Destroying the Mother of All Arsenals: Captured Enemy Ammunition Operations in Iraq

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Accidents (which claimed the lives of 6,000 Vietnamese in the first half of 2005 alone). Cambodia, Laos and Vietnam do have among the highest numbers of mine and UXO survivors in the world, but most of these were injured during or immediately after conflicts that have now been over for decades. In Vietnam especially, the population of mine/UXO survivors is aging, posing a new set of health challenges for government agencies and non-governmental organizations involved in their care.

Nevertheless, there is a compelling case for continuing to collect information and provide assistance to new victims as well. First, there are still significant numbers of new deaths and injuries each year: since 2000, these have averaged approximately 800 per year in Cambodia (with full reporting), 200 in Vietnam and 500 in Laos (with incomplete reporting). Cambodia ranks no. 3 or no. 4 worldwide in reported casualties, Vietnam around no. 10 and Laos between no. 15 and 20, depending on the year. Each casualty affects not only the individuals involved, but also their families and communities, frequently with devastating effects on families through medical bills, transportation costs and lost income. Thus, while longer-term survivors may have adapted to their injuries, new survivors and their families, as well as the families of those killed by mines and UXO, face immediate costs and challenges.

Second, the historical circumstances of the Indochinese conflict offer clear moral reasons for increased assistance. The U.S. government and NGOs as representatives of the American people have a particular responsibility, given that the vast majority of remaining lethal ordnance is of U.S. origin, certainly in Laos and Vietnam, and also in eastern and central Cambodia. Among the populations most at risk are the poorest, ethnic minority groups and those living in remote areas—which are often overlapping categories. Although the much-publicized weapons of mass destruction have not been found in Iraq, less has been said about what munitions were found there, the hazards they present or the efforts of Coalition Forces to remove the stockpiles. This article gives a first-hand view of the perils in Iraq.

Assessing and Managing the Problem

The discovery of these “ammo dumps” was not unexpected. Preparations to deal with captured enemy ammunition were part of the initial campaign planning for Operations Iraqi Freedom that started in October 2002. What was not appreciated until much later in 2003 was the scope of the problem. Ground commanders quickly put together plans and manpower in an attempt to secure or destroy the enormous caches of ammunition their units were encountering. These well-intentioned efforts would eventually produce mixed results and, in some instances, amplify the problem.

Increased awareness but uncertainty of the magnitude of the captured enemy ammunition (CEA) problem resulted in the United States Army Corps of Engineers requesting to conduct an assessment in June/July 2003 to determine if their existing munitions remediation programs could bring aid. Specifically Combined Joint Task Force 7 (CJTF-7) sought assistance in the munitions collection process, the transportation of the ordnance to disposal areas and the operation of the demolition sites themselves. Due to the perceived urgency of the situation, CJTF-7 wanted capability in place within 30 days of the assessment to begin reducing or replacing military personnel and equipment engaged in the CEA mission (now renamed the Coalition Munitions Clearance program). Combined Joint Task Force 7—the “customer”—wanted the U.S. Army Corps of Engineers and its contractors to provide a “cradle-to-grave” service that could eventually be transferred over to Iraqi authorities.

Funding was provided to the Corps of Engineers on 28 July 2003 to commence CEA operations. USACE awarded several contracts on 8 Aug. 2003—one to the Parsons Corporation (Pasadena, Calif.) for $80 million (U.S.) to provide the logistic support for the overall effort, and three contracts worth $67 million each to the following unclassified ordnance contractors: Explosive Ordnance Disposal Technologies (Knoxville, Tenn.), Terra Tech-Foster Wheeler (Pasadena, Calif.), and USA Environmental, Inc. (Tampa, Fla.). The scope of work for the contractors included the following requirements:

