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# Report on the Ninth International Law Enforcement Forum

# MINIMAL FORCE OPTIONS

and Less-Lethal Technologies

**Protecting the Public, Protecting the Protector  
in a Constrained Fiscal Environment**



Boston Marathon Bombing April 15, 2013

**International Law Enforcement Recommendations  
on Preventing and Countering Armed Attacks**

University Park, Pennsylvania – April 2013



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### Acknowledgements

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The Ninth International Law Enforcement Forum on Minimal Force Options was co-hosted by The Pennsylvania State University, The Association of Chief Police Officers (ACPO - UK) and the National Tactical Officers Association (NTOA). The forum was organized and conducted by the Institute for Non-Lethal Defense Technologies (INLDT) of The Pennsylvania State University. The workshop was held in University Park, Pennsylvania, April 14<sup>th</sup> through 16<sup>th</sup>, 2013.

It remains our view that the pursuit of minimal force and less-lethal options, the policy and legal aspects of developing and employing such technology, and the surrounding debates, should be conducted openly and on the basis of informed scientific and medical assessment set against clearly articulated operational requirements by professionals who have experience in policy, command, operational theaters of use and tactical deployment.

The content of this report is not intended to represent any policy and/or official position of ILEF, police organizations, research agencies, The Pennsylvania State University, the governments of the delegates in attendance, or any of their affiliated agencies. Although the conclusions and recommendations are based upon a general consensus of the participants, they do not necessarily reflect the views of all of the participants and/or the agencies which they represent.

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**In memory of Dr. John Leathers, cofounder  
International Law Enforcement Forum**



## Welcoming Remarks to the International Law Enforcement Forum by Dr. Edward G. Liszka, Director, Penn State's Applied Research Laboratory

The events of yesterday's Boston Marathon bombing provide a horrendous backdrop for our meeting. It reminds me acutely of how you are on the line all the time, prepared to face uncertain events, which you have to deal with very rapidly and effectively. I have great admiration for what you do, day in and day out

This is the ninth forum and it speaks to its value and importance. This forum was the brainchild of Dr. John Leathers, Colin Burrows and a number of others here. It was created as a venue for law enforcement personnel, enabling their discussions on minimal force, which is extremely worthwhile.

Your reports are very valuable and give people a good perspective on this area. Here, at the Applied Research Lab, we support the Departments of Defense and Justice in their development and use of non-lethal capabilities. So, I appreciate what you're doing in that regard and welcome you.

### INTRODUCTION

**Purpose:** This report summarizes the proceedings and recommendations for "Protecting the public, protecting the protector: Working to minimize risks to our citizens while ensuring officer safety in a constrained fiscal environment," from the ninth Law Enforcement Forum workshop conducted at Pennsylvania State University, 16-18 April 2013. This workshop especially focused on police preventing and countering armed attacks. Additionally, this report provides an update on minimal force and less-lethal technologies in keeping with the purpose of the International Law Enforcement Forum.

**Background -- Why Protecting the Public, Protecting the Protector in a Constrained Fiscal Environment:** Since its inception, the International Law Enforcement Forum has emphasized minimal force options in policing, and has maintained a particular focus on the development and utility of less-lethal weapons. This has become increasingly challenging as police face highly lethal situations in public places. "Armed offender attacks have occurred and continue to occur in crowded places such as sporting, transport and entertainment venues," states Australia's Attorney General 2013 publication, *Active Shooter Guidelines for Places of Mass Gathering*.<sup>1</sup> They have been conducted by violent extremists such as the 2008 Mumbai attack and the 2013 Nairobi, Kenya, Westgate shopping mall attack. The mentally and emotionally disturbed, as well as disgruntled have also conducted

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<sup>1</sup> "Active Shooter Guidelines for Places of Mass Gathering," 2013, [http://www.nationalsecurity.gov.au/agd/WWW/rwpattach.nsf/VAP/\(339383A93E59A076831A75961C22D2A2\)~Active+Shooter+Guidelines+for+Places+of+Mass+Gathering.pdf/\\$file/Active+Shooter+Guidelines+for+Places+of+Mass+Gathering.pdf](http://www.nationalsecurity.gov.au/agd/WWW/rwpattach.nsf/VAP/(339383A93E59A076831A75961C22D2A2)~Active+Shooter+Guidelines+for+Places+of+Mass+Gathering.pdf/$file/Active+Shooter+Guidelines+for+Places+of+Mass+Gathering.pdf) , p. 2

public attacks such as the shootings in Dawson College, Montreal, Canada, 2006; Cumbria, England, 2010; Utøya, Norway, 2011; Aurora, Colorado theater, 2012; Sandy Hook Elementary School, 2012; and Washington DC Navy Yard, 2013.

Between January and October 2013, the US experienced 12 active shooter situations, triple the annual average since 2009, stated US attorney General Eric Holder.<sup>2</sup>

The problem of protecting the public, as well as police became even more apparent as Forum participants arrived for the workshop. At 2:49 PM, 16 April 2013, two improvised explosive devices were detonated at the Boston Marathon finish line, killing three and injuring 264. In the events that followed, the bombing suspects shot and killed a Massachusetts Institute of Technology police officer and seriously wounded a Massachusetts Bay Transportation Authority police officer.

The global proliferation of IEDs poses another violent threat to public order. Between January and November 2011, 490 IED events occurred in the US, reported the Joint Improvised Explosive Device Defeat Organization, also reporting<sup>3</sup> that over 10,000 global IED events have occurred in 112 countries since January 2011.<sup>4</sup>

Country	Number of Incidents	Country	Number of Incidents
U.S.	271	Bosnia	1
Canada	8	Brazil	1
Germany	7	Denmark	1
Australia	5	Egypt	1
Israel	3	Greece	1
United Kingdom	4	Norway	1
Finland	2	Slovakia	1
France	2	Somalia	1
India	2	South Korea	1
Italy	2	Spain	1
The Netherlands	2	Sweden	1
Argentina	1	Thailand	1
Austria	1	Yemen	1
Belgium	1		

Active Shooter incidents by country, compiled by New York Police Department, *Active Shooter 2012*<sup>5</sup>

<sup>2</sup> Pete Williams, "Active-shooter incidents have tripled since 2009: Holder," *US News on NBC.COM*, 21 October 2013, <http://USnews.nbcnews.com/news/2013/10/21/21064404-active-shooter-incidents-have-tripled-since-2009-holder>

<sup>3</sup> Joint Improvised Explosive Device Defeat Organization, *Counter- IED Strategic Plan 2014 – 2016*, p. 2

<sup>4</sup> Joint Improvised Explosive Device Defeat Organization, *Counter- IED Strategic Plan 2014 – 2016*, p. 2

<sup>5</sup> Raymond W. Kelly, New York City Police Commissioner, *Active Shooter: Recommendations and Analysis for Risk Mitigation*, 2012 Edition, <http://www.nyc.gov/html/nypd/downloads/pdf/counterterrorism/ActiveShooter2012Edition.pdf>

The challenge of protecting the public and police is further complicated by cuts in law enforcement budgets. "The economic downturn of the past several years has devastated local economies and their local law enforcement agencies" states the US Department of Justice, further finding that "nearly a quarter of American cities surveyed have made cuts to public safety budgets."<sup>6</sup> In the UK, the government's central funding to 43 police forces in England and Wales is undergoing an overall 20 percent reduction, in real terms, between 2011 and 2015.

In the future, "Police services face two options," Canada's Public Safety Minister Vic Toews indicated. "They can do nothing and eventually be forced to cut drastically, as we have seen in some countries. Or they can be proactive, get ahead of the curve and have greater flexibility in designing and implementing both incremental and meaningful structural reforms."<sup>7</sup>

The best choice is to innovate. Thus, participants in the International Law Enforcement Forum met to determine best practices, concepts and technologies for protecting the public and police in a constrained budget environment and to consider the extent to which less-lethal technologies and weapons and tactics can be utilised to assist Law enforcement.

**The International Law Enforcement Forum (ILEF)** promotes minimal force options in policing, in keeping with United Nations basic principles, which also call for "development of non-lethal incapacitating weapons for use in appropriate situations." The Forum consists of experts in disciplines within the law enforcement field in the areas of operations, policy, medical, forensics, science and technology. They have come from Canada, New Zealand, Sweden, UK, and US, with new representation from Guyana this year. The Forum shares and addresses best minimal force options, often used by participants' parent organizations, as well as others.

The Forum's origin can be traced to a 1999 meeting hosted by the Los Angeles Sheriff's Department and Pennsylvania State University, and attended by Independent Commission on Policing in Northern Ireland. The Commission, comprised of international experts in policing reform, was created by the UK government as a result of the 1998 Belfast Agreement.

At the Los Angeles meeting, it was realized that there was much to be gained from developing a professional international approach to sharing best practice in respect of the development, testing and use of less-lethal technologies. In 1999, the Commission produced its report, *A New Beginning: Policing in Northern Ireland*, several recommendations focused on the use of less-lethal technologies and

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<sup>6</sup> Department of Justice, "The Impact of the Economic Downturn on American Police Agencies," <http://www.cops.USdoj.gov/Default.asp?Item=2602>

<sup>7</sup> Kim Mackrael, "Canada's police forces have to innovate or cut back," Toews tells summit," Ottawa's The Globe and Mail, Jan. 16 2013, <http://www.theglobeandmail.com/news/politics/canadas-police-forces-have-to-innovate-or-cut-back-toews-tells-summit/article7409314/>

referenced the work taking place in Penn State University, Los Angeles Sheriff's Department and other countries throughout the world.

The need for international policing expertise was again recognized in a meeting at a Jane's 2000 less-lethal weapons conference in Scotland. There, issues associated with the use of force, firearms and less-lethal weapons within the Northern Ireland context were set out by Colin Burrows QPM. He reviewed the history of less-lethal weapon use in Northern Ireland against a background of serious public disorder and civil unrest where the use of firearms and other lethal weapons often formed part of the threat faced by police and military personnel. He also identified key changes in approach and the challenge of ensuring that 'systems' were properly evaluated, and used in a way which minimized risk. The presentation outlined the work that was being accomplished by the police in Northern Ireland in conjunction with the UK's Association of Chief Police Officers, the Home Office and the Ministry of Defence. This work included developing improved systems, a broader range of less-lethal technologies and common operational guidance on the use of such equipment by all police services in the UK. In consultation with Penn State's policing expert, Dr. John Leathers, it was agreed that UK and North American police and policymakers would benefit from sharing experiences and collectively addressing the whole area of 'minimal force options and less-lethal technologies'. As a consequence the International Law Enforcement Forum on Minimal Force Options was created and the following summarizes Forum workshops since:

**Penn State University 2001:** Hosted by Penn State's Institute for Non-Lethal Defense Technologies, supporting the US Defense Department's Joint Non-lethal Weapons Directorate, and US Department of Justice. US and UK researchers and developers of less-lethal technologies shared best practices, worked through principles for minimal force options, and captured common operational requirements.

**Penn State University, 2002:** Forum participants identified and addressed several needs, the more urgent being the needs for development of: less-lethal weapon/technology database; injury database; standards for development, testing, and training; and characterization of operational needs. The Forum's recommendations were included in the UK government's December 2002 report on public order equipment, and highlighted the importance of the International Law Enforcement Forum. A follow-on UK report also referenced the Forum's development of international testing and training standards, informing less-lethal R&D sponsored by the UK's Home Office, Ministry of Defence and Association of Chief Police Officers.

**UK, 2004:** Hosted by the UK's Association of Chief Police Officers and the Police Scientific Development Branch. Participants included operators, policymakers, researchers, and medical experts. Together, they addressed less-lethal technology requirements, including: capabilities; medical assessments; information sharing; and common standards for less-lethal weapons development, testing, training and use. The meeting also facilitated the increased interaction between research and evaluation organizations, police oversight bodies, academic and political groups, government and non-governmental organizations. It

resulted in broader appreciation of less-lethal technology issues. Additionally, the meeting led to a peer review of UK less-lethal technologies in Washington DC conducted later in 2004.

**Ottawa, 2005:** Hosted by the Royal Canadian Mounted Police, addressing policy formulation for less-lethal technologies. The Forum now included participants from Canada, New Zealand, Sweden, UK and US. They also interacted with manufacturers of less-lethal weapons, promoting a greater understanding between public and private sectors.

**Fairfax, Virginia, 2006:** Hosted by the Washington DC Metropolitan Police. Participants continued to come from previously mentioned countries, and addressed controlling aggressive individuals, maintaining public order, conducted energy devices, and other less-lethal applications, as well as counter-terrorism issues.

**Orlando, Florida, 2008:** Focused on less-lethal technologies in terrorist events. Forum participants were briefed by UK and US military personnel on technologies and tactics used in counter-terrorism. They were also received presentations from officials recently involved in recent school safety and active shooter incidents.

**UK, 2009:** Hosted by the National Policing Improvements Agency (NPIA) at the Police Staff College in Bramshill. The Forum addressed policing of large-scale public events, as well as less-lethal technologies and minimum force options for them.

**Vancouver, 2011:** Hosted by the Justice Institute of British Columbia (JIBC). Notably, participants were briefed by Chief Constable James Chu of the Vancouver Police Department on security at the Winter Olympics in Vancouver, British Columbia. For such major events, the Forum made recommendations for employing technology, managing crowds, responding to terrorist threats, and conducting media relations.

**International Law Enforcement Forum -- Critical to Policing Missions:** Particularly in an era of constrained budgets, the need to travel and meet is likely to be questioned. However, the need for law enforcement to do so was indicated by the US Office of Management Budget's *CONTROLLER ALERT: Travel and Conferences*, dated May 23, 2013:

"... There are circumstances in which physical collocation is necessary to complete the mission. These circumstances may include, but are not limited to, collaborations in the scientific

community, unique training events for the law enforcement community, or the need to perform formal inspections as part of an agency's oversight and investigatory responsibilities."<sup>8</sup>

The International Law Enforcement Forum has been critical to policing missions. "...the information that the UK has gained from especially ILEF has been invaluable in informing policy, the technical know-how, and the choices that we made in the weapons...Choices were informed because of the experience and the knowledge and what happened in other countries," stated Graham Smith of UK's Home Office Centre For Applied Science and Technology. As he further stated, "You've got to have these groups." The Forum's values for policing have been recognized repeatedly in workshops, to include:

**Meeting a Need:** While nations' militaries have long used frameworks and forums to share information, the same did not exist for law enforcement agencies prior to the International Law Enforcement Forum. It enables critical information sharing for police, which no other international forum exists. This was indicated by Steve Palmer, Executive Director of the research center at University of Regina in Canada and formerly with Canadian Police Research Center: "In the very early days -- 2003, 2004 -- when we had issues with Tasers® and use of force, other people around the table said, 'where do you go for advice?' Canada had a very small talent. There are not a lot of places where we can go and get advice."

**Network of Experts:** "ILEF fills a gap for people like me, who are gripping the rails at public inquiries ...we use the Forum and experts around the world to tap into to say, 'Do you know about this?'" ILEF enables participants to access other agencies' expertise in several areas: tactics, operations, intelligence, policies, medicine, command and control and technologies.

**Sharing Best Practices:** Law enforcement agencies are separate entities facing common problems. ILEF allows participants to share agencies and nations' best practices, which would otherwise be stove-piped. "In London, right after a shooting, there was a series of phone calls to the US and in the UK to people in this room here... asking counterparts how they would approach a similar situation," stated Colonel Andy Mazzara USMC (Ret) head of Penn State's Institute for Non-Lethal Defense Technologies. "Some of the answers were enlightening."

**Multi-level and Interdisciplinary Review of Issues:** "What I saw with ILEF," said Canada's Steve Palmer, "is the sharing of information with this panel of experts: practitioners, scientific/technical community, medical community, some government policy folks. Having them around the table, you can have a very informed discussion quite quickly on issues."

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<sup>8</sup> US Chief Financial Officer Council, "CONTROLLER ALERT: Travel and Conferences," May 28, 2013, <https://cfo.gov/controller-alert-travel-and-conferences/>

**Open Examination of Issues:** ILEF is not aligned with a particular agency. It also maintains an informal process. Thus, participants are able to more freely address issues, with emphasis on reduced parochialism.

**Advancing Appropriate and Effective Minimal Force Options:** The International Law Enforcement Forum has informed the use of less-lethal technologies in participating nations. After Irish law enforcement changed the aiming point for less-lethal baton rounds from center of chest to belt buckle, ILEF participants proposed the same for US agencies, thus reducing fatalities. More recently Martin Hubbard with the UK's Ministry of Defence stated, "This Forum (ILEF) is invaluable to myself and the colleagues that I discussed this with, in terms of getting a different slant on the way in which non-lethals and less-lethals are used. I find it very useful."

**Future Mentor for Other Nations' Using of Less-Lethal Technologies:** "I am seeing more, particularly in the developing world, commissions of inquiry, which are saying, 'get less-lethal weapons,'" stated UK's Colin Burrows, ILEF Advisory Board Chairman. "But, we are not seeing those thought processes for those (weapons)...even in the developed world, people who are new into the thing (less-lethals), are making all of the mistakes that we have made." As UK's Graham Smith stated, "We could provide valuable information for them...if we don't, the bad outcomes that you're going to see in that country, are going to affect weapons uses in our own countries and other countries."

**Model for Others:** Following ILEF, the Canadian Law Enforcement Forum was established, enabling information sharing across Canada's jurisdictional boundaries. The importance was indicated by Canada's Steve Palmer: "Our focus is on major events...We are seeing transitions in how we are managing those events, focusing much more on the preventative side, then the reaction side... We are also seeing multi-sites, whether it's the 'Idle-No-More,' the native movements, and others in Canada. We are trying to coordinate across a very large country of four and five time zones, different activities... We are trying to make sure that we have the right tactics and responses for that as well." An effort has been made to establish a similar forum among law enforcement agencies in Latin America.

**Conduct of the Ninth Law Enforcement Forum workshop:** As in the past, Forum's Advisory Board convened the day before to address issues from the 2011 workshop and to coordinate the upcoming workshop. The Advisory Boards proceedings and recommendations are at Annex A.

On 16 April the ninth Law Enforcement Forum workshop convened with representatives from law enforcement-related organizations in Canada, Guyana, Sweden, UK and US. The workshop's schedule is at Annex B.

Similar to previous Forum workshops, the morning sessions, 16-17 April, focused participants on key issues, and provided international updates on minimal force use, as well as less-lethal technologies. In the

afternoons of the first two days, 16-18 April, structured breakout groups addressed aspects of the workshop's theme, protecting the public, protecting the protector in a constrained fiscal environment. Specifically, breakout groups were assigned subject areas, and tasked with answering associated questions. The breakout groups' subject areas follow and their assigned questions are at Annex B®.

- Breakout Group 1: Public and police safety for major public events with emphasis on preventing and countering armed attacks
- Breakout Group 2: Social media in policing with emphasis on preventing, countering and investigating armed attacks
- Breakout Group 3: Police custody challenges and proposed solutions

After meeting, each breakout groups' leader briefed the findings to the workshop's collective participants. The process was repeated on the second day, with personnel reassigned to different breakout groups to enable comprehensive treatment of the subject areas.

Again, similar to past workshops, the third day addressed a special interest, this year being the testing and peer of a new less-lethal technology, the UK's Discriminating Irritant Projectile. At 1200, 18 April, the ninth International Law Enforcement Forum adjourned. The following is an informal **table of contents** outlining the format and structure of the remainder of this Report:

- Section 1: Public and police safety when addressing armed threats
  - UK Response to Active Shooters and Terrorist Incidents: Increasing Interoperability Across Police Forces and Military -- Deputy Chief Constable Simon Chesterman QPM of West Mercia
  - Public and police safety for major public events, with emphasis on preventing and countering armed attacks: ILEF breakout session report
  - Social media in policing, with emphasis on preventing, countering and investigating armed attacks: ILEF breakout session report
  - Policy custody challenges and proposed solutions: ILEF breakout session report
- Section 2: International update on minimal use of force and less-lethal options
  - Reflections on the Less-lethal Journey and the Need to Do More -- Ian Arundale QPM (former Chief Constable of Dyfed Powys Police)
  - Study on Seven Canadian Police Agencies' Use of Force: Dispelling the Myths -- Dr. Christine Hall, Vancouver Island Health Authority

- Recent US legal actions involving less-lethal options -- Steve Ijames, Major, Springfield Missouri Police Department
  
- Section 3: International update on less-lethal technologies
  - Canadian Technology Update – Steve Palmer, Executive Director, Canadian Centre for Public Safety and First Responders at the University of Regina
  - United Kingdom Technology and Tactics Update – Graham Smith, Home Office Centre for Applied Science and Technology
  - United States Technology Update – LTC Ed Hughes, Weapons and Protective Systems Technologies Center, ARL Penn State
  
- Section 4: The International Law Enforcement Forum’s Peer Review of the UK’s Discriminating Irritant Projectile Development Program

The Appendices to the Report contain the agenda, the discussion questions for the breakout sessions and the list of attendees.



## Section 1: Public and Police Safety When Addressing Armed Threats

**Prefacing Remarks by Colin Burrows, ILEF Chair:** The 'live time' TV images broadcast from Boston yesterday demonstrate the complete indiscriminate nature of bombings. There can be no worse way of attacking individuals and creating fear. It doesn't matter if the perpetrator was part of a terrorist cell or an individual who wanted to cause injury and destruction - the outcome is the same. And, the news and video images were coming in real time. They were not all images recorded by the professional media or commentary from a police commander who had taken over command but many of the images were being transmitted using smart phone technology- such is the world we now live in.

One of the images shows police responding to the detonation of the bomb with handguns drawn. The reality is we all respond to what we think is taking place

The events that occurred yesterday just put a different perspective on what we do. Safeguarding the vulnerable is what policing is all about, and the primary focus of this workshop, as indicated in the title, "protecting the public and protecting the protector." In addressing the subject, we give special emphasis to preventing and countering such armed attacks.

Managing conflict and responding to threats of violence whether from individuals or groups or in situations involving major public disorder involves a range of policing responses including the ability to deny opportunity, disrupt intent and dealing effectively with threats and real-time incidents. In his opening remarks our Chairman provided a review of key events that had occurred across the world where use of less-lethal technologies had appropriately enhanced the tactical intervention. However he also used the opportunity to raise concern about others situations in developing countries where weapons intended as lethal were being used in a way that brought them into disrepute and where human rights abuses had occurred.

Colin emphasized the responsibility on delegates to ensure that best practice was advocated and work to ensure that weapons, munitions and tactics which were inappropriate ceased to be used. As set out in the letter of invitation to this event 'the tactical options available range from the less-lethal to conventional weaponry and on occasions requires reassessment of tactical options and capabilities. Security provisions are however, increasingly having to be conducted against a background of efficiency savings and the ability to demonstrate value for money without compromising safety and effectiveness.

Therefore issues with respect to coordination and interoperability both at the local, national and international level will be a key area of discussion, as will be the benchmarking of capability and response as they relate to preparation, incident response and post-incident review.

ILEF 2013 will provide an opportunity to consider the operational policy and tactical issues associated with such situations and the extent to which appropriate use of force options can effectively be used within a human rights framework.

This section focuses on protecting the public and police when addressing such armed threats active shooters and of Mumbai-style attacks. The section begins with the UK's response to active shooters and terrorist incidents, which includes increasing interoperability across police and military forces.

Section 1 also includes ILEF participants' work on tasks, which were addressed in breakout sessions during the afternoons of 16-17 April. Participants with diverse expertise were assigned to each breakout session, enabling comprehensive assessments of complex tasks. Notably, these breakout sessions provided findings and recommendations on the following subject areas:

- Public and police safety for major public events, with emphasis on preventing and countering armed attacks
- Social media and policing, with emphasis on preventing, countering and investigating armed attacks
- Police custody challenges and solutions

### **UK Response to Active Shooters and Terrorist Incidents: Increasing Interoperability across Police Forces and Military by Deputy Chief Constable Simon Chesterman of West Mercia**

*"...recent active shooter incidents have underscored the need for a coordinated response by law enforcement and others to save lives,"<sup>9</sup>*

UK best practices for interoperable police responses to active shooters and other major events were presented by Deputy Chief Constable Simon Chesterman QPM of West Mercia Police. In addition to his responsibilities in West Mercia Police, Simon has the lead on issues of policy and practice for the Association of the Chief of Police Officers (ACPO) on issues associated with armed policing and less-lethal weapons. One of the roles undertaken by ACPO is to coordinate the direction and development of the police service in the United Kingdom. It was explained that the coordination and interoperability which formed the basis of the presentation now extends across the 45 territorial police forces which operate in

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<sup>9</sup> US Federal Bureau of investigation, "Active Shooter/Mass Casualty Incidents," <http://www.fbi.gov/about-us/cirg/active-shooter-and-mass-casualty-incidents>

England, Wales, Scotland, Northern Ireland and other law enforcement agencies including the Civil Nuclear Constabulary (CNC).<sup>10</sup> The presentation utilised an Active Shooter incident which occurred in Cumbria, England in 2010 to explain how interoperability between different polices services worked in practice before setting out the wider work in this area and some of the drivers for approach and processes which underpinned the UK's approach to common standards.



*Cumbria active shooting victim*

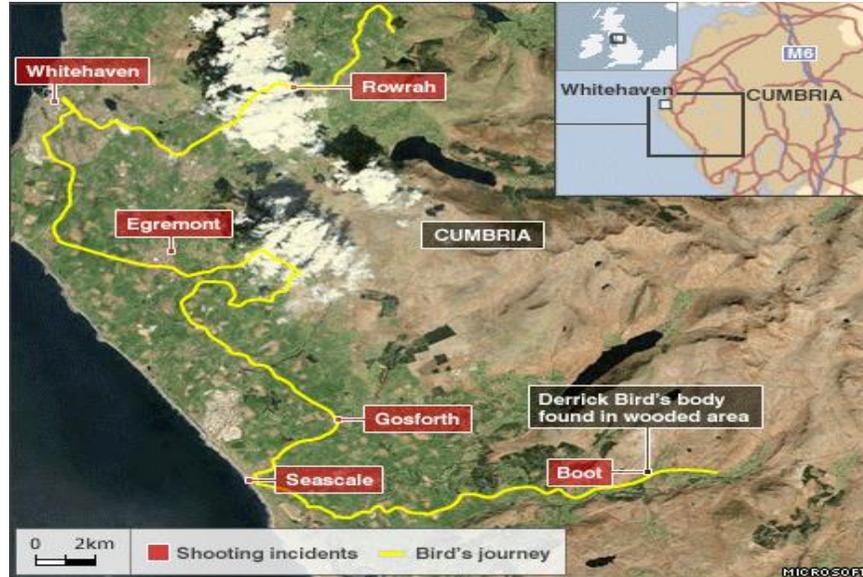
**The 2010 Cumbria Active Shooting and Police Response:** "They roll off the tongue," stated Deputy Constable Chesterman, referring to some of the most notable active shooter incidents. "We've had Hungerford (UK, 1987), Dunblane (UK, 1996). Cumbria (UK, 2010)". Each was different as was the terrible events in Norway's Utoya Island (2011) and the numerous school shootings which have occurred in the US.

Responses to active shooters often involve more than just the local police force, and the Cumbria case is an example. On the 2 June 2010, Derrick Bird, a taxi driver, killed 12 people and seriously wounded 11 others, including some left as amputees. Initially he was targeting people he had a grievance with and

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<sup>10</sup> The Association of Chief Police Officers (ACPO) is an independent, professionally led strategic body. ACPO leads and coordinates the direction and development of the police service in the United Kingdom.

wanted to kill. Then, he began shooting indiscriminately from his car. Bird's killing spree occurred over a 55-mile route and lasted one hour, 57 minutes. It eventually ended when he shot himself.



Active shooter Derrick Bird's route 2 June 2010. Also an interactive map depicting Bird's journey and shootings is at <http://www.bbc.co.uk/news/10232051>

"Now, you think about containing that threat, where he is mobile in his car. He is a taxi driver. He knows the area. It's rural," If we could have contained Bird, the firearms officers deployed to the scene and the people commanding them, were absolutely capable of dealing with that level of threat. What we couldn't do is find him."

As the incident developed several police forces augmented the search for Bird. Cumbria's armed police initially responded, joined by armed officers from the Civil Nuclear Constabulary at nearby Sellafield, as well as officers, the Northumbria, Lancashire and North Yorkshire police forces.<sup>11</sup> In the air, the search was augmented by helicopters from other police forces<sup>12</sup> and the Royal Air Force.<sup>13</sup>

**Lessons Learned from Cumbria:** "I've never reviewed an incident like this, without there being some learning issues coming out of it," such was the case with Cumbria.

