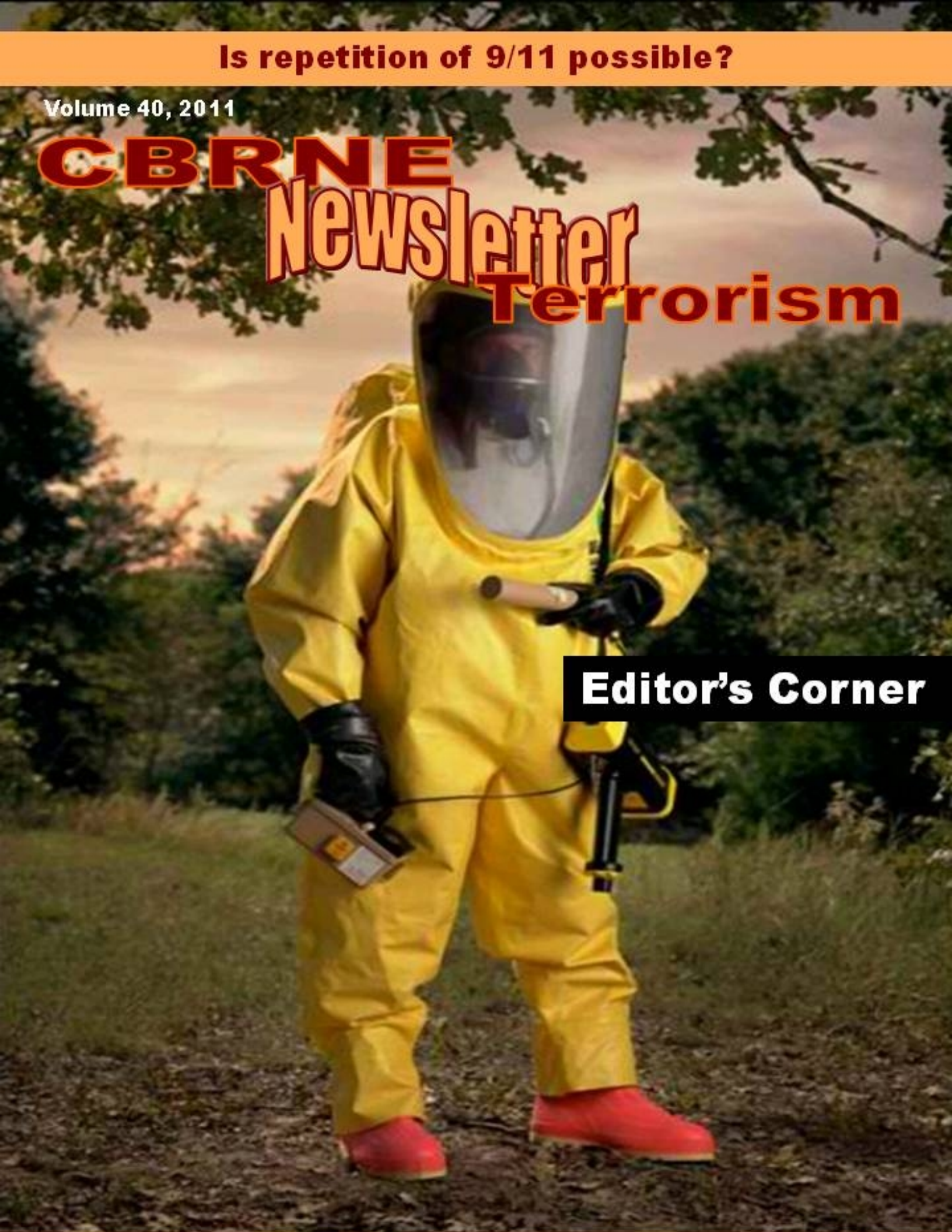
Is repetition of 9/11 possible?

Volume 40, 2011

CBRNE Newsletter Terrorism



Editor's Corner

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Editor's Corner

Editorial

Dear Colleagues,

One more year is approaching its end and another copy-and-pase New Year is eagerly aswaiting to evolve. If we look back certain events marked 2011 – Osama bin Laden's kill and the Norwegian Massacre being the most prominent events. Year 2012 will be remembered for the London 2012 Olympic Games – a mega sport event but at the same time a mega target attracting ambitious worldwide terrorists. The international community is waiting for this event while the British community is doing its best to shield the games and the people who are going to visit the country.

In December 20th Musa Khan Jalalzai (author of "Civil War and the Partition of Afghanistan" and "Punjabi Taliban") of Daily Outlook Afghanistan, wrote a very comprehensive analysis about current preparatory phase of Olympiad:

" In 11 March 2011, government announced the London 2012 Olympic and Paralympics Safety and Security Strategy which guarantees delivering a secure game. This strategy, which focuses on five areas; protect, prepare, identify and disrupt, command, plan and resource and engage, will be dealt under the principles of Britain's Counter Terrorism Strategy, coordinated with Policing Strategy for Olympic Games and the Assistant Commissioner Specialist Operations (ACSO).

The issue of Britain's National Security has been dominant factor in the recent debates on the Olympic security arrangements that raised many questions about the cost and massive deployment of army and police personnel in London. These debates also led to the commissioning of a number of studies in government and private research institutions to help the government in designing a better security plan for the Olympic Game.

British army has also prepared its own security plan involving the deployment of Royal Navy's largest ship, 22,500 tone helicopter carriers HMS Ocean in Greenwich for the duration of the game, assault vessel Bulwark in Weymouth where the sailing events will take place. Moreover, ground to-air missiles will be deployed and this would be the first time such deployment is taking place. All these security measures would be police-led but army will make sure its contribution.

According to the Ministry of Defense, some 5,000 troops will support the police, up to 7,500 will provide venue security and 1,000 will provide logistic support. The UK police will also deploy more than 12,000 officers with the operation being planned on the basis that security threat level will be set at severe.

According to the recent report of Intelligence and Security Committee, Chief of MI5, Jonathan Evan called the Olympic Game as huge event and said: "We are going to be pulling at least 150 intelligence staff out of other roles across the services to put them back into intelligence work at the frontline." Security Service Chief understands that terror attacks of more than 200 suicide bombers cannot be prevented and their most likely target might be the upcoming Olympic Games in July 2012.

Security Service believes that the UK based extremists groups are planning to develop new ways for all new counter measures. In such a large sporting event, the threat of terror attack cannot be ruled out because maintaining the security of 8 million spectators will be a difficult task.

Government and law enforcement agencies are increasingly concerned about the possible cyber attack from extremist groups, foreign hackers and intelligence networks with malicious intent, such as terrorism and act of disruption. Chief of GCHQ has recently warned about the cyber threat to the UK security and said the country economic security is under threat. Mr. Loban warned that the country is witnessing the development of criminal market place, where cyber dollars are traded in exchange for citizen's credit cards details.

In present global marketplace, Internet is no longer just about e-mail and website. This machine empowers the growing list of revenue-generating e-business activities. In near future, cyber terrorism

and economic jihad will ultimately target all Britain state institutions as it has been a driving force behind the modernization of Russia, China and Indian economy and military industry.

Cyber wars in near future are possibly to be based on strategic and tactical digital thrusts and defenses across geographical boundaries, where assets are taken electronically, are remotely controlled or destroyed by compromising their digital brains.

Recent report of the NBC News revealed that the London Olympic Technology Operation Centre might rely on 9,500 computers and more than 1,000 to run the security infrastructure including communication channel and transport networks.

According to the Director research Control Risk Group, Jake Stratton, "London has become the pre-eminent terrorist target in Europe because extremists' threat in the past had been vague and undefined war against the West" Extremists in the United Kingdom may likely to adopt deadly tactics next year as internal security threat is being developed in a dangerous way by these groups who conduct non-lethal training here.

Terrorists may use computer not only to inflict damage in security infrastructure but to disrupt the whole communication system. As these groups have frequently stated that they will launch a large scale attacks, there is more possibility that these attacks will be carried out by their trained members.

They will try to create panic and fear by using IED specifically, peroxide and fertilizer as they have already used in Norway in July 2011. According to intelligence reports, these non-state actors have acquired advanced technology and recruit young people in their small cells where they use Internet and other communication means. Intelligence reports in Russia revealed that extremist forces can export radio – nuclear materials or dirty bombs. If they succeeded in their plans, there will be massive destruction in London.

