United States Department of State
and the Broadcasting Board of Governors

Office of Inspector General

MEMORANDUM

TO: DS – Mr. Greg Starr, Acting

FROM: OIG/AUD – Mark W. Duda

SUBJECT: Report on *Concern With the Department's Replacement of Body Armor* (AUD/SI-08-21, Mar. 2008)

In researching potential audit areas, an Office of Inspector General (OIG) team conducted research on the Department's use of body armor. The team collected related documentation and interviewed officials from two units of the Bureau of Diplomatic Security (DS) – the Office of Physical Security Programs, Defensive Equipment and Armored Vehicle Division (DS/PSP/DEAV), and the International Programs, Overseas Protective Operations, High Threat Protection Division. OIG will not be initiating an audit at this time, but it identified one concern, which it wanted to bring to the Department's attention.

DS/PSP/DEAV does not have written policies and procedures that provide detailed guidelines on the inspection and replacement of body armor after the service life of the body armor has expired.[1] Lives could be at greater risk in a firefight or other dangerous situation if the body armor's protective capabilities have deteriorated over the years, particularly in hot and humid climates.

National Institute of Justice Guidance

The body armor purchased by the Department complies with the National Institute of Justice (NIJ) standards.[2] According to the current NIJ Guide 100-01 (Nov. 2001), *Selection and Application Guide to Personal Body Armor*, certain ballistic fabrics lose ballistic-resistant efficiency when wet but return to normal upon drying. NIJ laboratory tests of "non-water-repellent treated vests soaked in water have shown a reduction in ballistic efficiency of more than 20 percent compared to that of dry vests." As stated in the NIJ guide, the cause is unknown, but it is theorized that water acts as a lubricant, allowing the bullet to pass through the fibers more easily.

[1] OIG defines the service life of body armor as expired when the protective capabilities of the body armor no longer meet National Institute of Justice standards.
[2] NIJ is the research, development, and evaluation agency of the U.S. Department of Justice and is dedicated to researching crime control and justice issues.

In addition, as stated in the NIJ guide, laboratory tests conducted by the U.S. Army Natick Research and Development Command verified that body perspiration can also significantly reduce the ballistic efficiency of untreated fabrics. These tests found that an untreated vest will absorb perspiration in amounts comparable to a vest that has been allowed to drain following immersion in water. NIJ states that the vast majority of body armor manufactured today uses materials that are waterproof or water repellant. However, NIJ performs wet tests on all brands of body armor vests it tests to determine whether they provide adequate ballistic protection when exposed to moisture.

Also, ultraviolet light and worn-out areas are known to cause degradation of certain types of ballistic fabric. As stated in the NIJ guide, tests have demonstrated that ballistic efficiency is significantly and adversely affected by exposure to sunlight for extended periods of time. NIJ recommends that each time body armor is washed, it be carefully inspected for any signs of wear. If the thread used to sew layers of protective materials together is wearing badly or the fabric is unraveling, the vest should be replaced. Otherwise, according to NIJ, moisture may enter through the open area of the fabric and penetrate the protective panel, thus temporarily reducing its ballistic-resistant efficiency.

The Department purchases NIJ-approved body armor, including body armor gear that has passed the wet test. However, according to NIJ, a more significant determinate of reliability is the care and maintenance the body armor has received since being manufactured. For example, if armor that is 10 years old has not been worn often, it may still be compliant with NIJ standards. However, if a vest has been worn regularly for two to three years and improperly cared for, it may have deteriorated and may no longer be compliant with all ballistic protection standards.

NIJ guidance recommends that armor be visibly inspected at least once a year for the first five years. If there are signs of excessive wear, NIJ suggests that ballistic efficiency tests be conducted within those first five years. Otherwise, ballistic testing is not necessary until the body armor is five years old.

Department Lacks Inspection and Replacement Guidelines

DS/PSP/DEAV officials told OIG that DS does not have a methodology or requirement for routinely inspecting and replacing body armor vests.[3] Currently, DS/PSP/DEAV supplies replacement body armor vests only upon request or when users attend specific training courses, such as the RSO (Regional Security Officer) In-Service Course or the High Threat Tactical Course. To request replacement of body armor, the user may access DS/PSP/DEAV's website and follow the directions to request new body armor. According to the Division Chief, DS/PSP/DEAV currently has the budget to honor existing body armor requests and has done so in the past. However, according to the same official, a Department-wide data call would likely result in an unprecedented number of replacement requests. DS should be prepared with a methodology to prioritize and work an ensuing backlog.

