



ARCHIVED - Archiving Content

Archived Content

Information identified as archived is provided for reference, research or recordkeeping purposes. It is not subject to the Government of Canada Web Standards and has not been altered or updated since it was archived. Please contact us to request a format other than those available.

ARCHIVÉE - Contenu archivé

Contenu archivé

L'information dont il est indiqué qu'elle est archivée est fournie à des fins de référence, de recherche ou de tenue de documents. Elle n'est pas assujettie aux normes Web du gouvernement du Canada et elle n'a pas été modifiée ou mise à jour depuis son archivage. Pour obtenir cette information dans un autre format, veuillez communiquer avec nous.

This document is archival in nature and is intended for those who wish to consult archival documents made available from the collection of Public Safety Canada.

Some of these documents are available in only one official language. Translation, to be provided by Public Safety Canada, is available upon request.

Le présent document a une valeur archivistique et fait partie des documents d'archives rendus disponibles par Sécurité publique Canada à ceux qui souhaitent consulter ces documents issus de sa collection.

Certains de ces documents ne sont disponibles que dans une langue officielle. Sécurité publique Canada fournira une traduction sur demande.

A practitioner's guide to the 2011 national body armor survey of law enforcement officers

Bruce Taylor, Ph.D.***

Heath Grant, Ph.D.**

Bruce Kubu**

Jack Roberts, Ph.D.****

Megan Collins**

Daniel J. Woods, Ph.D. **

Submitted to the National Institute of Justice

November 1, 2012

* This project was supported by Grant No. 2009–SQ–B9–K112 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Points of view in this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice or any other organization.

** Police Executive Research Forum: 1120 Connecticut Avenue NW, Suite 930, Washington, DC 20036

*** NORC at the University of Chicago: 4350 East-West Highway, Bethesda, MD 20814

**** American Society of Mechanical Engineers (ASME) Fellow, Independent Consultant

A practitioner's guide to the 2011 national body armor survey of law enforcement officers

Since the first known line-of-duty death more than 200 years ago, more than 19,000 U.S. law enforcement officers have been killed in the line of duty.¹ In fact, in the past 20 years, on average over 160 officers are killed in the line of duty each year² – with roughly 35 to 40 percent from gunshots.³ This fact demonstrates the critical importance of increasing our understanding of the factors impacting the performance of body armor, often referred to as bullet-resistant vests, in real world conditions.

There is no dispute about the importance of body armor in saving officer lives. And there is a growing awareness in the policing field that body armor safety and performance can be compromised by environmental factors (e.g., exposure to heat and moisture over time) and poor care and maintenance practices (e.g., folding armor during storage). Despite these concerns, there has been little research examining officer attitudes and behavior related to the use and care of their body armor.

In a national survey of law enforcement officers, supported by the National Institute of Justice (NIJ), the Police Executive Research Forum (PERF) examined these issues. In this practitioner summary, we announce our findings from a national survey of over a thousand sworn officers from randomly selected law enforcement agencies about their use and care practices for their body armor.

¹ <http://www.nleomf.org/facts/> (Accessed Oct. 18th,2012)

² <http://www.nleomf.org/facts/officer-fatalities-data/year.html> (Accessed Oct. 18th, 2012)

³ <http://www.nleomf.org/facts/officer-fatalities-data/causes.html> (Accessed Oct. 18th, 2012)

Background:

This practitioner summary describes research conducted by PERF regarding law enforcement officers' use of body armor, and regarding state and local law enforcement agencies' policies on the use of body armor. The current research builds on previous work conducted by PERF in conjunction with the U.S. Department of Justice regarding body armor. In 2005, PERF and the Bureau of Justice Assistance (BJA) surveyed the nation's 100 largest law enforcement agencies regarding their use of body armor containing Zylon® following reports that Zylon-based armor was vulnerable to performance degradation. That study revealed that more than one-third of the agencies were still using armor containing Zylon yarns, but nearly all of those agencies were planning to replace those vests.

And in 2009, PERF and BJA completed the first nationally representative survey of law enforcement agencies on body armor policies and practices. This survey revealed that 99 percent of responding agencies used body armor to some extent, but only 59 percent of agencies *required* use of body armor at least some of the time, and fewer than half of the agencies that mandated that body armor be worn had a written policy on this issue, making enforcement of the policy more complex.

