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14. ABSTRACT On July 7, 2005 four bombs exploded on the London mass transit system; three on trains in the London Underground, and one on a double decker bus. The bombings were the worst attack on London since World War II. Five years later, on October 27, 2010, Farooque Ahmed was arrested in Virginia for planning a similar attack on the DC Metro. The DOD possesses capabilities and vast knowledge that can be used to enhance civil authority response to attacks. By leveraging DOD assets, emergency responders can build on the lessons learned from the London bombings instead of repeating the mistakes.					
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MASTER OF MILITARY STUDIES

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ENHANCING DEFENSE SUPPORT OF CIVIL AUTHORITIES WITHIN THE  
NATIONAL CAPITAL REGION

SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF MILITARY STUDIES

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## Executive Summary

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**Title:** Enhancing Defense Support of Civil Authorities within the NCR

**Author:** Major Jonathan P. Graebener, United States Army

**Thesis:** This analysis will examine how the lessons learned from the 2005 London Underground bombings can enhance Defense Support to Civil Authorities within the National Capital Region.

**Discussion:** On July 7, 2005 four bombs exploded on the London mass transit system; three on trains in the London Underground, and one on a double decker bus. The bombings were the worst attack on London since World War II. In the immediate aftermath, emergency responders evacuated the wounded, assessed the damage, and counted the dead. Investigators from all levels of law enforcement, and intelligence personnel began piecing together the bombers preparation, planning, and execution of the attack. Although not all the questions have been answered, many lessons learned have come from the attacks. Five years later, on October 27, 2010, Farooque Ahmed was arrested in Virginia for planning a similar attack on the DC Metro. The Department of Defense possesses many capabilities and vast knowledge that can be used to enhance civil authority response to attacks. By leveraging DOD assets, emergency responders can build on the lessons learned from the London bombings instead of repeating the mistakes.

**Conclusion:** The use of DOD assets will enhance civil authority response to catastrophic emergencies within the NCR. Leveraging the US Military's expertise in training, planning, and wartime medical experience will assist civil authorities as they prepare and execute their mission of homeland security.

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Public transportation's efficiency, affordability, and convenience serve as one of the most popular methods of travel in the United States, as well other developed nations. However, high passenger volume and relatively low security also make public transportation an easy target for terrorist organizations.

London - July 7, 2005: The worst bombing the city had seen since World War II occurred when members of the Secret Organization of Al Qaeda in Europe, attacked the London Underground System. The Government's response was quick and efficient, and trains were running the next day. Contributing to the immediate response was Great Britain's experience with the ongoing conflicts with Northern Ireland; the London Subway and the Government were prepared for terrorist attacks on public transportation.

This paper will take an in-depth look at the response to the London Subway Bombings, and a recent terrorist plot to bomb the DC Metro in Washington D.C. These episodes suggest that the Department of Defense must provide training, simulations, and subject matter expert assistance to civil authorities to better prepare emergency responders for an attack against public transportation in the National Capital Region (NCR).

### **The Plan**

Four men unknown to Britain's law enforcement and intelligence officials carried out attacks on the London Subway in 2005. Mohammed Sadique Khan, Shehzad Tanweer, and Hasib Hussain were all British natives and Muslim by birth. Jermaine Lindsay, a convert to Islam, was born in Jamaica and moved to the United Kingdom when he was one year old.<sup>1</sup> Although all four men came from relatively stable backgrounds, investigators believe radicalization of the terrorists occurred sometime between 2001 and 2003.<sup>2</sup> According to the official report, Khan and Tanweer conceived their plan after returning from a three-month visit

to Pakistan in November 2004.<sup>3</sup> According to investigators Khan and Tanweer may have met with members of Al Qaida and received training during their visit.<sup>4</sup> Their plan included a base of operations, reconnaissance, operational security, application of the principles of war, financing and technical expertise. In addition, the planners knew that intelligence and law enforcement agencies focused their efforts on external threats.

To plan and prepare for the operation, the men chose a location relatively close to London where they could work and blend in with their surroundings. They chose a, "modern ground floor flat" (18 Alexandra Grove) in Leeds, England; about three hours north of London, and sub-leased it from a student at Leeds University.<sup>5</sup> The location provided ideal cover because of the large student and Muslim population in the community.

To prepare for the operation, the suspects used reconnaissance to choose their objective and confirm ingress and egress routes and conditions on the objective prior to the assault. Reconnoitering of the objective took place on at least two separate occasions. Evidence confirmed that at least one of the bombers conducted reconnaissance of the target area in March 2005, and closed-circuit television camera (CCTV) footage afterwards identified Khan, Tanweer, and Lindsay at the Luton Rail Station in Bedfordshire on June 28, 2005 presumably conducting a final reconnaissance of their objectives.<sup>6</sup>

The bombers superior use of operational security throughout the planning phase allowed them to elude both the law enforcement and intelligence communities. Despite relatively minor infractions of the law, the four men blended in as average citizens. Additionally, they understood their operational environment and the cultural aspects of the local community, as they easily blended into the Muslim neighborhoods in Leeds.

The four bombers used the principles of war in the planning and execution of their operation.<sup>7</sup> Specifically, their use of surprise and simplicity assisted the group in overcoming challenges presented by a robust national intelligence apparatus, an effective law enforcement community, and force protection measures in place for years in preparation for any attacks by the Irish Republican Army (IRA). Their general lack of previous terrorist experience also contributed to their reduced danger of detection (See Appendix A for a discussion about how the bombers compensated for their lack of experience).

To combat terrorism, national security organizations attempt to identify the terrorist organizations center of gravity, critical capabilities, critical requirements, and critical vulnerabilities. For example, to execute the London Underground bombings (critical capability), the group (center of gravity) needed money (critical requirement/critical vulnerability).<sup>8</sup> Usually the movement of large amounts of money through banks, the internet, or via credit cards creates a critical vulnerability because law enforcement officials can track and seize suspicious monies. This analysis becomes ineffective when the critical vulnerability does not adhere to standard norms, which was the case in the 2005 Bombings.

