent messages or identified by third parties during complaints processes). Second, was to assess the potential effectiveness of the Taser data as a risk management tool. That is, as a means of acting proactively to identify questionable deployments such as multiple taser uses or those not accounted for by TUFs.

All data captured on the eight Tasers issued to Dutton Park Division between 1 April and 19 May 2008 was analysed by research officers from the Research and Prevention section of the CMC. This data collection period reflects the first six weeks of operational use by Dutton Park police officers. The assumptions used to code the activations were:

Any activation or firing of up to 5 seconds that corresponded with a date and approximate time recorded in the Equipment Register was categorised as a "spark test". Any activation closely following the first spark test was also categorised as a spark test.
Any activation that corresponded with information provided on a Taser Usage Form was categorised as consistent with an operational deployment.
Any activation outside of these two categories was classified as "other". This is discussed more fully below.

Results

The Equipment Register shows that between 1 April and 19 May 2008, Tasers were issued to Dutton Park officers 401 times.

[15] Activation of the Taser includes when the device is 'sparked' (either as a test of the device or a warning to a suspect), discharged in drive stun mode, or fired in probe mode. The Taser X26 does not record any information for deployments that involve the activation of the light or laser only.

[16] Taser International (1998-2006) training presentation, p 95.

Analysis of the information downloaded from each of the eight Taser dataports shows that the devices were activated 300 times by officers. It is important to note however that this is a conservative figure. An unknown number of activations recorded for two Tasers were not captured in the data output due to an error made by the officer while downloading the data. Table 12 shows a breakdown of the information known for each Taser examined.

Table 12. Dutton Park Taser usage data – 1 April 2008 to 19 May 2008

Taser No.	Times issued	Recorded activations	Spark tests	Other	Deployed
X00-283335	45	5[2]	3	2	
X00-287635[2]	36	8	5	3	
X00-287833	48	47	38	9	
X00-304367	55	46	39	7	
X00-287518	61	59	44	14	1
X00-287678	37	31	29	2	
X00-287611	65	59	46	13	
X00-283036	40	45	27	18	
Other ID/NA[1]	14	0	0	0	0
Total	**401**	**300**	**231**	**68**	**1**

[1] Includes Equipment Register entries where a) the Taser number was not recorded or b) the Taser number recorded did not correspond to any of the eight tasers provided for analysis.

[2] Use of this particular Taser was not able to be accurately analysed due to an error made by the officer while downloading the data. There was no fault with the Taser or data associated with its use.

Spark tests

The QPS Taser policy states that when obtaining a Taser officers should "conduct a spark test for one second visually ensuring there is an arc between the electrodes". This is consistent with the training and information provided by Taser International which states that "a daily spark test should be conducted once every 24 hours or prior to the start of [the] shift for individually issued [Taser] X26". According to Taser International, the purpose of this spark test is to ensure battery strength as well as weapon functionality and conditioning.

Based on the assumptions outlined above, it was determined there were 231 readily identifiable spark tests carried out by officers. In the majority of cases, these activations occurred in close proximity to the time recorded by officers in the Equipment Register. Generally, these times also corresponded with the commencement of operational shifts (e.g. 6am, 2pm, 10pm). While most of the spark tests were only 1 second duration, a smaller number were activated for 3 to 5 seconds. Only a few cases involved multiple spark tests.

Other

Approximately 20 per cent of the known activations (n = 68) were considered to be "other" firings. Principally, this was due to the absence of additional information which may have assisted to identify the types of deployments.

While the QPS encourages officers-in-charge of the regions to develop local standing operating procedures to record the conduct of a spark test (among other things), this practice was not apparent from the review of the Equipment Register. Nevertheless, it was determined that the "other" activations were likely to be the result of either:

a station demonstration (for training or education purposes);
a public demonstration (for education purposes);
an additional spark test conducted by the officer while on duty;
a spark test conducted by a second officer who may have been provided with a Taser during a shift or at a shift handover; and
an operational use not accounted for by a Taser usage form.

In the majority of cases classified as "other", deployments were only a one or two second duration, and at all hours of the day and night. This suggests that these activations may indeed have been additional spark tests. In a smaller number of "other" activations, the firings were recorded in close succession or in a series, suggesting that the Taser may have been used for a training session or station demonstration. For example, on 1 April 2008 there were four recorded activations between one and five seconds duration within a three minute span. Similarly, on 18 May 2008 there were nine recorded activations between one and three seconds durations within a 15 minute span.

However, the key point to be made here is that in the absence of other information or supporting data it cannot be categorically ruled out that these activations are actually operational uses of the device not accounted for by TUFs. This is a potential issue in terms of the risk management of Taser use. It should also be noted that there were no complaints received during this period which correlated to any of the 'other' uses.

Taser Usage Forms

There were only five uses of the Taser by Dutton Park officers between 1 April and 19 May 2008. In three incidents the Taser was drawn only by officers, and in two incidents the Taser was discharged in drive stun mode. In the case of the known deployment, the information captured by the dataport was consistent with the information provided by the officer involved in the incident.

For example, data for a drive stun deployment on at South Brisbane shows:

	Dataport	**Taser Usage Form**
Date	12/04/08	12/04/08
Time	00:49:12	00:45
Duration	4 seconds	3 seconds

As previously indicated the data relating to the second use of the Taser in drive stun mode was not captured due to an operator download error.

Conclusions

Analysis of the dataport function of the Taser X26 supports the use of the feature as an effective means to confirm (or refute) reported or alleged uses of the Taser. The ability of the dataport to capture the date, time and duration of each deployment serves as an important accountability mechanism for police officers and the general public, particularly to resolve issues arising from complaint related incidents. That is, the ability to download and verify deployments will be useful for the purpose of investigating complaints.

However that the use of the dataport as a proactive accountability measure to assist in the identification of trends in problematic deployments or misuse is substantially limited. This is primarily due to the 'noise' generated by the spark testing of the device. In other words, it is very difficult to determine any patterns of use or uses that may be unjustified given the number of activations that are recorded and not readily accountable.

Therefore, if the QPS would like to make proactive use of the dataport it would be necessary to adopt strategies that assist in distinguishing operational uses of the Taser from spark tests and training or education drills. Policy has since been amended to require spark tests or other activations to be recorded on the Station Equipment Register. Adherence to this direction will form part of the Inspectorate and Evaluation Branch's compliance based inspection program.

Complaints

The CMC received four complaints relating to the use of a Taser during the trial period and it is only these complaints that are discussed here.[17] Complainants may have made a number of allegations about officers in each incident but only details pertaining to allegations of "*assaulted using a Taser"* are summarised in Table 14 below. Information such as specific location of incident have not been provided so as to maintain confidentiality of complainants.

