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Editorial

The US-Russia Nuclear Arms Reduction Pact that was signed in April 2010 is a welcome step towards comprehensive disarmament but its fruition remains uncertain given the disagreement over the other areas of concern. Similarly, the ongoing Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) may not achieve all that is desirable but can be another step towards disarmament.

In this context, P K Sundaram studies the importance of the US effort towards delinking the Chemical and Biological weapons from Nuclear Deterrence, in the current issue of the magazine. Kapil Patil looks at the slow and sometimes difficult efforts undertaken by the United States towards eliminating its stock of the Chemical weapons that are legacy of the power politics of the 20th century.

S. Shashikumar argues for drafting a more robust policy on the CBRN issues, especially in the backdrop of the recent Cobalt-60 leakages in Delhi.

This issue also features other regular features like Country Profile, Kaleidoscope, Chemical and Biological News and Book Review.

With our readers' feedback, we wish to publish issues in the future that focus on a subject of particular concern.

Contributions and feedback are welcome and can be addressed to: editorcbw@gmail.com

De-linking CBW from Nuclear Deterrence

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Summary

President Obama's Nuclear Posture Review[1] has raised hopes of universally fine-tuning nuclear deterrence; using it 'fundamentally' against the nuclear threats. This article attempts to underline the issues involved in de-linking Chemical and Biological weapons' threats from nuclear use.

The US Nuclear Posture Review

The Nuclear Posture Review (NPR) is a policy document of the US Department of Defense that underlines the role of nuclear weapons in the country's overall security strategy. It basically seeks to establish "U.S. nuclear policy, strategy, capabilities and force posture for the next five to ten years".[2] The NPR is a unilateral declaration and the opinion on whether it actually influences the nuclear behaviour of other states is sharply divided. However, since the operationalisation of nuclear forces is informed by this strategic postulation, it becomes significant.

The NPR process was started in 1994 and in April this year President Obama brought out his first and United States' third Nuclear Posture Review. President Obama has been stressing at minimizing the role of nuclear weapons in US' security strategy. This, as he affirmed in his famous Prague speech on nuclear disarmament, would act as a precursor to rendering nuclear weapons useless, leading to their eventual elimination.[3] Hence, the release of the NPR-2010 was preceded by high expectations from the disarmament and nonproliferation lobbies on the one side and deep apprehension regarding dilution of security priorities among the security community on the other hand. Not surprisingly, it took 150 meetings, several delays and Obama's own interventions to guide the process and satisfy all the stakeholders.

And the final document, released on 06 April 2010, does lay out a transformed role for US nuclear weapons. The NPR essentially aims at enhancing security of the US through strengthening the international nonproliferation regime.[4] The NPR tries to minimize the possible conditions in which nuclear weapons could be used. The NPR calls for a moratorium on developing new nuclear weapons, assures the Non Nuclear Weapons States (NNWS) compliant with the NPT about not using nukes against them, and precludes using nuclear weapons against a chemical or biological weapons or even massive cyber attacks. This recapitulation of priorities is seen as recognition of a global scenario in

which terrorism and 'rogue' states are bigger challenges than cold war style state rivalries.[5] Discussing the NPR in an interview, President Obama said "We are going to want to make sure that we can continue to move towards less emphasis on nuclear weapons...and to make sure that our conventional weapons capability is an effective deterrent in all but the most extreme circumstances."[6] This is definitely a perceptible departure from Bush administration's policy charted out in the NPR of 2002 that enhanced the role of nuclear weapons by envisaging their use against a large number of potential threats conventional attacks of large scale.

CBW Weapons and Nuclear Deterrence

The pertinence of the role of using nuclear weapons against chemical or biological attacks was under discussion for a long time. Since the C&B weapons are already banned and there are multilateral mechanisms to deal with violations through the UN Security Council, the US unilateralism of linking nuclear deterrence to Chemical and Biological threats was deemed unwarranted. However, in the December 2002 "National Strategy to Combat Weapons of Mass Destruction," the Bush administration stated that the US reserves the right to retaliate with overwhelming force, including nuclear weapons, in case of a CBW attack.[7] On the operational side, the option to use nuclear weapons to destroy identified enemy stockpiles of chemical or biological weapons was included in the draft "Doctrine for Joint Nuclear Operations" of The Joint Chiefs of Staff in 2005.[8]

China in its Unilateral Security Assurance of 1978, was the first state to come up with a comprehensive no-first-use policy affirming "at no time and in no circumstances it will be the first to use nuclear weapons".[9] This obviously means CBW threats are de-linked from nuclear deterrence in China's policy. In Russia's case, it has a clear declaration about using nuclear weapons in response to a WMD attack against or a major conventional attack against itself or its allies.[10] Pakistan's stance on using nuclear weapons is perhaps most amorphous in the world. It has no stated nuclear doctrine but it has linked its nuclear posture to India and its military leaders have been evoking nuclear threats even in case of water disputes.[11]

India has a declared no-first-use policy on nuclear weapons under its nuclear doctrine adopted in August 1999.[12] However, in the pronouncements in the wake of establishment of the Strategic Force Command (SFC) in 2003, India practically revised this stance by allowing for the use of nuclear weapons in response to a biological or chemical attack. It added a phrase saying ".....in the event of a major attack against India, or Indian forces anywhere, by biological or chemical weapons, India will retain the option of retaliating with nuclear weapons."[13] This revision in India's nuclear doctrine is also seen as diluting the NFU stance against the NNWS.[14] India has been demanding a universal No-First-Use treaty. This demand found place in its 7-point agenda submitted to UN Conference on Disarmament in 2008.[15] However, this can be meaningfully done only with de-linking chemical and biological weapons from nuclear deterrence.

Scholars have been arguing that clubbing CBW weapons with nuclear weapons under the rubric of 'Weapons of Mass Destruction' is misleading.[16] The major justification provided for linking nuclear deterrence to CBW threat is that in case of a CBW attack, states can not retaliate in kind, as Chemical and Biological Weapons have been outlawed. However, a close scrutiny would suggest that the supposed role of nuclear weapons in CBW deterrence goes against nonproliferation imperatives. Whether nuclear weapons can deter chemical or biological threats has also been under question. Contrary to the credo of nuclear proliferation optimists, the experts on Chemical and Biological Arms Control have held that pushing nuclear weapons to the background would actually help in making chemical or biological weapon programs less attractive.[17] The International Commission on Nuclear Non-proliferation and Disarmament (ICNND)'s "Draft Treaty on Non-First use of Nuclear Weapons" also in its introduction asserts that No-First-Use doctrines, with stated non-use against CBW threats "would give less motivation for other

states to develop nuclear —or for that matter chemical or biological—weapons capabilities of their own".[18] Moreover, to actually reduce the danger of chemical weapons, meeting the extended deadline of 2012 for destroying chemical weapons stockpiles, universalizing the CWC, strengthening the Organisation for the Prohibition of Chemical Weapons (OPCW) are much urgent needs than a hollow threat of nuclear weapons. Nuclear weapons have not been used since 1945 and there a great deal of political taboo and extremely complex strategic calculations would be involved in actually using nuclear weapons. Therefore, nuclear threat is not likely to be an effective deterrent for chemical weapons anyways.

De-emphasizing the role of nuclear weapons in dealing with CBW threats did not come to Obama's Nuclear Posture Review only because of some exigent imperative of disarmament politics. In the process of drafting of the Nuclear Posture Review, the Nuclear Weapons Complex Consolidation (NWCC) Policy Network's recommendation for a new strategic posture highlighted the need of eliminating any reference to the sue of nuclear weapons in retaliation to CBW attacks, holding that "military means other than the threat of nuclear preemption or retaliation can and must suffice to address these lesser threats."[19] the report went further in its recommendations and underlined that the new US Posture review should "forego integrating the potential use of nuclear weapons with strategies for use of conventional force" and mandate nuclear weapons to be used only against nuclear attacks or threats.

Defining the "Sole Purpose" of Nuclear Weapons

With chemical and nuclear weapons already internationally banned, the only real possibility of their use is by malicious non-state actors. And when it comes to non-state actors, nuclear weapons do not provide any credible deterrence promise against them.[20] Moreover, in case of CBW weapons, the forensics to determine the source of such attacks is an extremely complex process and identifying the state harbouring or commanding the terrorists will always be disputable. This will blunt the possibility of retaliatory strike. The best ways to reduce CBW terrorist threats have been identified as – intelligence collection and analysis, control spread of precursor chemical or biological agents, reducing vulnerability of high-profile targets, strengthening biosecurity measures including management of consequences of CBW attack, increased security at chemicals and biological plants and research centres and enhanced international co-operation.[21] Experts, including the ICNND Report on Non-proliferation and Disarmament strongly recommend strengthening of compliance mechanism of the Chemical Weapons Convention and Biological and Toxin Weapons Convention, while making retaliation against nuclear attacks "sole purpose" of nuclear weapons.[22] Hence, there is a strong case for de-linking chemical and biological weapons from nuclear deterrence doctrines. This will make no-first-use policies meaningful and further contribute to de-valuing nuclear weapons, an essential step towards a world free of nuclear weapons.

The de-linking of nuclear deterrence from Chemical or Biological weapon threats in the US nuclear posture review is a welcome step. However, since the process of getting individual states to adopt a national No-First-Use policy and non-use against CBW weapons will be cumbersome and the existing trust-deficit in international system will make it extremely untenuous, this can practically happen only through some universal agreement. This can be meaningfully done only through some legally binding international instrument.

Assigning lesser roles for nuclear weapons would eventually help in reducing the role of deterrence that triggers arms race and encourages proliferation. De-linking nukes from CBW threats is an important step in that direction. An international no-first-use treaty with explicit de-linking of CBW threats is an urgent imperative.

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Detonating Chemical Weapons: Technology and Safety Paradox

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Summary

The US Army's decision to use controlled detonation through EDTs could complete the destruction task earlier than the current methods allow. EDTs are the appropriate supplements to current methods of neutralization followed by bio-treatment. US Army requires working in close cooperation with resident groups by effectively demonstrating them the technology that could address their concerns over environment and safety.

The United States has one of the largest stockpiles of chemical weapons some of which dates back as far as World War I. By end of January 2010, the US has destroyed 22,322 of the original 31500 tons of chemical stockpiles. It includes the deadliest nerve agents; Sarin, VX and the vesicant mustard stored at nine weapons depots. The weapons at the three sites have been eliminated through incineration or neutralization processes. The four sites are still running the active incinerators have completed the burning process. The remaining two storage sites; Blue Grass Army Depot (BGAD) in Kentucky and the Pueblo Chemical Depot (PCD); where the destruction work is yet to begin and there is a growing pressure to meet the 2012 deadline for completion of disposal. However, the US Army's Chemical Materials Agency (CMA) officials have claimed that the disposal work at BGAD will begin only by 2018 and will be over by 2021. In its bid to catch up with the 2012 deadline, the US Army's decision to explode some mustard munitions at both places[2], and possibly even some nerve agent in Kentucky, nevertheless has shocked the residents and environmentalists groups. The environmentalists are crying fowl over Army's decision since blowing up some of the weapons in a detonation chamber would be worse than burning them.

It is thus important to probe why US Army has decided to explode some munitions and what are the technologies and mechanisms its employs that does not jeopardise the safety of local residents and without causing any environmental disaster in its attempt to meet the deadlines. The US Army's decision is apparently guided by two primary concerns. First, the Assembled Chemical Weapons Alternatives (ACWA) - responsible for destruction at BGAD and PCD program - has decided to use an Explosive Destruction Technology (EDS) to accelerate the weapon disposal schedules at both installations and in turn to catch up to lawmakers' demand for full chemical disarmament by 2017. Second, an important concern behind this strategy is to augment the under construction facilities by providing an additional destruction capability

at both sites. However there have been serious misgivings about the way the select munitions were going to be blown up.