The risk of violent attacks and disruption is possible because every big sport game represents a new target for terrorist attack. The main challenge will be the infinite number of soft targets to secure, but this can be a difficult job. Every successive government is struggling to confine extremist elements to their nests and keep the Counter Terrorism Strategy to the four work streams (pursue, prevent, protect, prepare). Police pursue to stop terror attacks but failed to prevent people becoming terrorists or extremists.

The failure of their strategies resulted in the countrywide riots in August 20011. According to recent research reports, following a peaceful march in relation to the police response to the killing of a black guy, Mark Duggan by Metropolitan police service firearm unit, a riot began in North of London. Police in their turn, arrested and produced 1,984 people before the courts. Among the arrested people in London, some 24 percent were under age while four percent were over 40. Ethnically speaking, among the arrested people, 42 percent were white, 46 percent Black and 7 percent were Asian."

I think that we all agree with his thoughts and it is obvious that there are so many things to be done in all sectors of counterterrorism. What I would like to add is that medical/hospital CBRNE preparedness is still lacking the appropriate attention from state authorities worldwide. Officials in high places must realize that spending all that money for "Golden Hour" will not prevent a CBRNE terrorist attack while medical consequences of WMD agents' release will last for months and years. Following the triple catastrophe in Japan, no-one has the right to say that CBRNE threat is science fiction. What if it happens in your city or in your countrly?

More specifically about London 2012: Following the killilng of Osama bin Laden, his successor being in the dark for long might attempt to regain the lost "face" of the Arab world. "Face" is very important because it is a "respect" parameter – very important in between Arab men. In order to do this there are two alternatives – one has to do with quantity, the other with quality. The former need more blood; in that case multiple attacks in an urban/ megapolis environment (London/Olympic Cities/non-Olympic Cities) is ideal to create ecatombs of victims with universal mass media coverage. The later might produce less blood but it will become a new landmark superior to 9/11; thus a CBRNE attack before or during the Olympic Games might change the route of the river when comes to Wester-Arab world interrelations. In both cases total prevention is impossible but best preparedness ever can be achieved with local and international cooperation and collaboration. United Kingdom is a mighty nation but new emerging

threats are too big even for them to handle alone. Ask for assistance with experts worldwide; no one will blame the country of being incapable to deal the threat with its own means because of the magnitude and peculiarities fo the threats. On the contrary everybody will lounge poisonous darts if something happens and no assistance has been asked in advance.

Following a small poll at the website hosting the Newsletter, there was a majority request to change the frequence that we edit the Newsletter. The majority (43%) asked to go monthly while many others (37%) stated that quarterly is OK with them. We finally decided to change to bi-monthly since we understand that news should always be as fresh as possible. We will do that from the beginning of 2012. We also plan to start a blog in parallel that will follow daily events mostly in the counter-terrorism section.

In this issue we are still short out of advertising – in that respect we reduced prices even more and if this does not work we will continue to incorporate ads from other sources as part of your information process. We stress once more that ads' money is not for profit but for expanding our activities in the area of CBRNE/CT information – i.e. conferences, visits, participation in forums etc.

From the above you realize that CBRNE-CT issues are kind of "passion" for us and not a main stream profession for profit. Even if the ads will not work out well, we will continue to edit the Newsletter even in its previous amateuristic format because it is the content that matters not how the whole thing looks like! It is self-evident that your remarks, comments and suggestions are more than welcomed and will be highly appreciated and incorporated in future issues!

Enjoy the CBRNE-Terrorism Newsletter and if you really like it, please feel free to pass it over to colleagues in your networks!

The Editorial Team of the CBRNE-Terrorism Newsletter is sincerely, deep from heart, wishing you all Merry Christmas and a Very Happy New Year with lots of health, luck, love, smile, houmor and success both personal and professional. Please let us expand our wishes to your families that support you in your difficult and often dangerous tasks. We all, either in the field or behind a computer, aim for a better world for us and our beloved ones. God bless you all!

The Editor

BG(ret) Ioannis Galatas, MD, MA, MC

The All-Time 10 Worst Military Contracting Boondoggles

By Adam Weinstein

Source: http://motherjones.com/mojo/2011/09/contractor-waste-iraq-KBR

After three years, the bipartisan Commission on Wartime Contracting completed its business this week. In its final report to Congress [1] (PDF), it estimates that the federal government has lost [2] between $31 and $60 billion to contractor fraud and waste since the wars in Afghanistan and Iraq started. "The government was not prepared to go into Afghanistan in 2001 or Iraq in 2003 using large numbers of contractors, and is still unable to provide effective management and oversight of contract spending," said [3] commission co-chairman Michael Thibault.

Beyond its bureaucratic title ("Inattention to contingency contracting leads to massive waste, fraud, and abuse"), the most interesting chapter of the commission's 248-page report reads like a greatest-hits list of expensive bloopers that make that famous $600 Pentagon toilet seat look like a bargain. In ascending order of egregiousness, here are the top 10 war-contractor boondoggles detailed in the report:

10. Welfare for warlords: When the Pentagon hired Afghan big-rig drivers to transport supplies as part of its Host Nation Trucking program, it forgot to guarantee the truckers' safety. So the truckers spent as much as 20 percent of their contract money paying off local bad guys for protection. A 2010 congressional report titled *Warlord, Inc*. [4] (PDF) concluded that "The HNT contract fuels warlordism, extortion, and corruption, and it may be a significant source of funding for insurgents."

9. The world's most expensive road: In 2007, US planners decided to pave a 64-mile mountain road [5] between the Afghan towns of Khost and Gardez. They figured it would take $69 million to complete, but the cost swelled to $176 million. Much of that was spent on security, including a lot that went to a local big-swinger known as "Arafat," who's now believed to have been working for the insurgents. In May, the *New York Times* reported [6] that "a stretch of the highway completed just six months ago is already falling apart and remains treacherous."

8. This old base: In the fall of 2007, the Air Force gave $18 million to contractor CH2M HILL for construction work at Camp Phoenix, an Army installation in Afghanistan. The firm hired a shady subcontractor who didn't pay his workers and fled the country with $2 million, which he used to build himself some villas abroad. The unpaid workers walked off with a bunch of generators and other materials. The delays left hundreds of NATO troops without suitable housing for a year and a half. When the contracting commission's Thibault visited the soldiers in their temporary digs, they alerted him [7] (PDF) to the shoddy electrical work: "I just walked in the room and I'm talking to some of the people living there and they say, 'Sometimes when you put the plugs in, if you don't have the right extension, it's just like a sparkler.'"

7. Rent-a-ripoff: Coalition bases in Iraq and Afghanistan tend to be big and rugged, so many units rent locally owned four-wheel-drives for troops to get around the installations. A 2010 survey of US forces in Afghanistan found [1] (PDF) that the Army was spending $119 million annually to lease about 3,000 cars—roughly $40,000 a year per car. Last year, the General Services Administration found that the military "could lease and maintain 1,000 vehicles for about $19 million per year," or 16 percent of what it had been paying.

Nevertheless, the Army still considers paying a premium for rental cars to be strategically necessary; it's even listed as "civic support" in a manual titled "Money as a Weapon System [8]" (PDF).

6. The Kabul bank bust: This thing's so screwed-up, we wrote a whole explainer about it [9]. Since 2003, the US Agency for International Development has paid $92 million to the accounting giant Deloitte to train executives of the Afghanistan Central Bank. The Central Bank oversaw Kabul Bank, Afghanistan's largest private bank, which had an estimated $900 million in assets loaded with worthless loans. Unsurprisingly, the bank collapsed in 2010, taking the nascent Afghan financial system down with it. (Kabul Bank's founder and CEO explained [9]: "What I'm doing is not proper, not exactly what I should do. But this is Afghanistan.") In effect, USAID paid a Wall Street firm beaucoup bucks to fiddle while the Afghan market burned. "USAID staff learned of serious bank problems from reading about them in the *Washington Post*. Deloitte never notified the agency," the contracting commission reported.

5. Never leave a mandarin behind: In 2005, the Defense Logistics Agency awarded Swiss-based Supreme Foodservice a fat contract to ship "vitally needed [10]" food to bases in Afghanistan. By the early 2011, the company had billed the government $4.2 billion, but Pentagon investigators found [11] that sum had been padded with hundreds of millions in possible overcharges for things like providing "premium airlift" of fresh fruits and vegetables from the United Arab Emirates. Nevertheless, the company got a two-year extension [10] on its contract, perhaps because the Army general who used to supervise Supreme's DLA contract is now president [10] of the company's US division.