[3] When body armor is purchased and issued to a user, the user also receives manufacturer's instructions on properly caring for and maintaining it.

According to the Defensive Equipment Program Manager, DS/PSP/DEAV does not have the manpower, budget, or written guidelines to personally inspect the condition of each body armor vest and replace each at the end of its useful service life, nor does the DS official believe DS/PSP/DEAV should take on the responsibility. Rather, he believes body armor inspection should be an individual responsibility. However, DS has not provided written guidelines to emphasize this or reminded individuals who have been issued body armor or are serving as custodians for body armor pools[4] that vests should be inspected annually. Further, DS has no written guidance on how to inspect a garment and properly maintain it.

Immediate Actions Necessary

The NIJ guide provides information on the maintenance, inspection, and life expectancy of body armor. DS/PSP/DEAV should incorporate this information into the Special Protective Equipment Handbook, currently being developed in DS's Office of Management Services, Policy and Planning Division. When issued, this handbook should be made readily available to those individuals issued body armor or serving as body armor pool custodians. It should include procedures for inspecting the body armor vests, identifying deficiencies, and replacing the vests when appropriate. Specifically, the handbook could list key areas of the vest for users to inspect and identify examples of deterioration, especially for those personnel working in countries with excessive heat.[5] Additionally, if DS/PSP/DEAV staff cannot inspect the condition of each vest as often as recommended by NIJ guidelines, it should develop a method (e.g., DS/PSP/DEAV's Special Protective Equipment for RSOs telegram, which is currently being revised and will be distributed to DS field offices and posts worldwide) to remind the users to conduct periodic inspections. As initial steps, DS/PSP/DEAV could add information to its website and include a section on body armor in the Special Protective Equipment for RSOs telegram regarding the maintenance, inspection, and replacement of body armor. The information should also be inserted into the Special Protective Equipment Handbook and eventually be included in the Foreign Affairs Manual and the Foreign Affairs Handbook.

OIG believes that establishing a formal inspection methodology should help to identify and prioritize the replacement and delivery of body armor to those individuals at posts most at risk from small arms fire. Further, DS/PSP/DEAV should begin receiving information from users and custodians regarding their body armor inventory needs. Then DS/PSP/DEAV should highlight its budgetary requirements based upon identified user needs.

> **Recommendation 1**: OIG recommends that the Bureau of Diplomatic Security immediately develop and disseminate written policies and procedures that provide detailed guidelines on the inspection and replacement of body armor vests.

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[4] An example of a body armor pool would be body armor stored at a facility for visitor or emergency use. Responsibility for these vests may be assigned to an overseas post's RSO or other custodian if no RSO is at the facility.

[5] For example, in the summer, temperatures across the Middle East frequently soar above 100º F. Specifically, temperatures in Baghdad can easily reach 120º F, and Basra has reached 124º F (Encarata.com, worldclimate.com, shinesforall.com, and Foreign Service Institute transition center). Excessive heat is the most likely cause of deterioration, other than operational damage; thus it is vital for the vests to be inspected regularly.

Recommendation 2: Within six months after the guidance is issued, OIG recommends that the Bureau of Diplomatic Security conduct an initial assessment to determine immediate vest replacement needs.

Recommendation 3: OIG recommends that the Bureau of Diplomatic Security determine the adequacy of its budget to fill immediate and projected replacement needs and address funding shortfalls as appropriate.

As the cognizant bureau, please provide information on actions taken or planned on these recommendations within 30 calendar days of the date of this memorandum. Actions taken or planned are subject to OIG follow-up and reporting in accordance with the attached resolution procedures.

OIG appreciates the cooperation and assistance of your staff. If you have any questions or need additional information, please call me at (202) 663-0372 or Chris DeShong, Director of Security and Intelligence, at (703) 284-2651.

Attachment: As stated.

cc: DS/C – Mr. Patrick D. Donovan, Acting Deputy Assistant Secretary
DS/C/PSP – Mr. Gentry O. Smith
DS/C/PSP – Ms. Linda S. Watts
DS/C/ST – Mr. John Bainbridge
DS/EX – Mr. Stephen J. Mergens
DS/IP/OPO – Ms. Justine M. Sincavage
DS/IP/RS – Jean Duncan
DS/PPB/PPD – Ms. Brenda W. Ferry