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Current Department of Defense Entry Control Point Search Procedures and the Possible Breach of a Combat ECP with a Bioagent; A Preliminary Report of the Perceptions of Military Personnel

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Abstract

The U.S. military has numerous bases scattered all over the globe with these bases increasing following post 9/11 terrorist attack. Like every nation, each base has an Entry Control Point (ECP) with search procedures and practices to deter and prevent breaching. The question is how these various Department of Defense (DoD) ECPs tactics, Techniques and Procedures (TTPs) would, deter or prevent a breach by a terrorist –Human Borne with a Bioagent (HBBA). A cross, survey study was conducted to obtain perceptions from military personnel with combat experience in 2014. Results indicated majority of the respondents stated that these TTPs will not be effective or somewhat effective to identify nor prevent a HBBA terrorist at the ECP. Further analysis tends to indicate that while many of the respondents, strongly agree or agree that some of the TTPs practiced at the "Approach and Access Zones of the ECP would be effective against IEDs, 61.8% of respondents strongly disagree or disagree that the ECP TTP measures at the Approach zones, will be effective against HBBA. In addition, 23.1% were neutral on how "Speed mitigation procedures at the ECP will effectively prevent the breaching of an ECP by a terrorist carrying a BA (HBBA). In conclusion, over 50% of the respondents with combat experiences do not think the current DoD's ECP TTPs are effective in detecting, deterring or destroying a terrorist with a bioagent at the ECP. It will be best for the DoD to revisit its ECPs TTP for possible update, following the bioagents threats and the desire by terrorists group to obtain these agents.

Keywords: DoD; ECP TTPs; Terrorist breach; Bioterrorism, Bioagent; Combat base

Abbreviations

DoD: Department of Defense; TTP: Tactics, Techniques, and Procedures; ECP: Entry Control Point; FOB: Forward Operating Base; HBBA: Human-Borne-with Bioagent; IED: Improvised Explosives Device; BA: Bioagent; PBIED: Person-Borne Improvised Explosive Device; VBIED: Vehicle-Borne Improvised Explosive Device; FP: Force Protection; CBRN: Chemical, Biological, Radiological, Nuclear

Introduction

In order to fulfill their missions in accordance with the directives of the President, the U.S. Military operates numerous bases in foreign countries - some in areas where the nation is actively engaged with enemies who have the desire to do harm to our nation, our allies and our citizens. In order to protect soldiers in the bases, the Department of Defense (DoD) has numerous policies in line with the national strategy and tactics, Techniques and Procedures (TTPs). As in the civilian sector, the military also has biodefense programs such as the Medical Biological Defense program, the Army National Guard WMD Civil Support Team, Biological Threat Reduction programs located in the Defense Threat Reduction Agency (DTRA), and the Biological Warfare Defense Program located in the Defense Advanced Research Projects Agency (DARPA) [1]. All of these programs are involved in various forms of research geared towards direct and indirect biodefense. Since post 9/11, the DoD has been receiving federal funds to execute biodefense programs to assist in combating BT [1,2].

According to Jean [3], "The Defense Department has embarked on a multi-hundred-million dollars effort to protect troops from bioterrorism. It is a strategy focusing on containing potential outbreaks in areas of the world where pathogens are known to exist" [3]. The main question is how effective are these changes, modifications and strategies in deterring or preventing a person from transporting a Bioagent (BA) (either as an intentional incubator or as parcel) to a building, airplane or a military combat post? Are these security measures as effective as those body scanners or body searchers, at the borders, airports, combat Entry Control Points (ECPs) or buildings, for preventing or deterring the transportation of explosives? How effective are the strategies and policies for accomplishing the mission of deterrence, detection, destruction or responding to bioterrorism?

Like the nation, the military have procedures /or measures employed as part of its random antiterrorism TTPs to prevent, react and recover from Person-Borne IED (PBIED) or Suicide-Vehicle or

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Vehicle-Borne IED (SVBIED or VBIED) attempts at breaching the ECP at combat bases [4-6].