While the 2009 study was a survey of law enforcement agencies, the current survey was conducted from the perspective of individual *officers*, not agencies. This is an important innovation, for there are few examples of individual-level surveys of nationally representative samples of law enforcement officers on any topic, let alone on an understudied area such as body armor usage. By surveying individual officers, we were

able to obtain findings about levels of actual use of body armor, and officers' attitudes about body armor.

Specifically, PERF surveyed a national sample of sworn officers from randomly selected agencies, weighted to reflect a representative sample of agency sizes, agency types (police departments, sheriffs' departments, and state police departments), and regions of the country. See our project final report for a full discussion of the survey research methods.

Following are some of the major findings, policy implications, and recommendations from our national study:

Key Finding: An increasing number of law enforcement agencies are adopting policies requiring officers to wear armor, and many officers report wearing armor in compliance with these requirements.

The current survey provides strong evidence that "mandatory-wear" policies are becoming more prevalent. Specifically, the new survey found that more than 92 percent of officers reported that they are required to wear body armor, either "at all times when on duty" (57%) or "at most times when on duty" (35%). By contrast, the survey completed in 2009 found that only 59 percent of the responding law enforcement agencies required body armor at least some of the time.

Similarly, the current survey found that 78 percent of officers reported that their agency has a written body armor policy. By contrast, the 2009 survey found that only 45 percent of the responding law enforcement agencies indicated that they have a written policy requiring body armor.

These findings, showing increases in "mandatory wear" requirements and in written policies, are perhaps the most significant information obtained through the

new survey, because requiring officers to wear body armor has direct implications for officers' safety. As it happened, the PERF survey described in this report was conducted shortly after Attorney General Eric Holder announced that the Justice Department's Bureau of Justice Assistance (BJA) would begin requiring jurisdictions to have a written "mandatory wear" policy in effect if they wished to obtain federal funding for body armor through BJA's Bulletproof Vest Partnership (BVP) program.⁴ The Justice Department cited an increase in officer deaths in firearms-related incidents in adopting this new requirement.

It is encouraging to note that fatal shootings of officers declined sharply in 2012.⁵ According to the National Law Enforcement Officers Memorial Fund (NLEOMF), which keeps detailed statistics on officers who are killed in the line of duty, there were 49 fatal shootings of officers in 2009, 59 fatal shootings in 2010, and 70 fatal shootings in 2011.⁶ But as of October 30, 2012, there were 36 fatal shootings in 2012, which is a 37-percent decrease compared to the 57 fatal shootings for the same January 1-October 30 period in 2011.⁷

Nearly all officers in our current survey reported that they generally wear body armor when required to do so, obeying the policies either all of the time (88%) or most of the time (11%). Officers overwhelmingly understand the need to wear body armor; 90 percent said that one reason they wear body armor is that it is "critical for safety."

⁴ The Attorney General first announced the new requirements, which applied to FY 2011 BVP grants, in October 2010. Details are available at <http://www.ojp.usdoj.gov/bvpbasi/docs/FAQsBVP MandatoryWearPolicy.pdf> and <http://www.ojp.usdoj.gov/bvpbasi/>. PERF began sending the survey to respondents in October 2010, and data collection continued until May 2011.

⁵ Whether the BVP's "mandatory wear" requirement is a causal factor in the reduction in officer deaths warrants further inquiry.

⁶ <http://www.nleomf.org/facts/officer-fatalities-data/causes.html>

⁷ <http://www.nleomf.org/facts/officer-fatalities-data/>

(Fortunately, a significant majority of officers (73%) said they had never been shot at or involved in other situations⁸ in which their body armor actually protected them from possible injuries.) In addition, 49 percent of responding officers checked “agency policy requires it” as a reason why they wear body armor, and 14 percent cited “family pressure” as a factor in their decision to wear the protective gear.

It is a very encouraging development that a large majority of officers understand that body armor is critical to their safety and that most law enforcement agencies have written policies requiring use of body armor. In addition to safety reasons, officers often cite agency policy as a reason for wearing body armor. These findings suggest that various efforts to highlight officer safety seem to be having the intended effect of increasing armor use.