Table 14. Complaints received

Date of receipt of complaint by CMC	Complaint summary
August 2007	The subject was arrested for public nuisance but refused to get out of the vehicle and verbally threatened officers. The subject has a history of violence against police and has previously made threats to kill police. The officer pointed the Taser at the subject and warned that it would be deployed if the subject did not alight from the vehicle. The complainant alleges he was inappropriately threatened by officers. The matter was referred to the QPS but due to the specific allegation being interwoven with court action it was determined that the courts should decide the facts of the case. No further action will be taken.
September 2007	A violent, drug and alcohol affected male was arrested and conveyed to a watchhouse. Upon arrival at the watchhouse, the subject was behaving in a violent manner in the rear of the van. Door of van was opened, the subject was warned that the Taser would be used if verbal commands were not followed. The subject followed instructions and was placed in a holding cell without incident. The subject was later processed and placed in a padded cell and handcuffs removed whilst under threat of the Taser. The subject did not provide any resistance and no further incidents occurred. The complainant alleges that he was tasered inside a room at the police station as he recalls seeing a red light being waved around before blacking out. The complaint was referred to QPS subject to CMC monitoring. Video evidence from the watchhouse and the complainant's refusal to cooperate with the investigation led to a determination that the allegation of 'assault using a Taser' cannot be substantiated. The matter has been closed.

[17] Complaints were included if 1) the matter related to an allegation of "assaulted using a Taser" and 2) the incident involved an officer from the participating trial areas of MNR, MSR, SER, or Dutton Park police division.

Received	Complaint summary
October 2007	The subject was arrested for assault police and common assault after spitting blood at an officer. While being conveyed to the watchhouse, subject remained violent, abusive and uncooperative. On being removed from the holding cell, the subject refused to comply with directions and threatened to kill police. Subject resisted attempts to search him and was warned several times that if he did not desist he would be tasered. Subject continued to struggle and subsequently received a drive stun to thigh. He continued to struggle and a second drive stun was applied to his torso region at which point he stopped resisting and followed police directions. A complaint was made by the father of the subject that Taser device was used on him on three occasions. The matter was referred to QPS subject to monitoring by the CMC. At the time of preparing this report the matter was still under investigation. Since that time it has been determined that while the officer may have used options other than a Taser, the actual use of the Taser was within QPS guidelines.
January 2008	An allegation was made by a legal representative that an itinerant indigenous person was assaulted with a Taser despite being unarmed and having advised officers that he was blind in one eye and had a heart condition. There is no corresponding Taser Usage Report for this incident. However a significant event message states the subject was found by a security officer sleeping in a public area and when advised by the security officer to move on, the subject threatened to kill the security officer saying (and motioning) that he had a firearm. The complainant then fled into parklands. The police dog squad attended the scene and after a short search located the subject who was subsequently found not to be in possession of a firearm. The complainant was uncooperative, and later charged with threatening violence. Police reports made no reference to the use of a Taser by police. The matter was referred to the QPS for investigation and has been closed and allegations finalised as exonerated.

In addition to these complaints, the CMC has generated files on three matters relating to the use of Tasers during the trial period. These include:

1. A matter was raised after media footage showed the deployment of a Taser in drive stun mode on a man who was refusing to put his hands behind his back while being held on the ground by police. The CMC determined that the information did not raise a suspicion of official misconduct or police misconduct, and referred the matter to the Research and Prevention section of the CMC for consideration as part of the trial. The matter has been closed.

2. A matter was raised following receipt of a significant event message about the deployment of a Taser on a man who confronted police with a knife by an officer who had not undertaken Taser training. The CMC determined that "having regard to the emergent circumstances surrounding the deployment of the Taser", the information did not raise a suspicion of official misconduct or police misconduct. The Commission did note however that "the deployment appears to have been contrary to the policy set out in the Commissioner's Circular (14/2007) which provides that relevant officers are not to use or carry a Taser unless they have successfully completed the relevant Taser training". The matter has been closed.

3. A matter was raised after CCTV footage forwarded to the Commission showed a possible inappropriate deployment of a Taser on a young female. The CMC also identified issues relating to the significant event message completed by the officer (specifically, the message was not consistent with the CCTV footage of the incident) and the security of the Taser device itself. The CMC have written to the QPS and concluded "that the use of the Taser was inappropriate and contrary to the Taser usage policy".

Conclusion

This trial allowed the examination of the use of Tasers by operational police in a general duties environment. During the conduct of the trial a decision was made by Government to extend the availability of Tasers to all operational police across Queensland. In preparing for this rollout it has been useful to consider the experiences of officers during the trial and the lessons learnt to help ensure Tasers are effectively and appropriately used by officers in the future. The findings in relation to the key review questions are summarised below.

Deployment of Tasers (KEQ1)

From 1 July 2007 to 2 June 2008 there were a total of 170 deployments of a Taser. In 41 per cent of incidents the subject was threatened with Taser use but the presence of the Taser and verbal warning were sufficient to resolve the situation. Probe activations were used in a further 25 per cent of incidents and drive stun only activations used in 29 per cent of incidents. On eight occasions both the probe and drive stun modes were used on a subject. Generally, deployments across the three trial regions were evenly spread with the Gold Coast District recording the most deployments.

During the trial the stun drive was used as often as the probe activation. The literature and international experience suggests that it is the stun drive that has the most potential for misuse, either through multiple application or application in a situation where an offender is not combative or physically resisting in a way that may cause harm to officers, self or others. In addition, it is the probe activation that provides the most opportunity for officers to take control of a violent situation as it results in full incapacitation of the subject and does this even if the subject is not susceptible to pain due to the effects of drugs. Consequently, additional attention has been directed to ensuring policy clearly guides officers in appropriate use of the stun drive and training emphasises the limitations and benefits of both modes of activation.

Effective and appropriate use of Tasers (KEQs 2, 3, 4)

Information gathered from the TUF and from interviews with officers indicates that Tasers provide a very effective use of force option for police. Between 86 per cent and 92 per cent of officers indicated that the deployment (threat, probe or stun drive) was effective. For officers, this meant that the Taser allowed the officer to gain control of the subject or situation, often without injury to themselves or the subject. The key to effective deployments is the ability of officers to make considered decisions based on a comprehensive threat assessment and choice of the suitable use of force. The Taser is not the best option in all situations and should not normally be the first option. In many circumstances effective tactical communication is sufficient to de-escalate the situation and allow officers to gain control without resorting to any physical use of force.

Taser use must be embedded in the operational skill training framework and officers must be reminded of the need to choose the use of force that has most chance of success and is proportionate to the perceived threat. This must be emphasised not only to reduce use of Tasers in non-combative, low violence situations, but equally to give officers confidence to use lethal force if and when the situation requires.

While it is the view of the Service that the majority of deployments during the trial were appropriate, it will be necessary for deployments to be monitored closely as more frontline officers become authorised to use a Taser. Strategies to maintain a high professional standard of Taser use are detailed below.

Advantages and challenges to using Tasers (KEQ 5)

Officers strongly identified a lower risk of injury to themselves and subjects as the most significant advantage of Tasers. While 26 subjects received injuries from the Taser these were minor abrasions and cuts. During interviews officers anecdotally reported a perception that if a Taser had not been available they would have resorted to alternative use of force which they believe would have resulted in injury to themselves or the subject.

While the trial was not able to quantitatively verify whether the use of Tasers actually reduced injury compared to the likelihood of injury if a Taser had not been deployed, this will be an important issue to examine once all operational officers have access to a Taser. Indeed, research from international police agencies has found a reduction in injuries following the introduction of Tasers.

Deterrence of violence and improved resolution of a violent incident were also common advantages cited by officers and this perception is supported by the fact that in 41 per cent of cases the situation was resolved by the presence and threat of a Taser.