There are two major technology forms for destroying chemical weapons approved under the Chemical Weapon Convention: high temperature destruction technologies like incineration and low-temperature destruction technologies like hydrolysis followed by post-treatment of the generated reaction masses[3]. Besides that there are many alternative technologies developed today and the number is growing. In 2009, the US Army in collaboration with the National Research Council (NRC) tested four chemical weapons disposal technologies: three private-vendor systems and one Army-developed explosive destruction system (EDS). Tests were conducted at both; the BGAD in Kentucky and the PCD in Colorado. The Army and the NRC tested 3 private-vendor systems which were; the DAVINCH system developed by Japan's Kobe Steel and US-based Versar, the transportable detonation chamber T-60 model supplied by US-based CH2M Hill, and the static detonation chamber SDC2000 model from Sweden's Dynasafe. The report submitted by the National Research Council titles as 'Assessment of Explosive Destruction Technologies for Specific Munitions at the Blue Grass and Pueblo Chemical Agent Destruction Pilot Plants (2009)'; recommended that, for destruction of 155-mm mustard gas munitions at BGAD and PCD, the DAVINCH and SDC2000 were the most effective. And for destruction of M55 rocket motors, the report recommended the T-60 as most effective[4].

However as per the recommendations the construction of these facilities would take some time. The Army's plan is to supplement these primary plans by carrying out the explosion inside an explosive containment vessel through controlled detonation. The ACWA is primarily considering the four EDT's for use in association to the full-scale treatment facility: Explosive Destruction System, Transportable Detonation Chamber, Static Detonation Chamber and a Vacuum-Integrated Chamber[5]. Each of these technologies has a large containment vessel designed to handle munitions. Certain mustard rounds which have been laying the depots for years without any periodic refurbishing are primarily being considered for blowing up in EDT. It is virtually impossible to disassemble them as most of them have been leaking and corroded for years now. For bacterial neutralization they need to be manually disassembled. The disassembling can be done either through robots or by sending technicians with safety kits, masks and so on. It is not clear how much the robots can be effective in carrying out the dismantling. Hence the only other option is to send the experts with safety kits and devises to manually disassemble them which is fraught with manifold risks. Since CMA is not responsible to put those workers at that kind of risk, the EDT is being considered appropriate for the 'rogue mustard munitions'. However, no chemical weapons will be exploded outside of vessel containment. It is expected that explosive technology is being considered for 15,000 mustard- and nerve-agent filled projectiles in Kentucky and 125,000 mustard agent-filled munitions in Colorado. US Army has been using the mobile detonation facilities for quite a long time now. However, one cannot be sure how much the use of EDTs can expedite the process of munitions disposal. There are no international standards for using EDT's. During the President Bush's tenure the ACWA remained grossly under funded which have severely restrained the ACWA's ability to carry out the disposal in prescribed timelines. Thus the use of EDT is expected to complete the destruction task earlier than the current methods allow and also brings continuity in destruction operations without further time lag.

The sudden shift to EDTs to hasten the process of disposal has caused widespread despair among the local residents. There has been heavy opposition by the citizens' advisory commissions in both states regarding the use of the technology for large amount of munitions as Army has proposed. The citizens groups are increasingly demanding that the poisonous agents have to be neutralized by bacterial processing. The lack of information remains the major source of confusion as most of these technologies are untested and generating suspicions about the efficacy of any specific EDT system. The lack of information about the systems, their reliability and environment

friendliness within the larger scientific domain in US raised the apprehensions amongst the residents. According to Craig Williams, director of the Berea-based Chemical Weapons Working Group, "As far as the acceptability of an explosive detonation technology, we remain unconvinced that it will meet the environmental and health criteria required but the jury's still out on that"[6].

The Army being the authority to carry out the destruction of chemical weapons is responsible to ensure the abidance to the domestic as well as international obligations and environmental safety norms by expeditiously destroying all of the US-declared chemical weapons. The international verification mechanism, widespread media coverage, environmental and local groups all necessitates it to assuage the safety concerns while employing the appropriate technology or combination of technologies and simultaneously to respect its CWC deadlines. Thus given the widespread public sensitivities involved; in the larger public interest, Army requires working in close cooperation with various resident groups. The selection of appropriate technologies and its effective demonstration to the citizen groups through Army-Public parternership could help addressing many warranted as well as unwarranted concerns.

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Terror Without Tags: Need For A Comprehensive National Security Policy

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Summary

Nation States prioritize the pursuit of security in such a way that threats to national security from external sources are cordoned from threats that arise from within. However, terror without 'tag values' - i.e. without an actor to perform, without an explicit intention of any party involved, due to the scourges of inefficient regulatory mechanisms and which has very little incubation time to register as serious threats – are important security threats which require concerted action among the people and the state for successful resolution. Empowered civil-society, decentralized capacity building and proactive citizenry can facilitate not only recognizing of the threats early, but also achieving quicker restitution of order.

Modern Nation States show striking proclivity in establishing a hierarchy of objectives. Among others, the pursuit of security is placed as a primary objective without which other goals remain vulnerable. In its broadest sense security can be defined as the state of being free from danger or injury, however it remains as elusive a concept for precise definition. Therefore Nation States prioritize the pursuit of security in such a way that threats to national security from external sources are cordoned from threats that arise from within. Though newer definitions of security, particularly in the context of developing countries, have questioned such compartmentalization, states acquire a significant cognitive behavior before they could attempt indigenous definitions of security. That is states learn by watching what others do. This leads to problems such as external threat attribution, preference to think that their state is on the side of the angels and their opponents are aligned with the devil[1], preparations to confront tangible threats and disregard intangibles, and a propensity to ignore 'terror without tag values'. This essay attempts to explain this lackadaisical state behavior to ignore terrors without tags in the context of India's response to two significant events: the recent Cobalt 60 radiation exposure and the Swine Flu pandemic. What these two events have in common is the radiation terror and biological terror that came without the conventional tags of 'terrorism' but created enough incentives for panic among masses. The essay concludes by stating that, given the propensity of chemical, biological and radiological threats to arise without tag values, a strong decentralized societal activism could prevent state's lackadaisical attitude towards these threats.

Cobalt 60 is a radioactive isotope of Cobalt which has a potential to cause severe radioactive contamination. On 9 April 2010, this radioactive material was found in a small scrap dealer's shop at the Mayapuri Industrial area of Delhi. The scrap dealer and his agents who were exposed to the radiation suffered injuries and were quarantined in a hospital. After the news came to light police cordoned off the area upto

one km and did not allow people to enter the locality. There were around 200 scrap shops in the market.[2] Thereafter important questions like sources of such radioactive emissions, the place of origin of such scrap, whether India is on the radar of terrorists who might use Cobalt 60 to create severe contamination, need for a multi-layered system of safeguards against such incidents and the need to have monitoring rights from imports of metal scrap to track its journey within the country[3] were discussed. However, except that the geographical scope of this incident is small, the terror caused by this incident, particularly among the people of Mayapuri Industrial area, is no different from what a terrorist would have imposed if he had capitalized on this Cobalt 60 contamination. After giving some assurances on the floor of the Indian Parliament, the government took no measures to strengthen civil-society's response to such accidents. Sadly, after few days this Cobalt 60 event became a non-issue among other citizens of Delhi.

The incident proves the point that such terror without 'tag values' - i.e. without an actor to perform, without an explicit intention of any party involved, due to the scourges of inefficient regulatory mechanisms and which has very little incubation time to register as serious threats – are important security threats which requires concerted action among the people and the state for successful resolution. Importantly, engineering a fast and efficient mechanism of reassurances among the masses would enable the state to treat the cause of such terror without surging on symptoms. This requires not just recognizing such silent threats but also usurping them within the definition of 'security'.

Consider the Swine flu pandemic in India. Other technical details apart, between the first reported case of flu in India in the month of May 2009 and the recent report published in March 2010 there were reported deaths of 1,443 people.[4] The level of terror infested by this pandemic was no less than any purposeful terror incident of other sort; however, the state machinery was unable (at the initial stages) to balance requirements of inquiry and restitution of order. For example, even after few reported deaths, the state did not use its official communication channels to disseminate vital information even when logic foretells that more than usual appeals for information would hit the help desk. Though the World Health Organisation (WHO) had designated the outbreak of flu as a public health emergency of international concern, India's started its work late. Luckily, WHO admitted that the seriousness of the pandemic had been overestimated[5], which covered India's underestimation of such threats. Juggling with numbers, the frequency of deaths in India due to Swine Flu was one in every twenty three people; however, for China it was one in every one hundred and fifty six people. A huge difference indeed!

The problem is that the outbreak of such pandemics is not seen within the definitions of 'security'. If advanced nations can manage such scenarios as health issues, mirror imaging such behaviour by developing countries, would preclude any proactive measures to confront threats. In a hypothetical scenario, let us assume that India's adversaries had purposefully infested the Swine Flu or any other biological agent with terror objectives; it is unclear how, with the given socio-political response mechanism, the state would coordinate national restitution, propagate internal reassurances and at the same time conceive of diplomacy or war outside. Unless the state-society coordination is well established the potential to confront conventional threats would be reduced. In other words, responses to 'threats without tags' should be taken as acid-test for future preparations.

In the changed conditions of modern times, chemical, biological and radiological agents not only have high propensity to create panic among the masses, but also attract attention without tag values. A state may not be threatened with a conventional imagery of nerve gas attacks or mustard gas attacks by dissenting groups but chemical weapons terror can originate from subtle sources like hazardous chemicals from industries polluting the river and causing few mysterious deaths. Similarly biological and radiological terror might occur as small and unavoidable accidents but could create enough panic reducing the state's

ability to rapidly respond to situations. Unless good governance is achieved with disciplined regulatory measures, a highly interconnected world would inevitably see CBRN incidents that were traditionally construed to happen from outside. Any compartmentalization of security therefore would complicate the state's ability to respond effectively. How can such complications be avoided?

Firstly, it is very important to look beyond traditional compartmentalization of security. Chemical, biological and radiological agents even without conventional tags attached to them can hamper security. A state's response to CBRN security therefore must not be contingent upon the means of its origin. Instead the response ought to be as comprehensive as it could possibly be to socialize the masses about the seriousness of the state to such issues. Secondly, effective state-society coordination is important for the pursuit of security against untagged CBRN terrors. Empowered civil-society, decentralized capacity building and proactive citizenry can facilitate not only recognizing of the threats early, but also achieving quicker restitution of order. For this the state has to intensely network with its citizens through its official communication channels, establish easier but stronger modes of decentralized governance and involve citizens in social restitution. For untagged CBRN threats, the state has to communicate its resolve of well-preparedness. Finally, each state has to indigenously define its concept of security. This is more important for developing countries which still have to establish strong procedural, regulatory and institutional capacity building. In this context, unchecked chemical leak is a security threat rather than a technical snag. To conclude, the imperatives of the socio-technological revolution demands proactive comprehensiveness in confronting CBRN threats both from within and without; when the stakes are high it is important not to ignore 'threats' which masquerade as 'accidents'.