<sup>11</sup> Paul Lewis, "Cumbria shootings: A frantic pursuit before police found the killer's body," 4 June 2010, <http://www.theguardian.com/uk/2010/jun/04/cumbria-shootings-police-response-bird>

<sup>12</sup> BBC, "Cumbria shooting rampage suspect's 'body found,'" 2 June 2010, <http://www.bbc.co.uk/news/10214661>

<sup>13</sup> BBC, "Armed police had no chance to stop Bird before he died," 4 June 2010, <http://www.bbc.co.uk/news/10241479>

**Geography:** "When it comes to things like responding to active shooters, we are always concerned it is going to happen in the big urban areas, the cities, the crowded places. I think if it happened in a major metropolitan city with a Metropolitan police force, it's going to be contained quite quickly." In the UK, the major active shootings have all occurred in rural areas where response and containment is more challenging. The Norwegians also learned that lesson, a year later at Utoya Island."

**Identify Who's in Command and When:** At the tactical level, armed officers from different police forces worked well together, and at the command level, "People knew they were in command" . However, that was not always apparent to others. "When we came to look at the audit trail afterwards, it wasn't always clear who was in command." Also, in terms of transferring authority, "quite often they were cross swords, in terms of handovers."

**Need for On-scene Medical Treatment:** Although some victims were seriously injured ambulance crews were not permitted by their control rooms to go forward to treat the injured. They had been briefed that until police had declared the incident over, they don't go forward. That was their policy. It was a written policy.

"I'm very relieved to say that that situation is now very different," said Chesterman. "The ambulance services in the United Kingdom have teams that are now trained tactically. They now have body armor, ballistic helmets etc. and they will go into what we now classify as the 'warm zone.' They won't go into a 'hot zone,' where there is still a ballistic threat. However if the attackers have gone through an area, leaving casualties behind, the ambulance will now come in."

Prior to the Cumbria shooting there had been great progress made in the UK in terms of common standards of training, tactics and command protocols which enabled both the Home Office police forces and the specialist officers from the CNC to work well together. The events in Cumbria were however only one of a number of Incidents and potential threats that were driving the proactive work which we were undertaking to progress issues in respect of 'interoperability' across police forces in the UK.

**Incidents and Factors Driving Interoperability across Police Forces:** "Making sure that we can work across district boundaries is hugely important," said Chesterman. Essentially, interoperability is needed for more than one police force addressing a common threat, as well as, for helping one force with a challenge greater than its own capabilities.

The challenge of achieving police interoperability was described. "We've got 43 police chiefs in England and Wales plus one in Scotland and one in Northern Ireland, all of them autonomous. We also have bodies like the Civil Nuclear Constabulary, and the Ministry of Defense Police, there is also the Serious and Organized Crime Agency which will be embraced within soon to be created the National Crime Agency.



There are 43 territorial police Forces in England and Wales. Police Scotland (formerly 8 forces) now polices all of Scotland. The Police Service of Northern Ireland has responsibility for NI. Specialist police forces include, the Civil Nuclear Constabulary, British Transport Police and the Ministry of Defence Police.

*UK's 45 territorial police*

In addition to Cumbria, the following incidents and factors have driven interoperability across UK police forces.

*1987 Hungerford.* In August 1987, Michael Ryan went on shooting spree in Hungerford. "That led to the creation of what we call the 'armed response vehicle,'" stated Chesterman. "It meant for the first time, the UK had armed police officers on duty, ready to respond, 24/7." Today, "there are about 175 ARVs on the road 24/7 in England and Wales," noted Chesterman. "That is six percent of officers who, 24/7 are deployed in armed response vehicles, available to respond.

*2005 Stockwell Shooting - Increased Interoperability Between Firearms and Surveillance Officers.* On 7 July 2005, Jean Charles de Menezes was misidentified as a suspect involved in the previous day's failed bombing attempts, and was shot dead by the London force. "It led to something called the integration of surveillance and firearms integration Metropolitan police at Stockwell tube station on the London Underground. Interoperability issues between firearms and surveillance officers were factors in the shooting, despite being in the same police course, in which we train all firearms officers," said Chesterman.

*2010 Threat of Mumbai-style attack.* The Mumbai attack occurred 26-29 November 2008, leaving 164 dead, and 308 seriously wounded. "In late 2010, the UK received intelligence suggesting that there could be a Mumbai by style attack in the UK," said Chesterman. Within a two-month period, UK police forces accelerated improvements in firearms response across the United Kingdom. These included enhanced

armed response vehicles, with all carrying the same equipment and the default weapon being a 5.56mm carbine.

*2012 Olympic Games in London.* "Operational interoperability was absolutely critical at the Olympic Games." It involved just about every force in the United Kingdom. So, when you are sending firearms officers from all over the United Kingdom into London to do close protection, to provide armed response, or undertake specialist firearm duties, etc., they have got to be fully interoperable. It's no good if they are using different terms for tactics or procedures, carrying different sorts of weapons. Interoperability was massively important."

*Budget Cuts Driving Collaboration between Police Forces.* "We have just received a 20 percent cut in our budget, and there is probably more to come," stated DCC Chesterman. "Policing faces a number of real challenges. The positive side of that is that it is driving us into more and more collaboration". This has included shared services, procurement and training.

*Active Shooters - Single System of Search.* "Historically, in the UK, an armed response vehicle would turn up and contain the threat, and then they would call for other officers with enhanced firearms skills -- specialist firearms officers -- to resolve it." Now, the tactics in this type of situation are very much more directed at dealing with the threat that is presented. They are highly trained ... "They have been through a whole active shooter program. Their tactics are very much to go forward. So, several armed response vehicles would arrive and the crews would be trained to go forward will close down the threat. They no longer wait for specialist firearms officers." It was noted that the US Attorney General Eric Holder has advocated a similar response to US police chiefs, saying there is a need for "an immediate, aggressive response to active shooters. In order to prevent additional casualties, it is often patrol officers -- not necessarily SWAT teams -- who serve as the tip of the spear in responding to these incidents."<sup>14</sup>

*Major Terrorist Threats - Increased Police and Military Interoperability:* It was explained that there is now a counterterrorist specialist, firearms network across the United Kingdom there are officers trained to this standard, about half of them in the Metropolitan and the rest are stationed at the counterterrorist hubs around the UK. "They have the equipment and the capability to undertake interventions, a range of scenarios and environments. Chesterman also posed the question, "what about the military?. It was explained that in the UK there has always been Military Aid to the Civil Power (MACP) and this included armed and specialist support to the police. In recent years this has been expanded across the UK. In the

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<sup>14</sup> Joe Johns and Stacey Samuel, "Holder: New strategies needed for 'active shooter' situations," CNN, October 21, 2013

event of a major terrorist attack, police provide the initial response, because they will be closer and faster, with Special Forces possibly reinforcing and working with us if we require their expertise.



*Police boarding underway ship -- "what about the military?"*

"There is a well-developed memorandum of understanding (MOU) between military and police," said Chesterman. "We are now looking at military and police integration. We have done a lot of work with them around interoperability." I am pleased to say, that this also extends to the UK wide mobile communications system that we use. 'Airwave' is a secure, digital encrypted mobile network which can be used for voice and data transmission. It is the common to alto 'blue light' emergency services and enables full interoperability. Using this system the military can also talk directly to us whether they are in the air, on the way to the incident or deployed in support of a police operation.

Tactically, we can work together as well. They are quite comfortable to be working alongside a police command structure, and being tasked by us with undertaking specific roles and interventions where they have specific expertise. We have even resolved the post-incident procedures as well. There has been really good work between police and Special Forces, in terms of how we work together" from the firearms perspective.

**Enabling Interoperability across UK Police Forces:** This is promoted by the Association of the Chief of Police Officers and DCC Chesterman explained how "as the ACPO lead on firearms, I can ask, but I can't

task," as operational independence rest with the Chief Officer in individual forces. Consequently, "there is an awful lot of influencing that has to go on, making sure that we are joined up across the United Kingdom. Ultimately, it work, because and in terms of firearms operations high risk area. Chief Officers recognize the benefits of working together within a shared framework and therefore work together in a very pragmatic way to resolve issues

Police interoperability has been underpinned by a framework of guidance, training, as well as a licensing and accreditation systems covering training, tactics and command issues. This has been important in making sure the 45 forces go in the same direction. "I'm not saying that they always do thing exactly the same, and we are always finding issues to be addressed, but most definitely, it is heading in the right direction. Elaborating on this framework Simon Chesterman explained the following UK wide documents which underpinned all of the Police approaches to firearms and less lethal weapon use by police:

*Code of Practice for Police Use of Firearms and Less-lethal Weapons.* This is a Code issued by the Home Office and all non-Home Office forces issued a statement of intent to comply with it. One aspect of the code is that it requires chiefs to produce a strategic threat and risk assessment. "We have to work quite hard to make sure that individual forces take into account regional and national threats, because there are things that won't affect some very rural, small forces, but clearly their metropolitan neighbors might need help," said Chesterman. "Based on that, they decide how many officers they will arm, the nature of the training, tactics and range of weaponry".

"It has its basis in legislation...it requires Chief Constables to have regard for the guidance that ACPO produces." It was further explained, "Have regard" sounds quite weak, and of course, there is lots of space for individual Chief Officers to ensure local services are developed in a way which is locally appropriate. However, it would be a rare for Chief Officer to ignore the national guidance, because they would have to explain in a post event inquest, that they have stepped outside the national guidance. Generally, we do quite well in terms of compliance."

*Authorized Professional Practice.* This is the UK national police guidance on management and command of deployment of armed officers," said Chesterman. "The good thing about it is that it does not constrain firearms commanders and firearms officers. It gives them space to be innovative. I think it protects them when it comes to giving evidence. They can use the guidance to illustrate why they did, what they did. The document is in the public domain."

*National Police Firearms Training Curriculum.* Developed by the UK's College of Policing, this addresses training standards and core tactics and thus, is not in the public domain. However, it was explained that "for example, if armed response vehicles from several different police services come to an incident they can now work very effectively together. They know exactly how they're going to move through a building. They know how they're going to stack on the door. They know the common system for room entry".

The curriculum is intended to prevent the local "tyranny of experts" - someone within the firearm teams who says, 'no we don't do it like that around here' ...It was explained that the positive progress that had been made and that in the UK you no longer have 45 different ways of carrying out a specific tactic. When firearms officers move across a force border they can work very effectively together. No longer do they use different terminology, different language, and different tactics. "Such differences though often seemingly minor can in a critical situation be highly dangerous."

DCC Chesterman further added, "We are trying to be much more specific around things like the equipment officers carry, the tactics they will be trained in and the weaponry they carry. So it is much more prescriptive. It is much less open to the tyranny of experts."



*Standard equipment carried in armed response vehicles across the UK*

**Firearms Licensing Regime.** This is managed by the UK's College of Policing. The College now licenses every police firearms organization in the UK to deliver firearms training from the national police firearms training curriculum. The license lasts for 2-4 years .if they don't achieve standards, they can't deliver firearms training, which impacts on that force. Does it ever happen? It does. We suspend licenses. The licensing process is there to ensure that the product is suitable for operational activity. The licensing process essentially ensures safety.

**Systems Approach to Development.** Ensures all less-lethal devices used in the UK are evaluated and approved as a complete system taking account of the launch platform, the munition used, the sighting

system and training and guidance provided to users has been central to the approach taken in the UK. All of these components form part of the systematic approach to assessing the medical implication of less lethal weapons entering service. This ensures that evaluations, operational trials and monitoring of weapons systems used across the UK are undertaken on the basis of common weapon systems used under common operational guidance.

Summarising the presentation DCC Chesterman ended the UK presentation by stating "I am not pretending it is all perfect, but great progress has been made".





## Public and Police Safety for Major Public Events, with emphasis on preventing and countering armed attacks: ILEF Breakout Session Report

**Background on Breakout Session:** This session was facilitated by Marc Lefebvre of the Royal Canadian Mounted Police, with participants providing best practices. Since then, some subjects have been augmented with additional information for a more thorough treatment.



**Scope of this Breakout Session -- Local Policing of Major Public Events, Emphasizing Prevention and Countering Armed Attacks:** Peaceful assembly -- for political, cultural or religious expression -- is an inherent right in a democratic society. Some public assemblages have been huge, such as the three million people celebrating Mass with Pope Francis on Brazil's Copacabana Beach in July 2013.<sup>15</sup> Events like these are the subjects of concerted national and international security efforts, as exemplified by the US titling them "National Special Security Events." The 2011 International Law Enforcement Forum addressed the policing of such nationally and internationally significant events. Notably, Vancouver Police Department's Chief Constable, Jim Chu, addressed policing the 2010 Winter Olympics.

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<sup>15</sup> "We need a bigger beach! THREE MILLION people pack Rio's Copacabana beach for final Mass of Pope Francis's tour of Brazil," *Daily Mail*, 28 July 2013, <http://www.dailymail.co.uk/news/article-2380378/Three-million-faithful-Catholics-pack-Rios-Copacabana-beach-final-Mass-Pope-Franciss-tour-Brazil.html#ixzz2oaifnrh7>

This breakout session focused on policing major public events, not classified as national level-type events, and which local law enforcement agencies assume the lead. These are sizable and frequent. As one Arlington, Virginia police officer stated, "We do a number of missions on an annual basis, like the Marine Corps Marathon which is very similar to the Boston Marathon in size – 26,000 to 30,000 runners and 200,000 bystanders." Additionally, approximately 110,000 people attend a home football game at Penn State University, which University police have the lead for policing.

In addition to the 2013 Boston Marathon bombing, public events have been the target of other armed attacks, as evidenced by the following:

- Two shooters wounded 19 people during the 2013 Mother's Day parade in New Orleans<sup>16</sup>
- Spokane, Washington police prevent IED detonation prior to 2011 Martin Luther King parade.<sup>17</sup>
- 2011 shootings at the "Congress on Your Corner" event in Tucson Arizona, killing six, wounding 11 others including US Representative Gabrielle Gifford<sup>18</sup>
- An attempted IED attack at a 2010 Christmas tree lighting in Portland, Oregon, thwarted by the FBI.<sup>19</sup>

This breakout session specifically addressed local planning and policing for these public events, with particular emphasis on preventing and countering armed attacks. Their recommendations and findings follow.

**Begin Preparing as Early as Possible, Using Frameworks and Experienced Personnel:** Preparing early may be possible for some events, but not all, thus necessitating frameworks and experienced personnel for use when some public events rapidly develop.

**Plan Well in Advance When Possible:** "If you know something is coming, you have a better opportunity to prepare," stated breakout session facilitator Marc Lefebvre, referring to scheduled public events. "Pre-event planning should begin 12-18 months before the date of the event, if possible," states the Department of Justice' [Planning and Managing Security for Major Special Events: Guidelines for Law](#)

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<sup>16</sup> Kevin McGill, "Brothers arrested in Mother's Day parade shooting," *Associated Press*, 16 May 2013  
<http://bigstory.ap.org/article/police-suspect-arrested-la-parade-shooting>

<sup>17</sup> FBI, MLK Parade Bomber: Horrific Hate Crime Prevented; Case Solved," hyperlink

<sup>18</sup> Marc Lacey and David M. Herszenhorn, "In Attacks Wake, Political Repercussions," *New York Times*, January 8, 2011, <http://www.nytimes.com/2011/01/09/US/politics/09giffords.html?pagewanted=all& r=0>

<sup>19</sup> Jim Kouri, "terrorist plot to bomb the Christmas tree lighting ceremony foiled," 27 November 2010, *examiner.com* <http://www.examiner.com/article/terrorist-plot-to-bomb-christmas-tree-lighting-ceremony-foiled>

**Enforcement.** <sup>20</sup>This may be possible for scheduled public events, such as sports, concerts, and conferences.

**Develop and Use Planning Frameworks:** "You know that if it is a repeated event, you're going to have a framework," stated a session participant, referring to approaches for assessing and planning for major public events. Such frameworks help address complex events. They also may have some adaptability to rapidly developing public events. Shortly after his 2009 death, thousands gathered in various locations in Los Angeles and around the country to pay tribute to Michael Jackson.<sup>21</sup> Just hours after the 2011 Stanley Cup Championship game, flash riots occurred in Vancouver.



*Greek police respond to a fire caused by a petrol bomb during the Greek Super League football game in Athens on March 18, 2012.*

**Develop and Use Experienced Planners for the Event:** "Every time we get a major event," stated a Canadian participant, "it's whoever does not run fast enough in the hallway that gets told, 'I need you to

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<sup>20</sup> Edward Connors, Department of Justice, *Planning And Managing Security For Major Special Events: Guidelines for Law Enforcement*, March 2007, p. vi

<sup>21</sup> Nekesa Mumbi Moody, "Michael Jackson Memorial Draws Thousands Of Fans To Glendale Cemetery," Huffington Post, June 25, 2013, [http://www.huffingtonpost.com/2010/06/25/michael-jackson-memorial-3\\_n\\_625980.html#s106444](http://www.huffingtonpost.com/2010/06/25/michael-jackson-memorial-3_n_625980.html#s106444)

plan this." He further stated, "Planning is a skill set that you have to develop and practice. Instead of kind of having rotation in that chair, you have people that get experience, first cutting cut their teeth on planning a one, or two day event, and working up to bigger events. Then, you have some pretty seasoned guys putting down the game plan."

**Assess the Event, Threats, Risks and Requirements:** "Look at the venue, its location, geography, and timing. Is it when you have a lot of visitors?" stated a Canadian participant. "Then consider possible threats around the venue." Basically, such an assessment helps determine risks and then requirements needed for the event."

**Assess the Event:** This helps determine what must be protected. This assessment comes from working with those conducting the events. In Canada, some law enforcement agencies have "Major Event Liaison Teams," which work with event sponsors, stated one participant. Most often, this entails working with private sector organizations, which have their own event security, as well as working with demonstrators and protesters.

**Assess Mission – Policing Purpose:** One US participant rhetorically asked, "What are you attempting to accomplish?" He further stated, "If your desire is to move the crowd immediately, then your risk and strategy are going to be completely different, then if you allow the crowd gather." A Canadian participant further stated, "you want to think about what you're trying to do: de-escalation, crowd management, crowd control, or crowd suppression."

**Assess Crowd and Its Purpose:** A US participant pointed out, that studies have shown that, except in unique circumstances, only about seven percent of a crowd is inclined toward public disorder, such as rioting and destroying property. If so, "that should dramatically affect how we do crowd management because most there are not violating the law," noted the participant, "but frequently we go in the other direction."

**Assess Triggering Points – Determining When to Act:** "If a crowd gathers, then you have to have trigger points, as to when you will take action," stated a US participant, referring to when crowd behavior might adversely affect public order. This may be when lives, property, infrastructure, or even the public event itself is threatened. For example, crowds demonstrated against event costs at the 2010 Winter Olympics, with Vancouver police drawing a "line in the sand" on the street outside the stadium filled with 60,000 spectators and athletes. Determining triggering points also goes to intelligence, as the US participant also noted.

**Assess Threats:** Intelligence is an ongoing process before, during and after an event. It identifies threats so that they may be, first and foremost, prevented, and then countered. Intelligence will greatly drive the determination and use of resources. Whenever possible, "You're going to be actively tasking intelligence,"

stated a UK participant, and not passively accepting it. Intelligence may be gathered by the following means:

**Intelligence from State, Regional and Federal Agencies:** Local law enforcement agencies may regularly coordinate with regional intelligence groups, like those the UK and US, staying informed of national and even international threats to events. Federal agencies also may help assess threats. For example, US Department of Homeland Security provides guidelines and formulas for assessing threats and risks, factoring in adversaries' intentions and capabilities. Additionally, US Secret Service has also developed threat assessment tools, primarily for individual protection.<sup>22</sup>

**Intelligence from Social Media:** This was repeatedly emphasized by participants. Monitoring social media sites will provide a general sense of crowd sentiment, as well as planned crowd activities. Such monitoring is especially critical if demonstrator, gang or criminal activities are likely. Additionally, police availability through social media allows communities to report suspicious behavior and threats.

**Local Intelligence Units:** These are in many law enforcement agencies, providing indicators and warnings of threats in local areas. Also, coordinating with intelligence units in nearby police agencies, may provide such information.

**Community Outreach:** Some UK police services have officers dedicated to working closely with community leaders and organizations. Such relationships may also provide indications and warnings of threats.

**Assess Risks:** Determining threats determines potential sources of some harm. "Risk refers to the possibility of harm occurring," states the UK Association of Chief of Police Officers', [Manual of Guidance on Keeping the Peace](#), "widely accepted as the measurement of both likelihood and impact of an event which could cause harm."<sup>23</sup> Essentially, risk determines likelihood of a consequence and how bad it might be. Risk assessment should be done cooperatively by operators and intelligence personnel, and may be assisted by federal agencies, as previously mentioned. Knowing such risks is key to determining resources needed to prevent, counter and mitigate them.

**Assess Policing Requirements:** Many law enforcement agencies will likely require more resources for public events than what they have on hand. These may be acquired from nearby, local police services, as well as those at state, regional and federal levels. In commemorating the World War II Memorial, the US

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<sup>22</sup> Edward Connors, Department of Justice, *Planning And Managing Security For Major Special Events: Guidelines for Law Enforcement*, March 2007, p. VII

<sup>23</sup> UK Association of Chief of Police Officers', *Manual of Guidance on Keeping the Peace*, 2010, p. 48, <http://www.acpo.police.uk/documents/uniformed/2010/201010JNKTP01.pdf>

Park Police and Metropolitan DC Police Department were assisted by 32 law enforcement agencies from Virginia, New Jersey, New York, and Pennsylvania, in addition to the US Secret Service, FBI, US Marshals Service, and other federal agencies.<sup>24</sup> Additional resources may be acquired through memoranda of understanding, designating command authorities, responsibilities, and interoperability requirements.

**Assess Other First Responder Requirements:** "Fire guys plan in isolation, the police plan in isolation," stated one Canadian participant. However, these services will be involved together in public events, as he further indicated, as will emergency medical services. Their roles and requirements should be identified as soon as possible, and delineated in memoranda of understanding, as well.

**Continuously Coordinate with All Impacted by Event Security:** Referring to just the preparation for a home football game, a Penn State University police officer stated, "We have to coordinate with multiple agencies ... coordination is done day in and day out, just to prepare for 110,000 people to show up."

**Pre-event Planning and Preparation:** "All the planning, all the scenarios, all the command, communications and contingencies, need to be worked out beforehand, so people are delegated and empowered to make rational and reasonable decisions, " stated one UK participant. "These activities shape the event and prepare for a range of possibilities, to include worst cases.

**Planning Worst-Case Contingencies – the Challenge:** "Special event planning now always takes into consideration the possibility of a catastrophic event," stated Philadelphia's First Deputy Police Commissioner Patricia Giorgio-Fox. "The worst-case scenario is much worse since 9/11, and it is more conceivable."<sup>25</sup> In addition to natural disasters, worst-case scenarios include armed attacks. The tendency is to focus on recent attacks, such as active shooters, Mumbai-style terrorist attacks, and planted, as well as improvised explosive devices.

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<sup>24</sup> Edward Connors, Department of Justice, *Planning And Managing Security For Major Special Events: Guidelines for Law Enforcement*, March 2007, p. 9.

<sup>25</sup> Edward Connors, Department of Justice, *Planning And Managing Security for Major Special Events: Guidelines for Law Enforcement*, March 2007, p. 15.



*Russian special forces after seizure of Moscow's Dubrovka Theatre by Chechen terrorists in 2002*

Therein lies the challenge. "Your planning is focused on what you think is going to happen," as one US participant stated, "it is geared to the historical outcomes." Adversaries will attempt to stay a step ahead of our planning," he further stated. "We adapt, they move to a different strategy." Planners should also consider those less-imagined, attacks at public events: suicide bombers, manned and unmanned aerial vehicle delivered explosives, as well as chemical, biological and nuclear weapons.

***Training for the Event:*** This prepares for the conduct of event's security and safety, as well as for the execution of worst-case contingencies. "The unanticipated event can turn your training completely on its roof," stated one US participant.

This training also enables interoperability among police officers from different agencies, supporting event security. One US participant cited training prior to the 2012 Republican National Convention, involving over 600 officers from police from different agencies within a 300 mile radius of Tampa, Florida. "Before anyone showed up in Tampa, they (lead police agency) sent around a cadre of instructors for anybody that that was going to participate. We had a three-day school. Not only did we get the playbook, we were practicing before we got there. It was a force multiplier. It increased interoperability."

Inter-agency training should also be conducted prior to an event. "That's another gap that needs to be bridged, among firefighters, police and emergency medical services. We try to do that," stated one US participant, referring to his community. "Firefighters have forgotten more about hazmat than I will ever know. They have got bigger budgets for wash downs and such. We have brought them in. We've got tactical medics that respond to every call out. They do the baseline stuff. If we need the fire department, they are there. They will set up the wash downs for the bomb callouts. We have blended the assets."

**Efforts to Prevent Bad Outcomes:** These refer to "taking all the possible actions to de-escalate and prevent before it (a bad outcome) happens," stated a UK participant. Such actions include:

**Educating the Public:** Done in advance of an event, informing targeted audiences of expected behavior, as well as compliance with security requirements. "With a lot of the big events they have in America – baseball, football, NASCAR races – it's really public education about what is acceptable behavior," stated one US participant. Some racetracks make it known that these "types of coolers can be brought in, or 'this is allowed, this is not allowed' ... when you start drawing your line in the sand, that kind of tells them where that line is going to be.' Similar public education has been done prior to other events like the World Cup games, Republican National Convention, and Canadian sporting and cultural events, pointed out several other participants.



*Public notification of restrictions for Raceway in Red Bluff, California*

This public education should be tailored to targeted audiences. In addition to those attending the event, a UK participant pointed out, "You have the resident population. You have an innocent transient population. They should understand what is going on, and the priorities for their safety." Such public education can be done via social media, print and broadcast media, announcement on transportation modes, signs outside and within the event.

**Coordinating with Demonstrators:** Often, police will coordinate with demonstration organizers in advance, informing them of acceptable behavior, security requirements, and areas where they are and are not allowed. Additionally, police may make known their tactics so that demonstrators will not misinterpret them.

**Encouraging Public Vigilance:** This is also done by public education. It should encourage the public to report suspicious activities and potential threats, stated both UK and US participants. This vigilance increases the possibility of threats becoming known and investigated.

**Meeting with Known and Suspected Troublemakers:** "These sort of events will have spotters, police officers who will know the troublemakers," stated a UK participant. "They (police) will tell them what is expected. There will be evidence gathering with a camera, filming the officers telling them and identifying the troublemakers. So they know full well they have been warned. It's been gathered as evidence. That does work with most people."

**Sweeps And Area Lockdown Prior to the Event:** This is intended to prevent threat employment prior to an event. "We invest a lot in bomb sweeping," stated a US participant, whose agency is responsible for security of a sports stadium. Following a sweep, the area is locked down. For some special events, manhole covers have been welded shut, and newspaper dispensers and trash cans have been removed as they can be hiding places for bombs.<sup>26</sup>

**Employing Technologies and Means for Detection and Surveillance:** "There are technologies out there," stated UK and Canadian participants, referring to detection and surveillance technologies. Despite their initial costs, some can provide manpower savings, as well as increased security. The following were identified after the ILEF meeting and are reported as follows:



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<sup>26</sup> Edward Connors, Department of Justice, *Planning And Managing Security For Major Special Events: Guidelines for Law Enforcement*, March 2007, p. vii

*Bomb detecting dogs work in crowds at Union Station in Washington DC*

**Bomb Detection Means:** There are several bomb detection means. However, major public events will require lightweight, portable means that can sweep large areas, as well as be rapidly transferred to points where they might be needed. Their detection must be fast, measured in seconds, rather than minutes or longer. The following are some possible means for bomb sweeping and detection:

*Dogs:* Although not a technology, dogs are considered the gold standard for bomb sweeping and detection. For example, the Arlington, Texas Fire Department has an explosive detection canine unit, comprised of seven specially trained Labradors, which are used to sweep the Cowboys Stadium and Rangers' Ballpark in Arlington for bombs and firearms before major events and visits by dignitaries. These are also "vapor wake" detection dogs, meaning they will follow a vapor trail left by an explosive. Such dogs also do bomb detection amidst crowds. Dogs have drawbacks, though. They require continuous training, become fatigued and are expensive. The reported, upfront cost of a vapor wake dog is \$130,000, which includes training.