The *Official Account* estimates the cost of bomb making material, rental cars, travel, and rent for the residence at 18 Alexandria Grove at about \$12,000.<sup>9</sup> Compared to the attacks on the World Trade Center on 9/11 which cost \$400,000 to \$500,000 to execute, the London operation was relatively inexpensive.<sup>10</sup> In addition, the group was self-financed using money earned at jobs, loaned from banks, and advanced via credit cards.<sup>11</sup> None of the purchases were identified by law enforcement officials prior to the bombings. The incremental purchases and use of mostly personal funds added to the stealth of the operation. Clearly the “inexperienced” bombers knew how the UK security organizations tracked terrorists and were able to prepare and

plan without much suspicion. Although not mentioned in the *Official Report*, many extremist Islamic charity organizations have operated within England for years, raising money for Jihad against the West, and could have easily supported Khan and his team in the operation.<sup>12</sup>

Although trained, Khan, Tanweer, Hussain, and Lindsay were not experienced terrorists. However, their use of a base of operations, reconnaissance, operational security, application of the Principles of War, and financing techniques indicates they did have technical support and planning guidance from someone who was experienced. The *ISC Report* states:

The extent to which the 7 July attacks were externally planned, directed or controlled by contacts in Pakistan or elsewhere remains unclear. The [Intelligence] Agencies believe that some form of operational training is likely to have taken place while Khan and Tanweer were in Pakistan. Contacts in the run-up to the attacks suggest they may have had advice or direction from individuals there.<sup>13</sup>

In today's world of high speed internet and global communications, the bombers could have easily used a number of different forms of communication to receive the information or guidance that they needed. This becomes more likely when examining the type of explosives used.

According to investigators, the bombs were made of a dangerous and highly unstable combination of peroxide-based chemicals.<sup>14</sup> The bombers knew which chemicals to purchase, how to weaponize them, and how to configure the material into man-portable bombs that fit into backpacks. These are not the skills that inexperienced people would have gained without outside assistance, thus creating these bombs without technical support seems highly unlikely.

Following most terrorist attacks, governments ask themselves "How did we not know this was going to happen?" To address such concerns, since 9/11 the United States and United Kingdom dedicated effort and money to create agencies and processes to prevent terrorist attacks within their borders. Britain's Intelligence and Security Committee's official *Report into the London Terrorist Attacks of 7 July 2005* dedicates an entire chapter to answer whether "...was

any Intelligence Missed or Overlooked?"<sup>15</sup> The report analyzed the information provided in the *Official Account* into associates of the bombers, who publicly took responsibility for the attack, the plan for the attack, detainee reporting from outside of the country, and reports from sources working for the intelligence organizations.<sup>16</sup> Upon review of available information following the bombings, the Intelligence and Security Committee (ISC) realized, Khan and Tanweer were tertiary subjects of an investigation in 2004 linking them to suspected terrorist activities within the UK.<sup>17</sup> However, the UK intelligence community did not realize this prior to the bombings, because their focus was on Islamic extremists outside of the UK's borders and not on a homegrown terrorist threat.<sup>18</sup>

### **London Attacked**

Early on the morning of July 7, as the G8 summit was about to start another day at Gleneagles, Scotland, the four suspects met at Luton Rail Station. Carrying rucksacks, rigged with five pounds of explosives each, the men moved unnoticed through the rail station to board a train to London.<sup>19</sup> As Khan, Tanweer, Hussain, and Lindsay reached their dispersal point at King's Cross; CCTV captured the men together on their way to the London Underground. Eyewitnesses report that the four men were seen hugging and then separated. According to the *Official Account*, "...Khan must have gone to board a Westbound Circle Line train, Tanweer an eastbound Circle Line train and Lindsay a southbound Piccadilly Line train. Hussain also appeared to walk towards the Piccadilly Line entrance."<sup>20</sup>

Through forensic evidence and eyewitness reports, the seventeen minutes that elapsed from when the four perpetrators were last seen on CCTV to the time of the explosions paints a picture of what occurred on the trains just prior to the blasts. Tanweer, aboard the Eastbound Circle Line, was sitting in the rear of second car (from the front of the train).<sup>21</sup> Seen adjusting

something in his backpack just before the blast, Khan was also seen on the second car from the front on the Westbound Circle Line just before Edgware Road.<sup>22</sup> Lindsay, riding in the first car, traveled on the Picadilly line approaching Russell Square.<sup>23</sup>

At 8:50 AM, three explosions at three different locations nearly simultaneously ripped through the London Subway System. According to the *Official Account*, "...the first [explosion] in a Circle Line tunnel between Liverpool Street and Aldgate stations, the second [explosion] on the Circle Line just outside Edgware Road and the third [explosion] in a Piccadilly Line tunnel between King's Cross and Russell Square."<sup>24</sup> The devastation caused by the explosions was evident by the number of killed and injured at each location. Tanweer's bomb killed eight people and injured 171, Khan's killed seven and injured 163, and Lindsay's killed 27 and injured over 340.<sup>25</sup> All three men died in the blasts and it is believed that they detonated the bombs themselves.

Five minutes after the three explosions, Hussain exited the Kings Cross Underground Station, and attempted to contact the other three bombers by cell phone.<sup>26</sup> Although investigators do not know why Hussain did not detonate his bomb in the Underground, they believe his bomb malfunctioned because he stopped to buy a 9-volt battery at a nearby kiosk.<sup>27</sup> Between 9:19 AM and 9:47 AM, witnesses saw Hussain on an overcrowded # 30 Double Decker Bus. Witnesses saw Hussain adjusting something inside his backpack just prior to the blast which occurred at 9:47 AM on the upper deck of the bus.<sup>28</sup> The blast, which occurred at Tavistock Square, near Russell Square, killed 14 people and injured over 110.<sup>29</sup>

### **Emergency Response**

Unlike the United States, where the state and local emergency responders are responsible for disaster management, the United Kingdom's system for emergency response is the

responsibility of the central government. In 1973, the United Kingdom created the London Emergency Services Liaison Panel (LESLP) that included, "Metropolitan Police Service, City of London Police, British Transport Police, the London Fire Brigade, the London Ambulance Service and local authorities."<sup>30</sup> The purpose of the LESLP was to ensure coordination amongst the various organizations responsible for emergency services and to establish a command and control (C2) structure for responses to attacks within the Capital city. The panel developed a system that designated C2 responsibilities to three distinct levels of command: Gold, Silver, and Bronze.<sup>31</sup> The color coded levels represent strategic, operational, and tactical levels of command and exist within each emergency response function. To further enhance response to emergencies, the government created the London Regional Resilience Forum (LRRF), who amongst other functions, develops scenarios and conducts emergency response exercises.<sup>32</sup>