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Myanmar

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Summary

Despite being a signatory to various anti-WMD forums and conventions, since 1980s, Myanmar has been allegedly involved in the manufacture, storage and even usage of chemical as well as biological weapons. Although such allegations are yet to be confirmed, instances have been from cited by human rights groups from time to time when Myanmar junta has reportedly resorted to the use of chemical weapons while dealing with ethnic minorities and local rebel groups, such as Karen National Liberation Army (KNLA), Kachin Independence Army (KIA), etc. So far, Myanmar' ruling junta has vehemently denied its involvement in any clandestine chemical weapon programme. Due to lack of adequate evidence, international community has not been able to take proper action against the junta in this regard. Still, the international organizations, particularly the UN, should take the responsibility of conducting thorough investigation of this issue by its very own UN Organization or the Prohibition of Chemical Weapons (OPCW).

Since its independence in 1948, Myanmar has consistently taken stance against all kinds of weapons of mass destruction (WMD). It has been a signatory to various international protocols and conventions against biological as well as chemical weapons, including the 1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare; the 1972 Bacteriological (Biological) and Toxic Weapons Convention; and Chemical Weapons Convention or CWC (1993). Still, allegations have been made against Myanmar from time to time for its involvement in the manufacture, storage and usage of biological and chemical weapons. So far, such allegations have not been confirmed though.[1]

Despite its early accession to the CWC, Myanmar has not been able to ratify it till today. It has aroused suspicion among many regarding Myanmar's dubious intention of acquiring a stockpile of chemical weapons. In fact, since 1980s, with the apparent establishment of the clandestine chemical weapons plant by the Ne Win regime, Myanmar and its ambition for chemical weapons has been an issue of debate.[2] A US Navy Intelligence Report (1991) prepared by Adm. Thomas A. Brooks indicating Myanmar as part of the fourteen nations outside the Soviet Union and NATO which might be in the possession of chemical weapons, aggravated the issue further.[3] More recently, in 2005, Belgian photojournalist Thierry Falise's interaction with two deserters of Myanmar Army also reportedly revealed Myanmar's possible engagement in a clandestine chemical weapon programme.[4] However, such reports regarding Myanmar's violation of the CWC are yet to be confirmed.

As mentioned earlier, allegations regarding Myanmar's involvement in chemical weapon programme can be traced back to early 1980s. In 1982, the then Burma Socialist Programme Party or BSSP dictatorship (which has been replaced by the current State Peace and Development Council or SPDC) was alleged by the *International Defence Review* for its usage of chemical weapon. Couple of years later, a US

Special National Intelligence Estimate (SNIE) claimed that Myanmar was assisted by Germany and Italy to develop chemical weapon of its own by the end of 1984. All these allegations were somehow substantiated by an article published in *The Bangkok Post* on February 1, 1984 which mentioned about an incident in which Myanmar troops fired mortar and artillery shells which emitted 'toxic gas' at anti-government Karenni rebels along the Burma-Thai border.

The possibility of Myanmar having a clandestine chemical weapon programme was reiterated by US Central Intelligence Agency (CIA) in 1988 and 1992. A US Defence Intelligence Agency (DIA) survey conducted in 1992 also offered a similar conclusion. While taking a step further, the survey named North Korea and China to be the possible suppliers who assisted Myanmar in setting up its chemicals stockpile. It was further reported that to deal with its lack of delivery system that could reach remote regions, in early 1990s itself, Myanmar looked for surface-to-air missiles capable of carrying chemicals.[5]

Over the years, Myanmar has been allegedly involved in using chemical weapons against its own natives, particularly the ethnic minorities. In this context, various instances have been cited so far. In 1992, Myanmar Army (Tatmadaw) was accused of violating the CWC by using chemical weapons during their prolonged offensive against the Karenni rebel strongholds at Manerplaw. While reporting that incident in its report titled "Is the SLORC using Bacteriological Warfare?" (February 1994), Karen Human Rights Group (KHRG) stated that due to the suspected usage of chemical weapons by the Army, several Karenni soldiers suffered from burns and rashes for months. Many of them also lost partial or complete loss of mobility in various parts of their body.[6]

In July 1992, the Kachin Independence Army (KIA) from north Burma was allegedly attacked by the Army with chemical weapons. The Kachin Independence Organization (KIO) reportedly intercepted a radio message from SLORC[7] which instructed its troops to withdraw 300 meters from the frontline shortly before the release of the chemical weapon shells by the Air Force on the KIA positions.

In February 1995, during its fight against the Karen National Unit (KNU) at Kaw Moo Rah, Myanmar Army allegedly resorted to the usage to chemical weapons once again. Karenni force reportedly had to withdraw from their position after the attack as the 'chemical shells' caused dizziness, nausea, vomiting, burning, and even unconsciousness.[8] This allegation of chemical weapon use was later on reiterated by an article titled "Burmese admit They Used Chemicals to Fight Karens" published in a Thai language newspaper- *Daily News*. The article particularly mentions about Secretary-2 of SLORC, Lieutenant General Tin Oo's meeting with Thai Army Commander Wimol Wongwanich in Thailand after the Kaw Moo Rah incident. During their interaction, Oo reportedly revealed to Wongwanich that although the use of chemicals against the Karen rebels was not right, it was necessary as they were engaged in anti-government activities. [9]

In 2005, the Myanmar Army was yet again accused of using chemical weapons against the Karen rebel force. In its report titled "The Issue of Chemical Weapons Use by the Military Junta", Christian Solidarity Worldwide (CSW), an international human rights group, mentioned about an incident on February 15, 2005 when the Army used chemicals containing mustard gas on the Karenni force at Nya My area. According to the report, within minutes of the chemical explosion, the rebel soldiers suffered from irritation to the eyes, throat, lungs and skin. Many of them reportedly also developed severe muscle weakness and coughed up blood. After assessing the symptoms of the affected Karenni soldiers following the attack, Dr. Martin Panther, a physician by profession and also the President of the CSW, concluded that the symptoms of the Karenni soldiers and the description of the device with which they were attacked basically established the fact that the Army attacked the rebel force with some sort of chemical weapon.[10]

So far, Myanmar's ruling junta has vehemently denied allegations of ever using chemical weapons.[11] In fact, it maintains that Myanmar simply does not possess such weapon. However, the junta's claim was somewhat nullified by two young SPDC defectors, who during their

interview with BBC correspondent in Myanmar, revealed that they themselves carried chemical weapons to the frontline. They were reportedly warned by their superior officer to be cautious while carrying such weapon as, if dropped accidently, the chemicals could cause serious health problems, and even death.[12]

More recently, in August 2009, during its clash with Kokang rebels, the Myanmar army was accused of using chemical mortars once again. The clash reportedly forced the rebels to withdraw from Shan state and take refuge in neighbouring China.[13] Following that incident, reports started pouring in about the Army's similar intention in dealing with other ethnic ceasefire groups, such as the United Wa State Army (UWSA), National Democratic Alliance Army (NDAA), etc. Anticipating such a step against them in the future, both these groups have reportedly purchased thousands of protective suits already.[14]

Although Myanmar Army's possible involvement in resorting to the use of chemical weapons indeed create a horrifying picture of the future ahead, so far, the international community has not been able to take a step against the ruling junta due to lack of adequate evidence. Still, we need to be cautious of the fact that all the incidents cited so far concerning the use of chemical weapons indicate a pattern of Myanmar's continued manufacture and use of certain weapons which seemed to be quite identical to the chemical weapons. If the allegations against the Myanmar army proved true in the future, it would not only bring out in the open Myanmar's violation of the CWC, it would also show to the world the junta's lack of regard towards international norms and treaties. From now onwards, instead of taking a backseat on such issue, the international community, particularly the UN should take adequate action in conducting investigation and intervention by the UN Organization for the Prohibition of Chemical Weapons (OPCW). Meanwhile it should also be ensured that such events do not repeat themselves in Myanmar in the future.

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Biological and Toxin Weapons Convention Website

The Biological and Toxin Weapons Convention (BTWC/BWC) was signed on 10 April 1972 and it entered into force on 26 March 1975. So far six review conference of this convention have been held.

The entire documentation of BTWC has been made available on the Biological and Toxin Weapons Convention Website. This site has been developed is to provide accurate, up-to-date information about the BTWC. The site is administered by the Department of Peace Studies of the University of Bradford at the request of the President of the Sixth Review Conference.

The site offers information in regard background, information of about state parties and the text of convention. It also gives information about declarations and reservations to the convention by various states.

The site offers detail information regarding various review conferences. This includes final declaration, conference documents, preparatory committee documents and drafting documents, summary record of the various meetings, statements by states parties and signatories, statements by regional and international organizations, and other relevant conformation. Information mostly gathered from officials sources in regard to National Implementation Legislations and Regulations for various countries has been provided. There is a separate section on the various measure take so for strengthening the BTWC regime which includes information on the confidence building mechanism (CBM) declarations by various countries.

The site is popular amongst the policy makers and research community.

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ARMS CONTROL

Emergency responders should be immunized against anthrax

March 8, 2010

Emergency responders arrived at Sen. Tom Daschle's Capitol Hill office on October 15, 2001 suited in personal protective equipment (PPE). One of Daschle's staffers had opened an anthrax-laced letter, yet another in a string of bioterrorist attacks that tormented the U.S. psyche in the immediate aftermath of 9/11. Nasal swabs taken of those first responders as they exited the building revealed that some had been exposed to anthrax, despite their PPEs and the miniscule amount of spores contained in that letter.

Thus, the question was raised: How can first responders provide necessary medical treatment following an anthrax attack while preserving their own health and safety?

Last Friday at the annual EMS Today Conference in Baltimore, Dr. Thomas Waytes added to the continuing discussion, addressing an audience of EMS personnel on what specific medical countermeasures are available for protecting emergency responders against anthrax bioterrorism. Waytes is a vice president at Emergent BioSolutions, manufacturer of BioThrax, the only currently licensed anthrax vaccine in the U.S.

"In a lot of circles, anthrax is called the poor man's nuclear bomb," says Waytes. According to Waytes, merely 6.5 kilograms of anthrax spores, if appropriately distributed, would have the kill potential of a small nuclear bomb, a sobering reality for EMS personnel and first responders to confront, especially considering the relatively easy availability of anthrax.

Because it's a "naturally-occurring disease," says Waytes, anthrax can be found from natural sources throughout the world; indeed, areas of Africa and the Middle East have outbreaks of anthrax on a regular basis. Anthrax spores are easy to grow, cheap to produce, well suited for aerosol delivery, completely tasteless and colorless, and resistant to the environment, which means they can last for decades. According to Congress's bipartisan Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, the U.S. now has a gap in its anthrax preparedness, compounded by the fact that anthrax can be genetically modified to be antibiotic-resistant.

"You can't absolutely count on the fact that . . . anthrax is going to be susceptible to the common antibiotics," says Waytes.

Of greatest concern to EMS personnel and the general American public is inhalational anthrax, caused by breathing in anthrax spores. According to Waytes, even with aggressive medical treatment, the mortality range can reach upwards of 90 percent. In the 2001 attacks, of the 22 cases of anthrax confirmed, 11 were inhalational, with five of those cases being fatal.

For EMS on the scene, PPEs aren't always enough to prevent inhalation. And while anthrax itself isn't contagious, spores residing on clothing or skin can be passed to EMS workers who come into physical contact with carriers.

"The most effective way to protect people against anthrax is to immunize people pre-exposure," says Waytes.

The military has been immunizing service men and women since 1998, and the Department of Health and Human Services (HHS) has a biodefense strategy predicated on the possibility of two major metropolitan areas getting hit with anthrax. They estimate that up to 25 million people would be exposed to anthrax; their goal, then, is to build up a national stockpile of 75 million doses of anthrax vaccine (three per person). But HHS has not distributed the vaccine widely to emergency responders, says Waytes.

But with unused doses of already purchased

anthrax vaccine sitting in the Strategic National Stockpile and reaching their expiry date (the vaccine has a four-year shelf life), Waytes thinks the time is right to take some of these expiring doses and make them available free to EMS personnel.