*Portable Explosives Detectors:* The handheld Fido XT, detects, in real-time, military grade explosives, such as TNT and PETN.<sup>27</sup> It has been used for detecting explosives in vehicles, luggage at airports and on personnel. Its users have included US forces, US Transportation Security Agency,<sup>28</sup> and US Park Police. As examples, it has been used to screen for explosives at the US National Mall during the Fourth of July

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<sup>27</sup> FLIR, "Fido® XT Explosives Detector," <http://gs.flir.com/detection/explosives/fido>

<sup>28</sup> *Homeland 1*, "ICX Technologies Awarded \$1.4 Million Robotic Explosive Detection Contract," October 21, 2008, <http://www.homeland1.com/homeland-security-products/explosive-ordnance-disposal-eod/press-releases/434175-icx-technologies-awarded-1-4-million-robotic-explosive-detection-contract/>

celebration, as well as at the Statue of Liberty in the New York area.<sup>29</sup> It was recently acquired by Marine Corps Military Police for screening vehicles entering the gate at Camp Lejeune, North Carolina.<sup>30</sup> The device has also been integrated into robots, used for bomb detection.<sup>31</sup> The Fido X3 is able to detect ammonium nitrate, TATP, and liquid threats like hydrogen peroxide and nitromethane.<sup>32</sup>

**Vehicle Inspection Technologies:** "A key concern is vehicle bombs," states the Department of Justice, *Planning and Managing Security for Major Special Events: Guidelines for Law Enforcement*.<sup>33</sup> Vehicles may also be used to transport and conceal armed personnel, weapons by themselves and other threats. The following are vehicle inspection technologies:

*Mobile and Stationary Systems for X-raying Vehicles:* a mobile X-ray system is the Z Backscatter Van. While moving, it can inspect nearby vehicles. It is used by US Customs and Border Protection for screening vehicles, possibly carrying illegal immigrants, as well as such contraband as weapons and drugs. It is also used by other nation's customs agencies for similar purposes.<sup>34</sup> Additionally it has been used by US forces in Iraq. The Z Backscatter can be viewed on [YouTube](#). A stationary system which X-rays vehicles as they pass through a checkpoint is the Vehicle and Cargo Inspection System, which was used at the 2012 Republican National Convention.



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<sup>29</sup> Ashley Rowe, "Faux Fido," *American City & County*, September 13, 2006, [http://americacityandcounty.com/security/facility/faux\\_fido](http://americacityandcounty.com/security/facility/faux_fido)

<sup>30</sup> Tony Lombardo, "Camp Lejeune to employ better bomb detectors," *Army Times*, August 6, 2011, <http://www.armytimes.com/article/20110806/NEWS/108060321/>

<sup>31</sup> *News OK*, "Fido, iRobot, link up to sniff out explosives," January 30, 2007, <http://newsok.com/fido-irobot-link-up-to-sniff-out-explosives/article/3005791>

<sup>32</sup> *Airport Focus*, "EAPC Approved Detector," October 10, 2013 <http://airportfocusinternational.com/ecac-approved-detector>

<sup>33</sup> Edward Connors, Department of Justice, *Planning And Managing Security For Major Special Events: Guidelines for Law Enforcement*, March 2007, p. X

<sup>34</sup> *Homeland Security-Technology.com*, "Z Backscatter Van (ZBV), United States of America," <http://www.homelandsecurity-technology.com/projects/z-backscatter-van-zbv/>



*Under Vehicle Inspection Robot with Camera:* this replaces the mirror-on-a-stick used to inspect under vehicles. It is a small, flat, remote-controlled robot that can move under vehicles and transmit images of undercarriages, detecting bombs and other contraband. It is usually used as one step in a vehicle inspection process. Early versions were deployed to Afghanistan and Iraq.<sup>35</sup> A subsequent version, General Robotics' Ferret, was deployed at the 2012 Republican National Convention in Tampa, Florida. The following describes a concept for its use:

"In one application of the Ferret's capabilities at the RNC, said Coss, the Secret Service used the robotic camera for under-vehicle scanning of buses that transported delegates to the convention from nearby parking lots. As the buses arrived, they were checked by a large mobile X-ray system called a Vehicle and Cargo Inspection System (VACIS), after which they proceeded to a different location where the canines would sniff them. If a dog detects something, it is trained to sit, signaling security personnel that further investigation is needed. At this point, the Ferret would be deployed to scan underneath the bus."<sup>36</sup>

**Gunfire Detection and Location Technologies:** Gunshots may be heard, but determining a shooter's location often is challenging. The US Department of Defense developed systems that use acoustic and infrared sensors to detect and pinpoint shooters, with locations identified on a display. Versions have

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<sup>35</sup> Bill Smuda, Edward Schoenherr, Henry Andrusz, Grant Gerhart, "Deploying the ODIS robot in Iraq and Afghanistan," *Unmanned Ground Vehicle Technology VII*, proceedings of the SPIE, Volume 5804, pp. 119-129 (2005), <http://adsabs.harvard.edu/abs/2005SPIE.5804..119S>

<sup>36</sup> *Government Security News*, "General Robotics' Ferret under-vehicle robot-camera deployed at RNC," 12-09-04, [http://www.gsnmagazine.com/article/27148/general\\_robotics%E2%80%9999\\_under\\_vehicle\\_robot\\_camera\\_ferret](http://www.gsnmagazine.com/article/27148/general_robotics%E2%80%9999_under_vehicle_robot_camera_ferret)

been used by US forces in Iraq and Afghanistan. Most are vehicle mounted,<sup>37</sup> although some have been employed on aerostats (balloons).<sup>38</sup> Such systems have increasingly been used in policing. An early version was used in 1996 Olympic Games.<sup>39</sup> Since, US police departments have tested and purchased such systems.<sup>40</sup> The Washington, DC Metropolitan Police use the ShotSpotter system, with 300 sensors deployed over a 20 square-mile area. Reportedly, it detects shooters' locations within a few yards and alerts police.<sup>41</sup> Such systems can reduce manpower-intensive searches.

**Unmanned Surveillance and Reconnaissance Systems:** these can reduce the need for personnel doing dull, dirty, dangerous tasks, as well as accessing areas too difficult for personnel. Some possible unmanned systems are:

*Unmanned Aerial Vehicles with Cameras and Sensors:* Proposed by several participants. UAVs can provide real-time imagery of key areas, with greater endurance and lower costs than manned aircraft. Since 2009, US police agencies have evaluated unmanned aerial vehicles for use.<sup>42</sup> Reportedly, 17 US police and sheriff's departments have requested authorization from the Federal Aviation Administration to operate UAVs. Some intend to use them for surveillance and



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<sup>37</sup> Joe Brassard, Wing Siu, "Sniper Detection using Wireless Sensor Networks," EE-194WIR: Wireless Sensor Networks, Tufts University, May 2005

<sup>38</sup> M. C. Ertem, E. Heidhausen (University Research Foundation MADL), M. Pauli (Naval Research Laboratory), "Quick Response Airborne Deployment of Viper Muzzle Flash Detection and Location System During DC Sniper Attacks," Paper presented at 32nd AIPR, 2003

<sup>39</sup> Department of Defense, *The ACTD Master Plan 2002*, pp 3-40 and 3-41

<sup>40</sup> Jeffrey McKaughan, "Vigilance Is Not Enough," *Special Operations Technology*, Oct 13, 2003, Volume: 1, Issue: 3

<sup>41</sup> Andros Petho, "ShotSpotter detection system documents 39,000 shooting incidents in the District," *Washington Post*, November 2, 2013, [http://www.washingtonpost.com/investigations/shotspotter-detection-system-documents-39000-shooting-incidents-in-the-district/2013/11/02/055f8e9c-2ab1-11e3-8ade-a1f23cda135e\\_story.html](http://www.washingtonpost.com/investigations/shotspotter-detection-system-documents-39000-shooting-incidents-in-the-district/2013/11/02/055f8e9c-2ab1-11e3-8ade-a1f23cda135e_story.html)

<sup>42</sup> Honeywell press release, "Honeywell Wins T-Hawk™ Micro Air Vehicle Contract from US Navy," February 2, 2009 <http://www51.honeywell.com/honeywell/news-events/press-releases-details/02.02.09THawk.html?c=31>. It states, "A civilian version of the T-Hawk is being evaluated by the Miami Dade Police Department for law enforcement applications."

crowd control.<sup>43</sup> Ontario Provincial Police have used UAVs to collect evidence in a remote area for a homicide investigation.<sup>44</sup>

*Throwable Reconnaissance Robots:* These are 1.2 pound, dumbbell looking, robots with cameras, which can be hand-thrown by police, propelling themselves to an area of interest. They have been repeatedly used for barricade situations, imaging layouts and shooter locations, prior to police entering rooms and buildings.<sup>45</sup> They also can be used for inspecting vehicle undercarriages.



*Networked Surveillance Cameras:* Surveillance video helped capture perpetrators of the July 2005 London bombings,<sup>46</sup> as well as aiding in naming the Tsarnaev brothers after the Boston Marathon bombing.<sup>47</sup> While surveillance cameras have been used for decades, their technologies are becoming cheaper, smaller and better. They are also digital and can be networked, allowing centralized viewing at remote locations. For example, Long Beach uses a system that integrates 400 public and private cameras throughout the city. Such systems allow police personnel to remotely monitor live video feed, rotating cameras with a mouse, as well as search archived video.<sup>48</sup> Additionally, software can cue viewers to subjects of interest, thus enabling preventive actions, as opposed to searching video after the fact.<sup>49</sup>

## Policing the Event – Implementing and Adjusting the Plan

*Command Structure/Organization for Dynamic and fast Decisions:* Security for public event will be overseen by a command. The question is, what command structure/organization is best suited for

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<sup>43</sup> Hunter Stuart, "Drone List Released By FAA Shows Which Police Departments Want To Fly Unmanned Aerial Vehicles," *Huffington Post*, February 9, 2013, [http://www.huffingtonpost.com/2013/02/08/drone-list-domestic-police-law-enforcement-surveillance\\_n\\_2647530.html](http://www.huffingtonpost.com/2013/02/08/drone-list-domestic-police-law-enforcement-surveillance_n_2647530.html)

<sup>44</sup> Draganfly Innovations Inc., Draganflyer X6 Unmanned Aerial Vehicle Takes Flight in OPP Police Applications, <http://www.draganfly.com/news/2009/03/26/draganflyer-x6-unmanned-aerial-vehicle-opp-police-applications/>

<sup>45</sup> Liz Fedor, "Reconnaissance Robots to the Rescue," *StarTribune*, May 31, 2009. Also, Reconrobotics.com, "Tactical Use of Mobile, Throwable Reconnaissance Robots," <http://www.startribune.com/business/46509847.html>

<sup>46</sup> David Biello, "Is High-Tech Security at Public Events Counterproductive?" *Scientific American*, April 18, 2013, <http://www.scientificamerican.com/article.cfm?id=how-to-better-protect-public-events>

<sup>47</sup> Susan Heavey, "Boston police chief: US needs more security at big events," *Reuters*, May 9, 2013, <http://www.reuters.com/article/2013/05/09/US-usa-explosions-congress-idUSBRE9480M120130509>

<sup>48</sup> Eric Hartley and Sandy Mazza, "After Boston: In a California terrorist attack, cameras would be watching," *Daily News*, April 15, 2013, <http://www.dailybreeze.com/general-news/20130416/after-boston-in-a-california-terrorist-attack-cameras-would-be-watching>

<sup>49</sup> David Biello, "Is High-Tech Security at Public Events Counterproductive?" *Scientific American*, April 18, 2013, <http://www.scientificamerican.com/article.cfm?id=how-to-better-protect-public-events>

dynamic crowd situations requiring greater speed of decisions? The best command structure is one that, "gives team leaders, who have boots on the ground, the ability and authority to make decisions to respond dynamically," as one US participant responded.

This was further amplified by a second US participant: "You've got to empower the guys out there, who have boots on the ground. Let them know the expectations you have of them. Let them know the rules of engagement, for lack of better terms. Be clear on department policies. Be professional and turn them loose. You are there to support them. The pyramid needs to be upside down. You've got to support them in everything that they are doing." As the first US participant stated, "it took us 20 years and 21 riots to get there."

**Communications and Social Media:** "We have communications centres in the field," stated a UK participant, "They have closed-circuit TV coming in." As he further stated, "which needs to be extended to social media." Monitoring of social media is viewed as necessary for staying abreast of crowd and demonstrator behavior. The challenge is getting that intelligence to police officers in the field. At the 2012 Republican National Convention, police officers were briefed each morning on intelligence gathered from demonstrators' social media sites. Additionally, police command must be able to use social media to correct misinformation, as well as inform the public on key issues.

**Controlling Access – Outer, Middle and inner Perimeters:** Referring to public events like the Marine Corps Marathon, a US participant stated, "We basically do concentric circles, where vehicles don't get in. Backpacks don't get inside of here, everything is searched. I equate it to checkpoints in Iraq, where you had your first point of contact."

This is similar to the Department of Justice's *Planning and Managing Security for Major Special Events: Guidelines for Law Enforcement*. It calls for "managing security for an event's outer, middle, and inner perimeters." Outer perimeter security may deter vehicles but not necessarily pedestrians, possibly involving counter-surveillance teams, mobile field forces, and fixed posts. Middle perimeter security may involve visual inspections, use of magnetometers and full pat-down searches. Inner perimeter will likely entail credentialing and extensive security for officials, performers and key event staff.<sup>50</sup>

**Fielded Police Officers and Less-lethal Capabilities:** These contribute to perimeter security. The arming of police officers differs between nations. Many UK and Canadian police officers "on the line" are not armed, although they are backed up by units with lethal and less-lethal force. By contrast, most US police officers have at least side arms at public events. One US participant described other fielded capabilities: "Within our mobile field force now, every eighth officer has a shotgun (loaded with beanbags)

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<sup>50</sup> Edward Connors, Department of Justice, *Planning And Managing Security For Major Special Events: Guidelines for Law Enforcement*, March 2007, p. X

or a pepper ball gun. Beyond that, we have a tactical unit that actually deploys the less-lethal rounds, as well as 40 mm and chemical agents."

**Lethal Overwatch** is provided by police snipers, pointed out Canadian and US participants. Their use of lethal force follows a protocol for engagement. A US participant stated that, "a tactical team element of four officers includes a sniper; that's coming down from the Department of Homeland Security suggestions for type III mobile field forces..."

**"Put Police Officers in the Crowd":** Said by a Canadian participant, further stating his organization uses, "the UK approach of just having officers embedded." This was also emphasized by a US participant pointing out the value of police officers mounted on bicycles, moving through the crowd. "At the Republican National Convention, they basically had everybody contained. The roving bike patrols were awesome. They had the parade route set. Anybody could protest. They just showed up and did their protest. But the Black Block (anarchists) got into the groups, we could see them because of their red and black clothing. The bikes were roving, and just contained the whole mob."

**Implementing Contingencies:** "This all goes down to training," stated a US participant, referring to the ability to implement contingencies. However, "scenario drives the response," as he also said. The following contingencies were addressed:



*Police on bicycles block protesters at the 2012 Republican National Convention*

**Rescuing Injured Personnel in the Midst of a Crowd:** How this is done greatly depends upon the nature of the crowd; the more disorderly, the more challenging. A US participant described the tactics for rescue in a disorderly crowd: "there was probably 500 people at a particular incident. We had two people

who were shot, and down. It was an unruly crowd that wasn't police friendly. It wasn't a planned protest. Our officers basically formed an immediate response team. They pushed into the crowd. Gave themselves 360° protection. Had threats of violence as they were going in. Someone else was seen with a handgun in the crowd. But, they rendered aid to the ones that were shot and pulled them out."

***Apprehending and Arresting Personnel in a Crowd:*** This may be done by designated arrest teams, pushing into a crowd. If not apprehended, the individual might be marked with a taggant or "Smart Water" technology for later identification and apprehension.

***Countering Crowd Disorder and Less-lethal Capabilities:*** At some point, crowd behavior may reach a triggering point, or cross "a line in the sand." Minimal force is emphasized. The police line, with officers standing shoulder-to-shoulder, may be used to prevent the crowd from accessing a restricted area, as was done when demonstrators approached the stadium in the 2010 Winter Olympic Games in Vancouver.

Less-lethal force may be used to prevent crowd disorder from threatening public safety and/or property. Different approaches to countering crowd disorder will have implications for less-lethal capabilities. "Are you going to address an individual who is stirring everyone up, or, do you want to disperse everyone that is there," asked a US participant. "There are two different paths for less-lethal tools." The individual may be targeted with very specific less-lethal capability, such as a blunt trauma munition, Taser®, or OC spray.

Dispersing the crowd will require a broad area, less-lethal capability. CS gas is most often considered, but care should be taken not to use it extensively. "I was at the Summit of the Americas in Québec City," said one participant. "I've never seen so many gas grenades in my entire life, and the people who lived down there in the restaurants were just ruined. The impact on others who were not involved must be considered." Another participant stated, "I know it cost the federal government a lot to clean the powder residue out of the HVAC systems." The water cannon or water projector was recommended for dispersing disorderly crowds. However, this possibility must be anticipated well in advance, as a water cannon/projector is a sizable system that requires staging in the vicinity. In addition to crowd dispersal, a water cannon/projector may be used for firefighting and decontamination of hazardous material.



*Providing crowd dispersal, firefighting and decontamination of hazardous material*

**Contingencies for Using Lethal Force:** Referring to criteria for using lethal force, one participant stated, "We call that a twofold test. If we have a subject, who presents a threat of death, or serious bodily harm, and it's imminent, it's a real threat and our failure to act results in serious bodily harm, then that twofold test is met. You don't have to call and ask for a green light." As another participant stated, "that's an immediate police response." The following contingencies for using lethal force were discussed:

**Subject Wielding Firearms or Edged Weapons:** A US participant described one approach: "You have someone that presents a deadly threat. You also have the other subjects. You can't indiscriminately use lethal force. However, if you can, isolate tactically, we would try to isolate the threat, using certain tools and tactics and deal with that lethal threat. You're pumping in a bunch of OC and CS and using less-lethal devices or munitions to try and disperse that crowd, if you can, and go in and isolate that lethal threat." Also, a police sniper might engage the threat, "if he is able to do so without harming other people," stated a participant. "They (snipers) are responsible for target identification."

**Sniper in a Hostile Crowd:** "We train every year for this," stated one participant. Police "move to the flank, and try to isolate, or identify where the threat is, and then move to wherever the threat is." He further elaborated, "we use a traditional line formation on the flank, and then arrest teams and prison transport behind it ... you have that, you have to have the ability to do the rescue, to get the citizens who may be shot too."

**Terrorist Attacks:** Referring to some armed attacks, one participant stated, "They were pretty much on board with setting up, and waiting for SWAT, setting up a perimeter, and beginning negotiations. That's fine if you are dealing with the disgruntled employee. When you are dealing with a terrorist outfit, they usually are fortifying their position. You are giving them time to fortify. You've got to hit them as hard as you can, when you get a plan in place, and take care of business."

**Evacuating Event Facilities:** "Nearly all stadiums, arenas, and other facilities holding special events will have evacuation plans for any emergency (e.g., a fire) that should have been reviewed by the fire department or fire marshal, states the Department of Justice's *Planning And Managing Security For Major Special Events: Guidelines for Law Enforcement*. "The main responsibility of the lead security agency is to re-examine those plans and ensure they are coordinated into the overall event security plan."

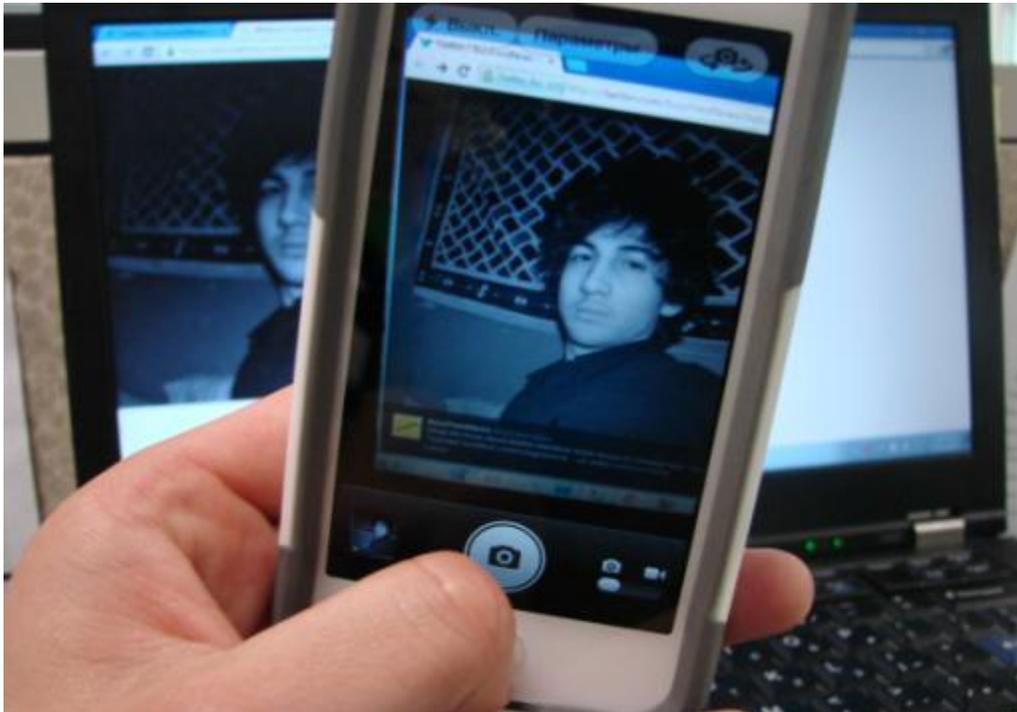
A key question is what is the criteria for deciding to evacuate? "What happens if you have a bomb threat," one participant asked another in an agency responsible for security at a sporting event. "First thing you do is assess the threat, and if it is deemed credible, then we have a decision made," he stated. "Say for example, do we have a threat, or do we find a device? It's layered decision making ... If it is credible, we have preplanned messages that will go out ... we evacuate," he said referring to text messaging. However, because of delays in texting to large audiences, as well as all in the audience may not receive the text

message, "we have also been looking at hailing devices, looking at putting up big electronic text boards and flashing messages on scoreboards," stated the participant.



## Social Media in Policing with Emphasis on Preventing, Countering and Investigating Armed Attacks: ILEF Breakout Session Report

*"The game changer here is that the big data era, the social media era, all aspects of that new world that was nonexistent even on 9/11, all of that came into play during this event"— then Los Angeles Police Chief, Bill Bratton (now Chief, NYPD), referring to social media's role in the capture of Boston bomber, Dzhokhar Tsarnaev<sup>51</sup>*



*Social media spread information on Boston bombing investigation*

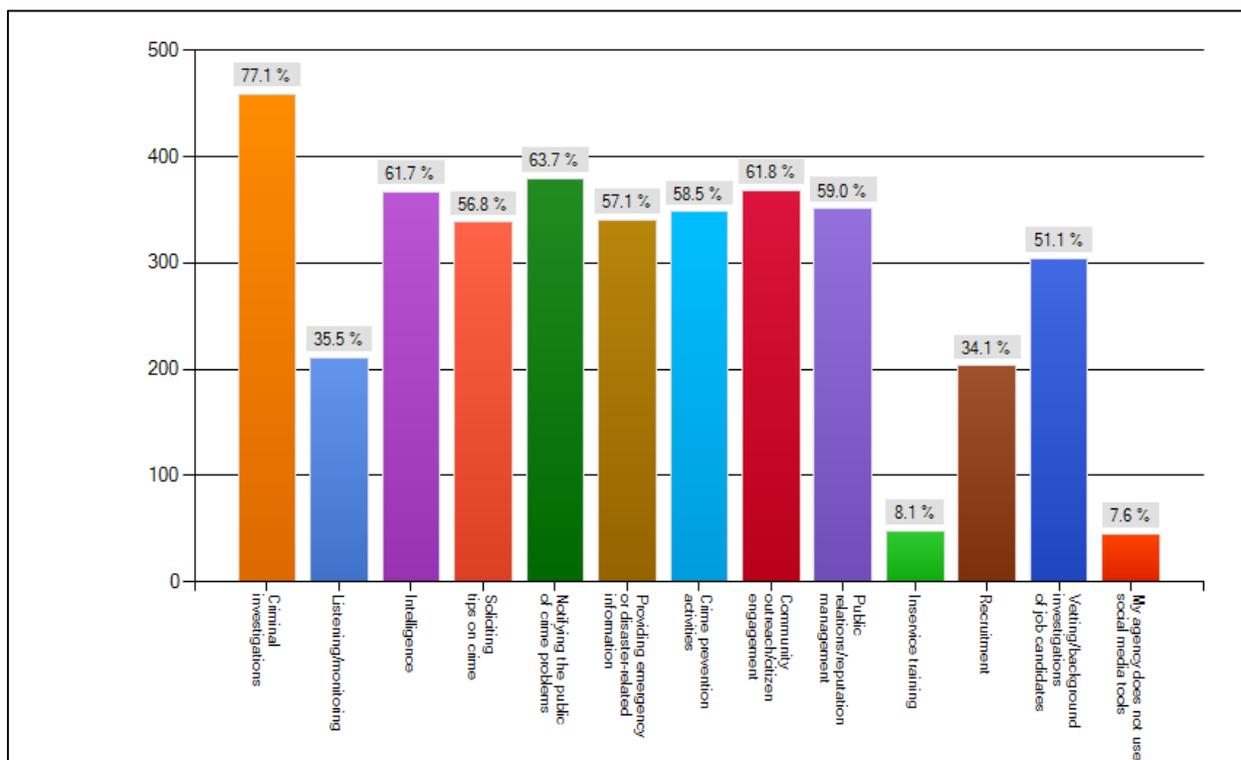
**Background on Breakout Sessions and this Report:** On 16-17 April 2013, ILEF breakout sessions addressed social media's role in policing, facilitated by Roy Marshall from the Police Service of Northern Ireland. Participants shared agencies' best practices, as well as commented on the potential of social media to benefit policing. While these sessions addressed social media's role in policing, in general, they gave attention to its use in meeting armed attacks, to include active shootings, terrorist attacks and gang attacks. At the same time these sessions were being conducted, social media was significantly aiding the investigation of the Boston Marathon bombing, indicating a dramatic change in policing. Since then, an increasing amount of information on social media in policing and public safety has come to light. Points

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<sup>51</sup> Martha Teichner, "Lessons to be learned from the Boston bombing," CBS News, 21 April 2013  
<http://www.cbsnews.com/news/lessons-to-be-learned-from-the-boston-bombing/>

made by participants in these sessions have been augmented with information from reports and studies on social media in policing.

**Background on Social Media in Policing:** There is strong evidence that the majority of police agencies use social media. In the UK, most police services have Facebook pages, pointed out a UK participant. In the US, "more agencies are going toward social media," stated one US participant. A 2012 survey of 600 US law enforcement agencies found that 92 percent use some form of social media. Of those, 90 percent use Facebook, 50 percent Twitter and 37 percent YouTube, according to the [International Association of Chiefs of Police's Center for Social Media findings](#).<sup>52</sup>



*Police uses of social media*

*from International Association of Chiefs of Police 2012 survey of 600 US law enforcement agencies*

Police agencies' use of social media varies, and so does their proficiency. Some agencies are "pretty poor" stated one participant, while others cited very sophisticated uses. Some police agencies have social media

<sup>52</sup> Emily Siner, "The Promises And Pitfalls Of Social Media — For Police," National Public Radio, September 22, 2013, <http://www.npr.org/blogs/alltechconsidered/2013/09/22/223813152/the-promises-and-pitfalls-of-social-media-for-police>

networks with a large number of followers, which implies great utility, according to "Reed's Law." For example, the chief of police in Brimfield, Ohio, has a Facebook page with more than 80,000 followers.<sup>53</sup> Such big social media networks allow police and a large number of citizens to readily communicate for a variety of purposes.

The value of social media in policing is generally recognized. "Speed is what sells it to me," stated one participant. "I think it is becoming a necessity," stated another participant, "given everybody being in a pinch. We have to work smarter. It (social media) is another tool for the toolbox."

**Uses of Social Media in Policing:** Police need to be where the people are. Most people are online, and most young people are in social networks – and that's how police can reach and interact with them. Today, police use of social media is expanding exponentially. The breakout sessions examined some of these uses, giving priority to their use in meeting armed attacks.