A number of programs may have contributed to this trend. For example, the U.S. Department of Justice has developed a national training initiative to improve the safety of officers, as part of a program called VALOR (Preventing Violence Against Law Enforcement and Ensuring Officer Resilience and Survivability).⁹ Since 1999, the Justice Department also has run the Bulletproof Vest Partnership (BVP) program, which provides reimbursement for law enforcement agencies that purchase vests that meet certain program criteria.¹⁰ Over 13,000 jurisdictions have participated in the BVP Program, with \$277 million in federal funds committed to support the purchase of an estimated 800,000 vests. Another example is the International Association of Chiefs of Police (IACP) SafeShield initiative, in

⁸ “Other” situations include car/motorcycle accidents, knives and other sharp instruments, punches/kicks, etc.

⁹ See www.bja.gov/ProgramDetails.aspx?Program_ID=99 (Accessed Oct. 18th, 2012)

¹⁰ See www.ojp.usdoj.gov/bvpbasi/ (Accessed Oct. 18th, 2012)

operation since 2002¹¹. SafeShield heightens awareness of the reasons for wearing soft body armor, and promotes the “Vests Save Lives” campaign. Presumably, these educational and training programs, combined with officers’ own knowledge of incidents in which body armor may have saved their own lives or the lives of colleagues, contribute to our finding that 90 percent of officers consider body armor “critical for safety.” Law enforcement agencies should maintain educational and training initiatives regarding body armor and avoid complacency on this issue.

Officers’ reasons for wearing body armor: Our next finding is that few law enforcement agencies appear to have strict disciplinary policies for failing to wear body armor. Less than one percent of officers reported that they had ever received discipline for a body armor violation. Most officers (58%) said they believed that the consequence for failing to wear body armor would be a verbal reprimand; most also felt that a second offense would result in a written reprimand. Only 20 percent said that they believed that a second offense would result in a suspension.

Despite the fact that officers did not believe that failing to wear body armor would result in severe discipline, when officers were asked to estimate how many of the officers in their platoon adhere to body armor policy, more than two-thirds said they believe compliance to be 100 percent, followed by another 28 percent who estimated compliance at 76 to 99 percent.

11

See <http://theiacp.org/About/Governance/Divisions/StateAssociationsofChiefsofPoliceSACOP/CurrentSACOPPProjects/SafeShieldProject/tabid/464/Default.aspx> (Accessed Oct. 18th, 2012)

Our interpretation of these data is that to a very large extent, officers have self-discipline about adhering to mandatory wear policies, presumably because they have the high level of understanding that body armor is critical to their safety. This is not to suggest, however, that a mandatory policy to support such use is not important. A shift to mandatory-wear policies over time may have contributed to the increased recognition by officers in the field of the importance of body armor, making strict enforcement less necessary.

Implications and Recommendations: Law enforcement agencies should maintain educational and training programs on the importance of wearing body armor, and should maintain or adopt policies requiring officers to wear body armor.

Inspections of body armor: Despite the overall positive trend in officers' wearing of body armor, we believe that law enforcement agencies should include periodic inspections of officers' body armor as part of their overall officer safety program. While more than 90 percent of officers felt that patrol leadership was supportive of wearing body armor, only about 30 percent of the officers said that their agency conducts inspections to ensure that they are wearing body armor. And only nine percent of officers said their agency conducts inspections to ensure proper maintenance of body armor.

Significantly, among officers who said that their agency was "very supportive" of body armor use, the use of inspections and the existence of a written policy were most often cited as their reasons for believing their agency strongly supported body armor use.

Implications and Recommendations: Law enforcement agencies should conduct inspections to ensure that officers are wearing, and are properly maintaining, body armor.