Approximately half of respondents felt that the potential for ineffective deployment and limitations in relation to the situations in which a Taser could be effective were disadvantages of the device. It will be emphasised in future training that Tasers are not the right tool for every situation but are simply an addition to the range of situational use of force options available to officers.

In addition officers identified the potential to become over-reliant on Tasers and for misuse as disadvantages.

Policy and procedures (KEQ 6)

Central to the effective and appropriate use of Tasers is the provision of clear policy and procedural guidelines underpinned by a strong training program. As a result of overview of all deployments and consultation with the CMC, at the six month point of the trial, amendments were made to the policy and operational guidelines in relation to deployment of the Taser in stun drive mode. In addition policy was also clarified in relation to situations in which a Taser is not recommended. These amendments were aimed at providing clear guidance to officers to assist their decision making. As Tasers rollout to all operational officers the policy and operational guidelines will be continually monitored and if necessary, amended further.

Training (KEQ 7)

In general positive feedback about the content and delivery of training was received from officers. The training in preparation for the trial was conducted over two days and delivered by SERT officers based on the training used by this special response unit. Given the rank and experience of officers the training provided to officers with sufficient knowledge and skill to

prepare them for operational use of Tasers. Nevertheless, opportunities to refine, improve and/or expand specific components of the training were identified through the trial.
The key to appropriate and safe use of a Taser centres on the use of force option decision making process. Consequently the two main changes to training have been on the use of the drive stun mode (particularly multiple deployments) and on re-emphasising situational use of force decisions and threat assessments. Officers who are trained to make balanced assessments of situational factors and choice of the most suitable use of force will be less likely to engage in inappropriate use of a Taser.

Drive stun mode appears both in the literature and in this trial to have greatest propensity for multiple activations or for use in situations where alternative, less confrontational options may be available. It is also acknowledged that less experienced, more junior officers will be using Tasers following the state-wide rollout and that the type of training these officers require will differ to that given to RDOs and DDOs. Consequently the training during the state-wide rollout will focus strongly on decision making in relation to stun drive.

All operational officers receive comprehensive Operational Skills and Tactics Training (OST) which is updated every year. Components of this training include how to make a situation threat assessment and proper consideration of the range of use of force option (e.g. tactical communication, OC spray, withdrawal from situation etc).

Taser Training Officers (Instructors) are selected from officers who are currently Operational Skills and Tactics Trainers. This is a pre-requisite for selection as a Taser Training Officer. These officers undertake two days training in order to become Taser Training Instructors. These officers also have to undertake annual one day up-skilling in regards to Taser Instruction.

Taser specific training builds on the OST training. The current training requires officers complete pre-course reading and successfully complete an online exam in relation to policy, procedures and technical aspects of the Taser prior to attending eight hours of face-to-face training in the use of the weapon including theory and policy familiarisation, scenarios and voluntary exposure. Officers are then required to complete two practical and one theory assessments. Officers must requalify their certification by attending a one day course each year.

Preparation for rollout (KEQ 8)

The Conducted Energy Device Implementation Steering Committee has coordinated the rollout of Tasers to all operational police across the state. In planning for this staged rollout a number of financial, logistical, safety, training and management issues have been considered. Most importantly the Committee has been cognisant of the imperative to ensure officers use Tasers appropriately and effectively, and that officers are provided with the skills and knowledge to make balanced decisions.

The key risks associated with the use of Tasers identified in the literature review, and by the QPS include:

Taser creep – the risk that, over time, Tasers begin to be used in situations that it was not intended;

over-reliance – the risk that officers will use Tasers as a weapon of first choice rather than considering other options to de-escalate a situation; and

multiple or prolonged deployments – the risk that officers will apply a Taser repetitively or for extended periods of time.

A number of reactive and proactive strategies have been identified to manage and monitor officer behaviour with key focus on the risk areas. These strategies will include:

1. Taser dataport downloads (the chip that records date, time, length of activation) will be audited;
2. Tasers will be included in Ethical Standards Command audits and inspections of stations;
3. a detailed station register of Taser equipment will provide an audit trail of officers' carriage of Tasers and cartridge use and activations including spark tests for each Taser;
4. Taser usage will continue to be recorded by officers on a Taser Usage Form developed as part of this trial. This will be a valuable research and monitoring tool; and
5. Implementation of a Significant Event Review Panel at each region and command to assess every deployment and provide a quick response to issues (e.g. policy, equipment, training improvements; use of force options used by individual officers and trends) if they are identified. These Taser Review Panels will be overviewed by the ESC.

Further, the normal complaints mechanisms and overview systems provided by the Ethical Standards Command, the Crime and Misconduct Commission and the Courts remain.

In summary the trial was conducted and implemented successfully and has allowed the Service to identify opportunities for improvement prior to the state-wide rollout of Tasers. In many instances the threat of a Taser was sufficient to resolve a potentially violent situation and to allow officers to take control of a violent, aggressive subject. When a Taser was actually activated, it proved to be highly effective in de-escalating the physical violence and allowing the situation to be resolved with little injury to subjects or officers. Nevertheless it was acknowledged that an enhancement of policy and training in relation to stun drive activations was required in order to ensure officers were able and willing to make justifiable and operationally sound decisions to use a stun drive.

The training package has also been amended to focus on the increased effectiveness of using the probes to ensure full incapacitation in contrast to stun drive, which relies only on pain compliance. Officers who had been trained were also reminded to carefully consider their decisions to use the stun drive, in particular, the use of multiple applications.

Injuries to subjects or officers were relatively minor and often the result of self-injury or another use of force used to resolve the situation rather than the Taser *per se*. Most officers believe an important benefit of Tasers is the lower risk of injuries to both themselves and subjects. Indeed it could be suggested that a number of circumstances could have resulted in the use of lethal force had a Taser not been available.

Overall the trial indicates Tasers can provide an important, alternative use of force option for police.

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Acronyms

ACPO	Association of Chief Police Officers
ACT	Australian Capital Territory
AFP	Australian Federal Police
CED	Conducted Energy Device
CEW	Conducted Energy Weapon
CPC-RCMP	Commission for Public Complaints Against the Royal Canadian Mounted Police
CPRC	Canadian Police Research Centre
DOMILL	Defense Scientific Advisory Council Sub-committee on the Medical Implications of Less-lethal Weapons
HECOE	Joint Non-lethal Weapons Human Effects Center of Excellence
NMI	Neuromuscular Incapacitation
NSW	New South Wales
OC	Oleoresin Capsicum
PwC	PricewaterhouseCoopers
QPS	Queensland Police Service
RCMP	Royal Canadian Mounted Police
UK	United Kingdom

Appendix 1. Overview of Literature on Tasers

Introduction

Taser is a registered brand name that refers to a type of hand-held conducted energy device (CED),[18] which is generally used to immobilise people or induce pain. This paper aims to provide a summary of Australian and international research to inform public debate in Queensland about the use of Tasers by operational police.