**Social Media in Policing against Armed Attacks – Active Shootings, Terrorist Attacks, and Gang Attacks:** Social media may provide intelligence on potential armed attacks, although this may be limited for active shooters. It also can alert police to an armed attack in real time, providing information on the situation. Additionally, police agencies and other organizations can notify personnel of an armed attack, providing them with escape and safety instructions. And, social media can aid investigations of armed attacks. These use of social media to meet armed attacks are further detailed as follows.

#### Gathering Intelligence on Armed Attacks

**Appropriate Access to Firearms:** One Canadian law enforcement organization uses social media to gather intelligence on those with firearms and a "concerning behavior," stated a participant. "Our firearms group very much uses social media to determine the appropriateness of anyone having legal access to firearms. They visit all sorts of sites such as Facebook or Twitter, essentially to do some profiling to see if there is any concerning behavior."

**Active Shooters:** Social media has been used to gather information – or "listen and watch" — as one UK participant. However in the US, active shooters reportedly have had little or no social media profiles. These included Adam Lanza, (Newtown, Connecticut, 2012); James Holmes (Aurora, Colo, 2012); and Paul Anthony Ciancia (Los Angeles airport, 2013). Suspected mastermind of the Boston bombing Tamerlan Tsarnaev also did not appear to have an active social media presence, although his brother, Dzhokhar, had a Twitter account, later discovered and analyzed by law-enforcement personnel. The reason for some active shooters' low profile on social media was explained by Paul Appelbaum, director of Columbia

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<sup>53</sup> Emily Siner, "The Promises And Pitfalls Of Social Media — For Police," National Public Radio, September 22, 2013, <http://www.npr.org/blogs/alltechconsidered/2013/09/22/223813152/the-promises-and-pitfalls-of-social-media-for-police>

University's Division of Law, Ethics and Psychiatry: "The typical portrait of the young men who commit these awful crimes is that they are outsiders, loners, disconnected from other people."

*Terrorist Attacks:* Several local law enforcement agencies regularly coordinate with a FBI Fusion Center, as well as a regional intelligence group. "It could be terrorist information or it could be general crime information," said one participant from a law enforcement agency in the US Northwest. These centers and intelligence groups draw information from social media, as well as other sources. "If they know we have an event coming up, they will actually check social media sites," said the same participant. Similar regional intelligence groups exist in the UK.

*Gang Attacks:* One police agency in the US Northwest uses social media to monitor and preempt gang activity. "There are a lot of gang parties," stated an ILEF participant representing this agency, "we are getting a lot of preemptive information regarding gang gatherings... We make an arrest and we grab their Facebook page before they can delete it and we get great pictures of them with guns and drugs and things like that."



[More than 60 Harlem gangsters felled by their own social media posts](#)

The Chicago Police Department also use social media to prevent gang violence, according to a press report. Chicago officials estimate that between 50-80 percent of the city's violent crime is gang-related. There, police sociologists use arrest records to map criminal networks. The next step is data mining. "When you let the computer take over computations and you start to do that network mapping, all of a sudden there's a lot of individuals that start to pop up that wouldn't normally hit the radar," says Commander Steve Caluris who commands Chicago's intelligence-led policing unit. "Those individuals, because of their associations, or arrest activity or contacts, all of a sudden become very interesting individuals." Once "hot people" are identified, police visit, warn them that they are at risk, being watched and offer them assistance.

Chicago adopted the process used by High Point, North Carolina, which implemented it five years prior, resulting in sharp drop in violent crime. For more information see, [how social media is transforming the way the Chicago Police Department fights gang violence](#).<sup>54</sup>



**Social Media Alerting Police of Armed Attacks:** "Simon Chesterman knew of the Boston Bombing before it was on the news," said one ILEF participant referring to the other ILEF participant and Deputy Chief Constable in UK's West Mercia, who had received a Tweet of the event. Those on-scene social media users can notify others, including police, of an attack in real-time, as well as provide information regarding shooters and the situation. This occurred when the terminated Los Angeles police officer, Christopher Dorner, conducted his shooting spree. "Shots were fired; then came the tweets," stated one news report.<sup>55</sup> More recently, personnel provided the following social media accounts of the New Jersey Mall active shooting:

- "Shots fired Garden State Plaza. Last known location by Apple store. Active shooter with Assault Rifle."
- "SOME GUY IS SHOOTING UP GSP"<sup>56</sup>

**Notifying the Public of an Armed Attack and Safety Instructions:** Organizations and communities use social media for this purpose. Initially, social media's potential for this use was seen in the 2007 Virginia Tech shootings. The attack was first reported on the university's website via a campus alert: "Gun shots

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<sup>54</sup> John Butin, "How social media is transforming the way the Chicago Police Department fights gang violence," *Governing*, October 2013, <http://www.governing.com/topics/urban/gov-social-media-transforms-chicago-policing.html#previous>

<sup>55</sup> John Nelson, "Twitter's effect grew as Christopher Dorner manhunt went on," *Los Angeles Daily News*, <http://www.dailynews.com/general-news/20130311/twitters-effect-grew-as-christopher-dorner-manhunt-went-on>

<sup>56</sup> *Twitchy Staff*, "Active shooter reported at Paramus, N.J., shopping mall; Updates: No injuries reported; Suspect Richard Shoop reported dead after self-inflicted gunshot wound," *November 4, 2013*, <http://twitchy.com/2013/11/04/active-shooter-reported-at-paramus-n-j-shopping-mall/>

reported - Coliseum Parking lot. Stay Inside. Secure doors. Emergency personnel responding. Call 911 for help." The alert was repeated on various Twitter accounts. Since then, social media has come to figure prominently in other organizations planning for active shooters. For example, South Carolina State University relies on social media and electronic communications for mass notification in the event of an active shooter.<sup>57</sup> Additionally, community members have used social media to relay safety instructions when the active shooting has occurred, as was the case in Warminster, PA in February 2013.<sup>58</sup>

**Aiding Investigations of Armed Attacks:** "We had the Cafe Racer shootings," said a participant from the Seattle Police Department, referring to an individual who shot and killed five people in a café in 2012. He further stated that Twitter accounts were used to track the killer. In the aftermath of the Boston Marathon bombing, social media aided its investigation on an even grander scale. Social media relayed smart phone photos of the explosion's blast and smoke, helping investigators determine the types of explosives.<sup>59</sup> Social media also instantly shared photos of the suspects, aiding in their rapid identification -- although, initially several individuals were incorrectly identified as the bombers.<sup>60</sup> Upon identifying Dzhokhar Tsarnaev as a suspect, investigators analyzed his social media accounts to help inform their search.<sup>61</sup> Additionally, Boston police used social media to communicate important public safety information, such as requests not to tweet reports from police scanners, which did get widespread compliance.<sup>62</sup>

**Social Media aiding Community Policing:** "The Philadelphia Police Department set up a tip line on Facebook," stated one US participant. "They had a 1-800 number and nobody called that. With Facebook, they got a lot of tips." The Dallas Police Department similarly has used social media to get information on gang activity, pointed out another participant. The public's great use of social media to report crime

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<sup>57</sup> *Associated Press*, "SC State holding active shooter drill," *The Post and Courier*, 3 December 2013, <http://www.postandcourier.com/article/20131203/PC1610/131209845/1005/sc-state-holding-active-shooter-drill&source=RSS>

<sup>58</sup> Jim MacMillan, "Social media reports: Active shooter in Warminster, PA, Tuesday night," February 19, 2013, <http://guncrisis.org/2013/02/20/neighbor-killed-in-crossfire-suspect-in-custody-after-gun-battle-in-warminster/>

<sup>59</sup> *ABC News*, "Social Media's Role in Capture of Boston Bombing Suspects: A look at Facebook, Twitter's role in identifying the suspects and learning about their lives," 04/20/2013, <http://abcnews.go.com/GMA/video/social-medias-role-capture-boston-bombing-suspects-19005936>

<sup>60</sup> CBS News, "Lessons to be learned from the Boston bombing," April 21, 2013  
<http://www.cbsnews.com/news/lessons-to-be-learned-from-the-boston-bombing/>

<sup>61</sup> CBS News, "Social Media's Role in Boston Bombing Investigation," April 20, 2013  
<http://www.ktva.com/news/local/Social-Medias-Role-in-Boston-Bombing-Investigation-203911731.html>

<sup>62</sup> Scott Kleinberg, "Boston Marathon bombing suspects: The social media manhunt and the arrest Social media provides front-row seat as police close in on Dzhokhar Tsarnaev," *Chicago Tribune*, April 19, 2013  
[http://articles.chicagotribune.com/2013-04-19/news/chi-boston-marathon-bombing-suspects-social-media-20130419\\_1\\_social-media-users-boston-police-boston-marathon](http://articles.chicagotribune.com/2013-04-19/news/chi-boston-marathon-bombing-suspects-social-media-20130419_1_social-media-users-boston-police-boston-marathon)

activity also greatly reflects that "people want to help," emphasized another participant. Essentially, social media is greatly enhancing community policing.

There are a multitude of other examples of how police have used social media to aid their investigations. In 2013, police in Bryan, Texas, posted on YouTube, surveillance video of individuals committing thefts and robberies. Viewers have helped identify suspects, leading to their arrests.<sup>63</sup> In 2011 Kentucky State Police investigators posted photos of jewelry, a tattoo, and a facial composite relating to an unknown body found 10 years prior. Responses provided additional evidence which enabled investigators to identify the dead individual.<sup>64</sup>



*Bryan, Texas Police posted surveillance video on YouTube,  
leading to arrests of subjects suspected in thefts*

***Social Media Aiding Recovery of Stolen Property:*** Surrey police in the UK are posting on Pinterest pictures of property found in searches, and then notifying likely area victims of the postings. This allows the latter to go online, possibly identify the property, produce sufficient evidence of ownership, and then recover their property.<sup>65</sup> Participant Sid Heal, a retired Los Angeles County Sheriff's Department commander, proposed developing a cell phone application aiding the recovery of stolen property. "Put

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<sup>63</sup> Nicole Morten, "Bryan police using YouTube, Pinterest to solve crimes," 1 November 2013, <http://www.kbtx.com/home/headlines/Bryan-Police-using-YouTube-Pinterest-to-Solve-Crimes-230272111.html>

<sup>64</sup> Robert D. Stuart, "Social Media: Establishing Criteria for Law Enforcement use," *FBI Law Enforcement Bulletin*, "<http://www.fbi.gov/stats-services/publications/law-enforcement-bulletin/2013/february/social-media-establishing-criteria-for-law-enforcement-use>

<sup>65</sup> Roger Nield, "Surrey police use Pinterest to return stolen property to victims of crime," *Connectedcops.net*, August 21, 2013, <http://connectedcops.net/2013/08/21/surrey-police-use-pinterest-to-return-stolen-property-to-victims-of-crime/>

your receiving stolen property database where they can access the type of property, the serial number and detectives the e-mail address." This would allow individuals purchasing items at a yard sale or another individual to search the database and even notify the investigating detective of identified stolen property. He further stated, "For every burglar we take off the streets, we will clear 30 cases."

***Social Media in Policing Demonstrations:*** This can provide intelligence on demonstrators' intent, capabilities and activities, enable communication between police and demonstrators, and help coordinate police deployments with respect to demonstrators' movements.

***Collecting Intelligence on Demonstrations:*** Several police agencies monitor demonstrators' social media sites to determine their future activities. "Some of our users (police) are signed on as demonstrators," stated one participant from the US Northwest, referring to such monitoring. Similarly, one participant stated that when he supported the 2012 Republican National Convention in Tampa, "they gathered a lot of intelligence from social media on the threat coming from the anarchists ...That was all posted on their blog site. We (police) were all made aware of that at the morning meeting."

***Police Communicating via Social Media with Demonstrators:*** During the 2009 English Defence League protest in Birmingham, UK police communicated via Twitter with protesters, directing them to the department's Web site and YouTube sites. There, police explained the tactics they would be using, as well as informed protesters where they could peacefully protest.<sup>66</sup> In the US Northwest, police use social media to contact organizers, seeking a physical meeting to explain the laws and parameters for demonstration, said one participant. Additionally, "Montréal police used social media to communicate with the crowd during student protests, last year," stated Canadian participant. "If there were any safety issues, or they (police) needed the crowd to do something, they tweeted it."

***Social Media Aiding Police Deployments during Demonstrations:*** At the 2012 Republican National Convention, police deployments responded to demonstration activities and movements, monitored on social media, explained one participants. Conceivably, social media could be used to coordinate police deployments during public demonstrations. This possibility was indicated by a US participant, noting deficiencies with present, police field communications. Referring to a student demonstration that his police agency responded to, he stated that the crowd "would proceed wherever they would want to and coordinated it using Twitter, while we (police) were working in riot platoon with bullhorns and radios that were ineffective."

***Social Media Aiding Communications Interoperability between First Responders:*** As one participant stated, "you've got Virginia, Maryland and DC in a tri-state area. The communication systems

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<sup>66</sup> Lauri Stevens, "Social Media in Policing: Nine Steps for Success," *Police Chief Magazine*, December 2013, [http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display&article\\_id=2018&issue\\_id=22010](http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display&article_id=2018&issue_id=22010)

since 911 are much more interoperable, but we still ... don't have interoperability on mobile data across major jurisdictions. I can talk to anybody in Montgomery County, but I can't talk to Prince George's County or DC." As he further stated, though, "you can use Twitter."

**Social Media in Police Community Outreach:** "With a well-planned strategy for using social media tools, departments can actually increase control of their reputation," stated Lauri Stevens, principal at LAWS Communications.<sup>67</sup> This was evidenced in examples cited by participants.

Referring to his police agency's use of social media for community outreach, one participant stated the following: "In South Florida... the citizens are holding the checkbook. We've made them realize that all the cops that work there are citizens too. So, let's try to make it a glass house. We try to dispel fear and rumors, and we get public support. We put on presentations at citizens meetings and let them know what their tax dollars are going for. We get so much support from them that the press backs off unless they've got some sort of juicy story."



*Seattle Police Departments' "Tweets-By-Beat"*

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<sup>67</sup> Lauri Stevens, "Social Media in Policing: Nine Steps for Success," Police Chief Magazine, December 2013, [http://www.policemagazine.org/magazine/index.cfm?fuseaction=display&article\\_id=2018&issue\\_id=22010](http://www.policemagazine.org/magazine/index.cfm?fuseaction=display&article_id=2018&issue_id=22010)

Similarly, the Seattle Police Department uses social media to inform its citizens about policing operations, also garnering considerable support. In September 2012, Seattle implemented its "Tweets-By-Beat," allowing citizens to monitor Twitter feeds of police dispatches in the city's 51 policing districts.<sup>68</sup> Referring to this use of social media, one participant from the Seattle Police Department stated, "We've had nothing but success. We've gotten a lot of feedback from outside sources."

**Drawbacks to Police Use of Public Media: Erroneous Information:** These include:

- **Erroneous Information:** "You can't believe everything you see," stated one participant. For example, the public using social media to aid the investigation of the Boston Marathon bombing, incorrectly identified individuals as being suspects, which other network users rapidly spread.<sup>69</sup>
- **Counterintelligence:** "We have responded to a lot of things that we have gotten off Facebook," stated one participant. "We will have a response. When we get there, there will only be a couple of guys with backpacks taking notes...There is no doubt in my mind this is counterintelligence."
- **Concerns about Officer Safety:** The news media's continuous tweeting during the pursuit of former police officer Christopher Dorner caused concerns about police safety, resulting in a request that news media stop tweeting.<sup>70</sup>
- **Paradigm Shift and Cultural Change within Police Forces:** "The problem that we have here is that some of the gatekeepers within the organizations are very risk adverse," stated one UK participant. As others pointed out, social media in policing often goes against organizational cultures, in which information is tightly held, and communicated in a much more controlled and slower manner.

**Implementing Social Media in Policing:** Several participants stated requirements for such implementations, some of which were also later addressed by Lauri Stevens in her "[Social Media in Policing: Nine Steps for Success](#)," in the December 2013 issue of *Police Chief Magazine*. These steps are summarized below:

**Have a Strategy:** Plan which tools (Twitter, Facebook, etc.) to employ. Each tool has its own attributes, advantages, and disadvantages, so use more than one. Determine who manages the tools.

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<sup>68</sup> John Nelson, "Twitter's effect grew as Christopher Dorner manhunt went on," *Los Angeles Daily News*, <http://www.dailynews.com/general-news/20130311/twitters-effect-grew-as-christopher-dorner-manhunt-went-on>

<sup>69</sup> CBS News, "Social Media's Role in Boston Bombing Investigation," April 20, 2013 <http://www.ktva.com/news/local/Social-Medias-Role-in-Boston-Bombing-Investigation-203911731.html>

<sup>70</sup> John Nelson, "Twitter's effect grew as Christopher Dorner manhunt went on," *Los Angeles Daily News*, <http://www.dailynews.com/general-news/20130311/twitters-effect-grew-as-christopher-dorner-manhunt-went-on>

**Create a Department Policy:** this is essential due to legal risks and management. Sites such as Twitter and Facebook have their own terms of use, which police departments must agree to accept.

**Assign Staff:** While the tools cost nothing, the cost of assigning personnel to manage and work with the tools remains. Someone has to maintain the content flow.

**Technology Is Not the Answer:** It's content that matters. The site or tool must be about the content. The department should engage in social media only when it can regularly provide content.

**Abandon Fear:** One of law enforcement's biggest concerns is that too much information will get out. Social media allows a department's voice to be heard, revealing personality and culture from the inside.

**Do Not Abandon the Effort:** Nothing will make the department look like an amateur more than a Facebook page that has not been updated since the day it was created.

**Avoid Anonymity:** Nothing says the department is unapproachable more than creating an online presence without a name on the content.

**Twitter Is Two-Way:** Some police agencies use Twitter as a one-way communication tool. If so, the department cannot have a conversation. Once twittering begins, continue and follow others. Departments using Twitter have reported receiving good investigative leads.

**Get Help if You Need It:** Get advice from other law enforcement agencies or an expert who knows what tools will accomplish the department's goals. Find somebody who can help plan, implement, and manage the social media program.

**More on social media in policing:** See:

- Association of Chiefs of Police Officers (UK), [Guidelines on the Safe use of the Internet and Social Media by Police Officers and Staff](#), 2013 (also see [brief](#) on slide shares)
- Deloitte (UK), [Harnessing digital, social and mobile technologies to fulfil 'peelian principles,'](#)
- International Association of Chiefs of Police, [Center for Social Media](#)
- Meaghan Gray, Toronto Police Service, [Building a Social Media Strategy](#), *Gazette published by The Royal Canadian Mounted Police, Vol. 73, No. 3, 2011*
- Robert D. Stuart, [Social Media: Establishing Criteria for Law Enforcement use](#), *FBI Law Enforcement Bulletin, February 2013*
- Social Media for Law Enforcement, [Walking the Social Media Beat](#)
- US Department of Justice, [Social Media and Tactical Considerations For Law Enforcement](#), May 2013

## Policy Custody Challenges and Proposed Solutions: ILEF Breakout Session Report

**Background on Breakout Session:** The session was facilitated by Sgt. Don Whitson of the Fort Collins, Colorado Police Department. Session focused on questions related to police custody challenges. The following details the challenges, provides discussion and in most cases, proposes solutions. Some challenges, however, could not be solved by this breakout session, nor are their solutions the purview of police in general.

**Background on Police Custody Challenges:** "We discussed case laws that affect how we respond to custodial situations," stated Don Whitson. "There are two sides of the issue. You have the responsibility to maintain custody of the individual, so he doesn't get run over by a car, or become a threat to you. The other side is how the courts look at an adequate use of force for that level of threat."



*Police respond to youth with mental illness*

### Taking Custody of Personnel with Mental Health Issues

**Discussion:** This is a huge issue, pointed out US and UK participants. In the UK, there is real scrutiny about how the police handle the mentally ill," stated a UK participant, "because health services are being cut, same as police are being cut. We are finding more and more people in the community with mental health problems...and certain lawyers and commentators are saying you should never Taser® someone who is mentally ill. So, that leaves you with the baton. But, you got to deal with the threat that is in front of you. The situation often worsens after such individuals are taken into custody. "Our detention facilities are becoming the de facto mental health wards," stated the US participant, "we have no other place to put them."

**Proposed solution:** Issue was not resolved, although, officer safety should be the priority.



"One of exponentially growing subgroups is veterans in need of services"

#### **Taking Custody of Veterans with Post-traumatic Stress Disorder**

**Discussion:** This is related to dealing with the emotionally disturbed, stated one US participant. "One of our exponentially growing subgroups is veterans in need of services. We are starting to see a large group there, and it is only going to get worse." Another US participant pointed out, "Diagnosed and undiagnosed Posttraumatic Stress Disorder, depending upon who you talk to and what you read, is hovering in the 65 percent range for returning veterans."

**Proposed solution:** Issue was not resolved.

#### **Taking Custody of Personnel with Religious and Cultural Differences**

**Discussion:** Taking custody of personnel with cultural and religious differences does require some special considerations. For example, arresting a traditionally dressed Muslim woman would require photographing, and thus removal of headdress like the hijab. "That would be a big deal – a massive deal," stated a UK participant. Also, a US participant stated, that when female police officers are dealing with Muslim males, the latter will not talk to them. It's only after male officers arrive, that Muslim males will communicate with police. Additionally, one police officer pointed out the necessity for translators in cases involving personnel speaking languages other than English.

**Proposed solutions:** Give safety first priority and conduct cultural training for police. "If you're dealing with someone with cultural differences on the side of the road, officer safety trumps any sensitivity," stated a UK participant. "Once you get the situation under control, then you can be sensitive to cultural

differences." Such sensitivities and special consideration depend on the cultures in communities being policed. Milwaukee has a huge Somali population, while northern Wayne County Michigan has a Muslim population of about 38 percent, which is predominantly Yemeni, noted one US participant. "Organizationally, it would be incumbent upon you to have cultural training for that large population ... You would be foolish not to have your officers trained in cultural issues for groups that you are going to interact with, in probably one out of three calls."



*Los Angeles County Sheriff's Department outreach to the Muslim community*

### **Understand the culture of the community you are policing:**

#### **Taking Custody of Opposite Sex Personnel**

**Discussion:** "It's all a matter of perception and that causes us a lot of problems," stated one US participant. For many male officers, "there is a reluctance to go hands-on," stated another US participant. One reason for such reluctance is how it might be perceived by others. "I still look at cop videos, where they are pulling a female out of the car and throwing her to the ground, and armed barring her, and I go, oh my gosh! But, make the disorderly person a guy, and nobody has a problem." Male officers are also worried about allegations, commented one UK participant. "Officers are worried about how to get a hold on women. Women are fighting on the street, and officers are quite reluctant (do hands-on) with closed-circuit TV. Officers are struggling, and quite innocently get their hand in the wrong place.

Also, "there is also a reluctance to search," said a US participant, referring to male officers searching female arrestees. "We generally have a policy that men won't pat-down female arrestees, when practical," said another US participant. Consequently, some departments require male officers to call for female

officers to search female arrestees, when practical. There are two problems with this policy. In some situations, female officers are not readily available. Also, there is no corresponding policy for female officers to call for male officers to search male arrestees. "Your policy is biased against male officers," as one US participant stated.

**Proposed Solutions:** Video apprehensions and searches, and policies should use the term "opposite sex." "It is easy to stand them in front and do your pat-down in front of a patrol car video," stated one US participant. "That's a practice that wasn't around when I first became a cop. It eliminates those allegations of impropriety. So, for US it hasn't been as big an issue, between that and personal worn video. Also, apprehension and search policies could use the term, "opposite sex," rather than referring to specific genders. "In writing your policy, if you just said, "opposite sex search," we get away from what's good for one or the other," said one US participant.

### **Transgender Officers Taking Custody of Arrestees**

**Discussion:** "Do you have transgender police officers in the US," asked a UK participant? "Yes," replied a US participant, pointing out a public photograph of three transgender police officers. "It just introduces a layer of complexity," commented the UK participant. Others also noted the complexity that it adds to searches, particularly with regards to those officers transitioning to the other gender.

**Proposed solution:** Issue was not resolved.

### **Media Impact on Police Custody Cases:**

**Discussion:** "I think we have become hypersensitive to the media," said one US participant. It is inhibiting command support for those doing custodial duties. "When you're talking about the challenges of dealing with people in custody, those are certainly evident," stated the same US participant. "We see a lack of command support, because we are trying to balance this relationship with the media. That leads to a lack of support for the officers doing the job." Also, "We've suffered from the unwillingness just to get out in front of the story," said another US participant. In the UK, an armed drug raid resulted in police shooting a naked man, getting out of bed, stated a UK participant. Afterwards the Chief Constable "went straight on the media, and said my officers have done nothing wrong. The problem was when they investigated, there were some problems... Now we are almost gagged, and there is an inability to say anything post-incident."

**Proposed solution:** "Whenever possible, transparency rules," stated a US participant. As another US participant said, "you get out and explain that stuff ahead of time, instead of it festering for months and months and months, letting speculation grow and all the conspiracy theories grow. That is more damaging than standing in front of a microphone, and going, 'the guy came at our officers with a butcher knife. He was naked. He was sweating. He didn't comply, and they had no other choice but to Taser® and beanbag him.' Those stories go away." And, as another US participant stated, "In cases where we know we did

something wrong, stand up and say." An example is Boston police public statements after an FM 303 projectile accidentally killed Victoria Snelgrove in 2004. "The next day, Kathy O'Toole, the Boston Chief, came out and publicly said, 'we don't know what happened, but we know it was our round and it is on US.'" That helped minimize the public impact.

### **Videoring Personnel in Custody**

**Discussion:** The media and the public use cameras to scrutinize police actions. "The other side is the police use of cameras, either the onboard (car video), or lapel or head cameras," said a US participant. In one police agency, 80 percent of the officers have cameras, and that was not a forced. Officers were outfitting them at their own expense. Also, in Canada, officers are on web cameras, as another participant pointed out. Yet, "there tends to be reluctance by some of police officers to embrace the camera and video for custody issues, because it may be taken out of context," said a US one participant.

**Proposed solution:** Use cameras, when possible. "Most officers think that in a custodial setting that works in their favor because it actually puts in context the things that are going on, that wouldn't otherwise be understood by a command or somebody in the media," said one US participant. Referring to officers using cameras, one US participant stated, "They videotape almost everything they do. .... It's dispelling about 98 percent of our citizen complaints."

### **New Officers Lacking Public Interaction and Custody Skills**

**Discussion:** "The new generation of officers that are coming on board do not have the social skills that more senior officers have," said one US participant. "That often leads to an automatic use of force – ask, tell, tase ... So there is a lack of training regarding those custody issues." He further stated, "We provide some verbal judo or tactical communication training to our recruit officers ... But we don't really follow up and give ongoing, contemporary training in speaking, and interacting with people."

**Proposed solution:** Mentor, as well as continue tactical communications training for young officers beyond recruit training.

### **Varying Security Levels for Each Type of Custody**

**Discussion:** Security varies with each type of custody. "You have a low level of custody with a security guard in a hospital, who has a very low level of force for keeping someone in custody," stated a US participant. "It escalates as we go -- the actual physical custody in a police car and escalates, again, when we get the arrestee to the jail, and finally into the prison system. The levels for force are going to change commensurate to those levels of custody."

"The variables change from one situation to another," as he further pointed out. "We have rural departments across the United States that have one or two officers that are responding in arrest situations. They really need three or four."

The weakest security is likely during transport. "We take them from a very secure environment," said a US participant. "We put ten inmates that need to go to court into a van, with a civil service employee that has been retired 15 years, and he is just trying to make some hourly money. We have him drive these people in a van, in a very unsecured environment, very high risk ...the deficiency is we have a very strong, robust security and then we abandon that out of necessity to get them from one place to another. So, if there is a vulnerability that would be where it is most likely."

Security also varies with each detention/jail facility. "What you might deal with in a five cell County jail, is going to be much different than an 800-person detention facility," said a US participant. "You've got different dynamics."

Additionally, security requirements vary with each individual. "Everyone is different," said the participant. "You have to give consideration to the size of the individual, the nature of the crime, the skill level of the officer."

**Proposed Solution:** Understand the situation, adapt tools to varying situational needs. "You need a holistic approach as to how you are dealing with people," stated the same participant. "All those factors have to be considered on each use of force." Officers, then, can consider use of custody tools, such as reaction belts, stun shields, etc. How these tools are used will depend on the situation. Notably, though, security during transport should be enhanced. "Typically, they don't have less-lethal alternatives in the transport," stated the participant. Also, some new less-lethal devices may be added in detention facilities. "Typically, the shotgun wasn't a preferred platform, because it's a firearm, and most of the prison or detention facilities don't favor a firearm inside," stated the participant. "But, the Lightfield Star rounds have become more appropriate for dealing with people inside the detention center. See YouTube video of [Lightfield Home Defender HV Star 12 - ga. Rubber Slug Rounds](#) .