"You shouldn't routinely say that all emergency responders should be immunized, but there are groups that may find themselves at increased risk of exposure," says Waytes. "These are the people that should be identified. Give them the benefit of pre-exposure immunization."

Such people include environmental sampling and hazmat teams, as well as EMS and fire rescue personnel. At Michigan State University, members of their campus security that have to respond to white powders are immunized with the vaccine. According to Waytes, it's the first university that has pre-protected emergency personnel on their university police team.

Ultimately, for Waytes, the key to providing effective emergency response to an anthrax attack while keeping EMS personnel safe is to anticipate another attack.

"We need to understand that certain people in certain occupations may be at increased risk for exposure," says Waytes. "Identify those people at higher risk and offer them pre-exposure immunization."

http://www.bioprepwatch.com/news/212257

US anti-WMD troops join military drills in S Korea

March 11, 2010

U.S. troops who would be tasked with eliminating North Korea's weapons of mass destruction in the event of armed conflict are participating in military drills with South Korea, the top U.S. commander in the country said Thursday.

"They are here for this exercise and if we ever went to war, they would naturally come also," Army Gen. Walter Sharp told reporters at Yongsan Garrison, the main U.S. military headquarters in central Seoul.

Sharp said that the troops are carrying out daily exercises with South Korean troops to practice locating, securing and eliminating the North's weapons of mass destruction.

The North, believed to have enough weaponized plutonium for at least a half-dozen bombs, quit international disarmament-for-aid negotiations and conducted a second nuclear test last year, drawing tightened U.N. sanctions.

Pyongyang also has been developing a long-range missile designed to strike the U.S., and has stockpiled between 2,500 and 5,000 tons of chemical agents and is believed to be capable of producing biological weapons, according to South Korea's Defense Ministry.

"What we are training for is all the threats that North Korea can throw at us," Sharp said.

Sharp's comments came as the North has been escalating its rhetoric against the U.S. and South Korea over their annual military drills that began Monday.

About 18,000 American soldiers and an undisclosed number of South Korean troops are taking part in the war games, dubbed Key Resolve and Foal Eagle, according to U.S. and South Korean militaries. Some involve computer simulation.

Pyongyang, which says they are a rehearsal for attack, warns it will bolster its nuclear capability and put its troops on high alert in response to the drills.

The U.S. says they are purely defensive and that it has no intention of invading the North.

"We have done these exercises before," State Department spokesman P.J. Crowley told reporters Wednesday. "These should not be a surprise to North Korea."

Sharp said the 28,500 U.S. troops stationed in the South are prepared to deal with any contingency in North Korea, but called for a diplomatic solution to end North Korea's nuclear programs and urged Pyongyang to rejoin stalled six-nation talks.

Also Thursday, South Korea's prime minister said North Korea must "listen to" international concerns over its atomic program and quickly return to negotiations.

"North Korea's development of nuclear weapons is seriously undermining international non-nuclear proliferation regimes as well as posing a threat" to the region, Prime Minister Chung Un-chan told a Seoul forum.

The North has demanded a lifting of the sanctions and peace talks with the U.S. on formally ending the 1950-53 Korean War before it returns to the talks.

The U.S. and South Korea have responded that the North must first return to the negotiating table and make progress on denuclearization. The talks involve China, Japan, the two Koreas, Russia and the United States.

Separately, former U.S. Secretary of State Henry Kissinger said at a lecture in Seoul that he supports sanctions not for the purpose of causing what he called "chaos," but rather to provide the country "a way out, into negotiations."

Former U.N. nuclear chief Mohamed ElBaradei, however, told a forum earlier in the day that he believes sanctions will not work and called on the U.S. to engage North Korea and assure it regarding security.

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DISARMAMENT

Iraq Faces Major Challenges in Destroying Its Legacy Chemical Weapons

March 4, 2010

Iraq joined the Chemical Weapons Convention in February 2009 and now faces major challenges destroying the chemical munitions it inherited from the Saddam Hussein regime.

Before the 1991 Persian Gulf War, Saddam Hussein's Iraq produced and stockpiled hundreds of tons of chemical weapons (CW), a small fraction of which still exist. After Iraq acceded to the Chemical Weapons Convention (CWC) on February 12, 2009, it was obligated to declare and destroy any surviving CW agents and munitions according to the detailed procedures set out in the treaty. Because some of Iraq's legacy chemical weapons were damaged by aerial bombing during the Gulf War and are extremely dangerous to handle, Baghdad will have great difficulty disposing of them. In addition, chemical munitions from the pre-1991 era will probably be recovered in the future and will have to be destroyed in a verifiable manner. How Iraq and the international community deal with these issues will have important implications for the CWC and the prospects for chemical disarmament in the Middle East.

Iraq's Chemical Weapons Activities

Before Iraq acceded to the CWC in early 2009, it had a long history of involvement in chemical warfare. The Saddam Hussein regime used mustard gas and the nerve agents tabun and sarin on a large scale during the Iran-Iraq War (1980-88) and the ensuing terror campaign against the Kurdish minority in northern Iraq, including the infamous chemical attack on the town of Halabja in March 1988 that killed some 5,000 civilians.

In late 1990, during the run-up to the 1991 Persian Gulf War, Iraq produced a large stockpile of chemical weapons at the Muthanna State Establishment, some 20 kilometers south of the city of Samarra, including aerial bombs, shells, artillery rockets, and Scud missile warheads filled with mustard and nerve agents. Chemical weapons were stockpiled at Muthanna in eight large cruciform bunkers—semi-underground structures resembling truncated pyramids that were built of reinforced concrete one meter thick and covered with a three-meter layer of sandy clay. Each bunker was about the size of a football field and had a main storage room with a capacity of about 10,800 cubic meters.

During the Gulf War, U.S. retaliatory threats deterred Saddam Hussein from using his

chemical arsenal, and Coalition aircraft bombed much of the Muthanna complex, shutting down Iraq's chemical weapons production. On February 8, 1991, an aerial bomb hit the roof of Bunker 13 at Muthanna. According to Iraqi declarations, this bunker stored 2,500 sarin-filled 122mm artillery rockets, which were partially damaged or destroyed in the bombardment. In addition, the bunker held about 200 metric tons of sodium and potassium cyanide salts (precursors for tabun production) and 75 kilograms of arsenic trichloride (a precursor for blister agent).

Post-Gulf War Chemical Disarmament

In the aftermath of Iraq's military defeat in the 1991 Gulf War, the cease-fire agreement—United Nations Security Council Resolution 687—required Iraq to eliminate its entire chemical weapons stockpile under the supervision of inspectors from a newly created UN disarmament agency, the United Nations Special Commission on Iraq (UNSCOM). Chemical munitions, bulk agent, and precursors stored throughout Iraq were consolidated at Muthanna and destroyed by incineration or neutralization. The destruction campaign, which lasted from June 1992 to June 1994, disposed of more than 38,000 filled and unfilled chemical munitions, 690 metric tons of bulk and weaponized CW agents, and over 3,000 metric tons of precursor chemicals.

Although the damaged Bunker 13 at Muthanna contained thousands of sarin-filled rockets, the presence of leaking munitions and unstable propellant and explosive charges made it too hazardous for UNSCOM inspectors to enter. Because the rockets could not be recovered safely, Iraq declared the munitions in Bunker 13 as "destroyed in the Gulf War" and they were not included in the inventory of chemical weapons eliminated under UNSCOM supervision.

Another nearby storage bunker at Muthanna, called Bunker 41, was in good condition, so UNSCOM used it to entomb contaminated materials left over from the CW destruction effort. These items included about 2,000 mustard-filled artillery shells that had been drained and burned to speed decomposition of the agent, and 605 one-ton mustard containers and other items that could not be thoroughly decontaminated. Because these items still bore traces of mustard, they posed a threat to human health if handled improperly. In 1994, Iraqi personnel working under UNSCOM supervision secured Bunkers 13 and 41 by sealing the entrances with massive barriers of brick, tar, and reinforced concrete more than 1.5 meters thick. They also used reinforced concrete to patch the hole in the roof of Bunker 13.

After the UNSCOM inspectors left Iraq in December 1998, the United States had no reliable sources of information on the ground. U.S. intelligence agencies assumed that in the absence of UN monitoring, Saddam Hussein would replenish his chemical arsenal. Iraqi opposition groups such as the Iraqi National Congress also provided misleading information that reinforced this belief. By late 2002, the CIA estimated that Iraq had acquired a stockpile of about 500 metric tons of chemical weapons, even though in early 2003 inspectors with the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC, the successor agency to UNSCOM) found only a few chemical artillery shells dating from the pre-1991 era.

The UNMOVIC inspectors were forced to leave the country in March 2003, shortly before the start of the Iraq War (Operation Iraqi Freedom). In the aftermath of the U.S.-led invasion and the overthrow of the Saddam Hussein regime, the CIA-led Iraq Survey Group (ISG) scoured Iraq for weapons of mass destruction, but found none. The ISG concluded that contrary to the pre-war intelligence estimates, the Iraq had unilaterally destroyed most of its undeclared CW stockpile after the 1991 Gulf War and had not resumed the production of chemical weapons.

Destroying the Chemical Weapons at Muthanna

On February 12, 2009, Iraq acceded to the Chemical Weapons Convention (CWC), a multilateral treaty banning the development, production, stockpiling, transfer, and use of chemical weapons. (To date, 188 countries have signed and ratified the CWC.) After joining the Convention, Iraq was obligated to declare within 30 days any legacy stocks of chemical weapons it

had inherited from the Saddam Hussein regime. On March 12, 2009, Iraq declared Bunkers 13 and 41 at Muthanna containing filled and unfilled chemical munitions and precursors, as well as five former chemical weapons production facilities, to the international body overseeing CWC implementation—the Organization for the Prohibition of Chemical Weapons (OPCW) in The Hague, the Netherlands.

Because of the hazardous conditions in Bunker 13, UNSCOM inspectors were unable to make an accurate inventory of its contents before sealing the entrances in 1994. As a result, no record exists of the exact number or status of the sarin-filled rockets remaining in the bunker. According to the UNMOVIC final report in 2007, the rockets "may be both filled and unfilled, armed or unarmed, in good condition or deteriorated." In the worst-case scenario, the munitions could contain as much as 15,000 liters of sarin. Although it is likely that the nerve agent has degraded substantially after nearly two decades of storage under suboptimal conditions, UNMOVIC cautioned that "the levels of degradation of the sarin fill in the rockets cannot be determined without exploring the bunker and taking samples from intact warheads." If the sarin remains highly toxic and many of the rockets are still intact, they could pose a proliferation risk.

Even if the sarin inside the rockets in Bunker 13 has degraded to the point that it has no military value and is little more than hazardous waste, the CWC still requires that all such materials be destroyed. Following Iraq's submission of its initial CW declaration in March 2009, the OPCW Technical Secretariat processed and analyzed the data. In April, Iraq submitted a general plan for destroying the CW materials stored in the two declared bunkers at Muthanna, as well as dismantling its former chemical weapons production facilities.

Because Baghdad acceded to the CWC more than ten years after the treaty entered into force in 1997, Iraq is not subject to the April 29, 2012 deadline for completing destruction of its chemical weapons that applies to the other member-states that are still eliminating their stockpiles (Libya, Russia, and the United States). Instead, under paragraph 8 of Article IV of the CWC, Iraq must destroy its chemical weapons "as soon as possible," with the order of destruction and procedures for stringent verification to be determined by the OPCW Executive Council. In April 2009, OPCW Director-General Rogelio Pfirter observed, "Undoubtedly, history and the unique complexities that we can envision for the implementation of Articles IV and V of the Convention [dealing, respectively, with the destruction of chemical weapons and former production facilities] make the Iraqi accession to the Convention a special case, and one that might provide unique implementation challenges."