This literature review has been prompted by the progressive roll-out of Tasers to first response police officers across Australia over the last two years. In Queensland, a 12-month trial of the use of Tasers by the Queensland Police Service (QPS) was concluded on 30 June 2008. On 29 January 2008, the Former Police Minister the Honourable Judy Spence MP announced that Tasers would be made available to operational police in every district throughout the state by June 2009. This followed the recent roll-outs of Tasers to first response officers in Western Australia (2007) and the Northern Territory (2008), and the announcement in May 2008 of a planned roll-out in New South Wales (NSW).[19]

Despite the increasing availability of Tasers to our operational police, very little research has been published in Australasia regarding the effectiveness and safety of Tasers. To date, most of the available literature has focused on the technical aspects of Tasers, anecdotal stories about the device and its utility in operational policing incidents, and newspaper articles and opinion pieces surrounding the introduction of Tasers by various police services.

For the purposes of this report, therefore, we also included overseas research studies and publications. This research included analysis of field use or Taser incident data provided by law enforcement agencies; medical or scientific research examining the physiological effects of Tasers; reports and views from human rights organisations; and reviews of existing literature and research. A considerable part of the currently available research can be linked to or involves TASER International in some way — either through the funding of research, the provision of data, or some other association.

Because of the range of medical and other scientific disciplines involved, this literature review does not assess the scientific rigour of the studies referred to, nor does it critically analyse the claims or conclusions made by their authors. Rather, it aims to highlight some of the issues relating to Taser use, including concerns about its safety.

The review has six sections. Following this introduction, the first section describes what a Taser is and how the device works. The second briefly outlines the history of Taser use overseas and in Australasia. The third outlines some of the operational benefits Tasers afford police, especially when compared to other use of force measures, and the fourth identifies the most common injury risks to people who may be tasered.

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[18] Taser is a registered trademark of TASER International (Arizona, USA). The term 'Taser' has been selected for use in this paper for two reasons: Taser is the specific device that has been chosen by the QPS, and 'Taser' is a more widely recognised and understood term within the community than 'conducted energy device'. Conducted energy devices are also known as conducted energy weapons (CEWs), electronic control devices (ECDs), neuromuscular incapacitation (NMI) devices and electromuscular disruption (EMD) devices. These terms have been used interchangeably in this review.

[19] On 18 May 2008, NSW Police Force issued a press release stating that general duties officers working as duty officers and supervisors will be trained to use a Taser. See <www.police.nsw.gov.au/news/media_release_Archive>.

The fifth section examines the primary concern with the device — can it cause death? It highlights the lack of consensus among the medical community regarding the device's safety and the repeated calls for independent and more rigorous research on Taser use, especially in relation to its effects on vulnerable or at-risk populations.

The final section addresses public concerns regarding the safety of Tasers, including its potential risks in some circumstances and the potential for misuse by officers. It includes findings of a citizen survey in New Zealand about Taser use and an overview of the current debate in Canada following a high-profile death which involved the use of a Taser. This is followed by a summary of the research literature.

What is a Taser?

The first Taser — an acronym for Thomas A. Swift's Electric Rifle — was designed in the late 1960s by NASA scientist Jack Cover. Patented in 1974, the Taser was initially a device for causing pain. It has since undergone substantial modifications to become a device that also interferes with a person's voluntary muscle control. As a result, Tasers now combine the pain function of traditional stun guns with the incapacitation function of CEDs.[20]

A Taser can be operated in two modes — probe mode and drive stun mode. In probe mode, two probes connected to the Taser by insulated wires are fired into a person's skin or clothing. The successful deployment of the probes completes an electrical circuit, allowing a high voltage, low amperage electrical current to pass from the Taser to the person. This causes uncontrollable muscle contractions resulting in the immediate loss of neuromuscular control, thereby immobilising the person. It also causes considerable pain. The immobilisation and pain caused by the Taser cease as soon as the device is deactivated. The device automatically deactivates after a five-second cycle; however, the user may manually deactivate the Taser sooner by engaging its safety mechanism. A cycle longer than five-seconds may be achieved if the operator continues to depress the trigger and will deactivate when the trigger is released. Data software in the Taser captures the total duration of each firing.

In drive stun mode, the Taser works much like a traditional stun gun. The probes are not usually fired, but instead the Taser is applied or pushed directly onto a person's skin or clothing. When used in this way, the Taser does not affect a person's motor functions and does not immobilise them. Rather, it inflicts localised, severe pain in the area where the Taser is applied. Drive stun mode can also be used to complete an immobilisation circuit if the probe mode fails.

As a police use of force measure, the device is promoted as a means of dealing with violent or aggressive people, especially those who may not respond to other uses of force.

Overview of Taser use overseas and in Australasia

With the establishment of TASER International in 1993, Tasers were initially sold in the United States to civilians. In 1999, TASER International began supplying Tasers to law enforcement

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[20] The Taser X26 is the latest hand-held CED on the market. This model is lighter and smaller and has a greater incapacitating power compared to its predecessor, the Advanced Taser M26. For more information about the history of Taser, see <www.taser.com/research/Science/Pages/historyofTASERDevices.aspx>.

agencies.[21] Currently, Tasers are used by over 13 000 agencies (such as law enforcement agencies, correctional agencies and military agencies) in 44 countries around the world including the United States, Canada, the United Kingdom (UK), France, New Zealand and Australia (TASER International 2008). More than 4700 of these agencies deploy Tasers to all of their patrol officers.

Until recently, the use of Tasers in Australia was restricted in all state and territory police services to tactical or specialist response groups. However, as mentioned previously, Tasers are now available to first response officers in Western Australia and the Northern Territory, with plans for similar roll-outs in Queensland and NSW. In New Zealand, it has recently been announced that police officers across the country will be issued Tasers in 2009. This follows a 12-month trial of the use of Tasers in general policing that concluded in August 2007.

With the widespread use of Tasers by police agencies overseas, a number of trial evaluations and reviews have been conducted to examine the effectiveness and safety of the device. These include:

- an independent evaluation by PricewaterhouseCoopers (PwC 2004) of the UK Taser trial commissioned by the Association of Chief Police Officers (ACPO);
- an evaluation of Taser devices conducted by the UK Home Office (Donnelly et al. 2002);
- three reports on the medical implications of Tasers prepared by the Defense Scientific Advisory Council Sub-committee on the Medical Implications of Less-lethal Weapons (DOMILL) in the UK (2002, 2004, 2005);
- a report on CEDs published by the Department of Justice in Nova Scotia, Canada (Nova Scotia Department of Justice 2008);
- a review of Tasers completed by the Office of the Police Complaint Commissioner in British Columbia, Canada (Battershill et al. 2004);
- a review of CEDs completed by the Canadian Police Research Centre (CPRC) (2005);
- a review of CED use by the Royal Canadian Mounted Police (RCMP) conducted by the Commission for Public Complaints Against the RCMP (CPC-RCMP) (2007, 2008); and
- an analysis of the effectiveness and risks of Tasers conducted by the Joint Non-lethal Weapons Human Effects Center of Excellence (HECOE) (2005) in the United States.

In Australasia, the available research is generally limited to an evaluation of the recent New Zealand Police Taser trial (New Zealand Police 2008), and a qualitative report by the Australian Federal Police (AFP) (2007) summarising the Taser-related incidents that occurred during the Australian Capital Territory (ACT) trial. Electrical safety analyses of the Taser have also been conducted by the biomedical engineering department of the Alfred Hospital in Melbourne (Southwell 2003, 2004). Recently, the NSW Ombudsman also released a review of the use of Tasers by the NSW Police Force which included 29 recommendations for improving policies, training and record keeping in relation to Taser use (NSW Ombudsman 2008). Separate research by Monash University is currently in progress.[22]

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[21] CEDs had been supplied to law enforcement agencies prior to the establishment of TASER International by other manufacturers such as Tasertron.