### **Profiling and Segregating Arrestees in Detention Facilities**

**Discussion:** "We know from the facilities that have been infiltrated with gangs, the more effective you are at segregating those people, they won't have the force multiplier, or critical mass," said a US participant.

**Proposed solution:** "Profile individuals, segregating them into different areas," said the US participant. "You're much more likely to deal with them effectively."



*Forced cell extraction*

### **Manpower intensive Cell Extractions**

**Discussion:** "Cell extractions -- there are still a lot of different ways we are seeing this done," said a US participant. "We've gone from the one or three officers rushing in, just taking him down, to having a complete team that has protective equipment, lots of training, and command. Cameras document the behavior of inmates, so they augment written reports."

"Five-man rush seems to be about the amount of people that can get into a typical cell and still be able to function," he further stated. Still, these are manpower intensive. "You have a five person element, you have a supervisor, and you have someone taping it, and you probably have a nurse, and a couple of trailers to move them. To get somebody out of the cell, you can eat up 10 people ... There seems to be a need for another type of method to perform cell extraction."

**Proposed solution:** Temporarily reduce an individual senses. "We control their environment," stated the same individual. "We have so many other unexplored areas that we can exploit. For example, use of darkness, it puts them out of their element. It's a psychological advantage. We can see them with night vision. They can't see US. We can use infrared surveillance cameras, or cameras, where we can monitor their movement and they have no idea what we're doing. Another possibility is, "really bright lights in the day, disrupting their senses."

### **Poor Reporting**

**Discussion:** "Patrol cops have this insatiable push, so that they can get done with what they're doing and get the next call. Once you do that repetitively, over and over again, that becomes your act of survival,"

stated a US participant. "So, report writing begins to lack. But, three years later when you are in the middle of litigation, that becomes a very important piece of information to protect yourself." As he further stated, "we are dealing with especially, aggressive people, but we are not documenting what the aggression was, fear for ourselves, and fear for others. That doesn't tend to get into a use of force report, as much as it should."

**Proposed Solution:** Reporting should be emphasized in training, as well as by command.

### **Use of Force Database**

**Discussion:** "Big issue that we've got is, lack of a use of force database," said a UK participant. Referring to complaints against the police, he further said, "We get told we are brutal. We can't go back and rebut it." Additionally, he stated, we "have been arguing for years that we should be recording this stuff."

**Proposed solution:** Adopt use of force databases, which includes such uses as firearms, Tasers®, spray, handcuffs and more. As the UK participant also noted, "when Dr. Christine Hall can say, 3.2 million police encounters with individuals and 99.9% of the time no force is used, that's powerful stuff."



## Section 2: International Update on Minimal Use of Force and Less-lethal Options

**Prefacing Remarks by Colin Burrows, ILEF Chair:** Our documents have stated previously, "It is the conviction of ILEF that less-lethal technologies and minimal force options provide officers with a capability of a variety of force options which can de-escalate violent situations, enable effective resolution, and in certain circumstances reduce the need to resort to lethal force."

We have developed processes within ILEF and parts of the developed world about the weapons that we have, how they should and should not be used, and provided guidance that goes behind them. Those weapons are going to other parts of the world, but they are not being accompanied by the guidance or the thought processes, and how to use them responsibly. Less-lethal weapons that were provided for good purposes are sometimes being misused and it comes back to haunt us.

The International Law Enforcement Forum continues to emphasize minimal force options and less-lethal technologies in policing. Additionally, we must learn the lessons from the use of minimal force and less-lethal technologies, and make those known to others.

Section 2 provides an international update on use of minimal force and less-lethal options. It begins with Ian Arundale's "Reflections on the Less-lethal Journey and the Need to Do More," providing lessons learned from uses of less-lethal devices in several countries, and means to mitigate bad outcomes. It is followed by Steve Ijames' presentation on "US Litigation Involving Less-lethal Weapons," also providing insights regarding how to avoid bad outcomes. Additionally, Dr. Christine Hall addresses findings from a "Study on Seven Canadian Police Agencies' Use of Force," which notably quantifies these agencies' experiences and helps dispel some of the myths related to such force.

### Reflections on the Less-lethal Journey and the Need to Do More by Ian Arundale

*"I found the controversy around firearms is nothing compared to the controversy I get around less-lethal. I am constantly being challenged by the media, by the public, by politicians" -- Simon Chesterman, Deputy Chief Constable of West Mercia and the Lead professional on armed policing and less-lethal weapons for the Association of the Chief of Police Officers.*

Ian Arundale retired as the Chief Constable, Dyfed-Powys Police in the United Kingdom. He is currently a consultant to police services in Australia, New Zealand and the United Kingdom. The following is an edited version of a transcript of Ian Arundale's presentation.



*London Metropolitan police officer fires less-lethal baton round*

**Begun but Never-ending:** Pursuit of a good outcome in the less-lethal field is a continuous process. It's a destination you never reach.

It also has been a very long and contentious journey. I want to tear through, at a fairly rapid speed, a little bit about the United Kingdom's journey on some key strategic issues. In reflecting on the last decade, I want to make sure that I include the importance of ILEF for individuals like me who were quite isolated and looking for good practice, expert advice and context across the world. ILEF was the catalyst and gateway for me getting that advice and guidance. I use some of those things that I have learned from many of you in this room.

A lot of good things have been done. Most of the incidents are extremely well dealt with. Many of those good things were done because we could rely on lessons learned from mistakes and lessons learned in other areas. Thus, I will use a couple of case studies. Many of these are incidents with a bad outcomes. This is where the key learning points are coming from.

The research by Dr. Christine Hall on police use of force puts it into context. It was something like 0.002 percent of their public interactions that police use force. It is a very small portion of police deployments, but in terms of the bad outcomes, this is sort of the depository of where they come from.

In the UK, we had a series of very bad outcomes in the 1980s. I don't know whether that was from bad technologies, bad tactics, or whether that was the circumstances or context. But out of those tragedies, came a political imperative -- in Northern Ireland, as well as across the UK -- to have a far different, far more intelligent, far more targeted approach to the use of force, in the less-lethal context.

A significant amount of time and effort has been spent in the United Kingdom, probably more than any other jurisdiction. But, in the United Kingdom, it was extremely difficult to get political support for this (less-lethal use). Just for Taser®, a number of US were involved with seven different government ministers, whose job it was to approve it. The politicians are only around for so long. We had great difficulty proving to politicians that we had a well-thought-out process for introducing Taser®. But, it became a political imperative and they were forcing it on the UK police services.

We are fortunate in the UK to say that we have a gold standard in relation to the use of Taser®. It's not because we've done anything particularly unique, other than learned from everybody else's mistakes and listened. I hope that continues to be the case in the future.



*ILEF's Peer review of UK Attenuating Energy Projectile in 2004*

**ILEF Aiding the Journey:** What really helped, is the fact that we have access to really good, extremely independent, technical, medical advice in relation to decision-making. We had real political issues getting the Taser® into the United Kingdom. Unfortunately politicians don't always believe the cops. We don't believe the manufacturers. Having independent advice was extremely good and the help that we had was impartial in relation to the equipment itself and human effects. Again, that's an influence that happened internationally.

ILEF was the catalyst for bringing the right people together and giving US the contacts. I reflect on the presentations from Sid Heal and Steve James on the work and knowledge they gathered and pulled together on less-lethals. That really worked its way into what we have done. A lot of what has been positive and beneficial, probably happened outside rooms like this when we were asking for help and assistance with our processes. It was not just for less-lethals. We've had access to learning from incidents such as the Washington snipers and various school shootings in North America as well. Programs that came out of that, advanced school safety, particularly John Leathers' work -- an excellent piece of work.

The documents that have been produced by ILEF, are quoted and readily available. Some have been spinoff documents for the National Institute of Justice. These have been extremely useful documents for US in the United Kingdom.

Particularly important for me is the fact that ILEF hasn't been parochial. It has included manufacturers and groups such as Amnesty International which challenge all policy and process. They have been allowed to come along, listen to what's happening, and ask difficult questions. I think that has been extremely good in improving confidence in the law enforcement community.

**Mistakes:** Despite everything that happened in the UK, mistakes are always going to happen. There might be variation in the frequency across departments, but they certainly will happen and the UK has had its fair share.

One particular incident happened in October of last year. Police were deployed to an incident, involving a man waving a samurai sword around the street. Taser® officers approached an older gentleman with a cane from behind and took him down with a 30-second discharge, on the belief that the cane looked like a samurai sword. Shortly afterwards, the culprit with the real samurai sword was arrested. This had significant media coverage in the UK. It was poorly dealt with by management.

There is one variable in all this that is hard to manage, and that is the individual officer. The technology is fairly static. People are in this equation, and quite often the bad outcomes that we see are because people go off and do strange and stupid things on occasion. Also, despite the good work that has gone on, individual police officers are still not learning the lessons. And, individual police officers sometimes have a mindset about using the technology, which means that the outcome is almost predetermined. And, in many areas I think a greater focus on de-escalation would lead to many more positive outcomes.

A particular point around de-escalation – the "contempt of cops" scenario is an example. You all know that a number of police officers are going to create a certain response in relation to a "contempt of cops" scenario, and sometimes those situations lead to a really bad outcome. That happens across the world. This is where it gets into questions about selection, training, and putting the right emphasis on de-escalation, rather than on using technology.



*Avoiding bad outcomes – "contempt of cops" scenarios*

Bad outcomes have occurred in various jurisdictions throughout the world and it has impact on US. The misuse of a piece of technology can have a direct impact on US. The media being what it is today, as well as social media will mean that difficult questions will be asked in all jurisdictions if there is abuse of a device anywhere in the developed world, because news travels quite quickly.

**International Lessons Learned:** I have been really surprised, traveling around, about how little knowledge there is in police departments, internationally, about UN basic principles for use of force, formally adopted in September 1990. Specifically, it states:

“Governments and law enforcement agencies should develop a range of means as broad as possible and equip law enforcement officials with various types of weapons and ammunition that would allow for a differentiated use of force and firearms. These should include the development of non-lethal incapacitating weapons for use in appropriate situations”

It really does give a mandate to governments to ensure that law enforcement agencies have got an appropriate range of less-lethal options. It is great leverage to get governments to put up cash and to have the political drive to help law enforcement obtain the right technologies. And, it is something that is helpful to the emerging democracies and police departments that haven't got a comprehensive less-lethal's approach.

Having been asked to review some use of force policies, I am absolutely amazed at the variation in them. That can be a positive thing, as long as, they are well thought out and fit the context of the circumstances,

and the threat has been effaced. Perhaps most importantly, they must be understood by frontline cops, and it must assist them in articulating why they took certain courses of action.

A key issue is whether policies are reviewed regularly, and whether what's on the street and in training regimes reflect those policies. Quite often there is a significant disconnect between those.

We've had many discussions in previous years, about the utility of the use of force model, and how it can help and how it can injure. In the UK, what has helped, is our conflict management model. It has now been developed into an international decision-making approach. Again, I think that has been extremely helpful, enabling officers to articulate their approaches and taking things forward.

One thing that we have often discussed here is the bad outcomes that can happen in a range of policing incidents. Bad outcomes are not just deaths. They can be the loss of public confidence, and quite often, the loss of an officer's career. It is very important to get ahead of the bad outcomes, wherever possible, and try to prevent it from happening. Risk managers will tell you that if anything is predictable, it's preventable. To have responses available when it does go wrong and to ensure that post-event, lessons learned briefs have taken place.

It seems that from the call to the bad outcome, there could be 15 minutes or less. It is happening extremely quickly. We certainly picked this up in New Zealand and Australia. And, the people that can affect the bad outcome, such as the dispatchers and the people taking the calls from the public, are rarely trained in relation to the triggers in the risk factors that officers are seeing on the streets.

The language and terminology, being linked to less-lethal devices, Taser® in particular, and associated with bad outcomes, are causing difficulty now around the world. Commentators, coroners, lawyers, politicians—all use different language, most of whom have no understanding of what is actually happening in these operational incidents, with the devices and the medical outcomes. They are coming back to harm US.

An example is a 2010 case at a Minneapolis a medical center. David Cornelius Smith died eight days after a violent confrontation. The cause of death was stated as “cardiopulmonary arrest while being restrained . . . anoxic encephalopathy.” However, the judgment also stated, “contributing conditions” were present, including “recent exposure to a conducted energy device.”

For me, I'm seeing more and more words such as, “associated with” and “contributing conditions” in cases involving less-lethal devices. These various patterns are often being used with different meanings for different members of the community, and other opinion formers. They may well get a view of police tactics and technologies, which is not based on science. These attributions are very important to try and manage.

**Less-Lethals and High-Risk Subjects:** Chronic consumers and people who are often presenting in crisis in our communities also associate with these statements. We know some people by themselves have a high risk of bad outcomes. Taser® is quite often the less-lethal option of choice in these circumstances, because it doesn't rely on pain compliance. Many of the people who are involved may be high on drink and drugs. We are also seeing a new phenomenon, where people are presenting in similar circumstances where drink and drugs are not a factor, but they do appear to be impervious to pain and police tactics. And, there are also the chaotic individuals, displaying multiple aggravating factors associated with excited delirium, and which are fairly common around the world.

The police department is quite often the only 24-hour social service. The police department I left in June of last year, between 2010 and 2012, saw a 41 percent increase in people presenting at a hospital, or being taken to a hospital, after self-harming. Those are the people that police officers are being deployed to confront, because they are in crisis within our communities and threatening to harm themselves or third parties.



*Individuals with high risk factors – not always common knowledge*

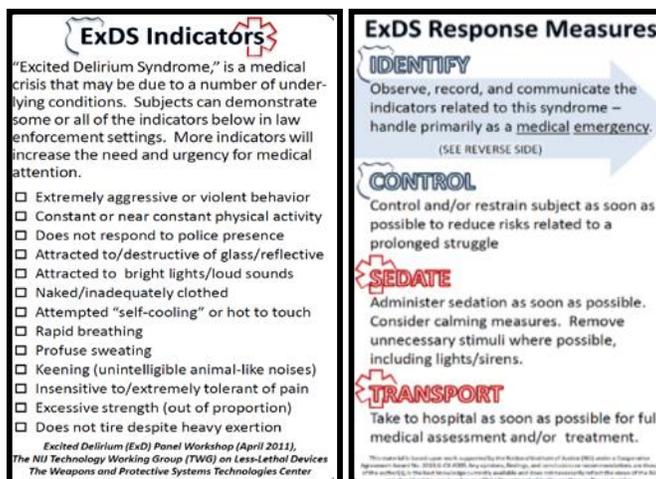
Yet, there appear to be jurisdictions that are not aware of these increased risk factors. An example is a case in Australia, which has caused a real moral panic across that country. To my mind, it is a clear, classic case involving all the factors generally reflecting excited delirium.

It seems to kick off with a student taking LSD and having a very, very bad reaction. Part of that bad reaction is a high body heat. Stripping off their clothes and running into the street, he is having delusions and thoughts that people are going to do him physical harm. He ends up going to a shop and stealing two packets of biscuits. He has no weapon with him at all. It is called into the police as an armed robbery. A foot chase ensues.

Three or four cans of OC are used on him, which appears to have no effect whatsoever. At this stage he is virtually naked. There are multiple Taser® applications, captured by Taser® video. There are 14 Taser® applications altogether. Seven of those applications occur within 51 seconds, some lasting up to 15 seconds. Drive stun is used repeatedly after he has been handcuffed. Throughout the process he does not present any real threat to officers. He dies within ten minutes after handcuffs are applied. All the descriptors of excited delirium are present here. (See on YouTube, [Police Footage of Roberto Laudisio Curti being Tasered to death in Australia](#))

I spoke to the coroner in this case. She is extremely pro-police., and does not want to make any criticisms normally of police officers. This is what she said in the written judgment: Officers acted “recklessly and dangerously” and “threw themselves into the confrontation like schoolboys in Lord of the Flies.” This is in a very well developed part of the world, and in an extremely good police department. Certainly, the increased risk factors were not common knowledge in this Australian police department.

Teach police the things that tell them a bad outcome is likely, and what they should do in relation to, this increased definition of risk. You'll see the card that originated from the National Institute of Justice' study on excited delirium, showing its features, or risk factors. Police should understand that higher risk individuals could mean a medical emergency. I think those aggravating factors, those risk factors are very consistent.



US National Institute of Justice card providing features of excited delirium and recommended actions

It is very much in everyone's interest to get that side of the equation solved, preventing some of the bad outcomes that we have all seen. Have a simple form of words, understandable by the street cops, such as "identify, control, sedate and transport," which are prescribed actions when encountering individuals with excited delirium features. Where police officers, certainly in the UK, are not aware of what excited delirium is – I think there is significant work to do.

**Continuous Training:** Now, when is "enough is enough." This is one example that occurred in Charlotte, North Carolina. A subject got into an argument with his boss. The subject had a pre-existing mental health condition. A police officer was dispatched to the scene, and used a Taser® on the subject. There are two discharges, one lasts 37 seconds and the other is five seconds. Its use was repeated, even though the officer was not getting the desired effect from the less-lethal option. The coroner's summation was that, "electric shock sent him into cardiac arrest." Money has been paid out to the family in relation to this. It raises the question that some officers and police departments are not reassessing the impact of the tactics that they're using.

Most police officers – and it seems worldwide – are very, very junior, with seven years of service or less. That seems to be what most frontline cops have for service. So, they haven't got the gray hairs, the scars that most people in this room have, or the wealth of experience that comes with that.

Many police chiefs are concerned that these new people may not have the level of interpersonal skills and common sense that we think people several years ago had when joining police departments. They are very good at using Twitter and Facebook and communicating by computers and mobile phones. However, such new individuals haven't had many standup arguments with angry men and woman that we've seen on the streets. This goes to training staff properly in de-escalation, as well as in using the right tactics and technologies to restrain and incapacitate, when appropriate.

**Mitigating Bad Outcomes and High Risks:** There are practices which can mitigate bad outcomes and high risks associated with the uses of less-lethal devices, to include:

**Crisis Intervention Teams:** These are specially trained officers who are deployed to high-risk incidents, because many people who present high-risk symptoms on the streets are known to police departments. I think North America is really good in dealing with many of these high risk individuals. Where there has been a rise in the development of crisis intervention teams, notably in Philadelphia, Memphis and Houston, it is expensive. I know the Philadelphia approach includes 40 hours basic training for the crisis intervention team, followed by updates in relation to that training itself.



*Rise of crisis intervention teams*

**"Chronic Consumers" Initiatives:** These are for individuals having problems with drink, drugs, mental health and a whole range of other issues, which are not the responsibility of police officers or police departments.

**Police Awareness of "Waistband" and "Cellphone" Incidents as well as Other Incidents:** This is where a subject moves in a seemingly threatening manner and gives an officer reasonable cause to believe there might be a threat from a weapon, when in fact the subject was only reaching for cell phone. The bad outcome is that conventional firearms may be discharged by an officer.

**Verbal/Tactical De-Escalation:** Training in this area should include such tactics as withdrawing and stepping back. Go back to the contempt of cop scenario. I'm sure many of these individuals do not have a kind word to say to police officers. All sorts of insults may be thrown at police officers. Some officers have been trained to back off and find the right time to de-escalate.

**Preventing the Pig Pile:** This is when you have any number of police officers piling on top of a subject. For critical incidents in Dallas, for example, teams are deployed with five officers at a minimum: four specially trained officers, effectively one for each limb, and a supervisor. So, they try not to aggravate a medical situation, by piling on an individual. Although the numbers would be difficult to crunch, they have helped reduce the risk of a bad outcomes in relation to some of these incidents.

**Enable Multi-agency Responses to Medical Emergencies:** Often efforts with multiagency groups and partners in de-escalation are extremely fragmented. But more coordination and better use of multiagency responses would reduce high risk incidents, and further legitimize the use of less-lethal tactics and technologies.

**Communication Strategies after an Incident:** Bad outcomes are going to happen, and misinformation is likely to come from so-called experts, who will give advice and opinions. Have well-constructed briefing packets that can go to key personnel such as coroners, journalists, lawyers and opinion formers.

**Family Aid:** A family well informed by the police department can really help resolve the situation. You want the right people saying good things about the police department and police officers.

**Have a Testing Regime:** The Charlotte Police Department had a death in 2011. There was an unsubstantiated allegation that a Taser® was at fault. That resulted in the entire police department losing its Tasers® overnight. There needs to be testing regimes in place so departments can demonstrate that their equipment is working within tolerance. If such an allegation is made, it can be instantly countered.

## US Litigation Involving Less-Lethal Weapons by Steve Ijames

Steve Ijames retired as a major in the Springfield, Missouri Police Department and is a noted and published expert on less-lethal weapons. He now advises police departments in litigation cases involving less-lethal weapons. The following is an edited version of a transcript of Steve Ijames presentation.



*Results of impact projectile to the head*

**Not about Litigation Prevention:** I do a lot of police litigation defenses. I have reviewed about 2,000 use of force cases. I've got 71 open cases right now. About three fourths of those are SWAT related, but they all are force stuff. For the last 5-6 years, my work has been, exclusively, reading depositions, going to agencies after an event, and assessing objectively and fairly, the best that I can, the circumstances in their case, and giving advice relating to the particular scenario being challenged.

I was asked to give you something that you could apply, as it relates to less-lethal force. I will provide some thoughts about how we can prepare, train and help those officers that we supervise and maybe just a little bit of lessons learned.

Here's what I've learned. I don't know how to teach liability prevention. In my experience, we frequently get sued when we shouldn't, and we don't get sued when we should. I see really good police work that happened to have a negative outcome that gets challenged. Then, I see really bad police work that worked out well, and no one cares. So, I don't know what you do, as it relates to liability prevention.

The basic focus of this discussion is about doing the right things for those people we work with. Basically, it's about laying a proper foundation to do reasonable, logical things, and ultimately increase the probabilities of good outcomes at the crisis site.

The North American experience is all that I have. Although cases may differ, I have found basic processes in the US and Canada are the same as it relates to defending officers. In the US, our basic philosophy is that each case will be analyzed with careful attention to the facts of that particular case. Some of our precedent type of law involves consideration for how severe the crime was; what we're up against; whether the suspect posed an immediate threat to the safety of officers or others; and whether the person was actively resisting arrest or attempting to evade arrest by flight. Although not all inclusive, those are the pillars of our jurisprudence, as they relate to officer reasonableness in using force.

I frequently talk with and teach police officers. We need to be very cautious about what I describe as getting drunk on our own wine. We tell ourselves what makes sense to each other, and we nod our heads and agree, because this court case said this, or this court case said that.

Ultimately, who conducts this careful, legal analysis on a case-by-case basis? Is it judges that have in-depth knowledge of the case and other relevant cases? I would answer, rarely. In my experience in civil cases, the plaintiff's lawyers want to get cases in front of juries. I almost never do a bench trial. They are almost always in front of juries. So, is it legal scholars? The answer is no. Is it your fellow officers? Almost never.

In my experience, the answer is Ozzie and Harriet Nelson, a citizen jury, who knows little, if anything about police work. By no means does it mean that we ignore the law. It means that we have to recognize that reality. Our argument is not to fellow officers, absent internal affairs. Our challenge is to help – and I

mean that sincerely – those citizens who will scrutinize what we do, and reach a conclusion that the force applied was reasonable in cases, where, in fact, that is true.

Let me just give this one overriding philosophy. We have to acknowledge up front that not all police use of force is defensible. The prerequisite for effectively helping your officers, and your agency, and the community they police, is acknowledgment that we don't do "perfect" in this business.

About 20 percent of the cases that I review, I can't defend. I simply can't stand behind the facts in the case. It doesn't mean that your officer is bad. It doesn't mean that your agency is a bunch of crooks. It means that I can't stand behind the use of force in this case. Some are overtly goofy, but most are not.

**Less-Lethal Weapons in US Litigation:** Less-Lethal litigation in the US is primarily focused on the following:

- Taser®
- impact projectiles
- OC in a direct application mode
- flash bangs
- CS in barricades
- Batons

Taser® is number one in use and number one in complaints. In my experience, all other instruments of force, combined, cannot approach the frequency of Taser® use in America. Nothing is even close. If you statistically do something, way more than anything else, why would we be surprised that is the challenge we most frequently see.

Impact projectiles are statistically used very rarely, much less than OC. But, I have more impact projectile litigations than OC. I never had an OC litigation as a standalone deployment. Again, I keep qualifying this. It doesn't mean that it doesn't happen.

Since Taser® has taken off -- in my experience -- all other less-lethals have just nose-dived. And, the reason I don't get, especially with impact rounds. The scenarios are dramatically different. What you would normally use an impact projectile for, you couldn't reach the person with a Taser®.

In my department, our high impact projectile use year was 2003. We shot 37 suspects. We shot six last year. Nothing has changed from an impact projectile perspective, devices we have in the field and assigned to SWAT. What has changed is, beginning in 2001, we incrementally issued Tasers® to every line officer. By 2004, everyone had them.

I can tell you that officers in my department are more prone to use Taser® than OC. And, there are a lot of reasons for that, most of them revolving around when and where the probes make contact. It just works better, and you don't have to nurse the guy for 45 minutes.

Flash-bangs are, statistically, rarely used, but I have a number of flash bang injury cases right now. I have a case from the South, where a bang appears to have been blind deployed through a window. It ends up against the face of a 16-year-old and basically blows the jaw completely off. The problem of flash bangs is that it is statistically rare, compared to other force. But, when they go south on you, they tend to go south really, really bad. Normally, when you have a flash bang litigation, it is big and ugly.

Gas in barricades -- I've got two cases right now. Again, it is statistically, rarely used. One I have is unique. The allegation is the house had to be dozed because they could not return it to normalcy. So, we are kind of working through that. Though, teargas is scary for a lot of agencies. Teargas has really served American SWAT well, when it is understood. Generally, it does so without a lot of rough edges.

And then batons, I hardly see them anymore. Most folks, since they have gotten Taser®, have figured out that it seems to work better than batons.

Legal challenges involving less-lethal options, in my experience, rarely focus on product liability. There are a couple of those big cases that Taser® is defending. They don't involve a person with a normal profile, but rather have had meth, coke, or a bad heart, and all that.

The normal beef that I see is, decisions leading up to use of force were wrong, and/or had a bad outcome. It just didn't work out well. You didn't mean to hurt my client, but they are hurt. So, we are going to sue you over that. That's what I see most of the time.

**Assessment of Taser® Cases:** Contrary to popular belief and rumors, the reason that we use Taser®, as much as we do, is that it works against people who don't get it. It works on mind-disconnected bodies. Nothing else out there does that. With this thing being viable with those who have an extreme tolerance to pain, and the fact that going hands-on has been argued the past 10-12 years as a bad idea, there is no surprise as to why we have seen its use as much as we have.



*"The key piece of the TASER® success puzzle is that many of those encountered by law enforcement today are self-medicated, mentally ill, or 'mind/body disconnected.'"*

By not relying on pain avoidance, Taser® has generated a proven track record of effectiveness with hardened adversaries. One guy had two butcher knives in his chest (and still resisted). I am fairly confident that if a police officer put an armed bar on him, the guy will look back and say, "Is that the best you've got." He can handle discomfort. Our normal processes of pain avoidance simply do not compute with a guy like that. The Taser® has been pretty helpful stopping people that we could not stop before.

As a result, we have used the device in a number of cases that, in my opinion, simply defy logic. We don't have to look very hard in this technological age to find cases on YouTube that cause us to scratch our heads and say, "what in the world were they thinking?" And the impact of that has been huge. A lot of cases in the US, which I'm not going to bore you with, are shaping the process.

In 1992, the International Association of Chiefs of Police did a study on OC proximal deaths. We had 67 dead people from pepper spray in one year. You read the American Civil Liberties Union reports and the IACP reports. Nowhere in there do you read anything that attacks police. It is all about the product and that pepper needs greater study.

With video and uses of Taser® being publicized around the world, I have never seen anything that has damaged our credibility more. So, when you see Taser® criticized, it is frequently in the same breath with law enforcement integrity and credibility. And, Taser® has been tremendously helpful, stopping people, nothing else will stop, but by virtue of misuse or abuse, it has damaged our credibility in a way that I have never seen anything else in American policing do.

Fall down risk, is, right now, the critical issue. The primary focus in training, relates to fall down from elevated platforms, which is critical. In my experience, most people get that. Today, the lion's share of Taser® litigation is focusing on ordinary Taser® deployment and fall down, but individuals aren't elevated.