In another statement on November 30, 2009, Director-General Pfirter noted that "exceptional safety considerations" had impeded Iraq's ability to comply in a timely fashion with the obligation in Article III of the CWC to declare its chemical weapons stockpile. On December 1, 2009, on the margins of the annual Conference of the States Parties in The Hague, representatives from Iraq, the United States, and the Technical Secretariat met to review the "possible enhancement of Iraq's declarations" concerning the status of the chemical munitions at Muthanna. The three sides agreed that additional information was needed to clarify the situation, including ground photographs, aerial imagery, documents, and findings from the UNSCOM and UNMOVIC inspections in Iraq. A follow-up meeting took place in The Hague on January 13-14, 2010, and efforts to clarify the Iraqi CW declaration continue. It now appears likely that Iraq will amend its declaration to list only the contents of Bunker 13, given the fact that Bunker 41 contains no filled munitions or bulk agent. The OPCW Technical Secretariat is also consulting with the Iraqi authorities about how to conduct an initial inspection to verify the declaration.

Iraq has asked the United States to provide technical and financial assistance in eliminating the CW materials stored at Muthanna. Because the conditions inside Bunker 13 remain extremely hazardous, however, Iraq and the OPCW Technical Secretariat have not yet decided how to proceed. One possible approach would be to drill holes in the bunker and use sensors to detect the presence of leaking chemical munitions. It would then be necessary to unseal the entrances,

use robots and/or bomb-disposal teams in full protective gear to recover the sarin-filled rockets, and destroy the weapons by incineration or chemical neutralization—a difficult, dangerous, and expensive process. Reportedly, a preliminary estimate of the cost to evaluate and inventory the bunkers (not including destruction) is $500 million, including providing security for the workforce and assessing and managing the danger from unexploded ordnance and agent leaks. Accordingly, the cost of the operation is a major concern.

A second option under consideration would be to entomb Bunker 13 in a concrete "sarcophagus" that would render it permanently inaccessible, as was done with the highly radioactive nuclear reactor at Chernobyl. However, the CWC's prohibition on "land burial" in paragraph 13 of Part IV(A) of the Verification Annex creates a potential obstacle to this approach. Some experts also argue that failing to recover and destroy the sarin-filled rockets would be inconsistent with the basic obligation in the CWC to eliminate all chemical weapons in an irreversible manner, and would therefore set a bad precedent.

Destruction of Recovered Chemical Munitions

Iraq's CW destruction efforts face an additional challenge that is likely to persist for some time. Between the end of major combat operations in Iraq on May 1, 2003, and Iraq's accession to the CWC on February 12, 2009, U.S. and British occupation forces recovered hundreds of chemical munitions containing degraded mustard or sarin, all dating from the Iran-Iraq War of the 1980s or the 1991 Persian Gulf War.

According to the ISG final report, published in September 2004, "Beginning in May 2004, ISG recovered a series of chemical weapons from Coalition military units and other sources. A total of 53 munitions have been recovered, all of which appear to have been part of pre-1991 Gulf War stocks based on their physical condition and residual components. The most interesting discovery has been a 152mm binary Sarin artillery projectile—containing a 40 percent concentration of Sarin—which insurgents attempted to use as an Improvised Explosive Device (IED). The existence of this binary weapon not only raises questions about the number of viable chemical weapons remaining in Iraq and [sic] raises the possibility that a larger number of binary, long-lasting chemical weapons still exist."

On June 21, 2006, at the request of the House Permanent Select Committee on Intelligence, Director of National Intelligence John D. Negroponte declassified the "key points" from a U.S. Army National Ground Intelligence Center report on the recovery of chemical munitions in Iraq:

- *Since 2003 Coalition forces havee ecoveredapproximately 500 weapons munitions which contain degraded mustard or sarin nerve agent.*

- *Despite many efforts to locate and destroy Iraq's pre-Gulf War chemical munitions, filled and unfilled pre-Gulf War chemical munitions are assessed to still exist.*

- *Pre-Gulf War Iraqi chemical weapons could be sold on the black market. Use of these weapons by terrorists or insurgent groups would have implications for Coalition forces in Iraq. The possibility of use outside Iraq cannot be ruled out.*

- *The most likely munitions remaining are sarin and mustard-filled projectiles.*

- *The purity of the agent inside the munitions depends on many factors, including the manufacturing process, potential additives, and environmental storage conditions. While agents degrade over time, chemical warfare agents remain hazardous and potentially lethal.*

- *It has been reported in open press that insurgents and Iraqi groups desire to acquire and use chemical weapons.*

At the time the Iraqi chemical munitions were recovered, Iraq was under military occupation by the United States and the United Kingdom,

which were parties to the CWC. Accordingly, both countries were subject to paragraph 1(a)(i) of Article III of the Convention, which provides that a state party must declare to the OPCW Technical Secretariat all chemical weapons "located in any place under its jurisdiction and control." In addition, according to paragraph 1 of Article IV, the CWC's requirements for verifiable destruction apply to "all chemical weapons owned or possessed by a State Party, or that are located in any place under its jurisdiction and control." Finally, paragraph 9 of Article IV states, "Any chemical weapons discovered by a State Party after the initial declaration of chemical weapons shall be reported, secured and destroyed in accordance with Part IV(A) of the Verification Annex."

These provisions of the CWC suggest that during the period after the 2003 invasion and the overthrow of Saddam Hussein when the United States and the United Kingdom controlled the territory of Iraq, they were legally obligated to declare any recovered chemical munitions to the OPCW Technical Secretariat and ensure that the weapons were stored and destroyed in a manner that could be verified by the international inspectorate. Yet because of the deteriorating security situation that prevailed during the early years of the military occupation of Iraq, Washington and London decided to conceal the recovery of hundreds of pre-1991 chemical munitions in order to protect their own troops and Iraqi civilians from the possible theft and use of such weapons by terrorists or insurgents. The recovered chemical munitions were then secretly destroyed.

Not until April 2009, in response to Iraq's accession to the CWC two months earlier, did the United States and the United Kingdom provide information to the OPCW Technical Secretariat about the *ad hoc* recovery and destruction of chemical weapons by U.S. and British occupation forces in Iraq from 2003 to 2008. In early September 2009, teams from the Technical Secretariat's Verification Division, including the Chemical Demilitarization Branch, visited Washington and London to review documents related to the recovery and destruction operations. In both cases, the Technical Secretariat's teams concluded that the documents appeared consistent with the information provided by the two governments in April 2009.

Other CWC member states were troubled by the implications for the Convention of the unilateral destruction of chemical weapons in Iraq by U.S. and British forces. During a meeting of the Executive Council in October 2009, South Africa's permanent representative to the OPCW, Ambassador Peter Goosen, speaking on behalf of the African Group of CWC member states, called for the development of guidelines for "the security and destruction of chemical weapons that come into the possession and/or control of a State Party or States Parties in situations not foreseen by the Convention, including conflict situations." Although Goosen did not mention Iraq by name, his statement clearly referred to the *ad hoc* destruction of Iraqi chemical munitions during the occupation. In Goosen's view, destroying such weapons "without the engagement of the Convention and its provisions" threatened to undermine the CWC.

To address this situation, South Africa urged that the Executive Council establish a working group, open to all interested CWC member states, to develop a set of guidelines for declaring and destroying chemical weapons in cases where foreign military forces recover chemical munitions from an area under their control. On October 16, 2009, the Executive Council duly approved the creation of a working group for this purpose, chaired by Michael Hurley of Ireland, and encouraged the participating states to complete their work as soon as possible. The new working group will focus on developing guidelines to deal with similar circumstances in the future, rather than rehashing the details of the Iraq occupation.

Given the way chemical weapons were stored in Iraq—often unmarked and combined with conventional ordnance—it is quite likely that pre-1991 chemical munitions left over from the Iran-Iraq War and the Gulf War will continue to be discovered for years to come. According to the ISG final report, "An Iraqi source indicated that when weapons were forward-deployed in anticipation of a conflict, the CW weapons often became mixed in with the regular munitions, and were never accounted for again. Another source stated that several hundred munitions

moved forward for the Gulf war, and never used, were never recovered by retreating Iraqi troops. A thorough post-[Operation Iraqi Freedom] search of forward depots turned up nothing—if the weapons were indeed left behind, they were looted over the 12 years between the wars."

Now that Iraq is back in control of its own territory, the United States wants the Iraqi government to deal with any future chemical weapons finds on its own. (The United Kingdom ended its six-year occupation of southern Iraq in June 2009, and the United States plans to pull out its combat troops by the end of 2011.) Given the likelihood that additional pre-1991 chemical munitions will be recovered in Iraq, the U.S. military is currently training Iraqi Army soldiers to identify, recover, render harmless, transport, and safely destroy chemical weapons. Because Iraq is now a party to the CWC, any chemical munitions recovered in the future will have to be disposed of under international verification, in a manner fully consistent with the provisions of the Convention.

Because Iraq acceded to the CWC more than 10 years after its entry into force, Baghdad is subject to Article IV, paragraph 8, which states that procedures for the "stringent verification" of chemical weapons destruction "shall be determined by the Executive Council." How the Iraqi government and the OPCW decide to eliminate Iraq's legacy chemical weapons—both those stored at Muthanna and any munitions that may be recovered elsewhere—will have broader implications for the region. Three Middle Eastern countries suspected of possessing chemical arms have yet to join the CWC: Israel has signed but not ratified the treaty, while Egypt and Syria have neither signed nor ratified. Destroying Iraq's remaining chemical weapons in a credible manner would bolster the chemical disarmament regime and set a positive example for the region. Conversely, a failure by Iraq to implement the Convention effectively could weaken the regime and reduce pressures on the remaining hold-out states to join.

http://cns.miis.edu/stories/100304_iraq_cw_legacy.htm

Army achieves major program milestone

April 19, 2010

Non-Stockpile mission destroys largest inventory of recovered chemical warfare materiel to date.

Today, the U.S. Army Chemical Materials Agency (CMA) announced that it completed its mission to destroy all non-stockpile materiel declared when the United States entered into the Chemical Weapons Convention (CWC), an international treaty mandating the destruction of our Nation's chemical warfare.

This milestone also marks the destruction of the largest inventory of recovered chemical warfare materiel (RCWM) to date - more than 1,200 munitions - with a stellar safety record.

CMA's U.S. Army Non-Stockpile Chemical Materiel Project (NSCMP) began operations at the Pine Bluff Explosive Destruction System (PBEDS), located at Pine Bluff Arsenal (PBA), Ark., in June 2006 to destroy items, such as 4.2-inch mortars and German Traktor rockets captured during World War II. PBEDS completed destruction operations on April 14.

"The Army's Non-Stockpile Chemical Materiel Project is the Nation's best equipped organization to provide safe, successful destruction of such a diverse inventory of recovered chemical munitions," said Carmen Spencer, Deputy Assistant Secretary of the Army for Elimination of Chemical Weapons. "This accomplishment exemplifies the excellent work we have come to expect from this dedicated group."

Munitions were assessed at PBA before treatment in NSCMP's Explosive Destruction System (EDS), a neutralization technology that provides safe, environmentally responsible treatment of RCWM. Developed as an alternative to open detonation, the transportable EDS provides on-site treatment and neutralization of RCWM and prevents the release of vapor, blast and munition fragments from the process. Operators confirm complete neutralization of the chemical agent by sampling liquid and air prior to opening the EDS.