[22] A PhD student is currently undertaking research on the effects of sub-lethal weapons including Tasers on vulnerable people.

Effectiveness in managing suspects

Tasers can be highly effective in enabling police to defuse potentially violent situations and manage aggressive suspects. As noted by the NSW Ombudsman in its review of Taser use by specialist units in the NSW Police Force, for example, "Tasers appear to have been a useful option for officers in the specialist units to achieve effective resolution of dangerous and high risk matters" (NSW Ombudsman 2008, p. III).

Various police departments in Australia and overseas have also reported that suspects frequently become compliant with police instructions on presentation alone of the Taser — i.e. without the device being activated in either probe or drive stun modes. In a study commissioned by ACPO in the United Kingdom, it was found that of the 58 incidents examined as part of a trial by five police forces, 12.1 per cent of situations were successfully resolved by the officer simply aiming the Taser at the suspect (PwC 2004). In a further 44.8 per cent of cases, suspect compliance was gained from aiming the Taser and its laser at the suspect.[23] The authors of the study subsequently concluded that 'Taser appears to have a high visual deterrent value which can enable officers to de-escalate possibly violent situations relatively quickly and easily' (PwC 2004, p. 26). Similar findings were also reported in the ACT and New Zealand. In the ACT, officers only had to draw or aim the Taser at a suspect in 12 of the 20 incidents to gain compliance (AFP 2007). In New Zealand, most incidents were resolved through presentation alone of the Taser; of 114 incidents involving a Taser, only 17 per cent resulted in the device being discharged (New Zealand Police 2008).

While compliance through the presentation alone of a Taser has resulted in successful outcomes for law enforcement, the activation of a Taser in probe mode also seems to have resulted in successful outcomes — i.e. the Taser has been an effective tool in controlling and restraining suspects who come into contact with police. Overseas research has found that firing the Taser produces successful outcomes in between 78 and 100 per cent of cases (Donnelly et al. 2002); for example, the Los Angeles Sheriff's Department reported that the Taser was effective in 92 per cent of cases, while the Victoria Police Department in Canada reported success in 89 per cent of cases. In the UK trial, the suspect was successfully arrested in all 13 cases where Tasers were used in probe mode, with only two of these requiring more than one cartridge to be discharged (PwC 2004).

Potential to reduce risk of injury

Tasers are often promoted as a use of force option that may reduce the risk of injury to police officers and suspects. This claim generally stems from several perceived benefits of the device including:

- it can be fired from a distance, reducing the need for officers to come into close physical contact with suspects
- it can be used to de-escalate a situation before it poses a heightened threat or risk
- it can assist police to restrain aggressive individuals who would otherwise be hard to control (PwC 2004).

[23] The Taser has a laser sight to assist officers in aiming the device. This laser can be turned on and off by the officer, and often produces compliance when pointed at the suspect. This is sometimes called 'red dotting' or 'laser painting'.

Consistent with this, numerous research reports have found that the introduction of Tasers has been associated with a decrease in the number of injuries sustained by police and suspects during arrests (CPRC 2005). For example, Smith et al. (2007) reported that the use of Tasers by the Miami-Dade Police Department significantly reduced the likelihood of suspects and officers sustaining both minor and major injuries. In Phoenix, there was a reported reduction of more than 60 per cent in the number of suspects injured during arrest after Tasers were introduced (Battershill et al. 2004). In Cincinnati, a 30 per cent reduction in suspect injuries and a 70 per cent reduction in the number of assaults on police (Rose 2005) were reported by the police department.

Potential to reduce use of lethal force

Notwithstanding that Tasers are not a substitute for lethal force, some overseas law enforcement agencies have reported a decrease in the number of police shootings following the introduction of Tasers (CPRC 2005). For example, in Phoenix there was a 54 per cent reduction in the use of lethal force while in Orange County a 78 per cent reduction in lethal force was reported (TASER International 2006). The Metropolitan Police Authority (2004) also cited fewer police shootings after Tasers were introduced into the service.

Qualitative reviews of Tasers indicate that the device has been deployed in situations that may have required deadly force if not for the availability of a Taser (Mesloh et al. 2005, Metropolitan Police Authority 2004). The authors of these reports assert that a substantial number of deaths have been avoided, thus reducing not only the personal tragedy of such events but the need for police inquiries and investigations and the costs associated with human resource support offered to officers, families and communities adversely affected by police shootings.

In March 2008, the potential for Tasers to reduce the need for lethal force was acknowledged by Queensland's State Coroner in his report on the inquest into the fatal shootings of four men by Queensland police officers (Barnes 2008). While recognising the controversial nature of the device, the coroner said: 'It is likely that if the officers in the four incidents had access to a Taser gun they would have been deployed. If it had occurred, such deployment may have resulted in each of the incidents being resolved without anyone being killed' (p. 139).

Potential injury risks of Tasers

Direct injuries

According to various research studies (Bozeman & Winslow 2005, Donnelly et al. 2002, HECOE 2005), a range of direct injuries may result from the use of Tasers. These include:

- minor skin irritation, redness and blistering where the probes make contact with the suspect's skin;
- facial lacerations;
- groin lacerations; and
- eye injuries.

In an extensive risk analysis, HECOE estimated the likelihood of a range of Taser-related injuries to suspects who are hit with the Taser's probes. Based on data reported by US police departments to TASER International, HECOE (2005) concluded that the more serious the injury, the less likely it was to occur. Specifically, HECOE estimated the risk of minor burns and lacerations to be no more than 81 per cent and 87 per cent, respectively. With regards to

potentially more serious injuries such as facial and groin lacerations, the risks were estimated to be no more than 1 per cent and 3 per cent, respectively. And the risk of eye injuries was estimated to be extremely low — 0.04 per cent.

Field use statistics indicate that the majority of people exposed to Tasers sustain no serious injuries (Battershill et al. 2004). For example, the Portland Bureau of Police reported that 63 per cent of suspects had no documented injuries (CPRC 2005); of those who did, 76 per cent experienced minor injuries like lacerations and bruises, while the remainder had injuries that were self-inflicted or unrelated to the use of the Taser. The Seattle Police Department reported that 68 per cent of incidents involving a Taser resulted in either no injury to the suspect or only small lacerations where the probes had punctured the skin (Donnelly et al. 2002). Similarly, evaluations from the UK, New Zealand and the ACT found that in all situations in which the Taser was deployed, no serious injuries were sustained by officers or suspects (AFP 2007, New Zealand Police 2008, PwC 2004).

Secondary injuries

Subjects who are hit by a Taser in probe mode often fall as a result of electricity-induced muscle contractions. There is some risk, therefore, of subjects suffering serious head injuries if their head makes contact with a hard surface, according to Bozeman and Winslow (2005), Donnelly et al. (2002) and DOMILL (2005).

This risk is heightened if the suspect is standing on a heightened platform such as the top of a staircase, on a roof or on a balcony (Donnelly et al. 2002). Although DOMILL (2002, 2005) has concluded that the risk of serious head injuries following the application of a Taser is generally low, it is widely accepted that Tasers should not be used on suspects who are in locations that would render them vulnerable (Donnelly et al. 2002).

