Organizing and Training for Combat CBRNE Hazards

BG James B. Burton and COL F. John Burpo

Operation Eagle Claw – An Ad Hoc Solution Failure. In April of 1980, an event of utmost strategic importance spectacularly failed for the entire world to see, bringing embarrassment to the United States, unease to our allies, and celebration to our adversaries. Iranian television continuously showed the charred remains of blackened American corpses of Americans victoriously flaunted during ensuing press conferences. Eight Americans died without ever being engaged by enemy forces in an operation that was aborted long before it was close to its objective.

Operation Eagle Claw aimed to rescue fifty-three Americans in two locations in the heart of Tehran who had been taken hostage in the 1979 Iranian Revolution. This complex operation integrated operators from the Navy, Army, Marines, Air Force, different intelligence agencies, forty-four aircraft from the different services, thousands of gallons of fuel, and a convoy of vehicles for insertion into a hostile city of over four million people. Forward reconnaissance had marked two locations in the desert, known as Desert One and Desert Two, for aircraft to land. Fix winged C-130 aircraft from the Air Force, loaded with the rescue force and fuel bladders, would rendezvous with Navy helicopters piloted by solo Marines at Desert One where they would conduct refuel operations without illumination. From Desert One, the eight helicopters would ferry the rescue force to Desert Two on the outskirts of the city where vehicles would be covertly staged to begin the infiltration early in the morning to the locations harboring the hostages. Expecting a firefight once the Iranians became aware of the rescue attempt, helicopters would arrive at a nearby soccer stadium to exfiltrate the hostages and rescue force to a nearby airport seized by Army Rangers so that a second fleet of fixed wing transports could fly everyone to freedom.1
Leading up to Operation Eagle Claw, the teams involved from the different services and agencies had never operated together or conducted a full mission rehearsal. Mission command confusion and mission complexity contributed to cancelling the overall mission, and the crash between a transport plane and helicopter causing American deaths and abandonment of equipment and sensitive information in the Iranian desert. The services brought specialized, functional, stove-piped organizations together and “built an airplane in flight” that crashed at Desert One. General McChrystal later commented that, “At best, the plan was a series of difficult missions, each a variable in a complex equation. At worst, with an ad hoc team, it called for a string of miracles.” The resulting failure would forever change the way the United States approached organizing, training, and resourcing special operations.

This paper examines the 20th CBRNE Command’s efforts to organize, train, and resource for Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) operations in order to achieve the Nation’s WMD and CBRNE objectives, and avoid ad hoc organizational and mission failures similar to Operation Eagle Claw. Given the nexus of ideology, technology and CBRNE materials employed by state and non-state actors, the 20th CBRNE Command offers that WMD may be better viewed as a subset of the more encompassing term CBRNE, which better reflects anticipated mission sets and serves as a broader lens for force employment. The future operational environment and recently-published strategic guidance demand organizing the Army’s CWMD and CBRNE forces, and regionally aligning them in preparation to execute their critical mission sets. In order to evaluate the effectiveness of employing multi-functional CBRNE formations, the Command developed and implemented a CBRNE task force concept to synchronize the synergistic capabilities of our Chemical, Biological, Radiological, and Nuclear (CBRN) and Explosive Ordnance Disposal (EOD) forces. The CBRNE task force concept is undergoing continual evaluation at the Combat Training Centers (CTCs) to identify critical gaps and challenges. To better identify and develop solutions to those capability gaps, the CTCs also serve as a focal point to assemble the CBRNE enterprise’s senior leadership as part of the 20th CBRNE Command’s “Scientists in the Foxhole” initiative, an immersive experience to better inform the scientific research, technology acquisition, and policy formulation that enables these forces. Ultimately these efforts serve to better organize, train, and resource the Nation’s scarce CBRNE assets.

**Background.**

Taking the political landscape of 1980 and applying it to today, one would be hard pressed to find a more politically charged, no-fail mission than countering Weapons of Mass Destruction (CWMD). Nearly every strategic guidance document published identifying threats to the United States and its allies highly prioritizes countering Weapons of Mass Destruction (WMD) as a clear danger as known
adversaries continue to pursue these types of capabilities.\textsuperscript{3,4} Whether it is criminals, terrorists, or nation states, “Increased access to expertise, materials, and technologies heightens the risk that these adversaries will seek, acquire, proliferate, and employ WMD.”\textsuperscript{5}

\textit{Operational Environment.} With today’s unprecedented global interconnection and the ease of access and distribution of information, threat technology and employment methods are much harder to contain, track, and therefore, counter. Regular and irregular forces, criminals, refugees and others intermingle and interact internationally across traditional lines. While WMD may illicit the notion of nuclear or chemical weapons, many CBRNE hazards are commercially available, easily procured, and when coupled with a delivery means, can have devastating effects. No longer are WMD, and more broadly Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE), threats and hazards the sole purview of nation states. In addition to a broad range of readily available conventional weapons, state and non-state actors can select from an array of affordable technologies that can be adapted in unconventional ways. They will use CBRNE capabilities to shape the operating environment to inflict casualties, create conditions to deter or defeat entry operations, and erode public allied or coalition support, and the basic will to fight.