*Two Taser® fall down risks – elevated platform and running*

***Taser® Use on Runners and Vehicle Operators:*** The primary area that I'm seeing is runners, people that have some momentum and forward movement, basically flight. Taser® is deployed in the back of someone fleeing, and litigation strategy has focused on that. The language I am reading is "foreseeable and predictable." Under our federal standard for use of force, you can only use force if it is intentionally applied. Accidents don't count under the fourth amendment. One definition of that is force intentionally applied. So, we have tried to get out of cases like this by saying, "I didn't mean it. I was using the Taser®. I didn't mean for his face to smack the ground."

The problem is the injury potential is well documented, especially with runners. Regular fall down risks, statistically, are very rare. You look at 1,200 Taser® deployments and two of them fell down and bumped their head. It is statistically very rare. Those are not runners, though. Runners tend to lead with their nose. When you shoot that guy in the back, that is frequently what contacts the ground first.

In one case seen on a Taser® camera, an individual's face goes right into the concrete stair – skull fracture, nose fracture, both eye orbits fractured. He was sprinting toward the house, when he got it in the back. Very defensible case, when the facts are known. Basically, a felony, a domestic abuser running into the house where the wife is, whom he choked unconscious, and the officer who deployed it said, "I would

have tased him if we were on nothing but concrete, but when I hit him ...I wasn't going to let him get in the house."

Balancing the need to use force with the potential outcome, I don't think this was unreasonable. We prevailed in this case -- accidental, unintended consequence of a lawful police behavior. It's a tough injury. But, do we let a guy, that earlier tried to strangle his wife to death, get in the house with her as he is running from me? I think the answer is, "no."

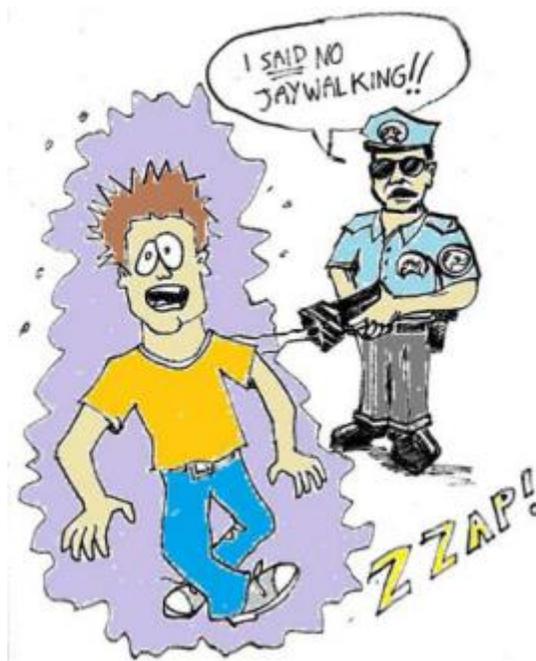
In contrast with that, I have a very good agency that I couldn't help with a case. A handcuffed, marijuana, misdemeanor suspect is transferred to the paddy wagon driver, who in the transfer loses his grip. The suspect breaks and runs. He is running handcuffed on a misdemeanor, nonviolent crime. Three deputies chase him, and they were admittedly running right behind him, saying "Stop running. Stop running or I will Taser® you. Stop running." Then they Taser® him, and he goes face first into the deck.

He's got a lacerated liver and a ruptured spleen. When he went to the deck, he landed on a storm grate. He is basically bleeding out right in front of them. Thankfully, he did not die. But, when I get the case, the attorney – good guy – said, flight after resistance and authorized by policy. Then he said what do you think? I said, I think it's under the heading of 'it's lawful, but awful.'

I can't defend that case. It is a nonviolent, fleeing, misdemeanor in handcuffs. I'm not saying it is illegal. I'm saying in contemporary police thinking today, three officers chasing a suspect, I don't think we're going to win this with a jury. I am not your guy. Can you find somebody else? Absolutely. The way the wind is blowing in American policing, flight is significant, hard surface is significant, Taser® is significant, and the nature of the crime is significant. In this case, I wasn't their person. This case is currently being litigated.

Also, there is a handcuffed, female prisoner in a booking facility. She is mouthing off to the booking officer. So, he removed his Taser® and tells her to stop. She turns and runs from him in a booking facility. He hits her with the Taser®. She is handcuffed. Is anybody surprised that she goes face first to the concrete floor? I am just pointing out the reality: there are scenarios in which Tasers® are used, that most of us would say, "what the crap?"

We need the Taser® so badly in this business, and we have to jealously guard its availability. We might say the outcome doesn't matter. But, in my experience with juries, the outcome is all that matters. And, we can say a system of jurisprudence, hind sight doesn't count. In my experience, nothing else does count. People look back and say, "You should have, would have and could have." We just need to guard this device, using it in cases with handcuffed people on hard surfaces is just problematic for us. That is just my experience.



Use against personnel on vehicles gets funkier. I reviewed a case two years ago, involving a 77-year-old, World War II veteran in a parade with his restored John Deere tractor. Getting to the end of the parade, he wanted to go straight because his truck and trailer were ahead. But, the directing deputy wants everyone to go left. "My truck is over there," said the veteran. "You will go left," said the deputy and then he tases the guy on his tractor. Tractors don't have gas pedals. They have throttles. If you Taser® the operator, the tractor is going to keep running. When we add elevation, mechanical conveyance, speed, the potential for injury just goes up.

The IACP model TASER® policy was revised in April of 2009, and one of the revisions addressed "fall down risk" with the new language underlined in the following:

"Advising against use in any environment where the subject might reasonably be subjected to a fall likely to result in death or serious physical injury. Examples include but are not limited to water in certain circumstances, and positions elevated above the ground. It is important to note that the ECW overrides voluntary motor response, and those who are exposed to its effects are generally incapable of protecting themselves during a fall. As such, officers shall consider the physical environment involved, and evaluate the need to overcome the resistance or terminate flight, as compared to the risk of fall down injury prior to deploying the ECW."

That just says, the model policy believes you should consider the totality of the circumstances, especially with runners and include that in your force decision. Why? Because we are getting sued in cases where we don't do that.

I read depositions on airplanes all the time. Officers love to tell people how they have been Tasered. Don't go down that path, because these plaintiff's lawyers go to the same training that we do. And, they have boilerplate questions.

"I've been Tasered," says the officer.

"Oh, have you really," says the lawyer. "Was it like a suspect?"

"Yeah, five second ride," says the officer.

"Were you on a mat," questions the lawyer.

"Maybe," says the officer.

"Did you have a spotter," asked the lawyer.

"Couple," replies the officer.

"Were you running on concrete with your hands cuffed behind your back," asks the lawyer.

"No, a guy could get hurt doing that," says the officer.

I have read that. Put yourself in the suspect's place. Run at a dead sprint and let me shoot you in the back with the Taser®. It's really a bad comparison. That's not why we expose people to Taser®.

Ultimately, it comes down to the credibility of our program. We need Taser® in this business. When we need it, nothing else will suffice. If we continue to use it in ways that truly shock the conscience, it causes people to wonder. A father in Alabama last year grabs his infant out of preemie intensive care and is at the elevator when the officer confronts him. He is holding the baby on a marble floor. The officers say, put down the baby. He doesn't. They tase him. What do you think happens to the baby? A pretty famous critic of police in Florida, said about the case, "What kind of moron would shoot a guy holding an infant on a marble floor?" I agree. Why would you ever do that? We just don't work through the policy and training of the implications of what we are doing.

We've got to deal with fall down risks through policy and training, and the reality that they are not all the same scenario. A suspect sitting on a couch is not the same as a suspect running down the driveway. We've got to be able to testify to that. That doesn't mean we don't Taser® people. It means saying, we have taught people. We have explained, through training and policy, that the risks are not the same, and our use of force is based on potential risk. We consider the facts involved, the significance of the crime, and we balance it with what might happen.

**Taser® Probe Contacts in Vital Areas:** I'm going to talk about probe contact with a vital area. Fall down is the primary risk I see from a litigation perspective. But, this is a combination of fall down and vital area contact. In a little department in Colorado, officers had this guy stopped. He was literally going 21 in a 20 (mile-per-hour zone in a school zone). They get into a verbal beef, and he turns and runs. So they chase him. The only thing I can speculate is that he looks back, because he had one probe in the face and one in his back. He falls. Right eye orbit is fractured, as is his nose. Then, we end up with the nature of the stop, flight, and end up with probe contact and fall down – both.

This is statistically rare, but it is the second area that I see most. We have to ensure that our folks get it. These probes fire, really, really slowly compared to what we are used to. Dynamic movement and Taser® do not fit. They don't add up. Two people fighting on the ground. You pull up with the Taser®. Bad idea. These probes have a mind of their own. They are like magnets to steel. They will go where you least want them.



*Taser® probe in the eye*

This one here, was just one of those deals where you wonder, how in the world? A state police agency on the East Coast chose not to be 'in bed' with Taser®. They wanted an independent training program. So, they contracted the IACP to get Taser® instructor training. I did that class for them. Their first tasing, after the Friday class, and it is right in the eye. The guy is fighting. There is nothing good about it.

Plain and simple, folks, Taser® probes are more intrusive than pepper spray. Most agencies have Taser® and pepper pretty darn close. I have no problem with that from a decision making perspective. I do have a problem with it from the decision to deploy. Many times at depositions, the plaintiff lawyer is careful how he raises this: "in other words, officer, Taser® and OC are inter-changeable. If you can do one, you can do the other, and vice versa."

I disagree with that. I am fine with grounds to arrest or detain, and a reasonable belief that a physical fight will follow. Action, word, or deed – you touch me, I'm going to knock you out. I am fine with the Taser® or OC. But, the Taser® has to be used more discriminately, because in my opinion, the risks are greater. Our US philosophy on force should be based on a need to stop behavior and consideration of risk. That is a significant factor in what is reasonable. It is not the only principle. In front of juries, that is a factor that I have found a lot of traction with.

***Taser® used in Drive Stun Mode:*** Drive stun is bad karma. I will just leave it at that. Drive stun was used a lot in the early 2000's. It was the focus of 99 percent of the complaints. Agencies have gotten a grip on the reality that drive stun does not stop anybody. It just really, really hurts. Once you've figured that out, folks tend to do pretty well. I don't think that drive stun should be outright banned. I've seen agencies do that. I just think it has to be in very limited scenarios, very clearly defined mission, and it kind of goes counter to what I believe Taser® is all about.



*Drive stun and effects*

Taser® is a custody tool, not a coercion tool. We've got to focus on all roads with Taser® lead to cuffs. That's what it's all about, and not getting them to be good. You find out after 15 Drive stuns down the road, they will not be good.

***Frequency and Duration of Taser® Use:*** We need to Taser® people in the least number of cycles, in the shortest amount of time possible. Do I believe there should be a prohibition, like three strikes and

you're out? That ignores the reality of the unique circumstances faced in a case. Pretty clearly, if you are at about three cycles, and things aren't working, you need to be thinking about something because this can't go on forever.

Cuffing under (Taser®) power is a very, very viable alternative. It is something that can be taught and mastered pretty well, especially with multiple officers. Our first cuffing under power was done by a single motorcycle officer out on the interstate the day after our first block of training in 2006. And he cuffed him, by himself, under power, or immediately after the cycle quitting. He was focused on it, getting him down on the deck. It's very viable, but not in every case. You've got to train to make it work. And we really need to focus on what it takes to get him or her handcuffed, with the least number of cycles, in the shortest amount of time.



*Training to handcuff under power*

***Custody versus Coercion:*** We need to preach and teach that this device (Taser®) is not a coercive tool. It might accidentally comply, but our training should be for the opposite: They won't do what we say and we use it to facilitate handcuffing. If they do, you are like, "wow, that was really amazing and unexpected." If they don't do what we say, then we say, "That's normal."

**Assessment of Flash Bang Cases:** Primary issue is contact with the device. When this thing goes off, it has a lot of horsepower. They are potentially valuable, recognizing the risk in the way you use them. The issue is reducing the risk for officers and suspects, alike, and still getting the job done.

The employment of these devices, almost all of them, worked out great. I don't get involved in those. I get involved with those devices that absolutely leave a mark. The very early catastrophic injuries were bad technology, bursting canister devices. But, the two cases that I have right now are some of the ugliest ones I have seen, and are contemporary technology, non-bursting canister, with ports at the ends, which are much safer than the older technology.

Pitched through the window – I will just tell you like it is. Having read a lot of flash bang cases, I am convinced, in many cases, they are deployed blindly. That is not the way it is reported. John Coleman in a book he wrote on patrol, said honesty is the single most important thing in everything we do. If we make a mistake, just admit it, and fall on our sword. But in injury cases, I get the most outrageous stories of how a person leapt off the bed, and laid on the device. You look at the physical evidence, like burned bed cushions, and nothing on the floor, and you just say, "What the crap?"

Contact with the device is the primary risk, with suspects and officers both. In recognition of this, it is my belief that reasonable steps have to be taken to reduce the potential for contact with the device. My philosophy on that is that in every scenario, we should mechanically place this thing on a bang stick. Others disagree, and that's all good. We have done this in my department, since 1992. We want to draw attention away from the point of entry, get it off the floor, and minimize the chance to get up against a human being. Physically attaching a flash bang to a pole has served US really well.



A police officer was killed a couple years ago with a flash bang in a handling scenario. In honor of him and everybody else in SWAT, organizationally, we can't ignore the realities of what happens when flash bangs are handled in ways that can go off physically against your body. Possession, storage and handling have got to be controlled by strict policy and training, consistent with best practices and the law.



I find in many departments, you can say, "you really can't keep flash bangs on your vest in the back seat or the trunk of your car. You really can't carry them home in your vest, and pitch them in a corner." But, I can assure you after doing a lot of SWAT classes, I see commanders looking around and saying, "Do you know what your team is doing on storage of flash bangs?" The universal answer is, "well, the sergeant says, they are up to speed." You really need to know, because if something really bad happens with a bang on your watch, the way the wind is blowing today, handcuffs could come with it. You could get arrested. It is that significant of a deal. I've had people say, I've talked to ATF and they don't care. They will care when something bad happens.

I've got a case, which focuses on flash bang use creating a scenario where a person believes they are being subjected to attack. We have someone who arose from a sound sleep, recently back from the war, with his wife saying "we are being attacked." The individual arms himself and heads toward the door. Two bangs are deployed. The door is opened. Behind a bunker, just waiting, he appears with a rifle. The rest is history. Why are we surprised when they arm themselves?

I will give you my thoughts. If you are looking for a distraction, I think we have enough imagination to do something that does not create even a shred of possibility that a person thinks they are coming under

attack. I've seen it in nine cases. Others are making a big deal out of that effect, and what it does to precipitate gunfire.

**Assessment of Impact Projectile Cases:** Accidental, unintended consequences – impact projectiles hitting places we don't want them to hit. When we hit people in vital areas, and they don't have much mass, they tend to die. When we hit people in the eyeball with penetrating rounds, they tend to die. We've got to focus on proven rounds; have policy and training related to rules of engagement - when we shoot and why we shoot; appropriate aiming points; and alternatives when we have reached the point of “enough is enough.”

**Criticality of Lethal Force and Unconventional Adversaries:** Last thing, and it is something different, but it relates. We are, here, attempting to focus on minimal force options. Overcoming resistance with a reasonable amount of force is critical, but in the back of officers' minds, we recognize what they might be facing on the next call.

A buddy of mine has for several years used the term "berserker." I googled it. A berserker was a class of Nordic warriors, performing superhuman feats on the battlefield, uncontrolled rage, immunity to pain, refusal to back down when injured against overwhelming odds. We seem to increasingly interact with such people, and some are ex-police officers; in Los Angeles County, Dorner, the Hollywood shootout guy, and the two shooters and Westminster Arkansas, the father and son who killed officers.



These are not people that we can easily characterize as, "oh, they were on drugs." These people are, in many cases, unexplainable. The dilemma that I'm pointing out is, we seek less-lethal options, but there is a class of subjects out there, that if we don't have our ducks in a row, in a big way, these people are going to 'get it on' in a big way. Our best intentions just aren't going to get it done with this particular class of person.

Last month, my town had a seemingly run-of-the-mill barricade situation involving a stolen car suspect, handled by patrol. Once they negotiated three women out of a house, one of the women says, "There is a guy in there with a gun."

They call SWAT. SWAT clears the house with dogs and robot, and he is not in there. They go to a back, metal building. No tracks in the snow, showing he got there. But, it's in SWAT's perimeter and they got to search it. They pop the door. They give a verbal challenge. Two guys come out with hands up.

One SWAT officer said, "I should've figured something out, when I saw the second guy coming to me and the look on his face was terror, and I don't think in hindsight he was scared of me." The second suspect gets almost to the door. A third suspect pops around the corner and fires two rounds at them. The second suspect falls at the officer's feet. The officer returns two rounds, pulls the guy to cover, shuts the door, backs up, and makes a barricade out of it.

In our experience with barricades, you have got to be hyper vigilant, especially in the initial moments, because that's when they are going to try to get out. About three minutes later, the third suspect pops out the opposite corner door, firing with a slung shotgun and pistol and hits one of our detectives in the hip.

The third subject shoots, and runs around the building. The SWAT team leader and assistant team leader are standing at the corner of the house. They fire an M4 round directly in the suspect's back and a three-round press with an MP5 directly in the suspect's back. He does not even skip a step. He makes a hard 90° turn out of their view, and runs into three other SWAT guys at a suspect-owned Suburban. The suspect is going for the Suburban. The three SWAT guys engage him in a 92 second gunfight, with the three shooting 166 rounds. The suspect is hit 71 times.

Two officers are together in a small tree clump with another officer 5-6 feet away. They yell over, "we're going to move on him with suppressive fire. You've got to flank him on the right side of the car and kill him." The officers started firing, moving towards him. He kept his head down.

The third officer runs and gets to the vehicle. He later said, "at that point, I had no conscious knowledge of what I had in my rifle. I've got to make sure I've got bullets. So, he slung his rifle, turns the corner and pops the suspect twice in the head with a .45. The suspect has both femurs shattered, upper arm bone shattered, and left forearm is shattered. The guy is shot to pieces, and he is mostly under the vehicle.

The autopsy was very clear. A .223 round vaporized his left lung; that was the first round that hit him. He never even blinked. Kept right on running about 30 feet. The officers asked, "Did we miss?" One round and then three rounds together it. And then he engages in a 92-second gunfight and did a pretty darn good job. Not a military guy. Out of prison since December.

Less-lethal force is critical. We've got to balance minimal force options with the reality of officers' survival, and consider all force options when engaging unconventional adversaries. I believe this room is well represented by people that sincerely believe in the inherent value of less-lethal force. But, we are making a mistake if we teach and preach that philosophy at the expense of a hard focus on dealing with people, however statistically rare, who want a piece of US. Had this been an engagement with basic patrol officers, it would not have worked out this way. I'm not saying they are the best SWAT team, but they are very comfortable with long guns. Our patrol officers are not. Had this guy just busted out before SWAT got there, it would have been really ugly.



## Study on Seven Canadian Police Agencies' Use of Force: Dispelling the Myths by Dr. Christine Hall

**Myths about Police Use of Force:** When police use of force is reported in the news, myths often arise such as "Police are out of control," said Dr. Christine Hall. She also stated some of the other myths about police use of force:

- "Use of force is too multi-factorial to understand, no one will ever understand; it is way too complicated."
- "You can't define use of force. Everybody defines it differently. So don't even try."
- "Police agencies will not work together and will not share data"
- "Cops just lie. They just write down whatever they want."

However, "how do you know they are not true," asked Dr. Hall.

**Study on Seven Canadian Police Agencies' Use of Force, 2006-2012:** Done over six consecutive years by seven police agencies, and then analyzed by Dr. Hall and her associates. The study was funded by Canadian Police Research Centre, now part of Defence Research and Development Canada. A similar study at a US center was also funded by the US National Institute of Justice. The study did not receive industry funding.

**How the Study Was Conducted -- the Methodology:** Seven Canadian police agencies agreed to participate in the study and its data collection criteria, dispelling the myth that police agencies will not work together and share data.

These agencies had their police officers collect data on their uses of force and the results. The study was "prospective," meaning collection criteria was prescribed for police officers, so that they knew what data to collect after a use of force event. Specifically, officers used standardized forms, with checkboxes. "Four agencies had in-the-car reporting," stated Dr. Hall. "That's the way to go." Three agencies used less preferred paper forms.

"All use of force modalities are included," noted Dr. Hall. The standardized form specified these force modalities, which were accepted by the police agencies. This was not a Taser® study, pointed out Dr. Hall. "Taser® is a teeny, tiny piece of what we did." The forms did include a depiction of a human body, dubbed Taser® man," which officers used to show Taser® dart deployment on a subject.

Data were collected 24/7. Explaining the importance of continuous data collection, Dr. Hall said, "This is not a convenience sample," explained Dr. Hall. "A convenience sample means that you had a guy in the

office from 9 to 5, who wrote stuff down. We all know that significant events happen after midnight, especially on Saturdays."

"We actually pulled every single medical report and every hospital chart, for every single use of force subject who went to either emergency medical services, or the hospital." Also, reporting was monitored to ensure delays did not occur.

**The Study's Findings:** These are addressed as follows, dispelling several myths about police use of force:

**Police Use of Force Occurred .1 Percent of the Time:** The study drew on data from a total of 3.2 million police-public interactions. "That's any time a police officer was in the same physical space as a suspect or a subject," said Dr. Hall. Out of these interactions, "use of force happened .1 percent of the time, which means use of force didn't happen 99.9% of the time," further stated Dr. Hall. The total number of police-public interactions involving use of force was 4,992. The overall finding dispels the often held myth that police use of force is out of control, at least at these police agencies.

**Types of Force Used:** To put these uses of force into perspective, they were broken down into force modalities, or types of force. The seven police agencies used common definitions for each force modality -- countering the myth that everybody defines it differently -- and followed common procedures for collecting data on their occurrence.

The force modalities used most were handcuffs applied 92.6 percent of the time, and verbal de-escalation used 82.6 percent of the time. Dr. Hall also stated, "Myth: verbal de-escalation works on everybody. You've all heard that if a 5 foot, 2 inches female social worker can come to the scene and talk someone down, why can't you (police) do it. She is not talking down a meth head, who is schizophrenic. So, that's important."

<b>Force modality</b>	<b>Number</b>	<b>Percent of total use of force</b>
Verbal de-escalation	2711	82.6%
Handcuffs applied*	4570	92.6%
Hard-Hands physical/ stuns	3844	77%
Hobble (hands to feet restraint)	780	15.6%
Vascular Neck Restraint	331	6.6%

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OC (pepper) spray	180	3.6%
Conducted Energy Weapon (Taser®)	745	14.9%
Firearm pointed	509 (74 were lethal force overwatch)	10.2%
Restraint gear	168	3.4%
ARWEN/Bean Bag (Less-lethal munitions)	14	0.3%
K9 (Dogs)	120	2.4%
Spit Hood (plastic mesh prevents subjects spitting)	288	5.8%

A single force modality -- not including verbal de-escalation, not including handcuffs -- the physical stuff was used 60 percent of the time," stated Dr. Hall.

Two or more force modalities were used about 40 percent of the time. While a conducted energy weapon, or Taser®-like device was used alone 45 percent of the time, "The other 55 percent of the time, it was combined with something else," stated Dr. Hall. "Maybe they tried something first and then went to Taser®. Maybe they Tasered and had to do something else after."

She further elaborated: "When Taser® was used, it was 67 percent effective on the first go... it doesn't work every time. Maybe it missed." According to the data, "13 percent had at least one dart to the chest . . . That's about one in eight who have a dart to the chest."

**Nature of Calls Involving Force:** The study collected data on these, and are depicted as follows:

<b>Nature of calls involving force</b>	<b>Number</b>	<b>Percent of 4,992 use of force events</b>
Males involved	4315	87% (unknown with 30)
Weapons used by subjects	330	6.6%
Assaults	515	10.3%
Breaking & Entering	363	7.3%
Disturbance	873	17.5%
Mental health issues suspected	348	7.0%
APU event	62	1.2%
Intoxicated	1122	22.5%
Domestic	480	9.6%
Vehicle related	458	9.2%
Other call	1008	20.2%
Unknown	724	14.5%

"You (police) are dealing with highly abnormal people most of the time," stated Dr. Hall. "Officers in the field assessed subjects as having mental illness, plus or minus 22 percent of the time. Alcohol was involved 60 percent of the time, alone or with something else. Drugs were involved a quarter of the time. Any of those – mental illness, alcohol or drugs – were present in 72 percent of use of force events."

"Emotional disturbances, alone, officers' assessment is 8 percent," said Dr. Hall. "That's been stable for six years. It's almost the same as the Vancouver report on policing mental health individuals in crisis. Their number was 9-10 percent of use of force involves people in emotional distress all by itself."

**Medical Assessment Following Use of Force:** "You need to know that only about 830 people went to the hospital out of the original cohort of almost 5,000 ... about 20 percent," stated Dr. Hall. "When you

have an emotionally disturbed person, we are very interested in how they get to the hospital. Fifty percent of the people that officers assessed as psychiatrically unwell went by police car."

Often, "police cars are mental health ambulances," stated Dr. Hall, "there are lots of operational reasons why." One reason is the lengthy period of time it takes for medical conveyance to arrive. "The other reason is, if you've got them in the back of the police car, let's just go."

"When they went to the hospital and we checked their chart, we found about 50 percent had an emergency diagnosis that included a psychiatric complaint. Thirty six percent were the result of alcohol, and 22 percent were drugs.

"We're going to do the correlation," said Dr. Hall, referring to how police field assessments compare to medical assessment. "Police assessments of subjects' physical and mental conditions are often criticized. Officers are not accurate regarding what they say is wrong with people, and to determine if someone is intoxicated, you need blood work," said Dr. Hall.

### **Myths about Injuries from Police Use of Force**

**Myth: Injuries Cannot Be Tracked:** The study detailed types of injuries, resulting from police use of force. Out of the 830 documented injuries, "Seven people died in our study, six gunshots, and one sudden in custody death," she further stated. "Death of those who had injuries was .8 percent. So, eight in 1,000. If you look at death in all use of force, it is .1 percent, so, a tenth of a percent. The study categorized injuries as follows:

<b>Injury types</b>	<b>Number</b>	<b>Percent of total injuries</b>
Bruise/abrasion	227	27.4
Laceration	175	21.1
Sprain	41	4.9
Fracture any bone	48	5.8
Blunt trauma (may be multiple bruises)	37	4.5
Penetrating trauma (likely from Taser® darts)	34	4.1
Deaths	7	0.8 (0.1*) (1.0*)

**Myth -- Conducted Energy Weapons Injure More Subjects:** Injuries were assessed by police officers in the field. Referring to injuries, Dr. Hall stated, "We split that out between Taser® and non-Taser®." Out of all the injuries, 56 percent were categorized as non-Taser® injuries, while 45% of the injuries were Taser®-related. Explaining how the Taser®-related injuries occurred, Dr. Hall stated, "you fall down when you get Tasered and you get darts, and you probably get mild injuries like scrapes or bruises." Of the Taser®-related injuries, 36 percent required medical attention, while 30 percent of the non-Taser® injuries required medical attention. "When we brought them to the hospital, we basically found the same thing," stated Dr. Hall. "So, they (police) are pretty good about saying, okay this (injury) could need a little something."

**Myth -- Prone Positioning Kills People:** "Nobody died in the prone position, zero deaths," stated Dr. Hall. "One subject died of a classic, sudden in custody death. He was documented by all witnesses as never being prone. Dr. Hall also stated, "One out of 2922, who were not prone, died. That means .03 percent of that group died. Also, the subject who died had all 10 features of excited delirium."

**Myth -- Excited Delirium Does Not Exist:** "That is my favorite myth," said Dr. Hall, referring to a unique syndrome in some personnel encountered by police. Personnel with this syndrome are described as "displaying altered mental status with severe agitation and combative or assaultive behavior," wrote panel member and emergency physician, Dr. Gary Vilke, et al.<sup>71</sup> Generally excited delirium is thought to be associated with one or more of the following: 1) drug use; 2) psychiatric illness 3) metabolic disorders and 4) intra-cerebral events.<sup>72</sup> Moreover, police often have to forcibly restrain individuals with excited delirium to prevent destructive behavior. For more information, see [Special Panel Review of Excited Delirium](#) by the Less-Lethal Devices Technology Working Group, NIJ Weapons and Protective Systems Technologies Center.