Within minutes of the first blasts, authorities were notified and emergency responders moved to the locations of the bomb sites. Despite the catastrophic outcome of the bombings, the quick response was considered crucial to preventing further loss of life and damage to infrastructure. Aiding to the quick response was the LESLP command and control system and previous emergency response exercises conducted by the LRRF. In September 2006, the LRRF published their review on the response to the London bombings and cited many actions that directly contributed to the successful management of the incidents. Key actions taken by officials and responders included a pre-planned chain of command, evacuation of the Underground by employees, prompt shut-down of bus and Underground service, quick establishment of mortuary operations, and availability of bed space at local hospitals.<sup>33</sup> In addition to individual acts of heroism and the dedication of the men and women involved in the response; prior planning, coordination, and emergency response exercises were also contributors

to minimizing further injury and destruction. This reaction force included over 240 personnel and 42 trucks from the London Fire Brigade; and 400 personnel and over 200 vehicles from the London Ambulance Service.<sup>34</sup>

### **The Investigation**

Within minutes of the first three explosions, London police deployed to the scene of the explosions and a law enforcement command and control cell, already in place for the ongoing G8 Summit, began coordinating incident response.<sup>35</sup> Initial reports indicated the disruption to rail service was due to various reasons including a power surge, suspicious packages, and explosions.<sup>36</sup> Indicative of the confusion within the first 60 minutes of the first three explosions, was the Metropolitan Police press office statement, "This has been declared as a major incident. Too early to state what has happened at this stage."<sup>37</sup> By 9:30 am, England's national crisis management facility, the Cabinet Office Briefing Rooms (COBR), stood up and began gaining situational awareness and coordinating emergency response efforts.<sup>38</sup>

By 10:55 am, government officials officially announced that the explosions resulted in mass casualties and that public transportation in London would not continue operations pending further development of the situation.<sup>39</sup> Still unknown to authorities was the exact cause of the explosions. By noon on July 7, 2010, evidence suggested that the London Underground had experienced a terrorist attack. After the official announcement by the Prime Minister, internet postings by Muslim extremist groups claimed responsibility for the attack.

As emergency responders continued to sift through the damage and treat the casualties of the attack, investigators began their search for those responsible. By 11:40 pm, less than 24 hours after the attack, identification cards found at the Aldgate bombing site identified Mohammed Sadique Khan and Shehzad Tanweer as persons of interest.<sup>40</sup> On July 9, 2005, a

third person of interest, Hasib Hussain, was linked to the bombings and was connected to an address at 18 Alexandria Grove.<sup>41</sup> By the next day, police investigators received information that Hussain, Khan and Tanweer travelled together to London on July 12, 2005, and police searched the homes of the three individuals including the residence at 18 Alexandria Grove and received a report of four men putting on backpacks next to two cars at the Luton Station.<sup>42</sup>

As the investigation into the bombings continued to unfold, police linked the three explosions in the London Underground to the bus explosion at Tavistock Square. Investigators reviewed the CCTV from July 7, 2005, and identified four men (including Tanweer) at the Kings Cross and later at Luton Station.<sup>43</sup> At the Luton Station one of the two cars police were looking for was found in the parking lot. Inside one of the vehicles, police found home-made explosive devices.<sup>44</sup> The second car, having been subsequently towed, was found and investigators traced the registration to Jermaine Lindsay.

By the end of the investigation, the evidence identifying Khan, Tanweer, Hussain, and Lindsay as the bombers was overwhelming. Included in the evidence was DNA of the four men discovered at each blast site, forensic evidence linking Khan, Tanweer and Hussain to the suspected bomb factory at 18 Alexandria Grove, explosives found in the vehicle at Luton Station, CCTV footage of the four men at Kings Cross and Luton Station, eyewitness reports of Hussain working on something in his rucksack and then buying a 9 volt battery, and Khan's video on Al Jazeera and will indicating he was going to become a martyr through terrorism.<sup>45</sup>

### **Lessons Learned**

Since the 2005 London Subway bombings, the UK government along with other nations around the world, have studied the event and critically evaluated many aspects of the incident from intelligence collection to emergency responder performance in the aftermath of the event.

Most material available through open source media focuses on national level systems improvement throughout the British Government to prevent future terrorist attacks. This paper focuses on lessons learned as they pertain to the emergency response, specifically in the DC area.

To focus the many lessons learned from the multiple reports following the bombing, this paper uses the US Military Warfighting functions to categorize the main points, specifically command and control, maneuver, and sustainment.

Although the overall command and control of the London incident was successful, many shortfalls were identified in the months following the blast. These shortfalls included an inadequate permanent C2 facility, and over reliance on cell phone communication.<sup>46</sup>

The Strategic Coordination Center, which managed the response to the bombings, was located in Hendon, North London. Prior to the bombings, some efforts were made to prepare the location for use as a C2 facility in case of emergency; however on July 7, 2005 it was far from adequate.<sup>47</sup> The facility was not built to accommodate the amount of people that needed to use it and lacked sufficient resources for sustained operations. Additionally, the location was difficult to get to by the representatives of the various emergency response agencies due to the gridlock that ensued in the days following the blasts.<sup>48</sup>

Within the National Capital Region (NCR), emergency response planners must consider traffic congestion during a major incident. Traffic congestion following a terrorist attack poses serious risk not only in command and control, but also providing emergency response. A snowstorm in January 2011 virtually shut down every route leading into and out of the District of Columbia (DC) and many suburban areas. DC Council Member Phil Mendelson commenting on the 2011 DC snow storm stated:

In the fall of 2001 [just after the attacks on the Pentagon] we sat around this dais and we vowed that we were going to fix the gridlock of the transportation network, and that this

wasn't going to happen again. The discussion here today sounds very much like we're talking about the response to a snowstorm, rather than the fact that we have a serious national security problem. That snowstorm was a blueprint for how a terrorist organization could shut down the region.<sup>49</sup>

Even after implementation of lessons learned following the 9/11 attacks on the Pentagon and disastrous snow storms in 2010, the NCR still does not have an effective means of controlling traffic and communicating real-time events to the public at large.