\textbf{Challenges.}

Numerous organizations exist across the national security enterprise studying the CWMD problem set, many with different definitions of WMD but all with the same objectives of preventing its development, use, and preparing for consequence management. The American public expects that its government and national security enterprise is trained and organized correctly to meet this vast and complex threat. There is an expectation of rapid coalescing of capabilities to defeat, contain or respond effectively to CBRNE threats to protect US interests. To apply the lessons learned from Operation Eagle Claw, we must ensure that military forces and interagency partners responsible for confronting WMD, and more broadly CBRNE threats and hazards, are not ad hoc groups of functional, stove-piped organizations coming together when dire situations dictate, but rather, an integrated force continually training for and organizing appropriately to respond.

\textbf{WMD / CBRNE Terminology.} The Department of Defense currently defines WMD as “chemical, biological, radiological, or nuclear weapons capable of a high order of destruction or causing mass casualties and exclude the means of transporting or propelling the weapon where such a means is separable and divisible from the weapon.”\textsuperscript{6} However, there is an increasing recognition of the expanded scope and impact of CBRNE threats and hazards. A recently published CWMD White Paper by the Army Capabilities Integration Center states “the Army's approach to CWMD is consistent with the DOD
definition and includes the expanded scope of explosive threats resulting in a high order of destruction. This full range of chemical, biological, radiological, nuclear and explosive (CBRNE) threats and hazards is representative of the combined arms approach for future force capabilities development.”

In addition to broadening the scope of explosive yield considered, the full range of CBRNE threats and hazards is recommended as a broader umbrella concept for organizing, training, resourcing, and employing forces, where the WMD mission space exists as a subset of CBRNE. Including the range of low-to-high explosives to holistically characterize the current and future range of threats and hazards better captures the subset of critical tasks that Explosive Ordnance Demolition (EOD) Soldiers perform in operations including unexploded ordnance disposal to improvised explosive device (IED) defeat. These perspectives are drawn from the lessons learned from the Fukushima nuclear disaster in 2012 and multiple explosive attacks, to include: the 1993 New York City bombing of the World Trade Center; the 1995 Oklahoma City car bombing of the Murrah Federal building; the 1996 truck bombing of the Khobar Tower military complex in Saudi Arabia; the October 2000 boat bombing of USS Cole; and the April 2013 Boston Marathon bombing.8

To further illustrate this point, the explosives in the form of jet fuel, when coupled with the delivery means – an airplane – quintessentially illustrated a terrorist delivered CBRNE event on September 11, 2001 with mass effect that would not otherwise be formally characterized as WMD by the joint definition. “Whether or not the definition of WMD, or a definition of CWMD, will eventually include explosives, it is appropriate to acknowledge that future solutions developed in response to CWMD capabilities requirements should consider cross-utility for such things as explosives detection and forensic analysis of trace chemical residue. Any analytical capability developed for CBRN applications should consider the chemical nature of explosives as part of the requirement.”9 With this expanded CBRNE/WMD working definition and perspective, state sponsored nuclear and chemical WMD’s are considered here as a subset under the broader umbrella concept of CBRNE threats and hazards. While difficulty in the acquisition, development, and delivery of threats increases from Chemical to Biological to Radiological to Nuclear, with low-yield explosives remaining cheap and easy, accelerating technological advancement will enable greater ease in the development and employment of not only single threat types, but also more complex hybrid CBRNE threats delivered in parallel or serial within a given area of operations. In the same manner in which the 9/11 terrorists were able to couple innovative delivery means with a combustible fuel, we must anticipate unique and coupled delivery of multiple elements of the CBRNE threat spectrum. Improvised explosive devices are likely to remain a pervasive tactical threat, with the ability to be increasingly tethered to other CBRNE components. Regardless, the simultaneous presentation of CBRNE threats within an area of operations requires unity of command and
unity of effort of special purpose, highly technical forces to appropriately synchronize an effective response. Ad hoc solutions will not work.

Solution.