Military base defense

Size and numbers of U.S. Military bases on foreign lands: The exact number of military personnel and the numbers of U.S. military bases on foreign soil, especially combat bases, is unknown to the civil society. According to the DoD's Base Structure Report 2010, as at the 2010 fiscal year, there are 662 facilities maintained by the U.S. Military in 38 foreign countries, excluding those in Iraq and Afghanistan [7]. An article by Daniel R. Cobb, claimed that in 2009 the "Pentagon acknowledge maintaining 865 active U.S. military bases in 130 countries outside the U.S." not including bases in Iraq or Afghanistan [8].

General overview of a combat FOB perimeter: In the absent of any easily accessible authentic documentation, the fact remains that, there are combat military bases in foreign countries. Each base, Forward Operating Base (FOB), like every nation has a defense plan, with perimeter defenses and Force Protection (FP) plans [9]. The FP plan dictates the setting of defensive plan among other so as to secure the base. Threat assessment is a must for the battle space with biological threats falling in the Level III category of FOBs threat assessment [9].

Perimeter Force Protection

The perimeter consists of outside and inside walls, and numerous lines of deterrents and some highly sophisticated explosive detection instruments and many other measures that cannot be fully detailed here for obvious reasons, however, suffice it to say, similar to what is observed in every country's port of entry, at certain point on the perimeter are Entry Control Points (ECPs) with measures or TTPs to control access, thus prevent breach by terrorists or other forms of threats.

The location of these bases on enemies' countries makes them highly potential targets by terrorist group(s) for attack, by any means possible. The news networks /media are unrelenting in reporting numerous attempts and successful terrorist attacks and lately, from Afghanistan, killings perpetuated by those that have been "screened and cleared" by the base antiterrorist preventive measures [10,11].

Defending the FOB

Following the recommendation by the 9/11 Commission [12], the military like the nation has included the use of biometric system, strict measures among others, to verified and confirms who is permitted to ingress and egress the combat post. Other physical measures include the building of "HESCO" barriers or T-concrete walls and concertina wired perimeter barriers, to deter unwanted individuals from breaching the base perimeter. To improve visibility and early detection of aerial projectile missiles, combat posts have special surveillance instruments (intrusion detection surveillance systems) to have vision/image -real time -video motion sensors and rocket alarm detectors [4-6].

To gain entrance into a combat base, human or animal must come through specified ECP. Similar to any nations' boarder point, at each point, there are measures in place to identify individuals attempting to gain entrance with explosives, via vehicle, animals or humans. The ECPs are to prevent threats like the suicide-bomber terrorists as PBIED or VBIED. In addition to other FP perimeter measures like barriers, access control, ECP and guard tower watch, internal security measures like Rule of Engagement (ROE), roving patrol and Random Antiterrorism Measures (RAM) are also needed to ensure risk mitigation accommodating random antiterrorism measures [9].

There are three basic ECP functional zones: [4-6,9].

1. Approach Zone: This is the initial space, usually public between the FOB and major public way. It thus constitutes the most avenues employed to approach the FOB and that must be first line or zone of approach best control via Speed management.

2. Access Control Zone: This is the main body of the FOB's ECP. It houses the guards, personnel and vehicle inspections asset and thus site where Vehicle inspection, Personal Body Search and Traffic management / Over watch are conducted. Searches could be random or 100% subject to threat levels and other perimeter factors and FP conditions (FPCON).

3. Response Zone: This is supposed to be the zone that defines the end of the ECP and final denial barrier or gate to the FOB, so, it will be expected to be defended to threat as final stand. Security personnel here have enough time to react and have over watch view to close final gate and response maximally to stop the threat.