Twelve percent of those undergoing use of force showed three or more signs of excited delirium at the same time. "That's one in eight police use of force events," said Dr. Hall. That's based on officers observing and recording any of the following excited delirium features, taken from medical literature:

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<sup>71</sup> Gary M. Vilke, MD, Mark L. DeBard, MD, Theodore C. Chan, MD, Jeffrey D. Ho, MD, Donald M. Dawes, MD, Christine Hall, MD, MSC, Michael D. Curtis, MD, Melissa Wysong Costello, MD, Deborah C. Mash, PHD, Stewart R. Coffman, MD, Mary Jo McMullen, MD, Jeffery C. Metzger, MD, James R. Roberts, MD, Matthew D. Sztajnracer, MD, PHD, Sean O. Henderson, MD, Jason Adler, MD, Fabrice Czarnecki, MD, MA, MPH, Joseph Heck, DO, and William P. Bozeman, MD, "Excited Delirium Syndrome (EXDS): Defining Based on A Review of the Literature," *The Journal of Emergency Medicine*, February 2011, p. 1

<sup>72</sup> These possible causes are from Dr Chris Hall, brief entitled, "Excited Delirium Panel Workshop Seattle, Washington, " slide 31, entitled "Excited delirium: understanding physiology/ differential diagnoses"

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Excited Delirium Features	Number	Percent
Naked/partially clothed	268	5.4
No response to pain	549	11.1
No response police presence	1193	24.2
Constant physical activity	881	17.8
Doesn't tire	325	6.6
Superhuman strength	339	6.9
Sweating profusely	190	3.9
Excessive heat to touch	109	2.2
Glass attraction	105	2.1
Rapid breathing	246	7.0
None of the above	1228	24.9

Eighty-nine percent of the individuals in use of force events had two or less, concomitant excited delirium features. 18.4 percent had three or more concomitant features, which is 0.02 percent, or one in 5,000 of the police-public interactions; this equates to one in eight use of force events.

Additionally, 2.3 percent of the individuals in use of force events had six or more concomitant features, which was 0.004 percent, or one in 25,000 police public interactions. This equates to one in 43 use of force events. Dr. Hall put that into perspective: "Many agencies have a use of force a day. So, you're getting one (excited delirium, use of force event) a month, one every five weeks."

### Takeaways from this Study

**Police Use of Force Can and Should Be Tracked:** "Police use of force is profoundly rare and you need to make that point with your boards so that they know what you do," summarized Dr. Hall. "Knowing what you do, the safety is in the truth. The truth is in your data. If you collect what you do, you can defend what you do very easily." "The only way that they are going to know is if you write it down."

***Track Conducted Energy Weapons Uses and Results:*** "With the current climate of research, it is very important that we know how often people don't die, because no one is counting that, and you should."

***Excited Delirium Does Occur in the Field -- It is Predictable:*** Referring to recognizing the features or signs of excited delirium, Dr. Hall said, "What do we teach officers? We don't say, five is okay, and six is bad. With excited delirium, we say more is bad."

***Major injury is infrequent:*** The exception is gunshot wounds, "but it does happen," stated Dr. Hall.





## Section 3: International Update on Less-lethal Technologies

**Prefacing Remarks by Colin Burrows, ILEF Chair:** In keeping with the purpose of the International Law Enforcement Forum, this report provides an update on less-lethal technologies. This has been a continuing practice with representatives addressing less-lethal technology developments within their nations. This year, updates were provided on technological developments in Canada, United Kingdom and the United States.

### Canadian Technology Update by Steve Palmer

Steve Palmer is the Executive Director, Canadian Centre for Public Safety and First Responders at the University of Regina, and previously Executive Director of the Canadian Police Research Centre. From 1999 to 2004, Steve was the Director, National Initiatives for the National Research Council in Canada.

The following is an edited version of a transcript of Steve Palmer's presentation.

**A Word about ILEF:** This is my fourth ILEF presentation. Since I have been participating with this group over the last decade. We have been sharing information, taking information and putting it into application. We can honestly say that there are men and women alive today due to the lessons we have shared through this group, and certainly with the experts in the room. I think that's a pretty compelling reason for why you want to get together.

Also, we have learned, we are not alone. What we do in Canada, what you do in the United States, and what my colleagues do in the UK, impacts all of us. If we don't share learning, we can rapidly find ourselves in great difficulty.

Additionally, the amount of information that has been shared openly, willingly, has helped us advance. In Canada we have a limited pool of expertise. Fortunately, we have a limited number of events, but when we talk to people who have experienced the same, and have broader expertise, it helps us. In turn, we try and bring things to the table that will help others. What we have been trying to do by sharing information and working together, is reduce the number of problems and bad outcomes.

**Transition in Canada:** What we are seeing in public order and technologies in Canada is very much in a transitional phase. We have seen a number of incidents across Canada since we talked in 2011. We've had a G8 and G20 summit's in Canada, the Idle No More movement, student movements in Québec and Montréal, and multiple other events.



[Idle No More activities in 2012](#)

One issue is getting up front and dealing with the community, so that there is awareness of what the community is trying to undertake with protests; how they're going to react; how police are going to react and manage protest within those groups.

We are also seeing long duration events. For example, the "See You Tomorrow" protests. These occurred at night in different parts of Montréal. Over a 200-day period, Montréal emergency services reportedly responded to 248 medical interventions, resulting in 102 transports; 65 protests over 65 consecutive days; three protest with over 100,000 people; 13 riots; and 41 suspicious envelopes and actions, such as smoke bombs in subways and public buildings. Each night protesters would come up to the paramedics, wish them a good evening and then say, "see you tomorrow."



*"See you tomorrow" protest in Montreal,  
September 2012*

These longer duration events become very complex. They involve public order, health, sanitation, and fire services. It means ensuring that street people with emotional disturbance and problems don't get abused, as well as protecting people that do such things as look after building and site permits. Then there is the logistics of your own staff. And, over a long duration, emergency response teams tire and burnout. So, we are challenged.

We are looking at maintaining the peace, and looking at new governance models. We seek to protect people's rights, freedom of expression, and freedom of protest, and at same time protect law and order. We want to ensure that we are on the right side of history?

**Concepts and Technologies:** The question is how to do that? The speed and dissemination of information, with the Internet and a broad social media, give protesters agility. And, agility is what we will need to respond to that. That will bring changes in technology.

**New Governance Models:** The Association of Chiefs of Police are looking at these right now. We don't have national guidelines, frameworks. We have over 200 police services in Canada, ten provinces, and three territories. We have slightly different models and jurisdictions in each one. We are starting to talk about bringing that together and starting to train to that national model.

**Information Sharing Portals:** We are also looking at a national repository or portal, where we can exchange information. Vancouver Police Department already has started one where they share information on some major events. We are looking at how to make this national. We are looking at the technologies, current and emerging technologies, best practices, warning signs and how you mitigate against those.

**Social Media:** This is growing fast. I think few people understand it, and a few are associated with law enforcement. We are starting to use social media to inform the protesters when police are going to go in and take out black block people, making sure that there is awareness and basically trying to control ramifications that might become negative. Social media has tremendous real-time implications for us.



*Next generation 911 will receive digital media*

**Next Generation 911:** North America is going to this. It will take us from the old telephone system, where you dial in, to where you can text, tweet, and send other forms of digital media into the public safety centers. That will cause a huge number of headaches. Data volume in record management is going to be, at least in the short term, a nightmare. Some of the incoming information gets split into four streams: medical, fire, EMS and often an off-center emergency management office. All have different retention

strategies for this volume. We will find out the volume of information that Boston Police Department is going through over time.

All that means setting up policy and practices that enable people to provide information which may become evidence. We are planning ahead so that we know how to run social media sites, and where this will information go. That may mean looking at temporary storage structures, cloud structures. So, flip a switch and information goes into a cloud. But, many police services may not have the capacity to bring in that information. They may not want to bring it in within their firewall. They may want to bring it into a safe and secure place, and then gradually bring it out, treating it appropriately.

**Countering Handheld Lasers:** A green laser strike has occurred against police in Canada. Police got the weapon and subject, and prosecution is moving forward. Such lasers can have 2.2 W power, which could damage you. It is readily available. I'm hearing there will be more and more of those used against public order teams. The UK is looking at a protective mechanism. An example is protective glasses, which I have tried against all various colors of handheld lasers. They have very good attenuation. They only stop about 10 percent of visible light, but 99 percent of the five or six different colors of laser light.



**Awareness of 3-D Printable Weapons:** The Wiki Weapon project is working on three-dimensional printing for weapons. Three-dimensional technology is maturing, and the price is coming down to \$200-300 a unit. An example is a .22 that probably lasts for a single shot, but still a potential weapon. These weapons are in the early stages. (See [Wiki Weapon on YouTube](#))

**Conducted Energy Weapons:** The coroner's report was released on Mr. Robert Dziekanski, who died in Vancouver in 2007. The coroner declared it a homicide, contributed by actions of both the police and Taser®. This has triggered a lot of discussion in Canada. The Braidwood Commission came out with about 19 recommendations for policing in Canada and beyond. Most have been adopted in several jurisdictions and justice ministers across Canada are looking into practices. Right now the Canadian Academy of Health Sciences, an independent commission, is conducting an evidence-based assessment.

**Use of Force Project:** This is work that Dr. Christine Hall has been doing, collecting use of force data from police services across multiple years. It is a project that has come to an end. My opinion is that it needs to be a program. We need to collect evidence on use of force, as it is extremely important defense for police

services across Canada and internationally. In 2003-5, when people asked us about cause of death related to Tasers®, it looked like every time Taser® was used, we had a death, because that's what was reported. We didn't track uses when people survived. We didn't track other uses of force. Now, we have this information. It's also good comparative study. Police services can look at peer groups, compare levels of force and adjust their training. If we see that some officers are pulling guns more frequently than others, we can challenge that.

**Taser® XREP Project:** This is finished. I think what it showed was the product wasn't what was said. Taser®, I believe, has canceled production of the product.

**Other Projects:** We are looking at developing techniques and standards for flash bangs, as well as how to test Tasers®. That work is ongoing in many jurisdictions in Canada. Additionally, we are considering processes for the introduction of technologies, and getting a lot of help from the UK.

## United Kingdom Technology Update by Graham Smith

Graham Smith is the capability advisor at the UK's Home Office Centre for Applied Science and Technology. He was involved in introducing the less-lethal, Attenuated Energy Projectile, as well as the Taser® into UK policing. He is a member of the Association of Chief Police Officers conflict management portfolio and a member of the European Working Group on Non-Lethal Weapons.

The following is an edited version of a transcript of Graham Smith's presentation.

**Also a word about ILEF:** This is my ninth meeting. We have found in the UK that ILEF's information sharing has increased awareness and knowledge, and increased the efficiency and effectiveness in the way that we employ less-lethal options.

**Overview:** The UK's Home Office Centre for Applied Science and Technology provides independent advice to Police, the Prison Service, Ministry of Defence, Northern Ireland Office, Security Service, Dept. of Transport and others. The Centre conducts and enables testing to ensure devices meet operational requirements and police understand their capabilities and shortcomings. It's in this context, I am going to talk about less-lethal options and protective equipment employments.



*After 2011 riots in the UK, a review of less-lethal technologies*

### **Less-Lethal Devices**

**Review of Less-lethal Weapons:** This is probably one of our largest ongoing projects. After the riots in 2011, we were asked to review everything out there, to ensure everything the UK is using is the best. As a precursor, we reviewed the operational requirements. A subtle change in requirement that has come out of that review. The previous requirement stated that all effects had to be particularly discriminating. So, you could only use something on somebody if it only affected that one person. However, the review determined that in some instances you might need something that affected a group of people, but at a very low level. You might want to dissuade them, prevent them coming into an area, and turn them away. This was a slight amendment to our previous requirement.

The goal of this review is to identify those products with potential. They will need to be assessed to determine if they fill a capability gap and if they can be implemented according to the Home Office Code of Practice. This means gathering information showing that the technology does what it is expected to do against police operational requirements. If this is positive then equipment needs to be assessed for medical risks in use. There are several things that may be useful to UK police, one is the Discriminating Irritant Projectile, which is detailed at the end of this section.

**Water Cannon:** This has been used in the UK by the Police Service of Northern Ireland since 2002. We're reviewing that



*Water Cannon – More than one use*

use of water cannon, as well examining its use in other countries. We are seeing if it could have utility in the rest of the United Kingdom. The requirement for water cannon is being reviewed and technical specifications for new cannon are being prepared.

**Flash Bangs and Distraction Devices:** The device that the UK has used for some time, is getting expensive. The device also has cheaper and reloadable competitors. We want to know how the competing devices measure up, and whether their sound output may be as distracting as the current device. We have a group of tests, which will look at sound output; fragmentation; the amount of smoke that may or may not be desirable; and functionality. The customers are the police and prison services.

**Markers:** After the riots in the UK, we considered what could be done improve arrest rates. If an officer saw somebody committing an offence in the crowd, he or she couldn't arrest them because of the ongoing violence and conflict. We have considered ways of marking individuals, recording an offence, and gathering information for later prosecution. We have an ongoing project assessing different ways of doing that. There are invisible markers as well as visible markers. Additionally, body worn or weapon mounted cameras could be used to record images.



**Acoustics:** These devices look very promising. We have looked at those in the past. However, at that time we felt those devices were difficult to use safely. Their levels of sound could damage hearing. So, we told manufacturers that we wanted something that monitors the levels of sound emitted, keeping it to a level within our health and safety at work standards.

One manufacturer has come back with a prototype, which purports to do that. Hopefully it will provide a system with a warning sound that could possibly be used against a group to disperse them, separating those causing trouble from those who are just there. The manufacturer has selected a frequency and warbling effect tuned to irritate. It is a very directional sound that tends to get inside your head and really annoy you.

**Taser® X2:** Taser® International's latest model. It's got a number of advantages over the Taser® X26, which look like they would increase effectiveness or safety. The Taser® X2's advantages relative to the X26 are as follows:

**Two shots:** The X26 only has one shot. In studying the data on use in the UK, we found that that 65 percent of the time Taser® is effective on the first shot due to misses or non-attachment of barbs. This rises to eighty percent of



Taser® X2

the time on the second shot, but you need to reload to fire that second shot in order to increase your effectiveness. So, the two shot X2 looks like it should deliver an increase in effectiveness.

**Twin Laser Sights:** These indicate where both barbs will impact. We saw from our statistics that the X26 first shot's ineffectiveness can be because barbs do not attach, perhaps because the firer doesn't know where they are both going. The X26 has no laser pointer for the lower barb, the X2 has a laser dot for each barb.

**Ability to Arc without Removing the Cartridge:** This can be done without firing the X2 providing a use of force option that the X26 does not have. An X26 cannot arc without firing with a live cartridge inserted.

**Charge output regulation:** – Tasers® work by barbs getting into the skin. They also work if the barbs attach to clothing and arc across gap between the clothing and the skin; it does that is by providing extra charge to strike an arc and allow the electricity to jump across the gap and create an incapacitating effect. If the barbs go straight into the body that extra charge is not necessary to create the incapacitating effect. The Taser® X2 regulates the charge used so that it requires less charge if barbs go into the body. This should increase the safety of the devices.

**Better Monitoring:** The Taser® X2 measures its own parameters with in itself, such as the length of discharge. This allows users to check their Tasers® are operating correctly.

**Testing Plan for Taser® X2:** We are going to independently test those new features, and compare the capability of the X2 to the X26, not just in lab trials, but in user-based trials, as well. We are working collaboratively with the Canadians, with a division of labor. We are planning to assess whether the new device is safer and/or more effective; and if it is, how to best capitalize on that; and how to feed that into guidelines for use.

We will also be looking at the Taser® X26P, which Taser® announced in January. Seemingly, the X26P is similar in configuration to the X26 with the X2 electronics inside it. However, the Taser® X26P does not have some of Taser® X2's extra features, like the two laser darts and two shots. But, they do have a similar waveform and the X26P will allow some of the benefits of the new model whilst using existing cartridges.

**Radiofrequency Heating:** This is something the National Institute of Justice has looked at. NIJ tried to take a military system and put it into a smaller package, which could heat skin at a distance and which law enforcement could use. That project for various reasons has been shelved. However, the technology still holds promise and we will continue to monitor progress.

**Standards for Protective Equipment:** The Home Office has standards for protective equipment such as body armor, flameproof overalls, and public order shields. We have an ongoing project that is reviewing

these standards in light of new threats, new materials, and new processes. We want these standards to be as challenging to manufacturers as we can make them, and ensure police have the best equipment.

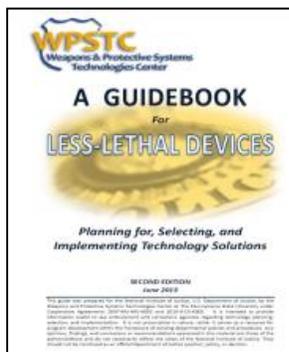
## United States Technology Update by Lieutenant Colonel Ed Hughes US Army (RET)

Ed Hughes is a researcher in the Weapons and Protective Systems Technologies Center at Penn State University. He is a retired Army officer and a graduate of the US Military Academy.

**Overview:** "A lot is going on in the Department of Defense and Justice regarding less-lethal technologies. Some of which we are involved in here at Penn State University," stated Ed Hughes. "I'm going to talk about some of the work that we have been doing here."

**Standards for Conducted Energy Weapons:** We have been involved with the development of a standard for conducted energy weapons, which the Justice Department began to look at developing about two years ago. Justice went to the law enforcement community and then went to subject matter experts, creating electricity panel of scientists and technologists. Justice also sat down with manufacturers and got their input. The initiative determined it was difficult to establish any kind of standard. The physiological effects are really not well understood, to establish a standard.

Presently, the International Electro-technical Commission seeks to establish a testing for conducted energy weapons. This standard will specify a method for measuring electrical outputs, current and voltage, from devices that deliver electrical stimulus to humans at stand-off distance of at least 2 meters for the purpose of temporary incapacitation. In doing so, the committee seeks to determine what type of test equipment we can use to gather data on these devices. The intent is that this standard will be applicable to conducted energy weapons which deliver an electrical stimulus via conductive extensions to a target at least 2 meters away.



**Guidebook for Less-Lethal Devices:** We have also been involved in the development and update of the *Guidebook for Less-Lethal Devices: Planning for, Selecting, and Implementing Technology Solutions*. It was prepared for the National Institute of Justice by the Weapons and Protective Systems Technologies Center at Penn State. It is intended to help law enforcement and corrections agencies and their technology planning, selection and implementation. It is not proscriptive; rather it is a resource for program development within the framework of department policies and procedures.

The first edition of the *Guidebook* was issued in March 2010, and a second edition followed in June 2013. A lot of input came from the Los Angeles County Sheriff's Department. We are working through a number of different changes, and there are a lot of things that we are trying to incorporate from the National Tactical Officers Association. Ultimately, we seek to convert the *Guidebook* into a smart phone application enabling wider promulgation.



**Review of Karbon Arms MPID:** In an inquiry from the Los Angeles County Sheriff's Department, we were asked to assess the Karbon Arms Multi-Purpose Immobilization Device (MPID), which is an electronic control weapon. This involved:

- Analyzing the electrical characteristics of the device waveform to include temperature extremes and depletion of power supply
- Analyzing ballistic performance and functionality at maximum, median, minimum ranges
- Analyzing drop testing and associated function checks at operationally relevant heights and drop orientations

**OC Spray Review for Pennsylvania State Police:** Also, a request was received from the Pennsylvania State Police to assess their OC spray canisters. They had experienced problems with OC spray canisters causing lacerations and burns to the eyes. We assessed the canisters, providing findings. All of the concentrations of capsaicin, dihydrocapsaicin, and nordihydro-capsaicin values seem to be within the expected range for all canisters. The measured capsaicin for the canisters fell between 0.56 percent and 0.64 percent which is consistent with the manufacturer's specification of 0.7 percent on material safety data sheets.

**Update on Assault Intervention Device:**

We have been involved with the National Institute of Justice in discussions on the Assault Intervention Device (AID). The device was planned for introduction in the Los Angeles County Sheriff's Department Detention Center in 2010. The device is a smaller version of the Defense Department's Active Denial System which uses radio frequency to create heat which will repel targeted individuals. The introduction did not occur for several reasons. The National Institute of Justice is pursuing another community panel, involving key stakeholders to include human rights groups, to address the Assault Intervention Device's possible use in the future.



*Assault Intervention Device*

**Assessments of non-lethal weapons for the Department of Defense:** We continue to assess a variety of non-lethal technologies for the Department of Defense. This has included assessing commercial off-the-shelf, human electro-muscular incapacitation or HEMI devices, and non-US made non-lethal impact munitions.



## Section 4: The International Law Enforcement Forum's Review of Discriminating Irritant Projectile Development Program

**Prefacing Remarks by Colin Burrows, ILEF Chair:** Again, similar to past workshops, one day is reserved for a special interest. This year, attention to conduct a peer review of a new less-lethal technology, the UK's Discriminating Irritant Projectile.

**Introduction:** Details of a project to develop a 37mm Discriminating Irritant Projectile (DIP) formed part of the UK presentations to ILEF over the last few years. As the project is now at an advanced stage and a prototype DIP been developed, the UK requested that ILEF assist in facilitating an informal peer review of the process that has been followed.

In a similar way, ILEF facilitated a peer review of the proposed introduction of a new 37mm Attenuating Energy Projectile (AEP) in 2004. The AEP was designed to replace the rigid baton rounds that had been used up to that time. The 2004 ILEF peer review was extremely useful in assuring the process for introduction of the AEP system, which has now been in operational use for nine years.

The DIP is a novel 37mm projectile designed to deliver a payload of micronized CS fired from the Heckler and Koch launcher designated as the L104. The L104 is part of the weapon system currently used across the UK for firing the AEP<sup>73</sup>. The process under review is part of the UK methodology for introducing new less-lethal technologies. If the Home Secretary deems the DIP appropriate for use, it may become available for introduction by police services across the United Kingdom.

**Peer Review Methodology:** The Peer Review was undertaken using a UK presenting panel and an ILEF constituted group of experts as a review panel (see Appendix 1). Colonel Andy Mazzara - Penn State University, ILEF Executive Director, facilitated the review. At various stages the ILEF delegates were provided with the opportunity to ask questions or make observations.

The session was introduced by Colin Burrows (ILEF Chair). Colin gave details of the L104 weapon system and the accuracy that had been achieved using the Attenuating Energy Projectile. The human effects modeling studies, which had been carried out prior to introduction of the AEP, and the operational role for which the weapon was intended were also explained. Details were provided of the national reviews conducted on the operational use and monitoring of medical effects. It was explained that the data on accuracy and injury potential provided baseline standards, some of which would be used to inform the injury potential of the DIP from kinetic effects. It was a requirement that the accuracy of the DIP should

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<sup>73</sup> The weapon system includes, the launcher, the sights, zeroing system and operational guidance.

at least meet that of the AEP and the weapon system should not introduce any increased injury potential as a result of the kinetic impact.

**Oversight and Management of the DIP Development Program:** The UK has a national codified process that applies to law enforcement for the testing, evaluation, and introduction of less-lethal weapons. Before introduction into service the Home Secretary must provide approval for any new or modified weapon system. The development and monitoring of less-lethal weapon systems for use by law enforcement in the UK is overseen by a Home Office-chaired steering group called the "Less-lethal Technologies and Systems Strategic Board." The Board include Home Office and Ministry of Defence officials as well as scientific and technical experts, National Policing Leads and other stakeholders. As the peer review progressed, Paul Daly from the Home Office Public Order Unit provided details of the approval system used for the introduction of new less-lethal weapons.

Deputy Chief Constable Simon Chesterman (National Policing Lead for Armed Policing and Less-lethal Weapons) explained that while the scientific, technical and medical assessments provided by the relevant UK authorities will be relied upon in the development and acceptance process, he also wished to be assured about processes being followed in ensuring operational viability and gaining community confidence. Recognizing the wealth of international operational and technical experience resident in ILEF he wished to ensure that the approach taken to date, the information which been brought forward and the proposed process for assessing operational utility and introduction into service was shared and critically reviewed. John MacDonald (secretary of the Armed Policing and Less-Lethal Secretariat) explained that the development, introduction and operational use of the DIP would follow a similar process and régime to that used for the AEP and comply with the requirements of the Home Office Codes of Practice on Firearms and Less-lethal Weapons. As part of the peer review the UK panel also provided details of the proposed testing, consultation and monitoring which would take place before and after the weapon entered service.

**Development Rationale:** Graham Smith from the Home Office Centre of Applied Science and Technology (CAST) provided the substantive and technical part of the presentation. He set out the UK approach for introducing and evaluating the DIP by reference to the User Requirement Document, Powerpoint and video of scientific laboratory testing and Concept Demonstrations that had been undertaken. Alan Hepper supported by Major (Rtd) Paul Bailey from the UK's Defence Scientific and Technical Laboratory (Dstl) contributed via a conference 'phone in'.

**User Requirements for the DIP:** As part of the documented approach to the project a 'single statement of user need' had been produced which reads:

*Currently, the user does not have a less-lethal capability which consistently produces a physiological response at ranges out to 20 meters and beyond. Hand held incapacitant sprays and Taser® X26 are limited in range and the Attenuating Energy Projectile whilst effective depends on the response to kinetic impact, this response is variable from subject to subject and situation to situation. Literature review has indicated that the respiratory effects of the favoured sensory irritant in appropriate quantities will induce a more consistent response.*

It was also noted that DIP, together with the AEP and other LLWs introduced across the UK, would contribute to the meeting of recommendations 69 and 70 of the 1999 *Report of the Independent Commission on Policing for Northern Ireland* (The Patten Report).

User requirements were detailed in a User Requirement Document (URD) and total 34 requirements related to operational performance, storage, transport, environment and more. The URD also contains the following five Key User Requirements (KURs):

1. The System should provide an effect sufficient to dissuade or prevent the subject from carrying out combative actions at ranges out to at least 20 meters and preferably 40 meters.
2. The System shall be accurate and discriminating within the need to ensure effectiveness.
3. The projectile is to be fired, with accuracy, from the L104A1/2 launcher with the L18A1/2 sight.
4. The projectile must be capable of being zeroed at 20m using the same precision and procedures as the AEP L60A1.
5. It is essential that irritant is not discharged during the flight of the projectile and that on striking an individual or object that all of the irritant is dispersed.

Graham explained the work completed to date, and provided evidence that KURs 3, 4 and 5 had been met using a prototype DIP. The accuracy component of KUR 2 had also been established. Experimentation including concept demonstration trials had indicated that the delivery system had the potential to meet KUR 1 in terms of dissuading a subject from carrying out combative action. Further work was required to establish the extent to which this would be consistently and predictably achieved in operational environments. Similarly, while the concept demonstration trials had indicated that the discharge of the DIP would not adversely affect large groups of people or cause open spaces to be evacuated, the 'discriminating' effect had still to be quantified. It is intended that use against an identified individual would have a minimal effect on other persons in the immediate vicinity.

**Projectile Development at April 2013:** It was explained that an earlier attempt at producing a DIP failed due to the difficulty in producing a nose cap that consistently gave up its payload. However, the earlier effort had demonstrated the ability to deliver, with accuracy and consistency, a projectile

containing CS at ranges out to 40 meters. This had resulted in a decision to re-start the project utilizing the same projectile design incorporating a nose cone of a completely different design.

Details were provided of the projectile design, which included a 37mm lightweight polyurethane projectile with two driving (rotating) bands designed to engage with the rifling of the barrel and a nose cone containing the CS payload.

The new design of nose cap constructed of a lightweight foam polystyrene was highlighted. The nose cap is designed to shatter on impact thereby giving up its payload. Tests to date indicated that the irritant is not discharged during the flight of the projectile and that on striking an individual or object all of the irritant is dispersed. Bench firing trials show that the DIP exceeds the accuracy parameters set down for the AEP and this has had also been evident in shoulder fired tests. Video was shown of the DIP being fired by officers on the range to demonstrate the consistency that could be achieved with this projectile at ranges out to 40 meters. Currently, the L104 used to fire the AEP is zeroed at 20 meters and the belt buckle area is used as the point of aim irrespective of the range at which the subject is engaged. The minimum engagement distance is one meter.

As the program developed, it was found that the DIP, when fired from a weapon zeroed for the AEP, also results in a mean point of impact at 20 meters, which was consistent with that of the AEP. In other words at 20 meters, a firer could anticipate that the mean point of impact of either the DIP or AEP would be the belt buckle area. However, the trajectory of the DIP is such that when fired at 40 meters the mean point of impact is, about 15 inches below the belt buckle, whereas the fall off with the AEP is much greater. It was explained that, with the current velocity and mass, the DIP's kinetic energy is about half that of the Attenuating Energy Projectile's, and its momentum, about a third. It did however travel faster and flatter than the AEP.