The most important area that concerned the LRRF in the after action report, was the telecommunications network -- specifically a dependence on cell phone usage by response agencies.<sup>50</sup> The forum found that although the mobile phone network did not shut down, the extreme strain on the system due to high call volume severely degraded the system.<sup>51</sup> Mobile phone communications in the wake of the 9/11 attacks on the Pentagon were also an issue for emergency responders. The Arlington County *After-Action Report on the Response to the September 11 Terrorist Attack on the Pentagon*, states that all elements of emergency response (Fire Department, Hospitals and Clinics, Law Enforcement) experienced degradation in mobile phone connectivity.<sup>52</sup> During a catastrophic event, whether natural or manmade, communication networks must exist and be resilient to aid in the command and control of operations. Additionally, alternate means of communication must exist in the event today's cell phone systems fail. Emergency responders must expect a disruption to cell phone service during a major event and have a robust communication network planned and prepared before the incident occurs.

After any terrorist attack, forces must secure the area before follow-on services can accomplish their respective missions. Maneuver forces such as police, contractor security, military, and other specially trained personnel like chemical response teams must be prepared to provide the site security. Typically these forces set up a security perimeter (also known as a

cordon) around the area, determine if a threat still exists, confirm or deny if any chemical, nuclear or biological substance threat is present, and look for any perpetrators linked to the incident. Two security areas of improvement that the LRRF commented on in its report were confusion at the cordons and the integration of chemical, biological, nuclear, radiological, and high yield explosive (CBRNE) teams.<sup>53</sup>

Security was obviously at an all-time high after the bombings on the London Underground, especially around the specific areas of the blasts. Although the immediate priority was to aid the wounded, officials could not ignore efforts to prevent further damage and possible follow-on explosions by secondary devices. Since three of the four explosions took place underground, additional specialties had to be used to assess the damage. These include electricians, public work officials, engineers, and myriad of other personnel that needed access to the bomb sites. Unfortunately, some of these key people were either not expected or unknown to the security officials providing the cordon around the blast sites, and the confusion hindered the progress of the response.<sup>54</sup>

Along with the physical security personnel, CBRNE Teams deployed to the areas to determine if any CBRNE were used in the bombs. Although no substances were found, the London Bombings identified deficiencies in the employment of the CBRNE Teams. These deficiencies included confusion by on-scene commanders on how to determine if an unknown bomb contained CBRNE; degraded equipment due to dust and smoke; communication of CBRNE status of patients arriving at supporting hospitals; and, lack of a by-name list of personnel involved in rescue operations.<sup>55</sup> Attention beforehand to each one of these identified weaknesses could have had a different outcome, if implemented into training scenarios prior to the blast (further discussion will occur later in this analysis).

One of the more difficult areas of emergency disaster planning includes handling a mass casualty (MASCAL) event. Mortuary affairs planning for a MASCAL situation dealing with a terrorist event requires immediate access to on-hand resources, pre-planned locations to establish temporary mortuaries, specialists to conduct identification and autopsies, and a high level of sensitivity. The UK government had recently approved a Mass Fatality Plan for disasters in March 2005; and it was this plan that emergency responders executed on July 7.<sup>56</sup> However, issues surrounding the plan began to develop in the days following the attack.

The cornerstone of the Mass Fatality Plan was establishing the temporary mortuary at military sites within the London Metropolitan Area. The “Resilience Mortuary” was established at the Honourable Artillery Company (HAC); which turned out to be owned by a private company.<sup>57</sup> Overlooking this detail caused some confusion establishing the mortuary in a timely manner because a contract had to be created, agreed to and signed in order to use the site. The oversight took officials months to rectify afterwards. Additionally, there was no prescribed chain of command amongst the coroners responsible for the conduct of the mortuary. The coroners involved did manage to work through these details, but more through unity effort than unity of command. Mission critical equipment was also not on-hand and had to be borrowed from the Association of Forensic Radiographers.<sup>58</sup> Lastly, the Mass Fatality Plan had not been communicated to all parties involved in mortuary affairs.<sup>59</sup>

The LRRF’s critical inquiry and comprehensive report into the conduct of the response by the many agencies involved provides valuable insight into emergency response planning. The response to the July 7, 2005 London Subway Bombings was not perfect, but it was effective. The United Kingdom arguably had the most comprehensive emergency response planning and interagency coordination in the world, but still there were lessons learned. Additionally, after the

September 11, 2001 World Trade Center Attack, the British government had made vast improvements not only in their planning but also to their intelligence community. Despite all the effort, the bombers, four unknowns from within England's borders, were still capable of planning and executing the worst bombing in London since World War II.

### **DC Metro: A Potential Target**

The United States has long relied on the vast oceans to the east and west, and stable neighbors to the north and south to ensure its homeland security. September 11, 2001, changed that perception in a blink of an eye. By the time the second World Trade Center crumbled, the United States government and its people knew that their country was vulnerable. The US enacted new laws, created agencies, and fought wars to try and restore the confidence in the citizenry that the United States was safe from terrorism. Nine years and two wars later, the US government continues to achieve its goal of avoiding another 9/11. So why should Americans be concerned that four bombs exploded in the London Underground on July 7, 2005?

On October 27, 2010, Farooque Ahmed, a resident of Ashburn, Virginia, was arrested for planning terrorist attacks at multiple Metrorail Stations on the DC Metro. Ahmed, originally born in Pakistan, later became a naturalized US citizen. According to The Federal Bureau of Investigation (FBI), he was charged:

...with attempting to provide material support to a designated terrorist organization, collecting information to assist in planning a terrorist attack on a transit facility, and attempting to provide material support to help carry out multiple bombings to cause mass casualties at D.C.-area Metrorail stations.<sup>60</sup>

The *Official Indictment* provides a glimpse of the influence the London Bombings had on Ahmed. Ahmed's plan recommended placing bombs on trains at three Metrorail stops near Arlington Cemetery and the Pentagon during the afternoon rush hour to kill as many civilian and military service-members as possible.<sup>61</sup> Incorporating lessons learned from the London attacks,

Ahmed recommended using "...rolling suitcases...instead of backpacks."<sup>62</sup> The indictment also indicates that Ahmed was willing to collect money in the name of charity to fund jihad overseas.<sup>63</sup> Ahmed also shared many similarities with the London bombers: he allegedly has ties to Pakistan, holds citizenship in the US, worked with Al Qaeda, and targeted mass transit. The FBI's Washington Field Office (WFO) continues to investigate the bomb plot. Although still under investigation, the planned bombing of the DC Metro serves as a reminder to the vulnerability of mass transit and the need to be prepared for a London-style attack.