There are also risks of ignition in some situations. Experimental studies show that the use of a Taser can ignite subjects who are covered in a flammable substance (Donnelly et al. 2002), and this has been reported in two operational experiences. Donnelly et al. indicate that there may also be a risk of ignition in environments like petrol stations where flammable vapours are present.

These findings suggest that the use of Tasers may be limited in some operational settings due to a number of environmental and situational factors. These should be considered by officers before deploying a Taser.

Can Tasers cause death?

While the majority of injuries resulting from Tasers appear to be relatively minor, a number of deaths are reported to have occurred following the use of a Taser. This has resulted in considerable debate surrounding the use of Tasers by law enforcement officers, including whether the labelling of Tasers as non-lethal devices is appropriate and, in particular, whether Tasers can cause death.

To date, research has not identified a direct causal relationship between the application of a Taser and the death of the person concerned. However, there is no consensus in the medical community regarding the safety of these devices (Dennis et al. 2007). This lack of consensus generally stems from conflicting or mixed research findings, the lack of independent and

rigorous research, and the scarcity of studies that have adequately tested the device on human subjects.

Medical and other scientific research on the effects of Tasers is largely limited by ethical or legal concerns that make it very difficult for researchers to reproduce scenarios that will occur 'on the ground' or reflect real-life policing situations (Synyshyn 2008). Some of these research limitations include the following:

- human subjects cannot be tested with illegal drugs or substances;
- research cannot be conducted on people suffering mental illness or excited delirium[24];
- most testing of Tasers is done on animal subjects (usually swine);
- only fit and healthy subjects (usually police officers) are selected for testing;
- the duration and application of the Taser is controlled in research situations (generally shorter exposures which are fixed to and not fired into a person); and
- in research situations, human subjects are targeted in areas away from the heart — i.e. the back.

Medical research results

Research that has sought to examine the physiological effects of Tasers has primarily focused on how discharges from neuromuscular incapacitation (NMI) devices like the Taser affect the heart, especially in terms of the likelihood of cardiac arrhythmias[25] or ventricular fibrillation.[26]

A key study conducted by the Alfred Hospital in Australia found that the current delivered by the Taser X26 is far less than that actually required to induce ventricular fibrillation (Southwell 2004).[27] Similarly, McDaniel and his colleagues found that the discharge required to induce ventricular fibrillation in pigs was 15 to 42 times greater than the discharge from a standard NMI device (McDaniel et al. 2005). Consistent with this, no cardiac arrhythmias in animal subjects were reported by Valentino et al. (2007), Stratbucker et al. (2003 cited in Vilke & Chan 2007), and Lakkireddy et al. (2006). Nanthakumar et al. (2006) also reported no cardiac arrhythmias in subjects when discharges were delivered away from the heart.

While these studies tend to suggest that CEDs may be safe, somewhat conflicting results have also been reported. For example, a recent analysis of 44 Taser X26 devices found that four (9.1%) of the devices generated a much higher current than that specified by TASER International (Savard 2008, pp. 8-9). These 'abnormal' devices were among six purchased prior to 2005, meaning that two-thirds of the older (pre-2005) devices were found to produce abnormally high currents. The report suggested that such abnormal devices may pose an increased risk of harm to subjects "when the barbs impact the chest in the vicinity of the heart" (Savard 2008, p. 16).

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[24] Excited delirium is defined as 'a state of extreme mental and physiological excitement, characterised by extreme agitation, hyperthermia, epiphoria, hostility, exceptional strength and endurance without apparent fatigue' (Morrison & Sadler 2001 cited in CPRC 2005, p. 36). It is discussed further on in this paper.

[25] Cardiac arrhythmias are abnormal heart rhythms, including heartbeats that are too fast, too slow, or otherwise irregular.

[26] Ventricular fibrillation is a life-threatening cardiac rhythm disturbance characterised by a lack of coordination in the contraction of heart muscle cells.

[27] Southwell (2003) also conducted a safety analysis of the previous Taser model, the Advanced Taser M-26.

The RCMP has since decided to remove from service all Tasers acquired prior to 2006 for independent testing (RCMP 2008).

Dennis et al. (2007) reported a study in which two of the eight swine died from ventricular fibrillation following exposure to Taser discharges. Nanthakumar et al. (2006) also reported an episode of ventricular fibrillation in one of their animal subjects when NMI discharges were delivered across the chest (i.e. close to the heart). Most recently, Walter et al. (2008) reported that Taser discharges administered with a transcardiac discharge vector — that is, so that the current between the two Taser probes passes through the heart — have dramatic effects on myocardial function including rhythm capture, ventricular tachycardia or ventricular flutter, and sometimes fatal ventricular fibrillation. Results from experimental animal studies such as these suggest that Tasers may be unsafe. Given the differences in research findings and the tendency for such research to be carried out on animal subjects, it is difficult to extrapolate these results to situations involving humans.

However, in a review of medical studies that examined the direct effect of Taser discharges on the heart, it was concluded by Nanthakumar et al. (2008, p. 1456) that it would be 'inappropriate to conclude that stun gun discharges cannot lead to adverse cardiac consequences in all real world settings'. The review also concluded that 'additional research studies *involving people* will help to resolve conflicting theoretical and experimental findings, and could lead to the design of devices with electrical pulses that cannot stimulate the heart' (p. 1457).

Of those studies that have been conducted on human volunteers (albeit with the limitations noted above), research has not identified any cases of ventricular fibrillation (DOMILL 2002, HECOE 2005). Similarly, two more recent experimental studies reported no changes to participants' electrocardiogram readings after exposure to a Taser (Ho 2007), and Levine et al. (2006) reported no cardiac dysrhythmias in 67 people exposed to Taser shocks during police training. In addition to these experimental findings, the National Institute of Justice reported that field experience indicates that CED use is safe in the majority of cases and that there is no medical evidence to suggest that exposure to CED produces abnormal cardiac rhythms in normal healthy adults (2008). Consistent with this, various police agencies have reported no deaths proximal to Taser use in the field (Battershill et al. 2004, White & Ready 2007).

Although the research in this area is quite technical and complex, it tends to suggest overall that the risk of Tasers causing cardiac harm and death is relatively low — at least in healthy subjects.

Consistent with these indications in the research, advocates of Tasers have repeatedly argued that no reported deaths in the field have been explicitly and solely attributed to the application of a Taser (Donnelly et al. 2002, McBride & Tedder 2005).[28] Instead, they argue that other

[28] On 6 June 2008, TASER International was ordered to pay $US6.2 million in damages following the death of a Californian man who was shocked multiple times with a Taser. While the jury attributed 15 per cent of the man's death to exposure to the Taser and 85 per cent to the man's own actions, it found that TASER International 'failed to warn police in Salinas, California, that prolonged exposure to electric shock from the device could cause a risk of cardiac arrest'. The police officers were not found liable. This case represents the first time TASER International has lost a liability suit. See <www.theglobeandmail.com/servlet/Page/document/v5/content/subscribe?user_

factors like drug use and pre-existing heart defects are almost always implicated (CPRC 2005, McBride & Tedder 2005).