The "FOBs perimeter is the first line of defense, while the first priority of an ECP is to maintain perimeter security. The design of an ECP must therefore have security features against vehicle-borne threats and illegal entry" [5]. ECPs are manned by security personnel trained with specific TTPs in order to operate these points to mitigate and prevent terrorist action. Like at every country's port of entry / boarders, TTP includes the searching of persons, vehicles and items, using, physical touch, hand held scanners, metal detectors, dogs and other gadgets (to detect explosive traces) according to protocol [4-6]. While these measures have proved to be effective again explosive-based terrorist devices, how effective would these be against BA or BA `devices?

Problem Statement

Researchers are both combat veterans of the U.S. military conflicts and are unaware of any TTP specific for HB-BA terrorist, capable of detecting or deterring a terrorist with bioagent from breaching a combat post ECP, nor know of any soldier that has been adequately educated at this point, on what a bio-agent would look like or how to react if found at the ECP, observation supported by Alakpa, 2015a, b [13,14]. Though at this time, no HB-BA route of terrorist attack has been documented employed by the enemy against a U.S. military combat post, however a local nationals have being reported with infectious agents having access to the food chain at a FOBs in Afghanistan [15]. The possibility of such a deadly form of attack being employed to threaten the U.S. security and its' forces stationed abroad is very feasible. The purpose of this research thus, is to determine how would current DoD's ECP searches/measure perform in detecting, deterring or degrading a terrorist, especially one with a BA from breaching the base ECP?

Materials and Methods

Research design

This was a cross-sectional survey study, with the administration of a validated five-point Likert scaled questionnaire with two constructs, with Cronbach's alpha reliability of 0.820 and 0.892 for Constructs 1 and 2 respectively15, to respondents in the organizations selected, and conducted with a single-blind approach, ensuring no direct contact between the respondents and investigator. However, in some situations there was direct contact between prospective respondents and the investigator (those willing to participate), and who later offered these respondents hard copies of the questionnaires, along with consent forms. Electronic copies were also sent to respondents who requested the questionnaire and consent forms in electronic format.

Respondents

The target populations selected for this pretest were U.S. military personnel (primary), and other individuals in the security profession (secondary) with combat experience. A total of 110 questionnaires were distributed, to the 13 Point of Contacts (POCs) of willing respondents at eight military installations: a National Guard post, three police stations in Sussex county in NJ, the Veteran's Administration (VA) Security Post at Castle Point, NY, two military/veteran coordinators in NJ Universities, and the U.S. Customs and Borders Office at Newark, NJ.

Data collection

Data from the target population was collected with the validated survey tool. Only those questionnaires that were fully completed, or with no more than four missing items, and in which respondents demonstrated knowledge or training on antiterrorism ECP TTP, were accepted for analysis.

Data analysis

Data collected were analyzed employing the Statistical Product and Service Solution (SPSS) statistical software (Base Grad Pack Shrink wrap version 21.0) for both Descriptive and Scale Reliability-Cronbach's Alpha analysis.

Results

Off the 110 questionnaires disseminated to the 13 POCs for distribution to willing respondents in their different Units, 96 were returned within the consent forms signed and of which, only 26 meet the criteria set and thus constitute the sample size for this study. A limitation that is taken into notices by the authors.

Construct 1: TTP Effectiveness against a terrorist with a biological agent at the ECP

On the effectivity of current various ECP TTPs in detecting, deterring and preventing a (Bioagents) BA breach at ECP breach, 56.0% of respondents believes current ECP will not be effective / or somewhat effective in preventing a terrorist with a biological agent from entry a base at the ECP (Figure 1). On the effectiveness of current IED detection and preventive TTPs, 52% of respondents claimed the current IED TTP will not be effective / or will somewhat be effective in the detection and deterrence of a terrorist with a BA at the ECP of a combat post, with 40%, claiming it will be effective (Figure 1). On the effectiveness of current DoD's CBRN TTPs to detect, deter or stop a BA breach at the ECP, 29.1% of respondents believes current CBRN TTP will be effectively /or very effective to prevent a breach at the ECP with a BA, while 50.0%, thinks, it is either not effective or, it is somewhat effective (Figure 1).