4. Soldiers of misfortune: To keep their profit margins fat, military contractors tend to subcontract on cheap labor from poor nations, a practice that's led to "forced labor, slavery, and sexual exploitation," the commission says. In a trip to Iraq in 2009, commissioners learned about the mostly African and South American guards hired by companies like Triple Canopy, SABRE, and EODT to provide security on big US bases. Among their discoveries: Guards were often ill-equipped, worked unusually long tours with 12-hour shifts, were denied their one-month vacations, and weren't paid until their contracts were finished, essentially forcing them to endure their assignments to the end. The government paid SABRE $1,700 per guard; in turn, SABRE paid its Ugandan recruits $700 a month and pocketed the difference.

3, 2, 1. KBR, KBR, KBR: According to the contracting commission, megacontractor KBR (a.k.a. the contractor formerly known as Halliburton) was paid at least $36.3 billion to provide base support in Iraq f or the past eight years. That's slightly less than the government bailouts for Bank of America and Citigroup. But then, the banks eventually returned the money. The commission report details numerous examples of waste by KBR. Where to begin?

There's the kickback from the subcontractors who were awarded a $700 million dining deal in Iraq. (The Department of Justice has filed a claim against KBR for that.) Then there's the $5 million spent on 144 KBR mechanics who worked as little as 43 minutes a month [12], on average. Inspectors have found that KBR can't account for $100 million worth of its government-furnished property in Iraq. Despite collecting $204 million for electrical work on Iraq bases, KBR's shoddy wiring has been blamed in as many as 12 soldiers' electrocution deaths [13], including a Special Forces commando who died after he was shocked in a shower stall [13]. The company has also billed Uncle Sam a half-billion dollars [14] to hire Blackwater to provide personal security in Iraq, a big contractor no-no.

Perhaps most troubling is the company's links to purported human trafficking. In late 2008, reporters discovered [15] a windowless warehouse on the Camp Victory complex outside Baghdad, where about 1,000 men from Bangladesh, India, Nepal, and Sri

Lanka were being held in prisonlike conditions. The men had been hired by a KBR subcontractor. Around the same time, another KBR subcontractor was sued [16] for allegedly spiriting Asian workers into Iraq with false promises of high-paying jobs.

And the waste continues. When the troop drawdown in Iraq started, writes the commission, "KBR accounted for about half of contractor personnel in Iraq. When bases closed and its personnel left those bases, KBR merely transferred some of them to other bases and continued to bill for their support." In all, KBR has cost the government [12] at least $193 million in pay for unnecessary personnel, and maybe as much as $300 million. However, the Pentagon is in no hurry to give KBR the boot. "We basically said that KBR is too big to fail," commission co-chair and former Rep. Christopher Shays (R-Conn.) complained [17] last year, "so we are still going to fund them."

Links:

[1] http://www.wartimecontracting.gov/docs/CWC_NR-49.pdf
[2] http://motherjones.com/mojo/2011/08/one-third-wartime-contracting-funds-wasted
[3] http://www.wartimecontracting.gov/index.php/pressroom/pressreleases/203-cwc-nr-49
[4] http://publicintelligence.info/WarlordInc.pdf
[5] http://en.wikipedia.org/wiki/Khost-Gardez_Pass
[6] http://www.nytimes.com/2011/05/01/world/asia/01road.html?_r=1
[7] http://www.bv.com/Downloads/Resources/Reports/Jan242011_Commission_Hearing_Transcript.pdf
[8] http://www.michaelyon-online.com/images/pdf/maaws-feb-2011-1.pdf
[9] http://motherjones.com/mojo/2010/09/kabul-bank-meltdown
[10] http://www.washingtonpost.com/wp-dyn/content/article/2011/01/03/AR2011010304267.html
[11]http://www.businessweek.com/news/2011-03-04/pentagon-hit-for-lax-oversight-of-4-2-billion-afghan-contract.html
[12] http://motherjones.com/politics/2010/03/kbr-idle-hands-iraq-balad-contract-waste-pentagon-report-hearing
[13] http://motherjones.com/mojo/2008/05/more-war-profiteering-kbr-style
[14]http://motherjones.com/mojo/2010/04/feds-sue-kbr-over-iraq-bills-blackwater-fraud-waste-abuse-private-security
[15] http://motherjones.com/mojo/2008/12/kbr-subcontractor-keeping-1000-asian-workers-warehouse
[16] http://motherjones.com/mojo/2008/08/kbr-sued-human-trafficking
[17]http://motherjones.com/politics/2010/03/kbr-idle-hands-iraq-balad-contract-waste-pentagon-report-hearing?page=2

NYPD raises concerns about nightclub terror

Source: http://www.digitaljournal.com/article/311832

The NYPD has teamed up with the city's nightlife association to update the 2011 edition of "Best Practices for Nightlife Establishments" to include anti-terrorism tips on suicide bombers for nightclub owners and staff.

The New York City Police Department has been working with the New York Nightlife Association (NYNA) to update the *Best Practices for Nightlife Establishments* to address current and pressing issues regarding the safety and security of nightclubs, bars and related establishments in the city. The *Best Practices for Nightlife Establishments* is a safety manual of sorts created by the NYPD and NYNA to assist the nightlife industry in enhancing safety and preventing illegal activity on their premises.

According to the NYPD, the handbook is meant to help keep patrons safe and prevent illegal activity.

The updated handbook, released this past Monday, includes a new and lengthy section on terrorism and anti-terrorism measures.

In an official public statement regarding the release of the 2011 edition of the manual and the added emphasis on anti-terrorism measures, police Commissioner Raymond Kelly was quoted as saying

We have included a substantial discussion of counterterrorism best practices for the nightlife industry, not to create alarm but to help owners and operators craft effective strategies for terrorism prevention and preparedness.

Reportedly, the NYPD decided to add the additional section due to the fact that an increasing number of bars and clubs abroad have been attacked or targeted by terrorists over the past few years.
Regarding the new section added by the NYPD addressing anti-terrorism measures, the manual had this to say (page 12)

This section is intended to provide information on counterterrorism planning to nightlife businesses. It is not intended to alarm or frighten, but rather to help New York City's vibrant nightlife community achieve both safety and hospitality for its customers.

The manual also provides the NYPD's definition of terrorism (page 12)

Terrorist Strategy

Terrorism is a criminal act designed to manipulate an audience beyond the immediate victims. Terrorists seek to commit acts of violence that draw local, national, and international attention to their cause. Terrorists plan their attacks to obtain the greatest publicity and choose targets that symbolize the ideologies they oppose.

On suicide bombers it provided the following information (pages 13 and 14)

Identification of Suicide Bombers

A. Counterterrorism security plans should include training for all staff in the detection of possible suicide bombers. There are many factors which may create suspicion of this activity: inappropriate clothing for the season, time, place or circumstance; protrusions from the clothing; concealment of the hands; visible wires or tape; two or more people communicating and trying not to be observed; a suspect whose presence or behavior is inconsistent with the time or place; individuals who are obviously disguised; individuals with obvious signs of extreme stress or nervousness, such as bulging veins in the neck, profuse sweating, shaking hands, touching the face continuously, involuntary motions, apathy, distant stare or unfocused gazing, feeling the body continuously; and individuals whose speech includes stuttering, mumbling or chanting, or are hesitant or unresponsive.

B. Suspicious luggage or packages on an individual should also be noted. Indicia include: individuals holding luggage which is incompatible with the surroundings; holding a bag very close to the body or not releasing it when appropriate; weight of bag is obviously great; identical bags carried by several individuals; and bags with obvious irregularities.

C. In all situations, part of the counterterrorism security plan should be to encourage all security and establishment staff to trust their gut feelings. If they feel suspicious or uneasy about an individual or group of people they should bring that suspicion to the attention of a security supervisor with responsibility for counterterrorism security.

D. Terrorists are not confined to one ethnic or racial group. There have been documented terrorist attacks by individuals of a wide variety of backgrounds. It is therefore important to stress in counterterrorism planning the need to be vigilant and observe all people, and not to exclude individuals from suspicion because of their appearance. Personnel should be mindful of the increased participation of females in terrorist activity.