"This milestone underscores our commitment to the CWC," said CMA Director Conrad Whyne. "This accomplishment could not have been possible without the commitment of all the workers, led by the Non-Stockpile Chemical Materiel Project, including Pine Bluff Arsenal, Pine Bluff Chemical Activity, Edgewood Chemical Biological Center, 20th Support Command, CBRNE Analytical and Remediation Activity-West, Sandia National Laboratory, Idaho National Laboratory, Science Applications International Corporation and supporting work forces. Their levels of technical expertise make it possible for us to fulfill our mission while protecting the public, workers and environment."

The NSCMP research and development team, faced with the unique and diverse inventory of recovered munitions at PBEDS, invented patent-protected processes and cutting-edge vessel enhancements.

"The PBEDS project presented many challenges, but we worked through all of them, achieving a significant milestone," said Laurence Gottschalk, Project Manager for Non-Stockpile Chemical Materiel. "Everyone involved should be proud of their contributions."

NSCMP engineers and chemists received a U.S. National Patent for developing a technology that improves the detoxification of lewisite, a World War II-era German arsenic-based compound. Before their work, the Army was challenged by disposal of lewisite and other arsenical compounds.

System enhancements included the Advanced Fragment Suppression System, which reduces the amount of solid waste generated by up to 80 percent, significantly cutting costs and supporting NSCMP's commitment to environmental stewardship.

http://www.globalsecurity.org/wmd/library/news/usa/2010/usa-100419-arnews01.htm

Depot's mustard stockpile inspected

Five inspectors from the Organization for the Prohibition of Chemical Weapons, based in the Netherlands, conducted an annual inspection last week of the mustard agent stockpile at the Pueblo Chemical Depot. Over four days, the inspectors took a physical inventory of every igloo at the depot. Inspectors represented South Korea, Spain, Romania and Russia, as well as the United States. Lisabeth Wachutka, depot treaty compliance officer, said afterward, 'This operation was a smooth and professional endeavor. All parties involved worked together to execute a highly successful inspection.

http://www.chieftain.com/news/local/article_d044e5ed-955a-56eb-bf03-080eacba1291.html

Chemical weapons destruction plant plans aired [Richmond, KY]

Two panels will meet Tuesday in Richmond, and an update on construction of a plant where chemical weapons will be destroyed is expected. The plant will destroy chemical weapons stored at Blue Grass Army Depot. The public will be able to comment during the meeting.

http://www.wave3.com/Global/story.asp?S=12107646

RECENT DEVELOPMENTS IN SCIENCE AND TECHNOLOGY

New Defenses Deployed Against Plant Diseases

April 23, 2010

An international team led by scientists at the Sainsbury Laboratory in Norwich,UK, have transferred broad spectrum resistance against some important plant diseases across different plant families. This breakthrough provides a new way to produce crops with sustainable resistance to economically important diseases.

Food insecurity is driving the search for ways to increase the amount of food we grow, whilst at the same time reducing unsustainable agricultural inputs. One way to do this is to increase the innate ability of crops to fight off disease-causing pathogens. Increased disease resistance would reduce yield losses as well as reduce the need for pesticide spraying.

Breeding programs for resistance generally rely on single resistance genes that recognise molecules specific to particular strain of pathogens. Hence this kind of resistance rarely confers broad-spectrum resistance and is often rapidly overcome by the pathogen evolving to avoid recognition by the plant.

However, plants have another defence system, based on pattern recognition receptors (PRRs). PRRs recognise molecules that are essential for pathogen survival. These molecules are less likely to mutate without harming the pathogen's survival, making resistance to them more durable in the field. These essential molecules are common to many different microbes, meaning that if a plant recognises and can defend itself against one of these molecular patterns, it is likely to be resistant against a broad range of other pathogens.

Very few of these PRRs have been identified to date. Dr Cyril Zipfel and his group at the Sainsbury Laboratory in Norwich, UK, took a Brassica-specific PRR that recognises bacteria, and transformed it into the Solanaceae plants *Nicotania benthaminia* and tomato.

"We hypothesised that adding new recognition receptors to the host arsenal could lead to enhanced resistance," said Dr Zipfel.

Under controlled laboratory conditions, they tested these transformed plants against a variety of different plant pathogens, and found drastically enhanced resistance against many different bacteria, including some of great importance to modern agriculture such as *Rastonia solanaceraum*, the causal agent of bacterial wilt and a select agent in the United States under the Agricultural Bioterrorism Protection Act of 2002.

"The strength of this resistance is because it has come from a different plant family, which the pathogen has not had any chance to adapt to. Through genetic modification, we can now transfer this resistance across plant species boundaries in a way traditional breeding cannot," said Dr Zipfel.

Published in the journal *Nature Biotechnology*, the finding, that plant recognition receptors can be successfully transferred from one plant family to another provides a new biotechnological solution to engineering disease resistance. The Zipfel group is currently extending this work to other crops including potato, apple, cassava and banana that all suffer from important bacterial diseases, particularly in the developing world.

"A guiding principle in plant pathology is that most plants tend to be resistant to most pathogens. Cyril's work indicates that transfer of genes that contribute to this basic innate immunity from one plant to another can enhance pathogen resistance," commented Professor Sophien Kamoun, Head of the Sainsbury Laboratory. "The implications for engineering crop plants with enhanced resistance to infectious diseases are very promising."

This research was funded by the Gatsby Charitable Foundation and the Two Blades Foundation, who have patented the technology on behalf of the inventors, and involved research groups from INRA/CNRS in France, the University of California, Berkeley and Wageningen University in the Netherlands.

http://www.sciencedaily.com/releases/2010/03/100314150912.htm

Defense Advanced Research Projects Agency Awards $4.395 Million to Fraunhofer CMB for H1N1 Vaccine Development

March 16, 2010

Fraunhofer USA Center for Molecular Biotechnology (CMB) announced today that it has received a $4.395 million award from the

Defense Advanced Research Projects Agency (DARPA) to develop a vaccine against H1N1 influenza virus using its plant-based production platform.

"Fraunhofer's work to help fight the spread of the H1N1 influenza virus is on the cutting edge of research and will impact the way we develop vaccines long-term"

This will be the third round of funding from DARPA and follows on CMB's successful optimization and feasibility studies completed in 2008 and a new, state-of-the-art cGMP pilot manufacturing facility completed at the end of 2009. This current funding will allow CMB's H1N1 vaccine candidate to progress to Phase 1 clinical trials, therefore validating the utility of the technology for manufacturing products for use in humans.

According to Dr. Vidadi Yusibov, Executive Director of Fraunhofer USA CMB, "Over the past eight years, we have taken our plant-based transient expression system for recombinant protein production from concept, through technical innovations, process improvement, and scale up. While the production platform has been validated by extensive pre-clinical studies, we are looking forward to entering the clinical phase of development."

The need for alternative manufacturing platforms with rapid response capability became apparent in the past year with the emergence of the H1N1 influenza. DARPA's interest in developing advanced manufacturing technologies for vaccine production stems from the need to protect military personnel and civilian populations from infections agents.

When asked their opinions on this latest announcement from Fraunhofer CMB, members of Delaware's Congressional delegation made the following comments.

"Fraunhofer's work to help fight the spread of the H1N1 influenza virus is on the cutting edge of research and will impact the way we develop vaccines long-term," said Congressman Mike Castle. "Dr. Yusibov and his team are leaders in their field and we are lucky to have them here in Delaware."

"Receiving this competitive grant shows clearly that Fraunhofer is helping lead the way in creating vaccine technology that can protect us against dangerous threats such as bioterrorism and pandemic flu," said Sens. Thomas Carper (D-Del.) and Edward (Ted) Kaufman (D-Del.). "We are proud of the work being done at Fraunhofer and look forward to seeing all that they will accomplish with this additional support from the federal government."

About Fraunhofer USA Center for Molecular Biotechnology

Fraunhofer USA CMB, a division of Fraunhofer USA, Inc., is a not-for-profit research organization whose mission is to develop safe and effective vaccines targeting infectious diseases and autoimmune disorders. CMB's technology provides a safe, rapid and economical alternative for vaccine production. The Center conducts research in the area of plant biotechnology, utilizing new, cutting edge technologies to assist with the diagnosis, prevention and treatment of human and animal diseases. The Center houses individuals with expertise and excellence in plant virology, pathology, molecular biology, immunology, vaccinology, protein engineering, and biochemistry.

http://www.businesswire.com/portal/site/home/permalink/?ndmViewId=news_view&newsId=20100316005584&newsLang=en

DHS Tackles Next- Generation Bioterrorism Detector

March 1, 2010

A government biosecurity expert last week briefed lawmakers on the Department of Homeland Security's next-generation "lab-in-a-box" to detect, to identify, and to aid response to a biological terrorism attack.

Dr. Tara O'Toole, undersecretary at DHS Directorate of Science and Technology (S&T), described how the department has and will continue to leverage new technology to refine and improve its BioWatch programbefore a House subcommittee.

The program began in 2003 in response to the anthrax mailings of 2001. DHS initially deployed air samplers in a number of unspecified metropolitan areas to detect biological pathogens, including anthrax, smallpox, plague, and tularemia, according to a Federation of American Scientists' report from 2003.The number of urban areas covered now exceeds 30 and DHS wants to expand the program to approximately 20 more urban areas.

O'Toole testified that S&T has developed a possible next-generation detector to improve the BioWatch program that's currently being tested by the_DHS Office of Health Affairs (OHA), which is responsible for the day-to-day management of the program. Currently, filters from the air samplers must be collected every 24 hours. The filters are then analyzed for pathogens at a local laboratory. This process, however, takes considerable time.

"With this sampler technology and deployment (known as Generation 2), as much as 36 hours may elapse between the collection of genetic material of interest and the availability of essential laboratory test results showing its presence," Dr.Bernard D. Goldstein, a University of Pittsburgh professor and chair of the Committee on Effectiveness of National Biosurveillance Systems, told the subcommittee. (The committee recently released a public summary of a report on BioWatch that it delivered to Congress.)

When a pathogen is detected, a BioWatch Actionable Result (BAR) is created. The laboratory then notifies local public health officials and they determine how to respond. A BAR, however, does not mean a bioterrorism release has occurred. O'Toole testified that numerous BARs have occurred since 2003 and have been deemed benign.

"In some BAR cases, BioWatch samples contained genetic material that was highly similar to that found in BioWatch target organisms, but which turned out to be from microbes that are present in the ambient environment but do not represent threats to human health."

Generation 3 technology, says O'Toole, will improve the program by creating a lab-in-a-box. "Gen 3 Bio Watch would be far more technologically sophisticated than the current BioWatch sensors," she told lawmakers, "with the ability to automatically collect outdoor air samples, perform molecular analysis of the samples and report the results electronically to provide near-real time reporting."

Pathogen detection rates could be reduced to 4 hours, O'Toole said.

Goldstein and his committee, however, remain skeptical of this next-generation technology. "Our review of the plans that DHS had developed for testing and evaluation for Generation 3 (as presented to us in spring 2009) revealed that technology goals for Generation 3 will be very difficult to achieve."

And even if Gen 3 detectors work as planned, they are only one layer to accurately identifying and aiding a response to a bioterrorism attack. One reason for this is logistics. The attack must occur in an area where the detectors are already deployed. Goldstein told lawmakers that while BioWatch could potentially alert local, state, and federal stakeholders of a release in a timely manner, he places more confidence in public and private health care systems to do bio-surveillance properly through information sharing.