**Decision to Use a CS Payload:** "We chose CS, mainly because we have a large evidence base that details the toxicology of CS available in the UK," said Graham Smith. "We knew the level of concentration that we needed to achieve with CS to get reliable effects was around 10 mg per cubic meter. This known concentration made it more attractive to choose CS as well. Additionally, CS has advantages relative to other commonly used irritants. Its decontamination is easier than that of CR (dibenzoxazepine); CS has been shown to be safer than CN and the toxicological effects of powdered or solid PAVA are less well defined. "

**Size of CS Payload – 1 Gram – and Nose Cap:** Before settling on a payload of 1 gram, concept demonstrations were held during which personnel were indirectly exposed to payloads ranging from 0.1 gram to 3 grams. Graham Smith provided video of these demonstrations during which various arrest

scenario were worked through. The demonstrations provided a degree of confidence that the DIP had the potential to provide a limited exposure of CS to a subject at distance out to 40 meters.

The concept demonstrations indicated that those close to the subject would be affected by the CS but that at the concentration used there was not general or widespread contamination of the area. It was also found that 1 gram provided the degree of sensory effect necessary. Laboratory test also revealed that payloads above 1 gram tended not to optimize the discharge of the entire payload at the point of impact. Although the concept demonstration was useful in providing confidence, the process was not sufficiently robust to provide evidence that the 1 gram payload would consistently produce the intended effects.

**Firing Trials:** Firing trials involving officers already trained in the L104 and AEP system were conducted with a view to establishing whether KURs 3 (accuracy) and 4 (zeroing using a weapon zeroed for the AEP) could be met. Graham Smith explained that the firing trial was a very intensive couple of weeks of firing, which used six firers from various police forces, firing alternatively DIP and AEP at different ranges – 10 meters, 20 meters, 40 meters ranges – 60 rounds of each (projectile – DIP and AEP), at each range, for each firer. In all, 1,596 rounds were fired during this assessment. Graham explained that due to the amount of data obtained and the way in which the firings had been conducted there was assurance that the figures could be relied on as having a statistical significance.

Firing trials compared the impact points for the two projectiles at these ranges. Using the belt buckle as the aiming point (Point of Aim – POA) and zeroing the weapon to hit this point at 20m these trials determined the mean Point of Impact (POI) at various ranges. The results are set out in the following table:

<i>RANGE</i>	<i>10m</i>	<i>20m</i>	<i>30m</i>	<i>40m</i>
<i>DIP</i>	<i>17mm (5/8") above POA</i>	<i>POI=POA</i>	<i>148mm (6") below POA</i>	<i>392mm (15 1/2") below POA</i>
<i>AEP</i>	<i>69mm (2 3/4") above POA</i>	<i>POI=POA</i>	<i>253mm (10") below POA</i>	<i>720mm (28 1/2") below POA</i>

*Testing to date provided confidence that KURs 2-4 could be met. This left further work to establish whether KUR 1 would be met (i.e. an effect sufficient to dissuade or prevent the subject carrying out intended action).*

In September 2012, the DIP was demonstrated to senior stakeholders in the police services, Home Office, Department of Justice Northern Ireland, and the Association of Chief of Police Officers. The demonstration

involved firing projectiles at a mannequin target, and comparing the test results to the performance of the in-service AEP. Following the demonstration, it was agreed that the development of the DIP should proceed so that decisions could be made on whether the DIP should enter service.

**Future Tests and Development:** Trials to determine the characterization of the DIP's effectiveness were currently being developed. A separate assessment will determine the risk of injuries from blunt impact. Additionally, other testing will evaluate the effects of handling, storage and environment on the projectiles reliability. Before any decision is made to introduce the DIP operationally, all test and trail results and draft guidelines on use will be presented to the Scientific Advisory Council on the Medical Implications of Less-Lethal technologies (SACMILL)<sup>74</sup> who will provide an independent statement on medical implications of use to the Home Secretary.

**Human Effects Trials:** "These are ethically approved human trials where we will fire the rounds at people; they are still in the planning stages" said Graham Smith. "They are intended to determine whether the projectile will be effective, as well as measuring the effect's onset and duration."

**Medical Assessment:** This assessment will determine the risks of injuries following the projectile's impact. It will be contingent upon positive results from the human effects trials. The Defence Science and Technology Laboratory will conduct the medical assessment, which will be based on a protocol endorsed by the independent medical committee. The medical assessment "will mirror to a certain degree the testing that was carried out on the Attenuating Energy Projectile," said Graham Smith. "But, there will be other tests that are carried out because of the different nature of this round (DIP). It's traveling faster and it's lighter, and it's got a different nose. . . . Whatever testing is carried out," said Graham, "will be endorsed by independent medical experts on the SACMILL panel. They will look at it to ensure that the testing is comprehensive and gives enough information to make an informed statement on risk in operational use."

**Handling, Storage and Environmental Tests:** "If we're going to have a reliability of function of around 97 - 99 percent, then we need to understand what changes that reliability if the round is taken out of the case," said Graham Smith. This testing will be contingent on a favorable outcome of the human effects trials, noted Graham Smith. As he further stated, these tests are "quite time-consuming and quite expensive."

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<sup>74</sup> The Science Advisory Committee on the Medical Implications of Less-Lethal Weapons (SACMILL) advises the UK government on the biophysical, biomechanical, pathological and clinical aspects of generic classes of Less-lethal Weapons, including medical implications and potential injuries. SACMILL is an advisory non-departmental public body of the Ministry of Defence

This testing will be conducted by the Defence Ordnance and Safety Group. Issues being addressed will include:

- Will projectiles operate within the specified temperature range?
- How long will projectiles last if it's in its original case?
- How long will projectiles last if removed from cases, carried by officers, and returned to cases?
- What is the overall life of projectiles?

**Developing Guidance and Training for Projectile Use:** Andy Latto from the newly established UK College of Policing (which has replaced the National Police Improvement Agency) explained the role the College would undertake in ensuring that national guidance was published for use of the DIP. Well-developed operational guidance will be available prior to the weapon system being submitted for assessment of the medical implications of the system. If introduced operationally the guidance will be subject to a continual iterative review process and the guidance will form part of what is referred to as Authorized Professional Practice (APP). This guidance and training is being developed by the College of Policing, which trains, credits and monitors all 56 police organizations in the UK in the use of firearms, including less-lethal weapons. Ultimately, the College will license each police force to use the DIP, and then monitor its use to continue to fine tune the guidance and training.

**Operational Pilot:** John MacDonald explained that if the Home Secretary gives approval to move to an operational pilot of the DIP this would be undertaken in several police areas. Criteria will also be established for a structured evaluation of all operational uses including outcome and medical effects. At the completion of the pilot, the Police will make a recommendation to the Home Office on whether to proceed with a full rollout of the projectile. Prior to moving to an operational pilot, it is expected that the SACMILL statement on the medical implication on the use of the DIP will be published and that there will be consultation with interest groups.

**Community Engagement:** There will also be a formal 'Community Impact Assessment' undertaken. A human rights audit of the implications of introducing the technology will also be completed. There will be consultation with 'interest groups' and NGOs (non-governmental organizations). Written advice on expected injuries will be issued to hospital accident and emergency departments, general practitioners and police forensic medical officers (who examine individuals in police custody).

Chief Constables in England and Wales will also undertake consultations with Police and Crime Commissioners.

Paul Daly explained the information that would be required prior to the Home Secretary's approval being given for both the initial pilot and any subsequent roll out of the technology.

**The Panel's Findings and Recommendations:** The presentations demonstrated that the initial tests had been done well and that this new round had been developed in close coordination with the user. There was acknowledgement that, although the kinetic effect of the DIP would be much less than the AEP, the combined effects had the potential to provide a more effective munition that could prevent or dissuade a subject from further action. It was also observed that a weapon system with effective periphery sensory irritant effects combined with the accuracy and consistency of the current UK AEP projectile, would have significant advantages for law enforcement.

The Panel made the following recommendations:

**Determine the extent to which the DIP will meet the KUR1 in terms of motor skill degradation (KUR 1):** The degree to which fine and gross motor skills would be degraded by the CS dose needed to be determined. It was agreed that further trials were required. Also, the onset, duration and recovery times for CS effects should be quantified. Referring to the effects sought in the human trials, Alan Hepper (Dstl), stated, "It is getting the shape of the graph that we are really interested in – the onset, how long it lasts, how long it takes to come off." Dr. Kenny suggested that it might be possible that, "you can give each test subject a known concentration.... Then you can measure the onset, the offset, and the degradation of the test subject's motor skills." The results will serve as a baseline for assessing projectile-delivered CS effects, which will be subject to several variables. John MacDonald outlined trials that were being planned to determine the 'DIP effect's characterization.' Under simulated situations, volunteers will be struck by the DIP and then required to undertake given tasks.

**Further work should be undertaken to determine how discriminating the CS effect will be:** The panel noted that the dispersion test had resulted in a high proportion of firings where concentrations of CS had moved to the right of the target after the initial impact. This had not been anticipated and work is still required to determine why this occurred. There was discussion as to how much of the irritant would affect the intended subject if this occurred during operational deployment and how much of the CS would affect those in close proximity. This potentially raised the question of how discriminating the effect would be. It was agreed that required discrimination would be addressed in future tests. Neither Graham Smith nor the panel was able at this stage to suggest a reason or a solution to the phenomena observed.

**Evaluate the combined effects of blunt trauma and CS (relevant to KUR1&2):** The panel observed that the planned human tests will only assess the effects of CS exposure, since volunteers will be wearing protective padding, and, thus, will not experience the projectile's blunt impact. "This is an interesting weapon because it is a combined effects weapon," stated Dr. Kenny. "If you hit someone with the round (in the belt buckle area), you cause them to exhale, probably followed by a sharp inhale, meaning they will probably deeply inhale the CS, and this may have a dramatic effect on their behavior." He suggested

that the UK should consider whether tests could be expanded to determine if there is a combined effect that is additive, meaning does the projectile produce  $1 + 1 = 2$  effect; or, are these two effects synergistic – one plus one equals three. Dr. Kenny suggested that the end result may be greater than presently realized. The UK panel acknowledged this and were cognizant of the need to take evaluate the combined kinetic and sensory effect. They indicated that this would be considered in the planning of future tests and monitoring of any operational pilot of the new technology.

**Assess blunt trauma to limbs, particularly the legs:** While it was recognized that the new technology would deliver significantly less kinetic energy than the AEP, it is important that the kinetic energy effects are well understood. "Are you testing for damage to the knees?" asked Joe Cecconi. Alan Hepper responded that force-plate tests would be used "to see how the energy is deposited by the projectile." Referring to limbs, though, he also stated, "there isn't very good criteria for injury metrics for areas of the body." Dr. Kenny pointed out that a limb model for assessing blunt trauma is being developed for the Human Effect-Modeling Analysis Program at the Air Force Research Laboratory in San Antonio, Texas. "Perhaps they would allow you to use their model," recommended Dr. Kenny.

**Concluding observations:** Colonel Mazzara facilitated a general discussion that included questions and observation from the ILEF participants.

The Peer review provided confidence that:

- The process used to document a capability, identify user requirements and KURs against which the projectile could be assessed was robust and well defined.
- Similarities were identified with the systems approach to weapon development in the US Department of Defense.
- The nature of the 'joined up' approach in the UK was seen as a good model. However, there was some adverse comment on what could be seen as a rather bureaucratic time consuming approach albeit the benefits of leveraging government research capabilities and Government endorsement were acknowledged.
- The combined use of kinetic impact and periphery sensory irritant to provide a system that could be used with accuracy out to 40m would, if successful, be advantageous to law enforcement.
- That KURs as presented were appropriate and that the processes being worked through to determine whether they were being met was sound.
- That further work was required to determine whether KURs 1 and 2 were fully met.
- The approach being proposed to meeting KUR 1 and 2 was appropriate and that the 'peer review' suggestions would enable further consideration.
- That the methodology used within the UK for pre-informing accident and emergency departments, and medical practitioners about any new technology was good practice.

- Similarly, the proposal that, following independent medical assessment, any roll out of the new technology would be undertaken in a good practice and controlled manner starting with a closely monitored and evaluated operational pilot.
- The group emphasized the need for community engagement and explanation of the new technology before its introduction.

In thanking ILEF for engaging with the UK, Deputy Chief Constable Chesterman stated that the combined experience, expertise and knowledge within the room provided him with an insight that consultancy could not purchase. He thanked the panel and delegates for their contribution and willingness to engage in the process. He acknowledged that there is still work to be done but that this process had given him the assurance required to map out and move on to the next stage of project development.

#### The UK panel:

- Paul Daly – UK Home Office
- Simon Chesterman QPM – UK lead on LLW for Association of the Chief of Police Officers
- John MacDonald – UK, ACPO secretariat for Armed policing and Less-lethal Weapons
- Graham Smith – UK, Home Office, Centre of Applied Science and Technology (CAST)
- Andy Latta – UK, College of Policing
- Alan Hepper OBE – UK, Defence Science and Technology Laboratory (on teleconference)
- Paul Bailey – UK, Defence Science and Technology Laboratory (on teleconference)

#### The ILEF Panel:

- Dr. John Kenny – US, Applied Research Lab, Penn State University
- Joe Cecconi – US, formerly of National Institute of Justice
- Rick Wyant – US, Crime Lab Washington State Patrol
- Ulf Sundberg – Sweden, Karolinska Institutet
- Mike Villa – US, Chief, Tukwilla, Washington Police Department

## Appendix A – Agenda

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### **Tuesday, 16 April 2013 (Day 1)**

- 0830-0840 Introduction and Overview – Andy Mazzara, Executive Director, ILEF (US – Penn State University)
- 0840-0850 Welcome by Dr. Edward G. Liszka, Director, Penn State’s Applied Research Laboratory
- 0850-0910 Opening Address, Colin Burrows QPM, Chair: Protecting the Protectors, Safeguarding the Vulnerable
- 0910-1015 Keynote Address: Former Chief Constable Ian Arundale QPM (UK)
- 1015-1030 BREAK – Refreshments provided
- 1030-1230 International Presentations: Less-Lethal Technology Overview and Updates  
*Canada: Canadian Technology Update – Steve Palmer, formerly of the CPRC*  
*United Kingdom: UK Technology and Tactics Update – Graham Smith, HOCAST*  
*United States: US Technology (National NIJ Centers) Update – LTC Ed Hughes, WPSTC*
- 1230-1330 LUNCH – Introduction to Breakout Sessions by Andy Mazzara
- 1330-1415 UK Strategic Direction and Lessons Learnt Deputy Chief Constable Simon Chesterman QPM (ACPO Lead for Armed Policing and Less-lethal capability)
- 1415-1600 Workshop Breakout Sessions  
1 – Custodial Challenges - Minimal Force Options and Officer Safety  
2 – Improving Management of Crowds, Public and Police Safety for Major Public Events  
3 – Public Events & Social Media, the challenge of Command, Control Communications & Police Response
- 1600-1630 BREAK (Reporting Out Preparation)
- 1630-1715 Plenary Session (Group Reports & Discussion)
- 1715-1745 Day 1 Summary and Conclusion – *Colin Burrows*
- 1800 ILEF Dinner at the Penn Stater Hotel and Conference Center
- 1830-2100 ILEF Workshop Dinner: Speaker – Mark Lomax, Executive Director, National Tactical Officers Association

**Wednesday, 17 April 2013 (Day 2)**

- 0700-0800 Breakfast (On your own/Hotel)
- 0830-0845 Day 2 Welcome – Colin Burrows
- 0845-0930 Research on Police Use of Force: Real results and lessons from the trenches – Dr. Christine Hall, Vancouver Island Health Authority (CAN)
- 0930-1000 Current INLDT/WPSTC Research Projects – Col Andy Mazzara USMC (Ret), Director
- 1000-1015 ILEF Workshop Photo
- 1015-1035 BREAK
- 1035-1045 Justice and Safety Institute’s International Conference – Don Zettlemyer, Director, JASI (PSU)
- 1045-1145 Recent Legal (US) Actions involving Less-Lethal Options – Steve Ijames, Major, Springfield PD (Ret)
- 1200-1300 LUNCH
- 1330-1530 Workshop Breakout Sessions
- 1 – Custodial Challenges - Minimal Force Options and Officer Safety
  - 2 – Improving Management of Crowds, Public and Police Safety for Major Public Events
  - 3 – Public Events & Social Media, the challenge of Command, Control Communications & Police Response
- 1530-1630 BREAK (Reporting Out Preparations)
- 1630-1715 Plenary Session (Group Reports & Discussion)
- 1715-1730 Day 2 Closing Comments – Colin Burrows
- 1800 Free Time/Transportation to downtown State College available

**Thursday, 18 April 2013 (Day 3)**

- 0730-0830 Breakfast (On your own/Hotel)
- 0830-0845 Day 3 Welcome – Colin Burrows
- 0845-1000 Case Study / Peer Review of a Technology Introduction (DIP) Panel
- 1000-1015 BREAK
- 1015-1230 Facilitated Panel Discussion/Questions & Answer Session:  
*Process, Technical Challenges, Operational Issues, Medical Aspects, Public Acceptability*
- 1230-1330 LUNCH
- 1330 Workshop Concluding Comments/Summary – Colin Burrows
- 1400 Workshop adjourns
- 1430-1530 Advisory Board “Hot Wash”



## Appendix B – Focus Questions

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### **Session 1: Custodial Challenges - Minimal Force Options and Officer Safety**

1. Identify the top two challenges or issues for handling individuals in custody? Why are those your top two, and explain any opportunity for employing minimal force/less-lethal options.
2. What are the main officer safety issues in a custodial environment? What have been the most and least useful and effective minimal force options, less-lethal munitions or devices currently being used in support of detention facilities? Why?
3. Do you have observations regarding the best and worst practices concerning how to (or how not to) secure an aggressive individual already in custody?
4. What are your experiences (or observations) on the safe transport of prisoners and/or suspects?
5. Have you ever done or supported a cell extraction? What tools, devices or techniques were the most and least effective?
6. How significant an issue has in-custody deaths and/or injuries been in your jurisdiction? Why?
7. Are there unique or obviously different challenges between safely securing men and women in custody? What are they, and why are they challenges?
8. Are there unique or obviously different challenges between safely securing in custody individuals with significantly different cultural or religious affiliations? What are they, and why are they challenges?
10. How might ILEF better support the international policing community in the area of custodial operations? How do we get from here to there?
11. Has your organization ever been involved in a large scale/mass arrest event? If so, discuss the arrest, transport and transfer issues and opportunities to employ less-lethal options with good (or bad) effect.

**Session 2: Improving Management of Crowds, Public and Police Safety for Major Public Events**

1. What are the main safety issues in a crowd control scenario, where there is intelligence or potential for serious violence? In respect of:
  - a. Officers
  - b. Crowd/Event Participants
  - c. Other people living, working and passing through the general area.
2. Drawing on operational experience how do these issues influence your decisions in respect of the:
  - a. Policing of the event
  - b. Type of less-lethal options you have available and
  - c. Guidance/controls on their deployment and use.
3. Are there new or emerging threats to public and/or officer safety in what we are seeing through organized and/or spontaneous crowd situations? What are those threats? How would you articulate an operational requirement for new technology or tactic in respect of any new threat identified?
4. What are the top three less-lethal or minimal force options that are used in your jurisdiction in support of crowd management? Why these three? Are there any new options under consideration and what are the issues being considered? What other options do you have available that are not likely to be used, and why?
  - a. How can you more effectively separate and move away and protect the peaceful, or more vulnerable, from an emerging crowd disorder situation?
  - b. What the best and worst (most useless) equipment, devices, or practices when it comes to officer safety, especially in the context of crowd management scenarios?
  - c. What have been the least useful and effective less-lethal munitions or devices currently being used in support of large scale public events? Can they be improved? How?
  - d. What are the most useful and effective less-lethal munitions or devices currently being used in support of large scale public events? Can they be improved? How?

- e. What are the best tactics and technologies to intervene, control and stop a violent crowd disorder situation from growing out of control?
5. Where violence is anticipated during or as a result of large scale public event is anticipated how are the community impact issues associated with deploying Less-lethal options as a contingency assessed and addressed? What measures would you consider to manage the potential negative community impact issues associated with the availability and potential use of such weapons? What is done to optimize the employment of these or other technologies in your jurisdiction?
6. **Day 2 Start/Primary Question:** If intelligence or previous experience indicates that there is potential for 'lethal attacks' on police, other emergency services or opposing groups how would this influence the type of weapons and protective equipment you would employ?

In terms of resort to lethal force options by police what would you consider to be a threat meriting such action coming from within the crowd?

What contingency plans/ training would you consider when dealing with a crowd situation?

- a. Aggressive individual(s) wielding an edged weapon or firearm?
  - b. A person discharging a firearm using the cover of the Crowd.
  - c. Sustained use of Petrol Bombs/ Molotov cocktails or the throwing of an explosive device
  - d. Crowd turning hostile and indicating a mob assault on private or public property with the intent of complete destroying the property;
  - e. Physical safety of individual or small groups of police being directly threatened; and,
  - f. Intelligence identifies potential explosive event (IED/suicide bomber) under large crowd cover.
7. Are you aware of any new or more effective less-lethal or other tactical options for police officers facing threats such as firearms, petrol or blast bombs, and masonry and laser lights at the height of serious public order situations?
  8. How can technologies assist in containment to better isolate/filter problematic groups and individuals from peaceful protestors?
  9. How can police best prevent crime and civil disorder in large scale crowd events through early intervention on or off-site to disrupt those indicating clear criminal intent?

10. Is your present command structure/organization best suited for dynamic crowd situations requiring greater speed of decisions? Why, or why not? What changes would you make? Where in the organization is officer safety a focus? How? Where should it be a focus? Why? Talk about operational communications before and during an event.
11. How can minimal force options and LL technologies be more effectively employed in an agile manner to better protect the public as well as the officers involved?

**Session 3: Public Events & Social Media, the Challenge of Command, Control Communications & Police Response**

1. Can you identify any good practice or systems which during rapidly escalating public disorder, prevent Police from being overwhelmed by the amount of information available coming at them as a result of attempting to monitor Social Media site at the height of the disorder
2. Are you aware of good Practice involving the proactive use of social media, police-led of neighborhood engagement key networks of individuals and the local media in order to publicise deterrent messages, as well as to support fact-based reporting which could help quell rumours and provide reassurance to a concerned public.
3. How can we remain informed by Social Media but avoid 'tail chasing' activity which risk diverting resources to either deliberate or erroneous postings? Is there good practice in respect of grading/ or assessment of information gained similar to how we grade more traditional information/intelligence.
4. How can Social Media be used in a timely, effective and targeted manner to explain police action, confirm information and dispel rumor particularly in respect of police use of force.
5. What change in mindset, operational capability and command response is required if the police are to effectively and proactively use socials media to get key messages out as opposed to relying on traditional slow time medial briefings, press releases and 'police spokespersons'.
6. What are the basic requirements for preparing a media "package" in anticipation of a large scale public event? How are social media engaged in this respect? How would, should, or could information about employing less-lethal devices be included?
7. With respect to large crowd control scenarios (such as sporting events or G20), what tactics, policies, training, and incident management issues relative to less-lethal and minimal force options need to be considered, and conveyed to the public? What are the most effective means of transmitting this information in the public domain? Are there any specific examples of good practice or problematic use that we can share?
8. In the context of large, urban-based sporting or political events, discuss the potential for preparing the public and the media for the potential employment of less-lethal devices.
9. Has your jurisdiction experienced flash riot/disorder events? What response worked well, what not? What lessons were learned that you can share with the group?
10. How can the social media be more effectively "used" to generate more favourable coverage of employing less-lethal technologies, police operations in general? Has your jurisdiction had any lessons

learned (positive or negative) from dealing with the media on such issues of CEDs, rubber baton rounds, tear gas/pepper spray, water cannons, or other LL devices? What were they?

11. Discuss “before, during and after” social media considerations or factors that should be included in large scale public event planning that would include the employment of less-lethal options.

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## Appendix C – Workshop Attendees

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Corporal Ernesto Angeles	Royal Canadian Mounted Police <b>Canada</b>
Mr. Ian Arundale QPM	Law Enforcement and Security Consultant <b>United Kingdom</b>
Major Brent Barlow	Dona Ana County Sheriff's Office <b>United States</b>
Sergeant Tom Burns	Seattle Police Department <b>United States</b>
Ms. Amanda Brooks	Penn State University <b>United States</b>
Mr. Colin Burrows QPM	Chairman, ILEF Advisory Board <b>United Kingdom</b>
Sheriff J. (Al) Cannon	Charleston County Sheriff's Dept (SC) <b>United States</b>
Mr. Joe Cecconi	National Institute of Justice <b>United States</b>
DCC Simon Chesterman	West Mercia Police Service <b>United Kingdom</b>
Chief Diane Conrad	Ferguson Township Police Department <b>United States</b>
Mr. Paul Daly	Home Office (Public Order Unit) <b>United Kingdom</b>
Sergeant Fred Farris	Lenexa Police Department (KS) <b>United States</b>
Lt Christian Fishel	State College Police Department (PA) <b>United States</b>
Chief Alan Goldberg	Takoma Park Police Department (MD) <b>United States</b>
Dr. Christine Hall	Canadian Police Research Centre <b>Canada</b>
Commander Sid Heal (Ret)	Los Angeles Sheriff's Department (CA) <b>United States</b>
Major Mike Hendrickson USMCR	Penn State University <b>United States</b>
LTC Ed Hughes USA (RET)	Penn State University <b>United States</b>
Mr. Martin Hubbard	Ministry of Defence (Dstl) <b>United Kingdom</b>
Major Steve Ijames (Rtd)	Springfield Police Department (MO) <b>United States</b>
Dr. John Kenny (Cmdr USN Ret)	Penn State University <b>United States</b>
Chief Thomas King	State College Police Department (PA) <b>United States</b>
Mr. Andy Latto	College of Policing Knowledge Centre <b>United Kingdom</b>

Dr. John Leathers	Pennsylvania State University <b>United States</b>
Sergeant Marc LeFebvre	Royal Canadian Mounted Police <b>Canada</b>
Commander Bob Lewis	Collier County Sheriff's Dept (FL) <b>United States</b>
LtCol Tom Linn USMC(Ret)	LinnWrite Associates <b>United States</b>
Lieutenant Ron Locke	Sarasota County Sheriff's Office <b>United States</b>
Executive Director Mark Lomax	National Tactical Officers Association <b>United States</b>
Colonel Andrew Mazzara USMC (Ret)	Pennsylvania State University <b>United States</b>
Superintendent Roy Marshall	Police Service Northern Ireland <b>United Kingdom</b>
Mr. John MacDonald	West Mercia Police <b>United Kingdom</b>
Asst Chief Bill Moerschbacher	Penn State University Police <b>United States</b>
Sergeant Brian Muller	Los Angeles Sheriff's Department (CA) <b>United States</b>
Lieutenant Dan Murphy	Arlington Police Department (VA) <b>United States</b>
Sheriff Denny Nau	Centre County Sheriff's Office (PA) <b>United States</b>
Director Lyndon Murdock	Public Safety Canada <b>Canada</b>
Mr. Kevin Nicholson	College of Policing Knowledge Centre <b>United Kingdom</b>
Major Erik Orient USMC	Penn State University NROTC <b>United States</b>
Mr. Steve Palmer	Former Director, Canadian Police Research Centre <b>Canada</b>
Chief Tyrone Parham	Penn State University Police <b>United States</b>
Chief John Petrick	Patton Township Police Department (PA) <b>United States</b>
Captain Dan Savage	Grand Rapids Police Department (MI) <b>United States</b>
Asst Vice Pres Steve Shelow	Police & Public Safety, Penn State University <b>United States</b>
Mr. Graham Smith	Home Office Scientific Development Branch <b>United Kingdom</b>
Colonel Ulf Sundberg (Rtd)	Karolinska Institutet <b>Sweden</b>
Chief Mike Villa	Tukwila Police Department (WA) <b>United States</b>
Mr. George Vyphuis	Assistant Commissioner, Operations, Police Force <b>Guyana</b>

Sergeant Don Whitson	Fort Collins Police Department (CO) <b>United States</b>
Mr. Rick Wyant	Washington State Patrol (Crime Lab) <b>United States</b>
Mr. Donald Zettlemyer	Justice & Safety Institute, Penn State University <b>United States</b>