• Manage ammunition supply points/collection points (ASPCP).
• Perform demolition of unsecured munitions.
• Perform destruction of priority munitions as identified by CJTF-7.
• Perform transportation of CEA from caches to ammunition supply points/coll- ection points or demolition areas as required and transport prepared demolition ordnance to designated areas.
• Perform surface unexploded ordnance clearances, booby trap clearances, disabil- ity of unconventional weapon devices, site investigations, evaluations and re- sponses in support of the CJEA mission.
Another eye-opener for contractors was the large number of countries that had supplied Saddam’s arsenal—
including Belgium, Brazil, Chile, China, France, Italy, Russia, Singapore, South Africa, Spain, Sweden and the former Yugoslavia. Munitions from at least 19
countries had been delivered to Iraq by a variety of means: surface ships, merchant vessels, freighters, airlift, air
and sea. Contractors and USACE personnel began mobilizing immediately following the launch of the advance,
and advance parties arrived in Baghdad on 24 March 2003. During this time period, a decision was made to centralize CEA
operations in Baghdad, with the project written by Christian Wall (C-7) Engineer Cell (C-7) at Camp Victory near Baghdad International Airport. It was further decided that field operations would be based in six
former regional Iraqi ammunition depots. Tetra Tech took the project by running operations in the north and
eastern parts of Iraq, while EOD Technologies occupied two locations in the central part of the country. USA Environmental
set up its operations at two sites north of Baghdad—
one in the Sunni Triangle and one south of Mosul. The initial missions objectives for this contractor workforce were the following:
- Reduce and eventually replace active military forcés
- Reduce and eventually replace active EOD forcés
- Perform field operations to Khaznadar, EOD support services.
- Perform EOD field operations
- Minimize use of Iraqi labor and assets.
- Be self-sufficient by January 2004

Facilitate transfer of operations to the Iraqi Munitions disposal commenced with EOD Technologies conducting a symbolic demolition op-
eration on 11 Sep. 2003, followed by USACE destroying 30 SA-7, 15 Strela man-portable surface-to-air missiles on 20 Sep. 2003. Two contractors being asked to provide munitions disposed of sa-
cinations—“demo shotes”—have been conducted several days a week at the six sites. Depending on weather con-
ditions and local labor, demo shots sometimes exceeded 100 rounds per site.

Contracting Iraqi labor forces to assist in sorting, storing and destroying munitions increased the pro-
duction capacity of each site significantly. Often, the Iraqi laborers worked at these depots at tremendous per-
table levels of risk from insurgent threats.

Types of Munitions

Contractors in Iraq found stockpiles consis-
ting of every conceivable type of ammunition—from sea mines and naval ordnance in the south of the country to small arms, artillery, mortar, tank ammunition, rockets, and guided missiles all across the country. Much of this ammunition was in various
storage areas that contained loose and scattered propel-
tants. The stabilizer in the propellant deteriorated and
rendered the material extremely susceptible to the high temperatures in the country. Several incidents of sponta-
naceous combustion occurred that resulted in personnel injuries or deaths.

Several types of foreign mortar fuses proved especially sensitive to handling, whether they were loose or pack-
aged. One incident resulted in the death of an Iraqi la-
ter when a mortar round simply exploded near a camp office. The ensuing firefight lasted about 45

Risk to Personnel

All this work was accomplished at considerable personal jeopardy to personnel. The most significant threat currently hindering all reconstruction efforts is a lack of security. CEA contractors were most at risk while traveling between sites. These movements were most often conducted in ground vehicle convoys. While traveling in convoy, the contra-
ctors were usually escorted by either military personnel or armed security forces. Regardless, insurgent forces
launched attacks and ambushes against these convoys. The most common methods of attack involved roadside improvised explosive devices and small arms fire. Occasionally, the convoy would be attacked by vehicles being used by the insurgents. As of the writing of this article, five CEA contractors have been killed in such attacks.

To counter the threat of attack, Parsons Corporation bought factory-armed Ford Excursion vehicles; however, USACE encouraged them to purchase mine-resistant vehicles from South Africa. Michael and Regis Trading were contracted to provide refurbished Casspirs and Mambas (respectively) to transport UXO and security personnel from site to site. As of the writing of this article, over 40 contractors involved in CEA operations have survived death or serious injury from IEDs and small arms fire due to the protection afforded by the Casspirs, Mambas and armored Excursions.

Indirect-fire weapons such as rockets and mortars are another form of insurgent attack. Many attacks involved mis-
tic tactics employed in Afghanistan, where rocketers are fired from improvised launchers with some incorpo-
rating a time-delay firing device to allow the insurgents to escape prior to the explosion. These attacks were
common between October 2003 and September 2004, and Camp Victory (where the CEA operation was based) was struck 18 times.