In addition to DC Metro's strategic location within the Nation's Capital and high volume of government employees, its chronic mismanagement also makes for an easy target by terrorist organizations. DC Metro has come under continued scrutiny since the train collision in June 2009 killed nine people.<sup>64</sup> In December 2010, Tri-State Oversight Committee (TOC) issued its *2010 Triennial Safety and Security Review (TSSR)* of the DC Metro. Although heavily redacted, the review identifies three key areas in DC Metro's Emergency Management Program and seven key areas in the Security and Emergency Preparedness Plan that are either deficient or areas of concern.<sup>65</sup> These areas, directed by the Federal Transportation Agency (FTA) in 2005, cover the basics for implementation, sustainment, and assessment of emergency management plans and programs.<sup>66</sup> Comparatively the 2007 TSSR of the DC Metro reported only one deficiency in the area of Emergency Management, indicating degradation in emergency management preparedness over the past three years.<sup>67</sup> Continued neglect by DC Metro in areas of safety and security will make the system a lucrative target for future terrorist organizations.

The October 2010 DC Metro Bomb Plot, serves as only one example of the increasing terrorist threat facing the United States. Dr. Walid Phares, Advisor to the Anti-Terrorism Caucus in the US House of Representatives, wrote recently, "...between 2001 and 2008, U.S. agencies

stopped one or two terror attempts a year...from 2009 until today, the government has been uncovering one or two cases a month.”<sup>68</sup> This represents a twelve-fold increase, adding further stress on the US law enforcement and intelligence communities. The probability that a successful terrorist attack will occur also becomes more likely. In his book, *American Jihad The Terrorists Living Among Us*, notable militant Islamic investigative journalists warns, “We [the United States] are still vulnerable...We have a window of opportunity to prevent further devastation. But the window won’t be open for long.”<sup>69</sup>

### **National Response Framework**

Like the United Kingdom, the US increased the planning and preparation for response to terrorist attacks following the attacks on 9/11. This included the creation of the Department of Homeland Security (DHS), Director of National Intelligence (DNI), and a 50% budget increase for defense and homeland security.<sup>70</sup> To provide a basis for unified emergency response, DHS created the *National Response Framework* (NRF) to serve as the “play book” on how the national government would respond to man-made and natural disasters within the United States. The NRF’s purpose, “...is intended to capture specific authorities and best practices for managing incidents that range from the serious but purely local, to large-scale terrorist attacks or catastrophic natural disasters.”<sup>71</sup> Unlike the top-down command and control system the UK implemented for emergency management, the US uses a bottom-up approach. Under the NRF, local authorities maintain responsibility for emergency management, and when necessary, request resources from state and federal governments to augment capabilities. The Department of Defense (DOD) plays a key, but supporting role under the NRF.

Although the NRF did not exist on 9/11 when terrorists crashed an airliner into the Pentagon, the response by local, state, and federal agencies serves as a good example of the

challenges posed by the US bottom-up approach to emergency response. The Pentagon, located in Arlington County, VA, poses a complex scenario in which multiple agencies have jurisdictional authority depending on the emergency. In case of fire, jurisdiction belongs to the Arlington County Fire Department (AFCD), but in the case of a terrorist act, jurisdiction belongs to the Department of Justice (DOJ) and FBI.<sup>72</sup> According to the *After Action Report on the Pentagon*, "These complex jurisdictional and organizational relationships tested the coordination and relationships of everyone involved."<sup>73</sup> To overcome these challenges, the AFCD and FBI agreed on a phased approach to overall incident command of the emergency response. Encompassing three phases, incident command belonged to the AFCD for phase one (fire and rescue), FBI for phase two (criminal investigation), and DOD for phase three.<sup>74</sup> Throughout the operation, DOD provided Defense Support of Civil Authorities (DSCA).

Had there been an attack on the DC Metro, civil authorities would have had to call on all assets at their disposal to manage the crisis, including the DOD. Although the DOD stands ready to provide DSCA, DOD involvement in domestic emergency response is not automatic. Title 10 requires that active duty military forces operating within the United States must have authority from the President of the United States (POTUS) and Secretary of Defense (SECDEF).<sup>75</sup> As outlined in the *Robert T. Stafford Disaster Relief and Emergency Assistance Act*, amended in June 2007,

...the Governor of the State in which such incident occurred may request the President to direct the Secretary of Defense to utilize the resources of the Department of Defense for the purpose of performing on public and private lands any emergency work which is made necessary by such incident and which is essential for the preservation of life and property.<sup>76</sup>

In some incidences, it may be impossible for state Governors to issue a formal request for Federal assistance as in the case of a nuclear attack. In such cases, the NRF allows for a "proactive national response to a catastrophic incident."<sup>77</sup> This provision allows the DOD to

deploy their capabilities to local and state authorities in response to a major terrorist event, like a bombing on the DC Metro, without POTUS or SECDEF approval.

Within the framework set out in the NRF, DOD assets, even when requested; remain under command and control of the combatant commander.<sup>78</sup> The United States Northern Command (USNORTHCOM), located at Peterson Air Force Base, Colorado, serves as the DOD command headquarters for homeland defense. After 9/11, USNORTHCOM established the Joint Force Headquarters – National Capital Region (JFHQ-NCR) to further enhance readiness of the DOD to provide defense support of civil authorities and to maintain a permanent presence within the NCR.<sup>79</sup> The JFHQ-NCR maintains a permanent headquarters located at Fort McNair, DC, and when authorized by National Command Authority, through USNORTHCOM, can transition to a Joint Task Force.

The DOD possesses capabilities that local or state emergency responders are not trained or equipped to handle. Capabilities like rotary and fixed wing aviation assets, technical rescue teams, and mobile communications platforms. Additionally, the DOD has over nine years of experience in dealing with blast injuries, improvised explosive devices (IED), post blast forensic analysis, and mass casualty events due to the wars in Afghanistan and Iraq. By leveraging the experience and capabilities of the DOD, civilian authorities in the NCR can enhance response capabilities to attacks like the foiled DC Metro.