The safety manual also offers recommendations for collecting surveillance footage and evacuation plans.
The NYPD believes strongly the most likely method of attack by terrorists against a nightclub in New York will be that of a suicide bomber or car bomb.

Terrorists view nightclubs as "dens of immorality"

The NYPD's concerns over nightclubs in the city being possible targets for terrorism stem from recent attempted and successful attacks on nightclubs in other countries by Islamist extremists.

London in particular has had some notable experiences with regard to terrorist targeting of nightclubs.

In June 2007, a group of Islamic extremists, most of whom were British nationals, conspired to wage a campaign of terror throughout the United Kingdom. The men were inspired by religious ideology of an extremist vein and sought to carry out the attacks as a form of solidarity with Al-Qaeda in Iraq and out of protest over Britain's involvement in the occupation of Iraq.

Amongst the chosen targets was the **Tiger nightclub** in London's West End area. Radicals parked two cars filled with explosives in front of the club in the hope of killing club-goers.

However, there were technical difficulties with the car bomb and it failed to detonate as planned. Later, police discovered the car bomb, and were able to safely disable the lethal device.

In 2004, an Islamic extremist in Canada was arrested for colluding with counterparts in Britain to bomb The Ministry of Sound, London's largest and most popular nightclub.

The most devastating terror attack to ever take place against a nightclub occurred on the night of October 12, 2002, when the terrorist organization Jemaah Islamiah, an affiliate of al-Qaida, bombed two nightclubs in rapid succession in Bali, Indonesia (a third bomb was detonated at the American consulate but caused only minor damage and no injuries). The attacks killed 202 people, a further 240 were wounded. Many of those killed in the attacks were vacationing university students from Australia on a break from their studies. Seven Americans and two Canadian tourists were among the fatalities.

The **Bali nightclub bombings** were the deadliest act of terrorism in the history of Indonesia. Islamist militants view nightclubs as "symbols of Western decadence."

Scantly-clad young women grinding close and hard against boisterous young men on a dance floor amidst a backdrop of pulsating lights, loud thumping music and free-flowing booze are all typical hallmarks of a Western-based nightclub. These same hallmarks are often what make Islamist militants denounce such places as "dens of immorality."

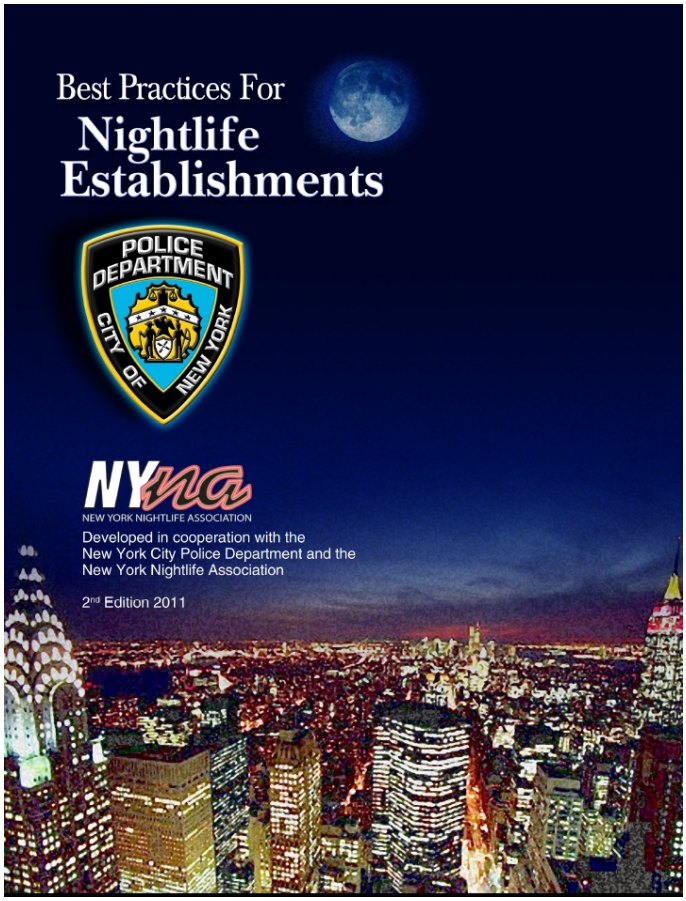
For most young men and women in their 20's and 30's in the U.S. and other Western societies, dancing the night away in nightclubs is a typical past-time and recreational activity or a way to blow off steam.

From the tactical standpoint of the terrorist, nightclubs are very good targets for a number of reasons. Most clubs in NYC are filled with hundreds of people in close proximity to one another. An explosive device detonated in such close confines would produce an especially high death toll and horribly maim countless others.

Even more, there is the secondary danger of people being stampeded by panicked crowds desperate to escape the club should a terrorist attack or even a

non-terrorist emergency (i.e., a fire or a large fight) were to occur.
A stampede is always a looming danger whenever there are large numbers of patrons at a single indoor location for an event be it nightclubs, a concert hall or theater of any sort.
On the night of February 17, 2003, at the **E2 nightclub** located above the Epitome Chicago restaurant in Chicago, 21 people were killed and more than 50 injured in a stampede caused by crowds seeking to escape what they mistakenly thought was a chemical weapons attack on the club.
On that particular night, some patrons got into a physical altercation prompting club security to use pepper spray to stop the fighting. Club-goers, unaware that the bouncers were using pepper spray to quell a disturbance, began vomiting and having coughing fits. Some club-goers even fainted from the spray's noxious fumes. The crowd, fearful and unaware of what was actually going on all began to charge for the exits, knocking to the ground and stampeding many of their fellow club-goers in the process.
Club-goers and witnesses would later tell the news media that they thought terrorists were using poisonous gas to attack the club. Some club-goers reportedly heard someone inside the establishment say, "Bin Laden is doing this."

Safety Manual Also Places Increased Focus On Prevention Of Sexual Assaults
The 2011 edition of *Best Practices for Nightlife Establishments* also addresses more conventional and everyday issues affecting nightclubs like those of under-aged drinking and fights, guidance on responding to serious criminal incidents and crime scene preservation, the use of magnetometers and ID scanning devices by security. Even more, it includes suggestions for preventing illegal and dangerous activity in a nightlife setting and stresses the importance of a good relationship between the venue and it's local police precinct.



The handbook also has an increased section on how to prevent sexual assaults and includes tips for recognizing signs of intoxication.
New York Nightlife Association partnered with the NYPD after the deaths of Imette St. Guillen and Jennifer Moore, who were killed in separate incidents after a night out in city clubs several years ago.
At least 150 bars and clubs are members of NYNA. However, all 1,200 of the city's bars and clubs will receive the new safety manual regardless of if they are NYNA members or not.
While the guide is not a set of binding laws, Paul Seres, the president of NYNA, told the Manhattan online news site, DNAinfo.com, he believes many nightlife operators will follow it.
“I want my staff to have the best, most thorough, in-depth training," said Seres. "That way I can run a great establishment."
The NYPD and NYNA will conduct a series of training and orientation sessions throughout the city in the coming weeks to introduce the current edition of the safety handbook to nightclub owners, managers and security personnel. The training sessions will begin at One Police Plaza - NYPD

Headquarters - on September 27, 2011, with similar sessions to follow in each of the city's five boroughs. While there is an enduring *general* terrorist threat against nightclubs, authorities note that there is no intelligence at the moment to suggest that there is a *specific* threat against any particular club in New York City or anywhere else in the United States.

NOTE: You can download the full manual from the CBRNE-T section of the Newsletter's website.

Southwest Airlines, Feds Investigate Arabic Markings on Planes

Source: http://www.foxnews.com/us/2011/09/21/southwest-airlines-feds-investigate-arabic-markings-on-planes/

Mysterious messages that appeared to be scrawled in Arabic writing on the underbellies of several

Southwest Airlines jets were being investigated Wednesday by the airline and the FBI, Los Angeles radio station KNX-1070 reported.

The graffiti, which began appearing in February on 737-model planes, has been found more often in recent weeks, according to the report.

The writing appears to have been etched using a chemical process and is visible only after an auxiliary power unit is turned on.