Potential risks of Taser use in the presence of drug use or health problems

The potential danger of using a Taser where subjects are drug affected or have health problems was highlighted in a report published by Amnesty International in 2006 on the use of Tasers by law enforcement agencies in the United States.[29] The report expressed concern over a perceived increase in Taser-related deaths in recent years — there were three reported deaths in 2001 and 61 in 2005 — and examined the circumstances surrounding 152 deaths that followed the use of a Taser.[30] From its analysis of available media, police and medical reports, Amnesty International (2006) identified a number of factors that were common to most of the Taser-related deaths it examined. These included pre-existing or underlying health problems such as heart conditions and mental illness, and being under the influence of drugs.

It has been suggested that people with these characteristics may comprise 'physically vulnerable populations', and may be at greater risk of injury or death following exposure to a Taser. Other physically vulnerable populations that have been identified include pregnant women, children, the elderly, and people with implanted electrical devices (see Amnesty International 2006, HECOE 2005, Schlosberg 2005). However, very little research has been carried out on the effects of Tasers on these different groups.

With regards to the apparent susceptibility of drug users to Taser discharges, one study has investigated the effects of cocaine on the likelihood of ventricular fibrillation in pigs (Lakkireddy et al. 2006). While it was hypothesised that cocaine would increase this risk, no cardiac arrhythmias were produced in any animal with or without cocaine, even when the NMI device was discharged close to the heart (Lakkireddy et al. 2006). The introduction of cocaine in the swine was shown to actually increase the safety margin for cardiac vulnerability. Despite the absence of empirical evidence, case data and the known effects of certain drugs on the heart led DOMILL (2002, 2005) to warn that drug-affected individuals may be more likely than normal subjects to experience adverse consequences after being struck by a Taser. DOMILL also concluded that individuals with heart disease and other cardiac defects may be similarly susceptible.

With regards to other possible vulnerabilities, animal studies suggest that subjects with a smaller body mass like children are somewhat more likely to experience ventricular fibrillation than larger subjects (McDaniel et al. 2005). In contrast, the risk of Tasers damaging and disrupting implanted electrical devices is considered to be very low, although further research is required (DOMILL 2004, Southwell 2004).

URL=http://www.theglobeandmail.com%2Fservlet%2Fstory%2FLAC.20080610.RTASER10%2FTPStory%2FBusiness&ord=5808948&brand=theglobeandmail&force_login=true>.

[29] In 2004, Amnesty International released a similar report which also examined the circumstances surrounding over 70 deaths following the use of a Taser in the United States and Canada. See <www.amnesty.org/en/library/asset/AMR51/139/2004/en/dom-AMR511392004en.pdf>.

[30] Most recently, in 2008 Amnesty International reported that nearly 300 deaths had occurred in the United States following the use of Tasers. See <www.amnesty.ca/take_action/actions/canada_taser_action.php>.

Other potential risks

In addition to the possible influence of certain subject characteristics, Amnesty International's 2006 report identified two other factors common to many of the Taser-related deaths it examined. These were repeated or prolonged applications of the Taser, and the use of the Taser accompanied by the use of restraints and/or chemical incapacitant sprays.

Again, very little research has examined the implications of these factors. Scientists have suggested, however, that multiple Taser applications can increase the chance of an electrical discharge hitting the heart in 'a vulnerable period' of the heart rhythm, thereby increasing the risk of death (Schlosberg 2005). Repeated applications may also lead to important physiological changes in the heart that increase the likelihood of ventricular fibrillation and death (Schlosberg 2005). It is thought that prolonged Taser discharges may similarly affect an individual's respiratory and cardiac functioning (HECOE 2005), which offers a plausible theory on the possible connection between deaths, the application of Tasers, and people experiencing excited delirium (CPRC 2005). Conversely, other studies have shown respiratory functioning was not affected during prolonged applications of CEDs (Ho, et al 2007).

The condition known as 'excited delirium' is one of the most widely cited causes of death following the use of a Taser (Amnesty International 2006, CPRC 2005, Synyshyn 2008, Talvi 2007). While not a recognised medical or clinical condition, excited delirium is used to describe a set of extreme behaviours, and is often cited by TASER International as the cause of the majority of deaths proximal to Taser use. Specifically, excited delirium is defined as 'a state of extreme mental and physiological excitement, characterised by extreme agitation, hyperthermia,[31] epiphoria,[32] hostility, exceptional strength and endurance without apparent fatigue' (Morrison & Sadler 2001 cited in CPRC 2005, p. 36). Recognised widely in law enforcement circles, people exhibiting signs of excited delirium are generally considered in need of immediate medical treatment and need to be managed accordingly.

In a recent review of the use of Tasers by the Royal Canadian Mounted Police (RCMP), the Commission for Public Complaints Against the Royal Canadian Mounted Police (CPC-RCMP 2007) cautioned against the use of Tasers on people demonstrating symptoms of excited delirium. The commission noted a distinct lack of research thoroughly examining the connection between Tasers, excited delirium and death, and called for a more conservative approach with respect to the use of Tasers on vulnerable people. It argued that available research suggests that these people have a higher likelihood of death, not necessarily because of the force that may be used by police to restrain them, but because of the mental or medical condition of the person at the time of police intervention.[33]

Overall, Amnesty International's report and the available research on physically vulnerable populations, multiple Taser applications and excited delirium suggests that Tasers may elevate

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[31] Abnormally high body temperature.

[32] Watering of the eyes.

[33] The commission was also mindful of literature which suggests that people experiencing excited delirium are in need of urgent medical treatment. However, the commission considers that a CEW is not a medical tool for dealing with these people and its use should be restricted.

the risk of death for certain subjects and in certain circumstances.[34] Further research is needed into these issues. This has been emphasised by Amnesty International, which has called for a ban on the use of Tasers pending independent and rigorous research on its use and effects. At the very least, Amnesty International has argued for Tasers to be restricted to situations in which the alternative would be lethal force (Amnesty International 2006).

Emerging public concerns about the use of Tasers

In addition to the concern about the potential of this device to cause death or injury to subjects in some circumstances, there has been community unease in some jurisdictions about the way in which Tasers have been used by police officers. These dual concerns have led a number of individuals and organisations to call for stricter policies or guidelines governing the deployment of the device. The NSW Ombudsman (2008), for example, has recommended that the NSW Police Force refrain from rolling out Tasers to junior general duties officers for at least two years until more is known about the use of Tasers in operational settings.

Potential misuse of Tasers by police

The potential for Tasers to be misused or abused by police officers emerged as a key public concern in, for example, research in New Zealand in which 1200 citizens were surveyed about their views on the device as part of the Taser trial evaluation. Ten (10) per cent of respondents were opposed to the police using Tasers (New Zealand Police 2008). Along with the potential for the device to cause injury or death, the predominant concern identified by those respondents was that Tasers would be used excessively by police (mentioned by 36 per cent of respondents). Similar concerns that police would use Tasers discriminatorily, inappropriately or excessively were raised by 29 of the 71 people who either made Official Information Act requests or corresponded with the Minister or Commissioner of Police about the Taser trial (New Zealand Police 2008).

Amnesty International has also repeatedly expressed concern about the use of multiple Taser deployments by law enforcement officers. The organisation also claims that Tasers have been used against individuals who posed no threat of violence, who were not armed or did not appear to present an imminent threat of death or serious injury, or who were already handcuffed and restrained by police (Amnesty International 2006, Amnesty International Canada 2007).