Body armor comfort levels: Next, our survey showed that officers are hopeful that manufacturers will be able to improve the comfort of body armor. Most officers hope that the next generation of body armor will have “improved comfort” (85%), followed by “improved fit” (73%) and “reduced weight” (64%). **This suggests that for most officers, a potential obstacle to regular use of body armor is that it can be bulky and uncomfortable to wear.** This finding should be considered when police agencies are choosing among various brands and types of body armor to purchase for officers. **When different brands of armor offer comparable levels of protection, it may be advisable to involve line officers to a significant extent in making judgments about which armor is most comfortable.**

More than half of the survey respondents were satisfied with the fit of their current body armor, but they were more likely to be satisfied if both the manufacturer and police agency representatives were involved in the process of fitting the armor. Thus, our survey suggests that officers would appreciate greater attention to the fitting process.

Implications and Recommendations: Agencies should make body armor comfort a consideration in future body armor acquisition decisions, to the extent that equal levels of protection are provided by different brands or models of armor, and should involve officers in the process of evaluating body armor where possible.

Proper storage of body armor: The survey included a series of true-false questions designed to test officers’ knowledge of facts pertaining to body armor design and maintenance procedures. On the positive side, the survey revealed that large majorities of

officers—between 89 and 99 percent— understand that body armor is not designed to last indefinitely, that it generally cannot be relied upon to stop rifle bullets, that it should be replaced if it is penetrated by a bullet, that it should not be laundered with standard detergent in a washing machine, and that it should not be stored in the trunk of a car.

However, there is room for improvement. The survey revealed that a substantial number of officers do not care for and maintain their armor according to optimal storage recommendations of leading manufacturers, possibly increasing the likelihood of its performance degradation.

For example, many body armor manufacturers stress the importance of optimally storing body armor flat. It is possible that storing armor on a standard clothes hanger, while deemed acceptable to some manufacturers, could allow the ballistic panels to bunch and create folds, and also allow the elastic straps to stretch beyond their memory point.

Our survey found that 56 percent of respondents keep their body armor in their locker between shifts, and the hanging of body armor on standard clothes hangers occurs more often in urban law enforcement agencies, where cramped facilities and small storage lockers may be an obstacle to the proper storage of armor. Thus, police executives should not only instruct officers to store body armor properly, but also should ensure that proper storage is practicable in their facilities. New configurations of lockers or other storage facilities may be required. It is suggested that law enforcement executives contact their individual body armor manufacturers to determine the optimal method of storage, because recommended methods can vary.

There are no universal professional standards regarding “best practices” for body armor care emphasizing storage practices. NIJ has produced informative guides in the past

that focused on the purchasing process, cleaning practices, and other related body armor issues (for example, see NIJ Selection and Application Guide to Personal Body Armor Guide 100-01). Our findings point to a need for further training and education of officers regarding certain points of body armor maintenance and care (which should be based upon established recommendations by NIJ and the National Institute of Standards and Technology).

Implications and Recommendations: Law enforcement agencies should adopt policies, training, and education to ensure that officers do not engage in practices that could be counter to manufacturers' recommendations concerning body armor storage. Instead, policies, training, and education should be based upon the recommendations of the agencies' particular body armor manufacturer(s).

Replacement policies and training: Agency support for body armor use is clear in the fact that a large majority of officers (92%) reported that their body armor was supplied to them by their agency. However, there could be a need to more closely examine body armor replacement policies for cases where armor needs to be replaced. More than half (51%) of the officers stated that body armor is not available for immediate replacement if their armor is damaged or lost. Not only does this raise officer safety considerations, it also can weaken officers' perceptions of the level of importance placed by the department on body armor use.

This finding suggests a need for departments to maintain an inventory of body armor in various sizes, rather than requiring officers to wait for long periods of time without armor. Departments may also examine developing alternative or back-up plans

with manufacturers to speed up replacement time or have temporary vests available during the order processing time.

Many law enforcement agencies should consider increased officer training related to proper body armor care and maintenance practices. Although most officers indicated that some sort of body armor training was available, it typically came in the form of literature provided by the armor manufacturer. Moreover, 22 percent of officers said that they had never received any training on the benefits and limitations of their body armor, while 28 percent had never received training on the care and maintenance of their body armor. Given the important knowledge gaps cited above, this is an area worthy of significant attention in the future.

Implications and Recommendations: Many law enforcement agencies need stronger body armor replacement strategies to ensure quick replacement when necessary. Training officers in the use of body armor (beyond reading the manufacturer's literature) is strongly advised.