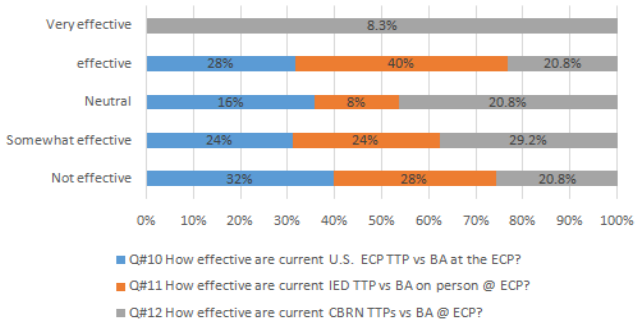

Figure 1: Respondents' perceptions on the effectiveness of current TTPs against bioagents at the ECP.

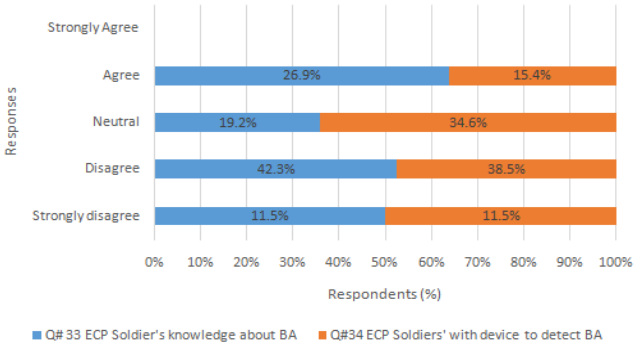

Figure 2: Soldiers at ECP, knowledge about BA and possession of effective BA detection devices.

At the Approach Zone: Speed mitigation measures: Of the 26 respondents' questionnaires accepted and analyzed, 73.1% agreed /or strongly agreed that, the various speed mitigation measures employed at the "Approach Zone" of the combat FOB ECP will effectively prevent any Suicide Vehicle-Borne Improvised Explosive Device (SVIED) or VIED. However, 53.9% strongly disagreed this measure will Prevent A Person-Borne IED (PBIED), but 61.6% of same respondents strongly disagree or disagreed that, this measure will be effective against an HBBA (i.e. person with a bioagent on them) at the ECP.

Construct 2: TTP measures /mitigations at the ECP

At the access zone: A: Vehicle Inspection TTP: With Direct External and interior vehicle search, measures, 94.6% of respondents agrees or strongly agree this procedure will effectively prevent a SVBIED/VBIED breaching the ECP. Over sixty-one percent (61.5 %), also agrees or strongly agrees that this procedure will be effective against PBIED and but only 38.4%, agrees or strongly agreed this procedure will be effective in detecting, deterring a terrorist with a BA from breaching the ECP.

The use of Non-Intrusive Inspection System (NIIS) is agree or strongly agreed to be an effective procedure against SVBIED/VBIED terrorist at the ECP by 65.4% of the respondents. A total of 42.3% agree or strongly agree this TTP will be effective against PBIED

Table 1: Respondent's (in %) perception with some of the FOBs' ECP Anti-Terrorism Measure and Mitigations / Preventive effectiveness Against Possible Terrorist Threat.