"It is broader and more flexible than BioWatch, permitting detection of a wider range of infectious diseases and diseases resulting from source of exposure that BioWatch is not designed or deployed to detect," he said. Another hurdle Goldstein said DHS must confront is BioWatch's ability to not only identify threats but coordinate and communicate the technology's findings with state and local public health decision makers and first responders.

Testing on Gen 3 technologies will proceed as planned. Dr. Alex Garza, assistant secretary for health affairs and chief medical officer at

OHA, testified that the agency has agreed to test bioterrorism detection systems from two vendors. If either or both vendors pass the initial testing, DHS will begin a " four-city operational testing phase...in a variety of outdoor and indoor environments to ensure the systems operate properly before committing the government to a large-scale buy."

http://www.securitymanagement.com/news/dhs-tackles-next-generation-bioterrorism-detector-

NATIONAL AND INTERNATIONAL DEVELOPMENTS

British troops in Afghanistan may be facing a new threat

March 14,2010

British troops in Afghanistan may be facing a new threat after claims by Taliban commanders that home-made bombs are being loaded with anthrax.

So far there is no evidence of biological weapons being used by insurgents. But one of Britain's leading terrorism experts warned last night that Taliban extremists linked with Al Qaeda would have the technology to produce the deadly disease.

An ITV camera crew filmed a bomb-making factory last week in caves at Tora Bora on the Afghan-Pakistan border. One bomb maker, identified as regional commander Mullah Doud, said: "We use anthrax so when a bomb explodes it produces a toxic cloud."

A drug user in Blackpool last week became the 10th person in Britain to die of anthrax-tainted heroin, thought to have been produced in Afghanistan. Professor Paul Wilkinson, of the Centre for Terrorism Studies at St Andrews University, said: "Anthrax is an effective weapon and producing it needs only basic levels of biology and chemistry.

"There are certainly extreme elements within the Taliban, those loyal to Al Qaeda, who would not think twice about this method. However, there is a wide chasm between producing anthrax and using it effectively in home-made bombs.

"Japan ese terrorists had intended to use anthrax on the Tokyo metro in 1995. They experimented with it extensively but in the end opted for the nerve agent sarin. This shows that it is not an easy substance to control."

Professor Wilkinson said the only safeguard against anthrax was anti-nuclear, biological and chemical warfare equipment.

Unlike in Iraq, where coalition soldiers regularly donned the suits, troops in Afghanistan do not wear them, though they are believed to have access to them if necessary.

Colonel Richard Kemp, former commander of British forces in Afghanistan, said: "It would not be unusual for extremist forces to use dirty bombs. In Iraq chlorine was the flavour of choice.

http://www.express.co.uk/posts/view/162872/Anthrax-threat-to-British-troops

Advanced Life Sciences' Restanza Effective Against Pathogen Representing Global Public Health And Bioterror Threat

April 22, 2010

Advanced Life Sciences Holdings, Inc. (OTC Bulletin Board: ADLS) announced positive results from an in vitro study assessing the efficacy of Restanza™ (cethromycin), its novel oral antibiotic, against 30 strains of Burkholderia pseudomallei, a serious, life-threatening bacterial pathogen. Restanza showed significant in vitro activity against clinical and environmental strains of B. pseudomallei as measured by minimal inhibitory concentration (MIC), the lowest concentration of an antimicrobial that will inhibit the visible growth of a microorganism after 24 hours of incubation. Restanza demonstrated

antibacterial activity with MIC values ranging from 0.5 - 8 ug/ml and MIC90 of 4 ug/ml. Most notably, Restanza also demonstrated positive activity against strains that were resistant to a commonly used antibiotic, azithromycin, for which MIC values were all greater than 64 ug/ml. In a separate study, Restanza also demonstrated in vitro activity against 30 strains of Burkholderia mallei with MIC values ranging from 0.06 - 1 ug/ml and MIC90 of 0.5 ug/ml, which are comparable to azithromycin.

"These impressive data provide additional validation of Restanza's broad spectrum of antibacterial activity as a countermeasure for biodefense and highlight its ability to address serious bacterial infections that today are becoming untreatable due to the increasing public health threat of bacterial resistance to currently marketed antibiotics, especially in emerging markets," said Michael T. Flavin, Ph.D., chairman and chief executive officer of Advanced Life Sciences. "When these data are added to the substantial body of evidence from previously published studies showing Restanza's demonstrated potent activity in multi-drug resistant pneumonia, tuberculosis, malaria, Lyme disease and sexually transmitted diseases, such as gonorrhea, our belief in Restanza's breakthrough therapeutic potential is significantly strengthened."

About Burkholderia pseudomallei and Burkholderia mallei

Burkholderia pseudomallei and Burkholderia mallei are Gram-negative, rod-shaped bacteria, and are the causative agents of the diseases melioidosis and glanders, respectively. These bacteria can be found in contaminated water, soil and on market produce. They cause deadly infectious diseases endemic to Southeast Asia and northern Australia, and which may occur in other tropical and subtropical regions. Transmission to humans and animals occurs through direct contact with the organism via ingestion, inhalation, or through open wounds and skin abrasions. Treatment of these diseases requires prolonged therapy with antibiotics. Few antibiotics are effective against these diseases, and there is currently no effective vaccine. The severe course of infection, high mortality, aerosol infectivity and worldwide presence of these pathogens have resulted in their inclusion as potential agents of biological warfare or bioterrorism, and are listed on the Centers for Disease Control list as Category B bioterrorism agents.

Restanza as a Biodefense Countermeasure

Advanced Life Sciences is developing Restanza as a broad spectrum medical countermeasure for biodefense to combat multiple high priority bioterror agents, such as Bacillus anthracis (anthrax), Fransicella tularensis (tularemia), Yersinia pestis (plague) and Burkholderia pseudomallei (melioidosis). FDA has designated Restanza as an orphan drug for the post-exposure prophylactic treatment of inhalation anthrax, plague and tularemia, but the FDA has not yet approved the drug for marketing in this or any other indication.

Restanza is being developed as a biodefense countermeasure by Advanced Life Sciences to fill the unmet need identified by the U.S. Government. In a report entitled "World at Risk: The Report of the Commission on the Prevention of WMD Proliferation and Terrorism," which was the result of a six-month study by the bipartisan Commission that Congress created pursuant to the recommendations of the 9/11 Commission, the Report states that a "potential gap in U.S. biological defenses is the threat of bioterrorist attacks with strains of anthrax that have been genetically modified to make them resistant to standard antibiotics. Given this potential threat, additional funding is needed for the National Institutes of Health and the private sector to develop new classes of antibiotics."

Advanced Life Sciences has received notice from the Biomedical Advanced Research and Development Authority (BARDA) of the U.S. Department of Health and Human Services that it has completed its initial technical evaluation of the Company's $15 million funding proposal for advanced development of Restanza as a biodefense countermeasure and identified it as a scientifically and technically sound proposal important to program goals and objectives that may require further development and

may be recommended for acceptance subject to funds availability. The Company was invited to submit additional information to allow BARDA to make a final determination on the appropriateness of the proposal to enter into contract negotiations.

About Advanced Life Sciences

Advanced Life Sciences is a biopharmaceutical company engaged in the discovery, development and commercialization of novel drugs in the therapeutic areas of infection, cancer and respiratory diseases.

Any statements contained in this presentation that relate to future plans, events or performance are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. These risks and uncertainties include, among others, those relating to technology and product development, market acceptance, government regulation and regulatory approval processes, intellectual property rights and litigation, dependence on collaborative relationships, ability to obtain financing, competitive products, industry trends and other risks identified in Advanced Life Sciences' filings with the Securities and Exchange Commission. Advanced Life Sciences undertakes no obligation to update or alter these forward-looking statements as a result of new information, future events or otherwise.

http://www.bradenton.com/2010/04/21/2222241/advanced-life-sciences-restanza.html

Teledyne receives DoD contract to aid nation's CBRN responders

March 8, 2010

Teledyne Brown Engineering, Inc., has been awarded a contract by the Department of Defense to aid the nation's front line performers in defense against chemical, biological, radiological, nuclear and explosive weapons of mass destruction.

The contract, awarded under a multiple award indefinite delivery/indefinite quantity contract, is to provide acquisition program and engineering support, research and technology, and program and integration support.

Nine other contract winners were announced along with Teledyne Brown, a subsidiary of Teledyne Technologies Incorporated, to provide as much as $485 million in support services over the next five years.

"Teledyne Brown is committed to applying its engineering and manufacturing expertise toward the DoD's effort to upgrade its chemical and biological defense equipment," Robert Mehrabian, chairman, president and chief executive officer of Teledyne Technologies, said. "Teledyne is here to support our warfighters on the battlefield and enhance homeland security."

Work for the contract will be primarily performed in Hunstville, Ala., and at Aberdeen Proving Ground, Md.

In the past, Teledyne Brown has provided the Department of Defense with chemical weapons disposal support for its Non-Stockpile Chemical Materiel Program, enhanced protection to the warfighters against improvised explosives, a new chemical and biological warfare agent decontamination system for sensitive electronics and avionics and a new biological detector test chamber.

http://www.bioprepwatch.com/news/212253-teledyne-receives-dod-contract-to-aid-nations-cbrn-responders

Durham anthrax building cleanup to cost $70,000

March 3, 2010

The remediation of the building where a Strafford County woman was exposed to anthrax spores will be costly.

The Waysmeet Center, which serves as the United Campus Ministry for UNH, is on the verge of signing a $70,000 remediation contract with CYN Environmental Services of

Stoughton, Mass., said the Rev. Larry Brickner-Wood, the ministry's chaplain and executive director.

The remediation will include soaking, with a bleach-like solution, five common-area rooms and a hallway that tested positive for low levels of anthrax.

In addition to the remediation cost, many items will be lost in the process, including art, furniture, books, a piano and other musical instruments. Brickner-Wood estimated the loss of those items at about $10,000-$15,000.

"The art work will be the toughest to lose," he said. "It's original art from students and artists, and many are dear students to us and talented artists."

He said the piano also would be tough to lose. It was donated five years ago and before then, the ministry had worked for more than six years to secure one.

The ministry also has a $20,000 bill hanging over its head for the first round of testing in the building in December.

Despite the cost, Brickner-Wood said the ministry is upbeat as the woman who contracted gastrointestinal anthrax there continues to improve. He said the eight students who live in the building and the many students who use it also are looking forward to its reopening.

"The things we're losing are just things," he said. "People will donate furniture, and they'll donate other things. The important thing is being back inside the building."

Brickner-Wood said the remediation should take two weeks, and barring any unforeseen circumstances, the ministry could be reopened by the end of the month.

State officials have said the woman likely contracted the gastrointestinal anthrax by swallowing anthrax spores from an African drum during a Dec. 4 drum circle event at the center.

The type of building cleaning planned for the center also was done after similar anthrax cases in Connecticut and New York.

http://www.allbusiness.com/humanities-social-science/visual-performing-arts/14037827-1.html

Experts Find Flaws In Planning For Md. Army Biolab

March 4, 2010

The Army failed to fully analyze the risk of public exposure to deadly pathogens from a biodefense laboratory building under construction at Fort Detrick, a National Academy of Sciences panel said Thursday.

But the committee said stringent safety procedures will protect workers and the public when the new U.S. Army Medical Institute of Infectious Diseases opens in 2014 at the Army installation 50 miles northwest of Washington.

The security measures will be tougher than those at the existing institute, the military's flagship biodefense center, where safety precautions already meet or exceed accepted standards, the committee's report said.

The strength of the operational safety measures outweighed weaknesses in the project's flawed environmental impact statement, panel chairman Charles N. Haas, a professor of environmental engineering at Drexel University, said at a briefing. So rather than recommending a rewrite of the environmental statement, which could have halted the $680 million project, the experts urged the Army to improve its risk assessment for such projects in the future.