One final, less frequent method of attack against CEA operations was direct assault against a worksite, and only one notable example in this regard occurred. On 10 April 2004, a large CEA cache site south of Mosul was attacked by a force of approximately 12 in-
surgents who were using Russian/Steyr assault rifles, rocket-propelled grenades and machine guns. The ensuing firefight lasted about 45 minutes, wounding one American and two Kurds. Exact casualties of the attack are unknown.

Safety Considerations

It should be no surprise that safety is a crucial issue when managing munitions and explosives. While conducting CEA operations, personnel were often exposed to toxic fumes, fire hazards, and machinery. Personnel had to wear appropriate protective gear, including respiratory masks and safety glasses.
ammunition but unfortunately spread almost 50 pounds of toxic material over the demolition area due to depleted uranium in the missile fragmentation warheads.

When properly trained and experienced personnel are utilized in munitions disposal operations, munitions with unique hazards can be identified and separated for future disposition. During CEA operations in Iraq, contractors destroyed on average approximately 1 ton of assorted explosive ordnance with properly positioned donor material and one block of C-4 explosives (12.5 pounds).

Finally, another organization complicated the securing and disposal of ordnance by instructing local Iraqis on how to disassemble certain remnants to recover the valuable components, such as brass rotating bands, copper shape-charge cones, and, in some cases, the explosive material. This did not start a “cottage industry” in order to provide a source of income for unemployed Iraqis. The precious metal was then sold to scrap dealers.

Environmental Threats

The environment also poses hazards to those not familiar with the area. At most would expect, the temperature in Iraq during the summer months can be extremely dangerous, particularly to personnel working outdoors dealing with explosives, propellants and metal objects. During July and August, average daily temperatures can range from 110 to 125 degrees Fahrenheit (43 to 52 degrees Celsius). Propellant becomes extremely unstable at these temperatures, metal-toed ordnance becomes extremely hot to handle without gloves, and in some instances, explosives in munitions begin to soften and exude. Large amounts of water were essential in CEA operations during the hotter part of the year, not only for hydration, but also in the event of a leakage of white phosphorous munitions.

Another environmental factor to contend with in Iraq is leishmaniasis, which is an infection in both humans and animals transmitted by sand flies (not fleas). Between August 2002 and February 2004, at least 522 cases of leishmaniasis were reported among U.S. military personnel who had served in southern and central Iraq. While treatment is available for this disease, it is far less painful and inconvenient to use N,N-diethyl- m-toluamide (DEET) lotion or permethrin repellent to avoid being bitten by a sand fly.

Other environmental factors to contend with in Iraq are snakes and scorpions. There are five types of poisonous snakes indigenous to the country, several of which have venom that is fatal to humans. Of relevance to CEA operations is the fact that both snakes and scorpions are fond of shading themselves in stacks of munitions both outdoors and in ammunition bunkers and warehouses.

No fatalities have occurred as a result of encounters, but there have been instances in which workers have required medical assistance after a scorpion sting.

Logistics

Prior to the current conflict, the Iraqi infrastructure was well-established with an extremely capable road network. Many supplies were shipped in from Kuwait, as well as some from Jordan as the intensity of the insurgency increased. The danger of transporting supplies that were obviously destined for Coalition Forces or civilian contractors created a very tenuous supply system. Many Iraqi, Turkish and Pakistani truckers were killed, injured or scared away because they were aiding in the reconstruction of Iraq in the post-Saddam era. This situation has made supplying CEA operations a formidable challenge.

Much has been written and discussed about the amount of ammunition that has not been secured in Iraq; however, little has been mentioned about the civilian CEA contractors who have accomplished a task never before attempted under fire. Their work has moved thousands of potential IEDs and weapons from the hands of the insurgents, protecting Coalition Forces and innocent Iraqis who simply want to live free from the oppressive Hussein regime.

In addition, by undertaking the CEA mission, the U.S. government has demonstrated its resolve in eliminating the hazards of explosive remnants of war. The United States will undoubtedly continue in this role as it moves forward in implementing the State Department’s new Weapons Removal and Abatement Services contract.

These U.S. efforts will continue to properly dispose of explosive hazards and in the process provide some assistance to adjacent civilians, but also the global environment.

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