## **Conclusions**

As discussed previously in the analysis, the success and failures of the London Subway Bombing response was due in large part to the exercise programs developed by the LRRF. The JFHQ-NCR hosts similar inter-agency exercises for emergency responders within the NCR. Capital Shield, JFHQ-NCR's capstone inter-agency exercise held annually, "facilitate[s] the

interoperability and cross-talk between JFHQ-NCR and Components, the National Guard, National Capital Region Medical-Joint Task Force (JTF-CAPMED) and the Inter-Agency to develop linkages that can be used for future readiness.”<sup>80</sup> The exercise involves training of emergency responders in a field environment located at Lorton, VA and also exercises command and control functions at Fort McNair, DC. According to Army Major Cory Wright, JFHQ-NCR Exercise Planner, the exercise incorporates regionally focused scenarios including National Special Security Events (NSSE) such as the State of the Union Addresses and Presidential Inaugurations.<sup>81</sup> Only since 2006, the exercise has incorporated terrorist-related events such as detonations of IED’s and vehicle-borne improvised explosive devices (VBIED).<sup>82</sup> Incorporating a scenario into Capital Shield like the London Underground Bombings in 2005, would better prepare emergency responders for a similar event in the DC Metro. The scenario should not only include emergency responders from the local, state, and federal level, but also employees of DC Metro. London Underground employees played a pivotal role in evacuating personnel in the minutes following the explosion. Other factors to include in the scenario must include communication plans and location of C2 nodes.

Simulations can also play an important role in assisting the DOD and civilian emergency responders in the planning for a potential DC Metro terrorist event. By leveraging DOD simulations support through the JFHQ-NCR and NORTHCOM, civilian agencies can gain better situational guidance, as well a crisis response coordination and timeliness of decision making under stress, regarding where to locate C2 nodes, casualty collection points, effects on transportation, and force requirements. Additionally, conducting a virtual exercise requires less manpower, can cover many more scenarios and causes less disruption to the local populace.

In addition to training exercises and simulations, medical personnel play a key role in responding to an emergency in a crisis situation. In the event of a terrorist attack on the DC Metro, local medical personnel would respond in accordance with the NSF and standing memorandums of understanding (MOU). As casualties begin to grow, a request may be submitted for augmentation of medical personnel from the DOD. The JTF-CAPMED, takes part in the annual Exercise Capital Shield and their personnel can fulfill requests for support to civilian authorities. Military medical personnel took part in the London Subway Bombings as well. An article written in the *Journal of the Royal Army Medical Corps*, recommends that military and civilian medical personnel frequently conduct exchange programs to enhance not only medical skills, but also to enhance support in inter-agency emergency response operations.<sup>83</sup> US Military medical personnel possess the experience and qualities that casualties of terrorist attacks will need. Their extensive knowledge of medical areas such as blast and traumatic brain injuries, along with leadership experience will play a role in the response. According to Army Colonel Marilyn Brew, Deputy Surgeon of JFHQ-NCR, "... [JTF-CAPMED has active exchange programs] with local hospitals, fire and emergency medical services, and emergency preparedness planners at the local, state, and federal (Health and Human Services) levels."<sup>84</sup> Although DOD personnel would not be the lead agency in a London-style bombing, an exchange program with local civilian hospitals increases the knowledge and skill set of civilian medical personnel to respond to complex and deadly attacks.

The DOD has many other capabilities not mentioned in this analysis that would benefit civilian emergency responders. For example, focusing on the three key areas in which the US Military excels: training, planning, and medical response, gives a glimpse into the benefits of leveraging DSCA. Often times the DOD's capabilities only becomes available after the incident

occurs, and when local, state, or Federal agencies request their support. Local and state officials have always been apprehensive in requesting support of the US Military within the country's borders. Likewise, the US Military has always been apprehensive in getting involved in domestic issues. The gap between civil authorities and the military must be bridged for effective response to catastrophic emergencies. By taking a proactive approach the gap will narrow and mutually supporting benefits of working together will be recognized.

## APPENDIX A

The purpose of Surprise, as defined by *Joint Publication 3-0*, "...strike[s] at a time or place or in a manner for which the enemy is unprepared... Factors contributing to surprise include speed in decision-making... effective intelligence... OPSEC; and variations in tactics and methods of operation."<sup>85</sup> Most terrorist attacks achieve surprise because perpetrators have the initiative, but in the case of the London bombers, their employment of the contributing factors ensured mission success. The reason the contributing factors were used so efficiently was that the plan of attack was simple. As mentioned previously, the four bombers were relatively unknown to the law enforcement and intelligence community. By all accounts they were also relatively inexperienced. To overcome this inexperience the plan was kept simple. *Joint Publication 3-0* defines simplicity's purpose as, "... [Preparing] clear, uncomplicated plans and concise orders to ensure thorough understanding... Simplicity and clarity of expression greatly facilitate mission execution in the stress, fatigue, and other complexities of modern combat and are especially critical to success in multinational operations."<sup>86</sup> Replacing the terms "multinational operations" with "personnel with various experience levels" makes the purpose provided by *Joint Publication 3-0* more relevant to the use of simplicity by the London bombers when analyzing the attacks. The bombers understood that to be successful they had to keep things simple to overcome their inexperience. Throughout military history commanders have used simplicity to overcome shortfalls in the experience levels of their subordinates, but only when the commanders themselves had the experience to recognize the shortcoming.

Notes:

<sup>1</sup> House of Commons, *Report of the Official Account of the Bombings in London on 7th July 2005*, (London, UK: House of Commons, 2006), 17, [www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf](http://www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf) (accessed December 13, 2010).

<sup>2</sup> *Ibid.*, p. 15.

<sup>3</sup> *Ibid.*, p. 22.

<sup>4</sup> *Ibid.*, p. 20.

<sup>5</sup> *Ibid.*, p. 22.

<sup>6</sup> *Ibid.*, p. 24.

<sup>7</sup> U.S. Department of Defense, *Joint Operations*, JP 3-0 (Washington, DC: Joint Chiefs of Staff, December 17, 2006), II-2. According to JP 3-0 the nine principles of war are Objective, Offensive, Mass, Economy of Force, Maneuver, Unity of Command, Security, Surprise, and Simplicity.