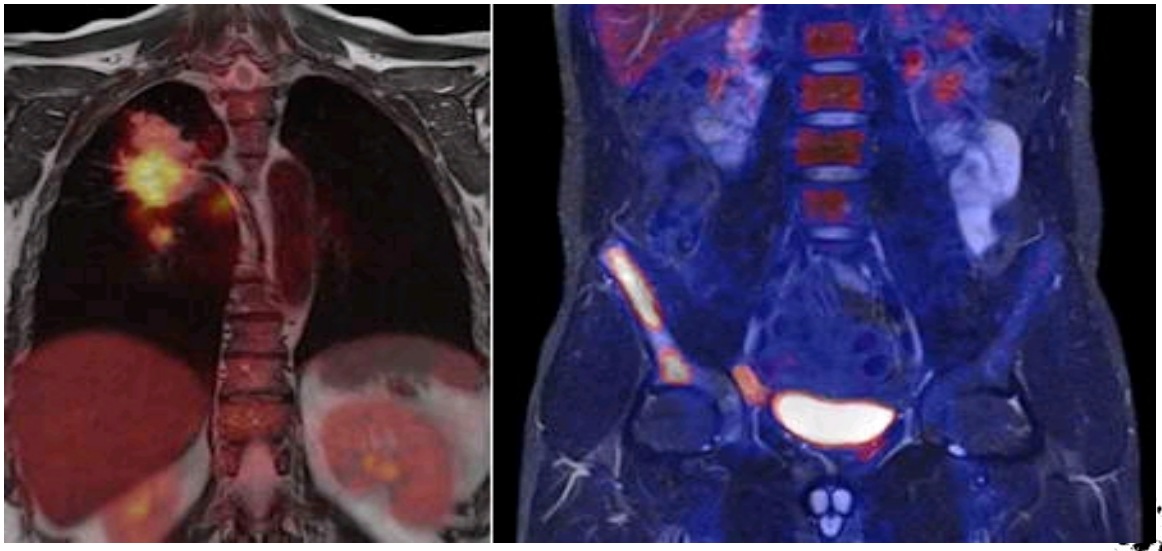
Southwest Airlines spokeswoman Brandy King confirmed that the company is "conducting an internal investigation." The FBI and Transportation Security Administration were also making enquiries. The airline denied that the vandalism posed a safety or security threat.

▶NOTE: This looks bright new. Keep an open eye while travelling!

The New TBI/PTSD Treatment Super Machine

Source: http://whatsbrewin.nextgov.com/2011/09/the_new_tbiptsd_treatment_super_machine.php

The National Institutes of Health Clinical Center said it started using an advanced medical machine from



Siemens approved by the Food and Drug Administration this June to diagnose and treat traumatic brain injury and post-traumatic stress disorder among military service members and civilians.
The gizmo, called a Biograph mMR (molecular magnetic resonance) machine, combines the functions of a positron emission tomography (PET) scanner and a magnetic resonance imaging (MRI) machine into one humongous package, which looks about the size of a small car.
Dr. David Bluemke, director of the NIH Clinical Center Radiology and Imaging Sciences, said the Biograph mMR "combines the two most powerful imaging tools . . . The MRI points us to abnormalities in the body, and the PET tells us the metabolic activity of that abnormality, be it a damaged part of the brain or a tumor. This will be a major change for many patients."

The new device makes patient care swifter and safer, he said. The faster turnaround time and more comprehensive results will help diagnose patients at an earlier stage of disease, leading to better outcomes, Bluemke said.
The purchase of the Biograph mMR was made possible through the Center for Neuroscience and Regenerative Medicine, a Defense Department-funded collaboration between NIH and the Uniformed Services University of the Health Sciences. The CNRM carries out research in TBI and PTSD that would benefit troops treated at Walter Reed National Navy Medical Center, near the NIH campus in Bethesda, Md.

Geopolitical Journey: Iran at a Crossroads

By Kamran Bokhari

Source:http://www.stratfor.com/weekly/20110926-geopolitical-journey-iran-crossroads?utm_source= freelist-f&utm_medium=email&utm_campaign=20110927&utm_term=gweekly&utm_content=readmore &elq=f108132c67584c1ab319e501b15b82b5

Geopolitically, a trip to Iran could not come at a better time. Iran is an emerging power seeking to exploit the vacuum created by the departure of U.S. troops from Iraq, which is scheduled to conclude in a little more than three months. Tehran also plays a major role along its eastern border, where Washington is seeking a political settlement with the Taliban to facilitate a U.S. withdrawal from Afghanistan.
The Islamic republic simultaneously is trying to steer popular unrest in the Arab world in its favor. That unrest in turn has significant implications for the Israeli-Palestinian conflict, an issue in which Iran has successfully inserted itself over the years. The question of the U.S.-Iranian relationship also looms — does accommodation or confrontation lie ahead? At the same time, the Iranian state — a unique hybrid of Shiite theocracy and Western republicanism — is experiencing intense domestic power struggles.

This is the geopolitical context in which I arrived at Imam Khomeini International airport late Sept. 16. Along with several hundred foreign guests, I had been invited to attend a Sept. 17-18 event dubbed the “Islamic Awakening” conference, organized by the office of Supreme Leader Ayatollah Ali Khamenei. Given the state of Iranian-Western ties and my position as a senior analyst with a leading U.S.-based private intelligence company, the invitation came as surprise.
With some justification, Tehran views foreign visitors as potential spies working to undermine Iranian national security. The case of the American hikers jailed in Iran (two of whom were released the day of my return to Canada) provided a sobering example of tourism devolving into accusations of espionage.
Fortunately for me, STRATFOR had not been placed on the list of some 60

Western organizations (mostly American and British think tanks and civil society groups) banned as seditious in early 2010 following the failed Green Movement uprising. Still, the Iranian regime is well aware of our views on Iranian geopolitics.

In addition to my concerns about how Iranian authorities would view me, I also worried about how attending a state-sponsored event designed to further Iranian geopolitical interests where many speakers heavily criticized the United States and Israel would look in the West. In the end, I set my trepidations aside and opted for the trip.

Geopolitical Observations in Tehran

STRATFOR CEO and founder George Friedman has written of geopolitical journeys, of how people from diverse national backgrounds visiting other countries see places in very different ways. In my case, my Pakistani heritage, American upbringing, Muslim religious identity and Canadian nationality allowed me to navigate a milieu of both locals and some 700 delegates of various Arab and Muslim backgrounds. But the key was in the way STRATFOR trains its analysts to avoid the pitfall that many succumb to — the blurring of what is really happening with what we may want to see happen.

The foreigner arriving in Iran immediately notices that despite 30 years of increasingly severe sanctions, the infrastructure and systems in the Islamic republic appear fairly solid. As a developing country and an international pariah, one would expect infrastructure along the lines of North Korea or Cuba. But Iran's construction, transportation and communications infrastructure shares more in common with apartheid-era South Africa, and was largely developed indigenously.

Also notable was the absence of any visible evidence of a police state. Considering the state's enormous security establishment and the recent unrest surrounding the Green Movement, I expected to see droves of elite security forces. I especially expected this in the northern districts of the capital, where the more Westernized segment of society lives and where I spent a good bit of time walking and sitting in cafes.

Granted, I didn't stay for long and was only able to see a few areas of the city to be able to tell, but the only public display of opposition to the regime was "Death to Khamenei" graffiti scribbled in small letters on a few phone booths on Vali-e-Asr Avenue in the Saadabad area. I saw no sign of Basij or Islamic Revolutionary Guard Corps personnel patrolling the streets, only the kind of police presence one will find in many countries.

This normal security arrangement gave support to STRATFOR's view from the very beginning that the unrest in 2009 was not something the regime couldn't contain. As we wrote then and I was able to see firsthand last week, Iran has enough people who — contrary to conventional wisdom — support the regime, or at the very least do not seek its downfall even if they

disagree with its policies.

I saw another sign of support for the Islamic republic a day after the conference ended, when the organizers arranged a tour of the **mausoleum** of the republic's founder, **Ayatollah Ruhollah Khomeini** (photo). We visited the large complex off a main highway on the southern end of town on a weekday; even so, numerous people had come to the shrine to pay their respects — several with tears in their eyes as they prayed at the tomb.

Obviously, the intensity of religious feelings varies in Iran, but a significant stratum of the public remains deeply religious and still believes in the national narrative of the revolutionary republic. This fact does not get enough attention in the Western media and discourse, clouding foreigners' understanding of Iran and leading to misperceptions of an autocratic clergy clinging to power only by virtue of a massive security apparatus.