Project critic Robert Kozak of the Fort Detrick Watchdog Group called the decision

"unconscionable" and said his group would consider suing the Army to force revisions in the environmental statement.

"We'd have to find the money to do it, but that is the next step," he said.

Beth Willis of Frederick Citizens for Bio-lab Safety said construction probably can't be stopped even though questions about hazards remain.

"We need to have the risks addressed and mitigated very transparently," she said.

The 800-acre installation that includes the new labs is surrounded by homes and businesses within the city limits of Frederick, a community of 59,000 about 50 miles from both Washington and Baltimore.

Fort Detrick commander Maj. Gen. James K. Gilman said in a statement that safety is the post's highest priority. He acknowledged a need for improved community outreach, a key recommendation of the panel's report, to better explain the institute's mission and its "relentless focus" on safety.

Workers broke ground for the new labs in August, about 2 1/2 years after federal regulators approved the environmental statement. The $680 million project will replace crowded facilities built in the 1960s.

The panel found numerous flaws in the risk assessment. One involved the effects of a worst-case scenario in which the Ebola virus and bacteria that cause Q fever, a potentially deadly flulike disease, are released from an exhaust stack. The Army said such an event would cause insignificant concentrations on the ground nearby and pose no threat to the community. But the review panel said data supporting that conclusion were "lacking, missing, or not transparent" in the environmental statement. The committee's own calculations "indicated the potential for significantly higher exposure."

Also, the environmental impact statement didn't adequately document or characterize individual risk of exposure or infection, the panel found.

The environmental statement also failed to consider potential exposures to those at Fort Detrick, as opposed to the community outside the gates, the report says. And it says the statement didn't address how the spread of a pathogen would be affected by population size and density.

Another scenario not considered was the threat of an insider with malicious intent, such as Bruce Ivins, an institute scientist whom the FBI concluded was the lone perpetrator of the 2001 anthrax mailings that killed five people and sickened 17 others. Ivins killed himself in July 2008.

Ivins did not emerge publicly as a suspect until just after his death, more than a year after federal regulators approved the final environmental statement for the new labs. He is not mentioned specifically in the panel's report.

The panel also faulted the Army for not considering other locations for the new labs, although Congress mandated they be built at Fort Detrick as part of a larger biodefense campus.

The safety review was sought by U.S. Sen. Barbara Mikulski, D-Md., at the request of Frederick County and citizens who alleged shortcomings in risk assessment.

http://wjz.com/local/panel.lab.regs.2.1537179.html

Compiled by: Wg. Cdr. Ajey Lele, Dr. Monalisa Joshi and Gunjan Singh.

Book Review

Francis Fukuyama (ed.), Blindside: How to Anticipate Forcing Events and Wild Cards in Global Politics (Washington D.C.: Brookings, 2007)

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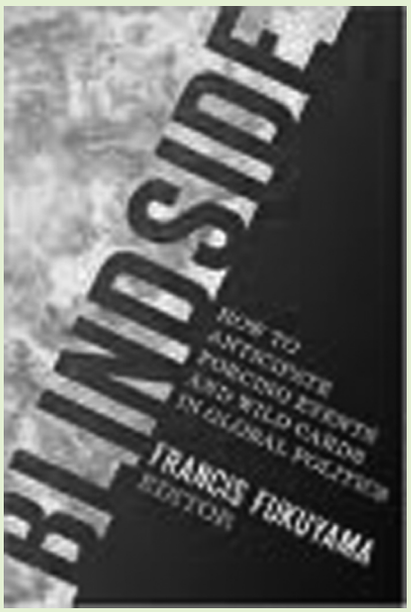
Summary

Blindside is a rich examination of the complexities involved in predicting and preparing for strategic surprises illuminated by pertinent case studies of past event as well as possible future outcomes across the political, technological, economic, and biological arenas.



The book seeks to illuminate policy choices available to American policy makers to deal with 'low probability and high impact' events like the September 11, 2001 attacks or the destruction of the former Soviet Union and the issues which prevent them from 'seeing the writing on the wall' as it were, in being better prepared to deal with such eventualities. Pointing out institutional as well as personal failures of key decision-makers that prevent full capacities from being utilised, they urge scenario building and cost-benefit analysis among other tools to help make better choices. The importance of technology is also pointed out, given that it drives much of economic and political change. Factors which militate against better preparation include the low probability of such events happening, the short-life of political careers, and 'pressure of the immediate', among others. The book discusses different case studies, including past instances of failure to anticipate events like the collapse of the Soviet Union and the East Asian economic crisis of 1997-98, as well as potential future cases of surprise like a biological event. It then examines the importance of forecasting, and concludes by an examination of the complexities in thinking through these and related issues.

Bruce Berkowitz in his chapter 'US Intelligence Estimates of Soviet Collapse: Reality and Perception' discounts the widely held view that US intelligence community was 'blindsided' and failed to anticipate the Soviet collapse. Instead, he shows that US intelligence provided long-range as well as shorter-range warnings about aspects such as a slowdown in the Soviet economy and a rapidly constricting choice of options for a Soviet leadership. Berkowitz points out that an intentional political decision better explains the Bush administration's policy of continuing its support to Gorbachev rather than an intelligence failure. David Hale in 'Econoshocks' points out that monetary excesses resulting from incomplete information as well as poor monitoring of systemic risk by international organisations like the IMF led to the East Asian economic crisis. Almost prophetically, the author notes that given the excesses in the 'old

industrial countries', 'the next major shocks to the global financial system are more likely to come from North America, Europe …'

William Bonvillian examines the role and contribution of DARPA (Defence Advanced Research Projects Agency) and the continued importance of such an innovation organisation to sustain America's national power. Gal Luft and Ann Korin examine the complexities arising out of the strategic importance of oil as well as due to attacks by groups inimical to multi-nationals extracting the resource from regions such as the Niger Delta. They note that with 10 per cent of the world's oil reserves, the Iranian regime seems unfazed by the prospects of tougher sanctions. China's and India's dependence on oil also complicates US foreign policy choices in dealing with countries such as Iran. The chapter goes on to examine the possibility of alternate fuels like ethanol or electric vehicles to reduce American dependence on foreign oil. They conclude by noting that the 'shift from an oil-based economy to a fuel-based economy' is both 'practical and economical' for America. Scott Barrett in 'Emerging Infectious Diseases: Are we Prepared?' urges 'global and offensive' measures to be better prepared to deal with emerging infectious diseases rather than unilateral or defensive measures. Barrett specifically urges action in the five areas of prevention, preparedness, surveillance, reporting and response. He notes that revisions to International Health Regulations (IHR) do little to address the fundamental weaknesses in the current system of ensuring security against the spread of diseases. Urging stricter global standards, Barrett calls upon richer countries to more actively participate in ensuring the development of the poorer states so that the conditions that give rise to new pathogens – poor sanitation, weak public health systems, among other deficiencies can be dealt with more effectively.

Part III of the book deals with the issue of Forecasting and the imperative need to be 'ahead of the curve' in a 'world of surprises'. Peter Schwartz and Doug Randall define strategic surprise as 'patterns of events that, if they were to occur, would make a big difference to the future, force decision makers to challenge their own assumptions of how the world works, and require hard choices today.' They note that anticipating strategic surprises can give enormous advantages to decision-makers. They urge organisations/decision-makers to be imaginative and systematic to detect surprises, put in place 'multiple filters' to gather information, process the filtered information effectively, focus not just on the events but on the contexts with in which those events are occurring, not be in denial about alternative scenarios, and put in place sensors to detect strategic surprise as they unfold.

Robert Lempert in 'Can Scenarios help Policymakers' urges American policy makers to be both bold and careful in dealing with a complicated world. He notes that scenarios can help decision makers 'overcome the psychological and organisational barriers that make it difficult to manage surprise' by expanding the diversity of possible futures. Scenarios for the author provide a 'powerful concept for focussing attention on the unexpected' and tools like information technology can 'enhance the systematic evaluation of surprise'.

Part IV of the book includes discussion among some practitioners and thinkers on the issues at hand, including by the Editorial Board members of American Interest. James Kurth for instance notes that the spectre of WMD attack on the United States – either by nuclear or biological weapons is quite serious an issue but one from which American society 'would be able to recover fairly soon'. He points out that WMD, barbarian enemy (Islamic fundamentalism) and demographic decline – three factors which are acting in conjunction, can cause great damage. Gregg Easterbrook on the other hand argues that 'positive' objective trends in the world like the sharp absence of war, non-occurrence of Malthusian or plague catastrophes, limited or absence of use of chemical or biological weapons in warfare, good economic growth, rising global equality, abundance of primary resources including that of oil, among other factors are a cause for optimism. Niall Fergusson urges greater focus on high probability high impact (HPHI) events like an Avian Flu virus or a computer virus that could shut down Google rather than

on low probability high impact (LPHI) events. The worldwide swing to the political left for Fergusson is another HPHI event that analysts are ignoring. Walter Russell Mead points out that society gradually gets better at mastering change and some of them do it better than others. He also dismisses the possibility of Fergusson's 'global left' having much influence in America and instead points to the increasing influence of religion in dealing with the complexities of modern American life. Mead notes that Rick Warren's (founder of an evangelical church group) *The Purpose Driven Life* is the biggest hard cover selling book in American history. Ruth Wedgwood notes that because capital will flee if it is taxed too hard, the 'fate of American labour has become a Malthusian one'. She talks of 'cyber-nations' where territory does not matter any more even as at the other end of the spectrum, immigration becomes a controversial issue due to competitive labour dynamics. Anne Applebaum posits the end of the 'American world' and a sharp decline of American power. Bernard-Henry Levi on the other hand points out that America continues to be creative and that American institutions are the 'soundest' in the world. Eliot Chen urges a rethink on the possible utility of American power if it remains dominant two decades from now on. Fukuyama concludes by noting that three fundamental reasons why people/societies are unprepared to deal with unexpected are the nature of human cognition, poor or missing incentives to prepare, and lack of institutions necessary to guard against such events.

The book is a rich examination of the complexities involved in predicting and preparing for strategic surprises illuminated by rich case studies of past and possible future events across political, technological, economic, and biological fields. Given that the book is an outcome of a programme sponsored by the American Interest magazine, it is not surprising that the analysis is mostly geared in terms of implications for the US. A similar exercise setting out various policy choices for India on account of changes in demographics, technology, and regional geo-politics among other relevant aspects over a 20 year time period will be useful and illuminating.

Instructions for Authors

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Submissions: IDSA invites contributors to submit researched papers, articles and view points. Contributions may deal with matters of contemporary debate or historical analysis related to Chemical and Biological Weapons/Terrorism/Disasters. The magazine carries three categories of contributions: full-length analytical papers of 2000-3000 words; articles of 1500-2000 words and view points of 800-100 words. The magazine also welcomes book reviews of 700-1000 words.

Contributors are requested to follow the guidelines and style given below.

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- The paper should be composed using MS Word 6.0 and above.
- The paper should be sent by email to the editor. It should be typed in Times New Roman, Font size 12 and 1.5 line spacing.
- All diagrams, charts and graphs should be referred to as Figures and consecutively numbered (Fig.1, Fig.2, and so on). Tables should carry only essential data and should complement the text rather than repeat what has already been said. They should carry a short title, be numbered (Table 1) and carry the source at the bottom. Each table must be referenced in the text.
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Notes should be sequentially numbered and listed at the end of the article. Details of references to sources should be included in the notes. Authors are responsible for the accuracy of the references.

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