<sup>8</sup> U.S. Department of Defense, *Department of Defense Dictionary of Military and Associated Terms*, JP 1-02 (Washington DC: U.S. Department of Defense, April 12, 2001), 67, 116, 117-118. The terms Center of Gravity, Critical Capability, Critical Requirement, and Critical Vulnerability refer to the Joint Doctrinal definitions found in JP 1-02.

<sup>9</sup> House of Commons, *Report of the Official Account of the Bombings in London on 7th July 2005*, (London, UK: House of Commons, 2006), 23, [www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf](http://www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf) (accessed December 13, 2010).

<sup>10</sup> National Commission on Terrorist Attacks, *9/11 Commission Report* (New York: Barnes and Noble Publishing, 2004), 172.

<sup>11</sup> House of Commons, *Report of the Official Account of the Bombings in London on 7th July 2005*, (London, UK: House of Commons, 2006), 23, [www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf](http://www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf) (accessed December 13, 2010).

<sup>12</sup> J. Millard Burr and Robert O. Collins, *Alms for Jihad* (New York: Cambridge University Press, 2006), 256-262.

<sup>13</sup> Intelligence and Security Committee, *Report into the London Terrorist Attacks on 7 July 2005*, (London, UK: Intelligence and Security Committee, 2006), 12, <http://www.official-documents.gov.uk/document/cm67/6785/6785.asp> (accessed December 13, 2010).

<sup>14</sup> *Ibid.*, p. 11.

<sup>15</sup> *Ibid.*, p. 1.

<sup>16</sup> *Ibid.*, p. 11-16.

<sup>17</sup> *Ibid.*, p. 14.

<sup>18</sup> *Ibid.*, p. 25-26.

<sup>19</sup> House of Commons, *Report of the Official Account of the Bombings in London on 7th July 2005*, (London, UK: House of Commons, 2006), 3, [www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf](http://www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf) (accessed December 13, 2010).

<sup>20</sup> *Ibid.*, p. 4.

<sup>21</sup> *Ibid.*, p. 5.

<sup>22</sup> *Ibid.*

<sup>23</sup> *Ibid.*

<sup>24</sup> *Ibid.*, p. 2.

<sup>25</sup> *Ibid.*, p. 5.

<sup>26</sup> Ibid.

<sup>27</sup> Ibid.

<sup>28</sup> Ibid., p. 6.

<sup>29</sup> Ibid.

<sup>30</sup> London Regional Resilience Forum, *Looking Back Moving Forward: The Multi-Agency Debrief, Lessons Identified and Progress Since the Terrorist Events of 7 July 2005*, (London Regional Resilience Forum: 2006), 53, <http://www.londonprepared.gov.uk/downloads/lookingbackmovingforward.pdf> (accessed December 13, 2010).

<sup>31</sup> London Emergency Services Liaison Panel, *Major Incident Procedural Manual*, Seventh Edition, (London: The Stationary Office, 2007), 21, [http://www.leslp.gov.uk/docs/Major\\_incident\\_procedure\\_manual\\_7th\\_ed.pdf](http://www.leslp.gov.uk/docs/Major_incident_procedure_manual_7th_ed.pdf). (accessed January 4, 2011).

<sup>32</sup> London Regional Resilience Forum, *Looking Back Moving Forward: The Multi-Agency Debrief, Lessons Identified and Progress Since the Terrorist Events of 7 July 2005*, (London Regional Resilience Forum: 2006), 3, <http://www.londonprepared.gov.uk/downloads/lookingbackmovingforward.pdf> (accessed December 13, 2010).

<sup>33</sup> Ibid., p. 3-4.

<sup>34</sup> London Regional Resilience Forum, *Addressing Lessons from the Emergency Response to the 7 July 2005 London Bombings*, (London Regional Resilience Forum: 2006), 22, [http://www.londonprepared.gov.uk/downloads/homeoffice\\_lessonslearned.pdf](http://www.londonprepared.gov.uk/downloads/homeoffice_lessonslearned.pdf) (accessed March 1, 2011).

<sup>35</sup> House of Commons, *Report of the Official Account of the Bombings in London on 7th July 2005*, (London, UK: House of Commons, 2006), 7, [www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf](http://www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf) (accessed December 13, 2010).

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Ibid.

<sup>40</sup> Ibid., p. 8-9.

<sup>41</sup> Ibid., p. 9.

<sup>42</sup> Ibid., p. 10.

<sup>43</sup> Ibid.

<sup>44</sup> Intelligence and Security Committee, *Report into the London Terrorist Attacks on 7 July 2005*, (London, UK: Intelligence and Security Committee, 2006), 11, <http://www.official-documents.gov.uk/document/cm67/6785/6785.asp> (accessed December 13, 2010).

<sup>45</sup> House of Commons, *Report of the Official Account of the Bombings in London on 7th July 2005*, (London, UK: House of Commons, 2006), 11-12, [www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf](http://www.official-documents.gov.uk/document/hc0506/hc10/.../1087.pdf) (accessed December 13, 2010).

<sup>46</sup> London Regional Resilience Forum, *Looking Back Moving Forward: The Multi-Agency Debrief, Lessons Identified and Progress Since the Terrorist Events of 7 July 2005*, (London Regional Resilience Forum: 2006), 5-10, <http://www.londonprepared.gov.uk/downloads/lookingbackmovingforward.pdf> (accessed December 13, 2010).

<sup>47</sup> Ibid., p. 5.

<sup>48</sup> Ibid.

<sup>49</sup> National Capital Region Transportation Planning Board, "TBP Briefed on Briefed on MATOC Role in January 26 Winter Storm," *TPB News* 8, no. 8 (March 2011),

<http://www.mwco.org/uploads/pub-documents/ol5FVlw20110304074814.pdf> (accessed March 10, 2011).

<sup>50</sup> London Regional Resilience Forum, *Looking Back Moving Forward: The Multi-Agency Debrief, Lessons Identified and Progress Since the Terrorist Events of 7 July 2005*, (London Regional Resilience Forum: 2006), 6, <http://www.londonprepared.gov.uk/downloads/lookingbackmovingforward.pdf> (accessed December 13, 2010).

<sup>51</sup> Ibid.

<sup>52</sup> Arlington County, *After-Action Report on the Response to the September 11 Terrorist Attack on the Pentagon*, (Arlington, VA: Arlington County Board), A-34, B-7, C-19, C-38.