In the same vein, I had expected to see stricter enforcement of religious attire on women in public after the suppression of

the Green Movement. Instead, I saw a light-handed approach on the issue. Women obeyed the requirement to cover everything but their hands and faces in a variety of ways. Some women wore the traditional black chador. Others wore long shirts and pants and scarves covering their heads. Still others were dressed in Western attire save a scarf over their head, which was covering very little of their hair.

The dress code has become a political issue in Iran, especially in recent months in the context of the struggle between conservative factions. President Mahmoud Ahmadinejad, who has encountered growing opposition from both pragmatic and ultraconservative forces, has come under criticism from clerics and others for alleged moral laxity when it comes to female dress codes. Even so, the supreme leader has not moved to challenge Ahmadinejad on this point.

Ahmadinejad and the Clerical-Political Divide

In sharp contrast with his first term, Ahmadinejad — the most ambitious and assertive president since the founding of the Islamic republic in 1979 — has been trying to position himself as the pragmatist in his second term while his opponents come out looking like hard-liners. In recent months his statements have become less religiously informed, though they have retained their nationalist and radical anti-Western tone.

For example, his speech at the conclusion of the second day of the conference on the theme of the event, Islamic Awakening, was articulated in non-religious language. This stood in sharp contrast to almost every other speaker. Ahmadinejad spoke of recent Arab unrest in terms of a struggle for freedom, justice and emancipation for oppressed peoples, while his criticism of the United States and Israel was couched in terms of how the two countries' policies were detrimental to global peace as opposed to the raw ideological vitriol that we have seen in the not too distant past.

But while Iran's intra-elite political struggles complicate domestic and foreign policymaking, they are not about to bring down the Islamic republic — at least not anytime soon. In the longer term, the issue at the heart of all disputes — that of shared governance by clerics and politicians — does pose a significant challenge to the regime. This tension has existed throughout the nearly 32-year history of the Islamic republic, and it will continue to be an issue into the foreseeable future as Iran focuses heavily on the foreign policy front.

Iran's Regional Ambitions

In fact, the conference was all about Iran's foreign policy ambitions to assume intellectual and geopolitical leadership of the unrest in the Arab world. Iran is well aware that it is in competition with Turkey over leadership for the Middle East and that Ankara is in a far better position than Iran economically, diplomatically and religiously as a Sunni power. Nevertheless, Iran is trying to position itself as the champion of the Arab masses who have risen up in opposition to autocratic regimes. The Iranian view is that Turkey cannot lead the region while remaining aligned with Washington and that Saudi Arabia's lack of enthusiasm for the uprisings works in Tehran's favor.

The sheer number of Iranian officials who are bilingual (fluent in Persian and Arabic) highlights the efforts of Tehran to overcome the ethno-linguistic geopolitical constraints it faces as a Persian country trying to operate in a region where most Muslim countries are Arab. While its radical anti-U.S. and anti-Israeli position has allowed it to circumvent the ethnic factor and attract support in the Arab and Muslim worlds, its Shiite sectarian character has allowed its opponents in Riyadh and elsewhere to restrict Iranian regional influence. In fact, Saudi Arabia remains a major bulwark against Iranian attempts expand its influence across the Persian Gulf and into Arabian Peninsula, as has been clear by the success that the Saudis have had in containing the largely Shiite uprising in Bahrain against the country's Sunni monarchy.

Even so, Iran has developed some close relations across the sectarian divide, something obvious from the foreign participants invited to the conference. Thus in addition to the many Shiite leaders from Lebanon and Iraq and other parts of the Islamic world, the guest list included deputy Hamas leader Mousa Abu Marzook; Palestinian Islamic Jihad (PIJ) chief Ramadan Abdullah Shallah; a number of Egyptian religious, political, intellectual and business notables; the chief adviser to

Sudanese President Omar al Bashir as well as the leader of the country's main opposition party, Sadiq al-Mahdi; a number of Sunni Islamist leaders from Pakistan and Afghanistan, including former Afghan President Burhanuddin Rabbani whom I had the opportunity of speaking with only two days before he was assassinated in Kabul; and the head of Malaysia's main Islamist group, PAS, which runs governments in a few states — just to name a few.

Tehran has had much less success in breaching the ideological chasm, something evidenced by the dearth of secular political actors at the conference. Its very name, Islamic Awakening, was hardly welcoming to secularists. It also did not accurately reflect the nature of the popular agitation in the Arab countries, which is not being led by forces that seek revival of religion. The Middle East could be described as experiencing a political awakening, but not a religious awakening given that Islamist forces are latecomers to the cause.

A number of my hosts asked me what I thought of the conference, prompting me to address this conceptual discrepancy. I told them that the name Islamic Awakening only made sense if one was referring the Islamic world, but that even this interpretation was flawed as the current unrest has been limited to Arab countries.

While speaker after speaker pressed for unity among Muslim countries and groups in the cause of revival and the need to support the Arab masses in their struggle against autocracy, one unmistakable tension was clear. This had to do with Syria, the only state in the Arab world allied with Iran. A number of speakers and members of the audience tried to criticize the Syrian regime's efforts to crush popular dissent, but the discomfort this caused was plain. Syria has proven embarrassing for Iran and even groups like Hezbollah, Hamas and PIJ, which are having a hard time reconciling their support for the Arab unrest on one hand and supporting the Syrian regime against its dissidents on the other.

The Road Ahead

Attending this conference allowed me to meet and observe many top Iranian civil and military officials and the heads of Arab and other Muslim non-state actors with varying degree of relationships with Tehran. Analyzing them from a distance one tends to dismiss their ideology and statements as rhetoric and propaganda. Some of what they say is rhetoric, but beneath the rhetoric are also convictions.

We in the West often expect Iran to succumb to international pressure, seek rehabilitation in the international community and one day become friendly with the West. We often talk of a U.S.-Iranian rapprochement, but at a strategic level, the Iranian leadership has other plans.

While Iran would like normalized relations with Washington and the West, it is much more interested in maintaining its independence in foreign policy matters, not unlike China's experience since establishing relations with the United States. As one Iranian official told me at the conference, when Iran re-establishes ties with the United States, it doesn't want to behave like Saudi Arabia or to mimic Turkey under the Justice and Development Party.

Whether or not Iran will achieve its goals and to what extent remains unclear. The combination of geography, demography and resources means Iran will remain at the center of an intense geopolitical struggle, and I hope for further opportunities to observe these developments firsthand.

Man arrested in 'step-by-step' plot to blow up Capitol, Pentagon

Source:http://thehill.com/blogs/blog-briefing-room/news/184445-man-arrested-in-plot-to-blow-up-capitol-pentagon

The FBI arrested and charged a man Wednesday for allegedly plotting to blow up the Capitol and the Pentagon. The 26-year-old Massachusetts man, Rezwan Ferdaus, was arrested as part of an FBI sting operation in which he was made to believe he was working with members of al Qaeda, who were actually undercover agents. Ferdaus allegedly gave the undercover FBI agents a detailed set of attack plans "with step-by-step instructions as to how he planned to attack the Pentagon and Capitol," according to the Department of Justice.

people would coordinate an automatic weapons attack with the aerial assault and massacre whom ever came into their path, according to the DOJ. For the past five months, Ferdaus has allegedly been stockpiling the equipment he needed for his proposed attack, including a remote-controlled aircraft, 25 pounds of fake C-4 explosives, six automatic AK-47 assault rifles and three grenades, according to the DOJ. He allegedly kept all of it in a storage facility in Massachusetts, where he was arrested.

Ferdaus was also charged with attempting to provide material support and resources to a foreign terrorist organization — al Qaeda — in order to carry out attacks on U.S. soldiers stationed overseas, federal authorities said. Ferdaus allegedly modified eight cellphones to act as detonation devices for improvised explosive devices, and gave them to the FBI agents to be used against American soldiers in Iraq. "During a June 2011 meeting, he appeared gratified when he was told that his first phone detonation device had killed three U.S. soldiers and injured four or five others in Iraq," according to the DOJ. "Ferdaus responded, 'That was exactly what I wanted.'" Last week,

The plans focused on the use of three small remote-controlled drone-like aircraft loaded with C-4 plastic explosives, which he planned to fly into the Capitol and the Pentagon using GPS equipment, according to the DOJ. The DOJ stressed that the public was never in danger from the explosive devices, which it said were controlled at all times by undercover FBI officials who closely monitored Ferdaus as he allegedly developed his plot. According to the DOJ, Ferdaus aimed to create a devastating psychological impact with the attacks, saying at one point, "I just can't stop; there is no other choice for me." "Although Ferdaus was presented with multiple opportunities to back out of his plan, including, being told that his attack would likely kill women and children, the affidavit alleges that Ferdaus never wavered in his desire to carry out the attacks," the DOJ said in a news release.