20th CBRNE Command. The 20th CBRNE Command comprises the majority of Forces Command’s active component EOD and CBRN unit capability, and these units are currently organized functionally under three O-6 Commands. The Command’s mission requires that the 20th CBRNE Command deploy to support unified land operations and perform mission command for Army and/or Joint CBRN and EOD Forces to achieve National CWMD, Homeland Defense, and Defense Support to Civil Authorities (DSCA) objectives, while providing globally responsive CBRN and EOD forces to combatant commands. In support of the mission, the current functional organization of the command does not capitalize on overlapping CBRN and EOD mission areas or core capabilities, nor were any of the subordinate formation’s efforts focused to any specific global region. The distributed nature of the command across 16 states and 19 installations creates inefficiencies in the execution of mission command, impacts negatively on readiness, and leads to ad hoc solutions when considering how to best resource emergent contingencies that call for the employment of EOD and CBRN forces.

The Command recognizes that to operate effectively across the CBRNE spectrum, we must broaden the historically singular view of the 20th CBRNE Command as focused only on CWMD and CIED, to one that is available for employment across the full range of CBRNE threats and hazards and across the full range of military operations. Rather than viewing the operational environment through a narrow CWMD lens, analyzing problems through a wider CBRNE perspective, better illuminates challenges, and opportunities, and leverages the full capability of the Command. Recent deployment of the 20th CBRNE Command’s Area Medical Lab capabilities in support of Operation United Assistance Ebola response illustrates an example of force employment that would have been precluded based on a strictly WMD employment mindset.

Establishing unity of command, defining clear objectives, and employing maneuver to capitalize on the flexible application of power are battle proven remedies for complex challenges. Reorganizing the 20th CBRNE Command into three multi-functional, regionally focused CBRNE Brigade Task Forces ensures the Army has the ready, reliable and globally responsive CBRNE capabilities to meet the challenges of the current and future strategic environments. The 20th CBRNE Command proposes to meet the challenges of the rapidly changing strategic environment, as well as the intent of the Quadrennial Defense Review (QDR) and the directives of the Army Strategic Planning Guidance (ASPG) by task organizing the functionally organized EOD and CBRN units into three multi-functional CBRNE Brigade

...
Task Forces, with each task force enabled with robust CBRNE planning and coordinating expertise and technical reach back capabilities.\textsuperscript{10,11}

Whether for training, contingency operations, or as an enduring organizations, task organization into three, regionally aligned, multi-functional CBRNE Brigade Task Forces ensures that these forces are properly organized, focused, positioned and prepared to respond globally to ever-evolving CBRNE threats. This adjustment to mission command immediately delivers more flexible and capable regionally focused CBRNE forces; mitigates the challenges of historical ad hoc solutions to similar and anticipated future mission sets, and overcomes the Command’s current unity of command and unity of effort challenges resulting from our widely distributed basing construct and complex mission profiles. For the supported commander, it solves the problem of disparate command and support relationships of CBRNE forces throughout the formation by assembling them under a single commander and integrated staff.

**Regional Alignment of CBRNE Task Forces.** The CBRNE Task Force (TF) concept packages trained and ready forces bringing the CBRNE mission set under one commander; thus, increasing mission command and reducing the hallmark ad hoc relationships of Operation Eagle Claw. Each CBRNE Brigade Task Force is regionally aligned with the Army Service Component Commands, and in support of the three CONUS-based Corps in accordance with the Army’s regional alignment of forces concept.\textsuperscript{12} Task Force 71 (CBRNE) is positioned in the Western U.S., and is aligned in support of I Corps with a focus on the United States Pacific Command area of responsibility (AOR). TF 48 (CBRNE) is positioned in the central U.S. in support of III Corps and is focused on the U.S. Central Command, Africa Command, and European Command AORs. TF 52 (CBRNE) is positioned in the Eastern U.S. and aligned with XVIII Airborne Corps in support of their Global Response Force mission.

Task organizing and regionally focusing the 20\textsuperscript{th} CBRNE Command’s subordinate formations improves readiness through unity of command, unity of effort, and increased “train as you intend to fight” familiarity between 20\textsuperscript{th} CBRNE and supported forces. By focusing our efforts regionally and aligning in support of the Army Service Component Commands, through the three Army Corps, we are better prepared to fulfill our expeditionary mission requirements without relying on traditional ad hoc solutions. Through task organization, our leaders, Soldiers, and Civilians are better informed about their potential primary operational environment, and are better able to train habitually with their supported maneuver formations, thus increasing interoperability, while examining specific regional threats, from current combat operations, to the range of threats found across the combatant commands.