In its review, the NSW Ombudsman acknowledged that experiences in other jurisdictions suggest that Tasers are most appropriately used in situations involving individuals who are displaying "combative or aggressive" behaviour. Its report recommended that standard operating procedures should authorise officers to use the device only when a person is "violently confronting or resisting police" (NSW Ombudsman 2008, p. IV).

Reflecting on the Canadian experience

Although evident elsewhere, concerns about the way in which Tasers may be used by police have been especially prominent in Canada. In particular, three Canadian reports released in

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[34] This is consistent with the conclusion of the Compliance Strategy Group in its review of the RCMP's policies and procedures relating to CEW use. It recommended that these apparent risk factors and their potential implications for CEW use be clearly dealt with in the RCMP's operational manual and training program.

2007 and 2008 have recommended that the use of Tasers be restricted following a high-profile Taser-related death.[35]

On 14 October 2007, Mr Robert Dziekanski, a 40-year-old Polish immigrant, died at Vancouver International Airport after a Taser was deployed by the RCMP. Police were called to the terminal after airport security reported that Mr Dziekanski was behaving in an agitated and erratic manner. A video which captured the incident shows that RCMP officers tasered Mr Dziekanski within seconds of coming into contact with him. Mr Dziekanski did not speak English and had been waiting at the airport for nine hours.

The death of Mr Dziekanski sparked world-wide media attention and led to the establishment of at least six federal and provincial Taser-related inquiries in Canada — including inquiries by the RCMP, the CPC-RCMP, the Canadian House of Commons Standing Committee on Public Safety and National Security, the British Columbia Coroner, and British Columbia's Attorney General.[36] The incident also marked the 18th Taser-related death in Canada since 2003, which was followed by two more deaths a month later.

While many of the inquiries established following the Vancouver Airport incident have yet to be finalised, the two that have been finalised drew similar conclusions about the use of Tasers by law enforcement officers. For example, in its interim report on CEW use by the RCMP, the CPC-RCMP recommended that CEWs be reclassified as an 'impact weapon' and be used only in those situations where an individual was 'combative' or posing a risk of 'death or grievous bodily harm' to the officer, themselves or the general public (CPC-RCMP 2007, p. 4). A second recommendation reinforced this directive in relation to individuals experiencing excited delirium.

The CPC-RCMP recommendation to restrict the use of CEWs followed the commission's view that its use had expanded to include situations not intended for CEW use — in other words, there was evidence of 'usage creep'. Under the current RCMP policy CEWs are labelled as intermediate devices and are in the same category as oleoresin capsicum spray.[37] However, the commission's view was that this classification 'authorises deployment of the weapon earlier than reasonable' and moves away from the original purpose which was 'to subdue individual suspects who resisted arrest, were combative or who were suicidal' (CPC-RCMP 2007, p. 41). This recommendation was repeated in the final report of the commission (CPC-RCMP 2008).

The Canadian House of Commons Standing Committee on Public Safety and National Security (2008) also recommended that Tasers be reclassified as an 'impact weapon' and be restricted to situations where a subject is displaying 'assaultive behaviour or presents a threat of death or grievous bodily harm'. The committee asserted that 'this restriction should not be lifted before independent research has indicated that use of the Taser gun poses not unreasonable risk for

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[35] Two of these reports were prepared by the Commission for Public Complaints Against the Royal Canadian Mounted Police.

[36] The Attorney General of British Columbia announced two inquiries to be headed by Thomas R Braidwood QC (see <www.braidwoodinquiry.ca>). For the House of Commons inquiry see <http://cmte.parl.gc.ca/cmte/CommitteeList.aspx?Lang=1&PARLSES=392&JNT=0&SELID=e21_&COM=13205>. For the CPC-RCMP inquiry see <www.cpc-cpp.gc.ca/DefaultSite/Investigations/index_e.aspx?articleid=1692>.

[37] The RCMP uses an Incident Management/Intervention Model (IM/IM) to determine the appropriate level of force, if any, required to preserve public and officer safety in relation to a police incident. The model defines a range of behaviour classifications (categories of resistance) and levels of intervention available to officers.

the subject'. Furthermore, the committee resolved to introduce a motion in the House of Commons calling for an immediate moratorium on the use of Tasers by the RCMP if this restriction was not implemented by 15 December 2008.

In reasoning the need to restrict the use of Tasers, the committee put the view that such a policy shift was 'necessary given the persisting uncertainty about the effects of CEW technology on the health and safety of persons subjected to it, and the scarcity of independent, peer-reviewed research in this regard' (Canadian House of Commons 2008, p. 2). The committee also considered such a measure was essential to restoring public confidence in the RCMP's use of Tasers.

Notwithstanding that the other Canadian inquiries have yet to be finalised, several issues raised during the examinations to date are relevant to the use of Tasers in Australia. For example:

- where CEDs should be placed on the use of force continuum or situational use of force models — i.e. when should Tasers be used?
- whether or not Tasers are safe and appropriate to use, particularly with reference to vulnerable people
- the risk of police using Tasers as a 'first resort' (i.e. over-reliance on the device)
- the risk of Tasers being used in situations for which they were not intended (i.e. Taser creep)
- the risk of multiple or prolonged Taser deployments.

These issues were not explored further in this review. Rather, they were identified to stimulate thinking and further discussion about the introduction of Tasers by Australian police agencies.

Summary of the research literature

Tasers provide police officers with another use of force option for dealing with combative and physically aggressive people. Its popularity with law enforcement agencies is increasing, with a growing number of agencies adopting the technology in Australia and overseas. This is not surprising given the operational benefits afforded to police, which include high deterrent value, immediate incapacitation, the ability to deploy at a safe distance, and limited or no aftercare in most situations.

However, the safety of Tasers has been questioned in the wake of reports of deaths following Taser use. While research has not identified a direct causal relationship between the application of a Taser and the death of the person, it does indicate that Tasers may pose a risk of serious injury or death for certain subjects and in certain circumstances.

Nevertheless, the academic and medical community remains divided on the safety of Tasers — this lack of consensus arising from conflicting research findings and the scarcity of studies that have adequately tested the device on human subjects. As such, there have been repeated calls for independent and more rigorous research on the effects of Tasers, particularly on vulnerable populations and at-risk groups who may be more likely to come into contact with police.

There is also considerable public concern in some jurisdictions about the potential misuse of Tasers by police officers following reports that Tasers have been used in situations for which the device was not intended, too early in interactions, and on people who posed no threat of violence or risk of serious injury.

This range of concerns has led a number of organisations and agencies to call for stricter policies or guidelines to govern the deployment of the device. Issues that have been raised in overseas forums and are relevant to the use of Tasers in Australia include their placement on a use of force model and definition of the circumstances in which they can be used, the degree of risk of using them on vulnerable populations, and the possible risks associated with multiple, simultaneous or prolonged deployments.

While the relevant research in Australia is limited, there is much to be learnt from the experiences of international law enforcement agencies and the findings of research to date. The key for policy makers is to balance the protection and safety of officers and offenders with community concerns about the possible risks associated with this device and the importance of appropriate policies and practices to guide police in using Tasers.