Ferdaus, a Northeastern University graduate with a degree in physics, allegedly visited Washington in May, taking pictures of his intended targets and proposed launch-sites for the remote-controlled aircraft, according to the DOJ. Ferdaus's plan allegedly evolved to include a "ground assault" as well, in which six

Ferdaus gave the FBI agents a training video he made demonstrating how to make cellphone detonators, authorities said. According to the DOJ, a focal point of Ferdaus's plots revolved around "jihad" and his desire to carry out the will of Allah.

The U.S. attorney for the District of Massachusetts, Carmen M. Ortiz, stressed that any underlying religious motives to Ferdaus's actions should not reflect on the Muslim culture at-large. "I want the public to understand that Mr. Ferdaus's conduct, as alleged in the complaint, is not reflective of a particular culture, community or religion," Ortiz said. "In addition to protecting our citizens from the threats and violence alleged today, we also have an obligation to protect members of every community, race and religion against violence and other unlawful conduct," he said. According to federal authorities, Ferdaus faces up to 15 years in prison on the material support and resources to a foreign terrorist organization charge; up to 20 years in prison on the charge of attempting to destroy national defense premises; and a five-year minimum mandatory sentence, and up to 20 years, on the charge of attempting to damage and destroy buildings that are owned by the United States by using an explosive. Pentagon spokesman George Little declined comment and referred all questions to the Justice Department.

EDITOR: This information is dedicated to all those in high places that will be surprised next time such an attempt will be successive. Just a simple reminder that we have remote-controlled planes, helicopters and boats capable of loading with enough quantity of high explosives.

Austrians see high multiethnic conflict potential

Source:http://www.austriantimes.at/news/General_News/2011-09-30/36618/Austrians_see_high_multiethnic_conflict_potential

A new survey has revealed a significant potential for conflicts between Austrians and foreigners. A poll by the Centre for Future Studies of Salzburg's FH higher education college shows that 53 per cent of Austrians considered the change that existing difficulties in the coexistence of themselves and immigrants could worsen as "very high".

Around 45 per cent of interviewed Austrians said the same considering Christians and Muslims while 31 per cent were of the same opinion as far as the situation between rich and poor was regarded. More than 1,000 Austrians aged 15 and older were questioned for the study which comes shortly after People's Party (ÖVP) Interior Minister Johanna Mikl-Leitner said police and prosecutors recorded 580 breaches of law with xenophobic, far-right, racist, anti-Semitic and islamophobic background last year. The minister declared that this was an increase of 28 per cent compared to 2009. It has to be seen whether poll's results will have any impact on the government's attempts to create more understanding for each other among Austrians and foreigners. The coalition of Social Democrats (SPÖ) and the conservative ÖVP presented Sebastian Kurz as the country's first state secretary for integration in April.Referring to the strong performance in polls by Freedom Party (FPÖ) boss Heinz-Christian Strache, Kurz recently said: "Many people can currently identify with Strache. Nevertheless, I have no interest in parroting his words."The deputy leader of the Viennese department of the ÖVP said about the right-winger's

controversial anti-immigration campaign: "It would be an easy thing to do to say a few slogans to become more popular and garner extra votes – but this is not my approach." Kurz added he was "not Austria's anti-Strache." The ÖVP official said he would not define himself "with what I am against." Speaking about the tense climate between many Austrians and the country's growing Islamic community, the state secretary appealed on immigrants to actively participate in the society and "feel as self-confident Muslims and Austrians at the same time."

Over half a million of Austria's populace of 8.5 million are Muslims. At the same time, the country's Catholic community is shrinking dramatically – a development which several other European countries are experiencing as well. Both the SPÖ and the ÖVP have been criticised for allegedly increasingly populist approaches to the sensitive matter of conflicts between Austrians and Muslim immigrants to tackle the FPÖ's increasing popularity. The right-wing party could become the strongest force in parliament in the next general elections, analysts have said. The SPÖ holds the most seats in the federal parliament at the moment, followed by the ÖVP and the right-wing faction Strache has headed since 2005. The Alliance for the Future of Austria (BZÖ) and the Green Party are also represented in the parliament.

SPÖ Chancellor Werner Faymann and the party's state secretary for financial affairs, Andreas Schieder, may feel confirmed in their calls for higher taxes on assets by the poll results considering the conflict potential between wealthy and impoverished Austrians which were presented today.

The left-wingers suggested the country's richest 80,000 to 100,000 households should be affected by such a tax. They claimed such a measure would mean additional revenue of up to two billion Euros a year. ÖVP Vice Chancellor Michael Spindelegger and ÖVP Finance Minister Maria Fekter made clear they opposed an increase of taxes on assets. Statistics have shown that 10 per cent of Austrians possess 60 per cent of domestic assets. Around 12 per cent of Austrians are at risk of becoming poor, researchers have warned. Especially single parents and people confined to do poorly paid part-time labour were in danger, they said.

Homeland Security Warns That Hackers May Be Motivated By Wall Street Protests

Source:http://www.mediaite.com/online/homeland-security-warns-that-hackers-may-be-motivated-by-wall-street-protests/

The "Occupy Wall Street" protests have been a way to fuel people's anger at Wall Street, and the Department of Homeland Security is concerned such high-profile events may inspire hackers to once again target big financial institutions.

Members of the group Anonymous have been seen at the protests, and those who have work the infamous Guy Fawkes mask have been arrested due to an obscure New York law banning masked gatherings. But a few days ago, hackers managed to collect the personal information of Goldman Sachs CEO Lloyd Blankfein. So Homeland Security issued a warning to big businesses that they could be next.

While the DHS warning doesn't mention Wall Street protests in particular, it did say that "publicized events" like Occupy Wall Street may motivate the group.

Nevertheless, the agency wouldn't

weigh in on the ways it might monitor Anonymous's involvement in Occupy Wall Street. "We don't have any role in someone's right to public protest," said a DHS official. One member of the protests quoted in the above article expressed his doubts at the effectiveness and outcomes of Anonymous' actions, but it's clear its members only represent a fraction of the protestors.

EDITOR: What is going on on the other side of the ocean? Protests, Anonymous, HLS. Is the virus spreading with migratory birds from old continent to the New World?

NATO to step up efforty against growing threat from chemical and biological weapons

Source: http://www.nato-pa.int/default.Asp?SHORTCUT=2620

Legislators from across the NATO Alliance on Sunday urged allied governments to step up efforts against the threat of biological and chemical weapons, warning that there is a growing danger that terrorists could acquire and use such arms to devastating effect.

"There is always a race between those who want to do us harm and those of us who search for technological means to thwart such terrorist acts. We as politicians must make sure that we stay ahead," said US Congressman David Scott, who authored a draft resolution for the annual session of NATO's Parliamentary Assembly.

The draft adopted by the Assembly's Science and Technology Committee calls on NATO governments to invest in detection technology, counter-measures and protection of critical infrastructure from biological and chemical threats.

On Monday, the resolution is expected to be approved by the full Assembly which comprises over 250 parliamentarians from the 28 NATO nations. The annual plenary session will be attended by NATO Secretary General Anders Fogh Rasmussen.

Scott said governments should not allow the current budgetary restraints to undermine defenses against biological and chemical weapons. "Biological and chemical weapons are a significant and evolving threat and we must remain vigilant and we must be strong against these terrorist threats to humankind," he told the Committee.

The draft resolution urges NATO governments to strengthen arms control, disarmament and non-proliferation efforts, particularly at a review conference of the international Biological and Toxin Weapons Convention starting Dec. 5 in Geneva. "This is our most urgent opportunity to update a control regime for biological and chemical weapons and it should be and must be stronger," Scott said of the conference which is held every five years.

NATO lawmakers urged their governments to press all nations to sign up to international conventions on biological and chemical weapons. The resolution also called on the four nations with declared chemical weapons - the United States, Russia, Iraq and Libya - to complete the destruction of their stockpiles in a timely and responsible manner. Non-declared biological and chemical weapons states should cease their programmes and declare any weapons holdings, the resolution said.