**Training - CBRNE Task Forces at the Combat Training Centers.** To test the task force concept, CBRNE battalion task forces have been scaled and tailored to support brigade combat teams during 9 rotations during fiscal years (FY) 14 and 15, with additional rotations planned for FY16. Both CBRN and EOD battalions have served as the integrating staffs under which CBRN, EOD, CBRNE Response Teams
(CRTs), nuclear disablement teams (NDTs), and expeditionary laboratories have been assembled. Task forces can be scaled and tailored across a range of possible contingency operations (Figure 1). These mission-tailored CBRNE task forces provide the supported commander a “single point of touch” to plan and execute interrelated CBRNE mission sets, allowing for effective mission command of technical forces on CBRNE target sites.

In order to increase training realism, the 20th CBRNE Command has collaboratively worked with both the National Training Center (NTC) and Joint Readiness Training Center (JRTC) to build an array of new CBRNE target sites. With equipment transfers from Oak Ridge National Laboratory and other interagency partners, these targets replicate an unprecedented degree of CBRNE training realism. When mission sets and training objectives warrant the employment of CBRNE task forces, the training relationships and lessons learned are invaluable to operationalizing the force and serve as foundational to future concept development.

**Resourcing - “Scientists in the Foxhole” and Advanced Technology Demonstration.** Given the 20th CBRNE Command’s multiple proponents including the CBRN School, EOD Directorate, and U.S. Army Nuclear and Combatting WMD Agency, that oversee interrelated CBRNE force doctrine, training, and resourcing issues, a holistic enterprise solution is required. To facilitate that approach, the 20th CBRNE command, in collaboration with the Defense Threat Reduction agency, organized a “Scientists in the Foxhole” initiative. This effort assembled senior leaders throughout the CBRNE enterprise, to include
the Office of the Secretary of Defense – Acquisition, Technology, and Logistics, Defense Threat Reduction Agency, the Joint Requirements Office, Headquarters Department of the Army G-8, Forces Command, Joint Program executive Office – Chemical and Biological Defense (JPEO-CBD), Research and Development Command, Edgewood Chemical and Biological Center, the U.S. Army Nuclear and Combating WMD Agency, and the EOD Directorate. This program aimed at providing senior leaders and scientists from the CBRNE Enterprise an opportunity to meet with and observe Soldiers and Civilians conducting CBRNE tactical operations, in a live force-on-force training environment. These type of engagements serve to assist the CBRNE enterprise in identifying capability gaps and potential materiel and non-materiel solutions to enable our Nation’s Counter-Weapons of Mass Destruction, and Counter-Improvised Explosive Device capabilities.

JPEO-CBD, in partnership with the 20th CBRNE Command, and many of these same enterprise partners, is leading an Advanced Technology Demonstration to accelerate technology development and implementation, and address multiple operational issues to include reducing a reliance on commercial off-the-shelf systems and improve sustainability and mobility, while gaining efficiencies in materiel and non-materiel solutions. This enterprise approach to holistically resourcing capability gaps and requirements allows the Army and the Joint Force to better resource an integrated, combined arms approach to combating CBRNE threats.

**Impact**

Organizing the functional subordinate formations of the 20th CBRNE Command into three, multi-functional, regionally aligned CBRNE Brigade Task Forces is an important step in meeting the Army’s Strategic Planning Guidance for this one-of-a-kind formation and provides our Army and our Nation an immediately improved solution for delivering integrated CBRNE capacity to meet expeditionary and campaign requirements. The expanded definition of CBRNE threats and hazards, with WMD/CWMD missions as a subset, facilitates a more expansive employment of the Command. Continued experimentation and validation of the CBRNE task force construct at Combat Training Centers, in concert with innovative enterprise efforts, such as the Scientists in the Foxhole and Advanced Technology Demonstrations, will ensure that our Nation’s CBRNE forces are properly organized, trained, and resourced for mission success, avoiding an ad hoc organizational solutions that increase the possibility of the type of mission failures seen in Operation Eagle Claw. It is imperative that the 20th CBRNE Command provide the Army, and the Nation with ready, reliable and globally responsive integrated CBRNE forces capable of leading and executing CBRNE related operations and activities, anytime and anywhere.
References

4 Army Strategic Planning Guidance, 2014.
6 Joint Publication 3-40.
7 Army Capabilities Integration Center (ARCIC), Countering Weapons of Mass Destruction White Paper. 22 April 2014.
8 Ibid.
10 Quadrennial Defense Review, 2014
11 Army Strategic Planning Guidance, 2014.
12 Army Strategic Planning Guidance, 19 April 2012, p.8.