<sup>53</sup> London Regional Resilience Forum, *Looking Back Moving Forward: The Multi-Agency Debrief, Lessons Identified and Progress Since the Terrorist Events of 7 July 2005*, (London Regional Resilience Forum: 2006), 10-12, <http://www.londonprepared.gov.uk/downloads/lookingbackmovingforward.pdf> (accessed December 13, 2010).

<sup>54</sup> Ibid., p. 10-11.

<sup>55</sup> Ibid., p. 11-12.

<sup>56</sup> Ibid., p. 14.

<sup>57</sup> Ibid., p. 45.

<sup>58</sup> Ibid., p. 15.

<sup>59</sup> Ibid., p. 14.

<sup>60</sup> Department of Justice, "Virginia Man Arrested for Plotting Attacks on D.C.-Area Metro Stations with People He Believed to Be al Qaeda Members" (Washington, DC: US Department of Justice, Office of Public Affairs, October 17, 2007), <http://washingtondc.fbi.gov/dojpressrel/pressrel10/wfo102710.htm> (accessed January 23, 2011).

<sup>61</sup> US District Court for Eastern District of Virginia, *United States of America v. Farooque Ahmed* (Alexandria, VA: US District Court for Eastern District of Virginia, October 2010), 4, <http://www.scribd.com/doc/40259471/INDICTMENT-DOCUMENT-Man-arrested-for-plotting-attacks-on-D-C-area-Metro-stations> (accessed March 2, 2011).

<sup>62</sup> Ibid.

<sup>63</sup> Ibid., p. 3.

<sup>64</sup> National Transportation Safety Board, "NTSB Cites Track Circuit Failure and WMATA'S Lack of a Safety Culture in 2009 Fatal Collision" (Washington, DC: National Transportation Safety Board, NTSB News, July 27, 2010), <http://www.ntsb.gov/Pressrel/2010/100727c.html> (accessed March 2, 2011).

<sup>65</sup> Washington Metropolitan Area Transit Authority, *2010 Triennial Safety and Security Review* (Washington, DC: Tri-State Oversight Committee, 2010), 268-269, 258-260, <http://www.tristateoversight.org/pdf/program/TOC%202010%20Triennial%20Review%20Final%20Report.pdf> (accessed March 2, 2011).

<sup>66</sup> Department of Transportation, "Resource Toolkit for State Oversight Agencies Implementing 49 CFR Part 659," (Washington, DC: Federal Transit Authority, April 2005), [http://transit-safety.fta.dot.gov/publications/sso/Imp\\_Guidelines/toolkit/html/ResourceToolkit.html#chapter3](http://transit-safety.fta.dot.gov/publications/sso/Imp_Guidelines/toolkit/html/ResourceToolkit.html#chapter3) (accessed March 5, 2011).

<sup>67</sup> Washington Metropolitan Area Transit Authority, *2007 Triennial Safety and Security Review* (Washington, DC: Tri-State Oversight Committee, 2007), 25-27, <http://www.tristateoversight.org/pdf/program/TOC%202007%20Triennial%20Review%20Final%20Report.pdf> (accessed March 21, 2011).

<sup>68</sup> Walid Phares, "The Ashburn Jihadist Signals a Greater Danger," *WashingtonTimes.com*, November 10, 2010, <http://www.washingtontimes.com/news/2010/nov/5/the-fbis-arrest-of-farooque-ahmed-of-ashburn-va-fo/?page=1> (accessed March 1, 2011).

<sup>69</sup> Steven Emerson, *American Jihad: The Terrorist Living Among Us* (New York: Free Press, 2002), 25.

<sup>70</sup> National Commission on Terrorist Attacks, *9/11 Commission Report* (New York: Barnes and Noble Publishing, 2004), 327, 361, 411-415.

<sup>71</sup> Department of Homeland Security, "National Response Framework" (Washington, DC: US Department of Homeland Security, January 2008), i.

<sup>72</sup> Arlington County, *After-Action Report on the Response to the September 11 Terrorist Attack on the Pentagon*, (Arlington, VA: Arlington County Board), A-20.

<sup>73</sup> *Ibid.*

<sup>74</sup> *Ibid.*

<sup>75</sup> For more information on U.S. Code Title 10, visit the U.S. House of Representatives website. [http://uscode.house.gov/download/title\\_10.shtml](http://uscode.house.gov/download/title_10.shtml).

<sup>76</sup> Department of Homeland Security, *Robert T. Stafford Disaster Relief and Emergency Assistance Act, as Amended, and Related Authorities*, (Washington, DC: Federal Emergency Management Agency, June 2007), 28, [http://www.fema.gov/pdf/about/stafford\\_act.pdf](http://www.fema.gov/pdf/about/stafford_act.pdf) (accessed March 2, 2011).

<sup>77</sup> Department of Homeland Security, "National Response Framework" (Washington, DC: US Department of Homeland Security, January 2008), 42.

<sup>78</sup> *Ibid.*, p. 11.

<sup>79</sup> Mr. Egon Hawrylak, Deputy Commander JFHQ-NCR, various discussions with author, June 2009 – June 2010.

<sup>80</sup> Joint Force Headquarters – National Capital Region, Exercise Capital Shield 2011, <http://www.mdw.army.mil/capitalshield/index.htm>

<sup>81</sup> Major Cory Wright, JFHQ-NCR Exercise Planner, email to the author, January 11, 2011.

<sup>82</sup> *Ibid.*

<sup>83</sup> SA Bland and others, "Military Perspective on the Civilian Response to the London Bombings July 2005," *Journal of the Royal Army Medical Corps* 152, No. 1 (March, 2006), [http://www.ramcjournal.com/past\\_06.html#top](http://www.ramcjournal.com/past_06.html#top) (accessed January 23, 2011).

<sup>84</sup> Colonel Marilyn Brew, JFHQ-NCR Deputy Surgeon, email to author, February 17, 2011.

<sup>85</sup> Joint Chiefs of Staff, *Joint Operations*, JP 3-0 (Washington, DC: Joint Chiefs of Staff, December 17, 2006), A-3.

<sup>86</sup> Joint Chiefs of Staff, *Joint Operations*, JP 3-0 (Washington, DC: Joint Chiefs of Staff, December 17, 2006), A-3.

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