ZONES	AT MEASURES	*Majority of Respondents' (in %) perception with various ECP TTP measures vs effectiveness*			KEY
		SVBIED/VBIED	PBIED	HBBA	
A: APPROACH ZONE	Speed mitigation: vehicle light weight arrest devices; spike; "pop-up" or Drop arm barriers	73.1% Agree/Strongly Agree	53.9% Strongly disagree/ disagree	61.6% Strongly Disagree/ disagree	
B: ACCESS CONTROL ZONE	***A: Vehicle Inspection*** - Direct External & interior vehicle search	94.6% Agree/Strongly Agree	61.5% Agree/Strongly Agree	38.4% Agree/Strongly Agree	
	- NIIS eg. Backscatter	65.4% Agree/Strongly Agree	42.3% Agree/Strongly Agree	32.0% Agree/Strongly Agree	NIIS (non-Intrusive Inspection System)
	- MVACIS	76.9% Agree/Strongly Agree	60.0% Agree/Strongly Agree	40.0% Agree/Strongly Agree	MVACIS (mobile Vehicle & Cargo Inspection system)
	B: Personal Body Search - Person verification, using CAC, BISA or BATS	38.4% Agree/Strongly Agree	→	34.6% Agree/Strongly Agree	CAC (Common Access card)
	- Handheld/ Portal metal detectors	80.7% Agree/Strongly Agree	→	61.5% Strongly disagree/ Disagree	BISA (Base Installation System Access)
	- Explosives trace detector spray kits	76.9% Agree/Strongly Agree	→	38.5% Agree/Strongly Agree	BATS (Biometric Automated Tool Set Systems)
	- Coral SD or Opal PBIED detection systems – optical device	60.0% Agree/Strongly Agree	→	40.0% Agree/Strongly Agree 44% Neutral	

breaching the ECP. However, while equal percentage of respondents (32.0%) either strongly disagree or disagree, and another same percentage either agree or strongly agreed that the use of the NIIS will be effective against and HBBA, 36.0% were neutral.

The use of MVACIS (mobile vehicle and cargo inspection system), majority of respondents (80%), either agree or strongly agree this TTP will effective against an SVBIED/VBIED at the ECP. Sixty percent (60%) of respondents agree or strongly agree this procedure will be effective again a PBIED, with just 40% either agree or strongly agree this TTP will be effective against a HBBA terrorist at the ECP.

B: Personal Body Search: The use of Person Verification tool like the Biometric Automated Toolset System (BATS) at the ECP. The percentage of respondents that agree or strongly agree that this procedure will effectively prevent a breach at the ECP by terrorist with an IED, were 38.4%. While 34.6% of the respondents, Agree or Strongly Agree that this TTP will be effective against a breach at the ECP by a terrorist carrying a BA, 30.8% were neutral and 34.6% Strongly disagree or disagree, thus, majority of the respondents do not believe this procedure will be effective against a HBBA terrorist.

The use of Hand-held and portal metal detectors: While 80.7% of the respondents in this study, Agree or Strongly Agree that the use of metal detectors will be effective in the detection and deterrence of terrorist with IEDs, 61.5% Strongly Disagree or Disagree about the effectiveness of the TTP against a terrorist with a BA at the ECP with the intension to breach the perimeter.

The use of explosive trace detectors spray kit: Seventy-Six percent (76.9%) of the respondents agree or strongly agree that employing this measure at the ECP for body search will be effective in deterring and detection of a terrorist with IEDs. However, just 38.5% with Agree or strongly agree, this procedure will be effective against a terrorist with a BA with the intension to breach the ECP.

The use of Coral SD PBIED or Opal PBIED detection system: Sixty percent of respondent in this preliminary study agree or strongly agree that use of the optical device during personal body search will be effective against a terrorist with an IED. Against an HBBA terrorist, 44% of respondents were neutral and 40% Strongly Agree or Agree, this procedure will be effective in the detection and deterrence of an HBBA terrorist at the ECP.

Respondents' knowledge level and possession of BA device while performing duty at ECP (Table 1)

Analysis about soldiers at the ECP's knowledge about bioagents and if they have devices that can effectively detect traces of bioagents borne on person indicated, 53.8% strongly disagree or disagree with the suggestion that soldiers at the ECP are adequately knowledgeable as to know how or what to look out for in terms of bioagent at the ECP (Figure 2). As to if every soldier at the ECP has devices that can effectively detect traces of bioagent borne on a person, 50.0% of respondents Strongly Disagree or Disagree that soldiers at the ECP have such devices (Figure 2).

Discussion

From these preliminary results, especially from Construct 2, it tends to indicate that, none of the current DOD's ECP searches TTPs at the Approach and Access Control Zones will be able to prevent or mitigate a terrorist with a BA from breaching a FOB ECP. In Hylton, 2011[16], it published a case, where a retired military officer as able to successfully breach the White House security with a modified bioagent, while, in an Alakpa, 2015 [15] dissertation, an observation was made in Afghanistan where an Afghan with an infectious agent was able to gain access to the food chain in a combat FOB. Both cases tend to support the preliminary findings of this study, that none of the current ECP TTPs as practiced in combat Area of Operations (AOs) and expressed by these respondents who have recently being deployed, will be able to deter or detect or mitigate a terrorist with a

BA from breaching the ECP. Many of the soldiers, according to the respondents in the study, lack knowledge as to what biological agent is, or what to look for during search procedures. They also lack the device that will detect a terrorist with such agent (Figure 1). Couple with the absence of any specific TTPs or drill, it becomes almost impossible to accept that the current ECP's TTPs will be effective against an HBBA terrorist. A similar observation was inferred from two studies conducted in West Africa [13,14].

Like the nation, the U.S. military has demonstrated its' ability to respond and recover (resilience) from past terrorists attacks, how would these resiliency hold with the aftermath of a well-coordinated multi-BT attacks, especially in a combat post? Biowarfare should not be confused with bioterrorism, a mistake many make by easily dismissing the possibility of the occurrence of the later, despite documentation of bioterrorism incidence pre and post 9-11 globally [15,17].

Only 38.4% strongly agree or agree, that direct external and internal vehicle search can effectively prevent an HBBA at the ECP. Similarly, the 34.6% strongly agree or agree that the use of the BATS (biometric automated toolset system), would effectively prevent an HBBA terrorist from breaching a ECP, however, 61.5%, strongly disagree or disagree that the use of hand held or other metal detector would be effective against an HBBA at the ECP. These are procedures many see commonly at most every port of entry in all countries with a border or even at the sensitive buildings. Could this be why the combat FOB ECP security team was unable to detect a Local National (LN) Afghan man with skin disease serving food to soldiers in a combat base? Could this also be why many anthrax leased letters where able to breach the security process at the U.S. postal and Senate Buildings post 9-11? [18], or the ability of a retired U.S. Air Force Lt. Col to breach the heavy secured "White House" security searches and delivered a modified "bacillus" to the then Vice President of the United State? [16]. Documents abound, about the desire by the Islamic terrorist groups, seeking to obtain BAs in order to cause terror [19,20]. Due to the limitation of sample size of the study, a repeat of this study with large population, in order to determine if there has being any change in the DoD's ECP TTP post the Ebola Virus outbreak, is highly recommended.

In this era of global terrorism, especially Islamic related threats, accentuated by the sophistication of the Islamic State of Syria and Iraq (ISIS), various al Qaeda groups, and second, the increasing dissemination emerging and infectious agents globally by travelers and couple with the fact the, there is an increase in refugee migration, with some of them being implicated in some terrorist acts in Europe, security at the port of entry is becoming highly vulnerable to a HBBA terrorist, like in military combat post, civilian port of entry cannot claim to be equipped with either the bioagent device nor the bioagent trained point of entry security personnel.

Conclusion

Perceptions is usually subjective and time specific, however, when obtained from respondents, who by their training and profession are experts, from both field and practical experiences, then such should be taken seriously. This preliminary study, tend to indicate that current DoD's ECP TTPs are effective against detecting, and deterring terrorist with explosives, but never with a biological agent, as no personnel is equipped with any device nor educated on how to search for biological agents at the ECP. It is the recommendation of the authors, for the military to implement changes in their ECP TTPs to revisit its ECP protocols after a possible of this study with a lager sample size, especially following the Ebola incident and current Zika virus incidence in the U.S. and the fact that, it is well know that, the terrorist groups are actively seeking bioagent to attack the U.S interest.

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