ETA End Of Armed Campaign Is No Start For Negotiations

Source: http://www.huffingtonpost.com/2011/10/21/spain-eta-negotiations_n_1023602.html

Spain was adamant Friday there would be no talks with the Basque separatist group ETA even as it welcomed an end to four decades of bombings and shootings following the group's announcement it was laying down arms.

In a historic statement, ETA announced Thursday it was ceasing its 43-year-long bloody campaign for an independent Basque state in territory straddling northern Spain and southwest France. But the group stopped short of declaring defeat and called on Spain and France to open talks on the conflict.

"There is nothing to negotiate with ETA," Defense Minister Carme Chacon told Spanish National Television, adding that ETA had not achieved any of its aims and that the decades "of pain and crime have not served them (ETA) at all."

It was the first clear signal from the government that there would be no deals made.

Chacon said this was the "beginning of an end that has to be managed intelligently."

"The road map from now on has to be followed with consensus and not in a rush," said Chacon.

ETA's decision was immediately welcomed by Spanish politicians across the board, with Prime Minister Jose Luis Rodriguez Zapatero saying it was a victory for democracy.

Mariano Rajoy, the leader of the conservative opposition Popular Party and the person tipped to form the next government following a national election Nov. 20, also hailed it as a major development but warned that Spain would only be fully at ease when ETA disbands.

ETA, which killed more 800 people in its now-ended violent campaign, made the announcement in a video of three its members wearing trademark Basque berets and white cloth masks with slits for their eyes. At the end of the clip, they defiantly raised their fists in the air demanding a separate Basque nation.

Spain's top security official on Friday paid homage to the security forces who helped bring about ETA's change of heart, but he said they would continue with their work.

COUNCIL OF
THE EUROPEAN UNION

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Brussels, 21 October 2011
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PRESSE 385

ETA declaration - Statement of EU Counter-terrorism coordinator Gilles de Kerchove

I welcome the announcement by ETA that it is putting a definitive end to its armed activity. I am sorry that it has taken so long to arrive at this point, and deeply regret that terrorism in Spain has taken so many victims. I would like to pay tribute to the resilience of the Spanish society over all those years.

I would also like to congratulate the judiciary and the law enforcement forces of Spain and of France whose successful cooperation has been such an important element in limiting ETA's ability to pursue its campaign of violence.

The EU remains firm in its conviction that terrorism is unacceptable in all its forms and manifestations and should be combated through the rule of law.

"We have ended a part of our task," said Interior Minister Antonio Camacho. "The most complicated part remains: guaranteeing, by means of strict adherence to our laws, that never again should a generation of Spaniards have to bear the burden of a barbarity that has dragged on our progress and compromised our future."

Spain in recent years has repeatedly refused any negotiations with ETA – talks in 2006 went nowhere and ended in a quick return to violence by the group.

Relatives of victims killed by ETA also insisted that group disband and tell authorities where its guns and bomb-making material are hidden.

"It is the hoped-for end, but not the desired one," said Angeles Pedraza, president of the Association of Victims of Terrorism. "The victims want the attacks to stop, but we want them to pay for what they have done. We want the total defeat of ETA."

ETA's statement made no apology for having killed hundreds of people.

ETA emerged during the dictatorship of Gen. Francisco Franco, who was obsessed with the idea of Spain as a unified state and suppressed Basque culture, banning the ancient and linguistically unique language – which sounds nothing like Spanish or any other language – and destroying books written in it.

Many Basques argue they are culturally distinct from Spain and deserve statehood, and arrests of independence sympathizers still prompt crowds to head to the streets clapping in support. But the wealthy and verdant region also has many inhabitants who consider themselves Spanish, or both Basque and Spanish, and have long been opposed to the militants.

The group's most spectacular attack came in 1973, when ETA planted a bomb on a Madrid street after weeks of tunneling and blew up a car, killing Franco's Prime Minister Luis Carrero Blanco.

But even as Spain returned to democracy in 1978 and the Basque territory and other Spanish regions were granted sweeping

autonomy over the following years, ETA became even more violent, killing hundreds of police officers, army members, politicians and civilians.
Classified as a terrorist group by Spain, the European Union and the United States, the group's power and ability to stage attacks waned over the last decade, especially after the Sept. 11 attacks and the 2004 Madrid train bombings by radical Islamists triggered a wave of revulsion against violence across Spain.
ETA preceded Thursday's announcement with a cease-fire in September 2010 which it then declared permanent in January. Thursday's video was the first time the group has ever renounced the armed struggle.

Video Surfaces of Muammar Qaddafi's Final Moments With Revolutionaries Before Death

Source:http://www.foxnews.com/world/2011/10/20/muammar-qaddafi-captured-in-libya-commander-says/#ixzz1bQeBPv00

Libyans rejoiced and the world breathed a collective sigh of relief Thursday at news of the death of ousted leader Muammar Qaddafi, but details of his capture and killing remained in dispute.
His convoy was hit by NATO airstrikes but not destroyed. And he later was captured alive in his hometown of Sirte. However, numerous reports -- often contradictory -- continue to surface about how he was captured and how he ended up dead, apparently from a bullet to the head.

A U.S. Predator drone was involved in the airstrike on Muammar Qaddafi's convoy Thursday in the moments before his death, as he tried to escape Sirte, a U.S. defense official told Fox News.
The official said the drone, along with a French fighter jet, fired on the "large convoy." A French defense official earlier said about 80 vehicles were in the convoy -- the official said the strike did not destroy the convoy but that fighters on the ground afterward intercepted the vehicle carrying Qaddafi. He was later killed, reportedly in the crossfire between Qaddafi supporters and opponents as he was being transferred.
Arab broadcasters showed graphic images of the balding, goateed Gadhafi -- wounded, with a bloodied face and shirt -- but alive, as he was pushed around by a crowd of revolutionaries. Later video showed fighters rolling Qaddafi's lifeless body over on the pavement, stripped to the waist and a pool of blood under his head.
Standing, he was shoved along a Sirte road by fighters who chanted "God is great." Qaddafi appears to struggle against them, stumbling and shouting as the fighters push him onto the hood of a pickup truck.

He was driven around lying on the hood of a truck, according to the video. One fighter is seen holding him down, pressing on his thigh with a pair of shoes in a show of contempt.

"We want him alive. We want him alive," one man shouted before Qaddafi is dragged away, some fighters pulling his hair, toward an ambulance.

Most accounts agreed Qaddafi had been holed up with heavily armed supporters in the last few buildings held by regime loyalists in the Mediterranean coastal town, where revolutionary fighters have been trying prevail for more than a month.

At one point, a convoy tried to flee and was hit by NATO airstrikes, carried out by French warplanes. France's Defense Minister Gerard Longuet said the 80-vehicle convoy was carrying Qaddafi and was trying to escape the city. The strikes stopped the convoy but did not destroy it, and then revolutionary fighters moved in on Qaddafi.

One fighter who said he was at the battle told AP Television News that the final fight took place at an opulent compound. Adel Busamir said the convoy tried to break out but after being hit, it turned back and re-entered the compound. Several hundred fighters attacked.

"We found him there," Busamir said of Qaddafi. "We saw them beating him (Qaddafi) and someone shot him with a 9mm pistol ... then they took him away."

Military spokesman Col. Ahmed Bani in Tripoli told Al-Jazeera TV that a wounded Qaddafi "tried to resist (revolutionary forces) so they took him down."

Fathi Bashaga, spokesman for the Misrata military council, whose forces were involved in the battle, said fighters encircled the convoy and exchanged fire. In one vehicle, they found Qaddafi, wounded in the neck, and took him to an ambulance. "What do you want?" Qaddafi asked the approaching revolutionaries, Bashaga said, citing witnesses.

Qaddafi bled to death from his wounds a half-hour later, he said. Fighters said he died in the ambulance en route to Misrata, 120 miles from Sirte.

Abdel-Jalil Abdel-Aziz, a doctor who accompanied the body in the ambulance and examined it, said Qaddafi died from two bullet wounds -- to the head and chest.

"You can't imagine my happiness today. I can't describe my happiness," he told The Associated Press. "The tyranny is gone. Now the Libyan people can rest."

The account given by Jibril after a coroner's investigation said Qaddafi was seized unharmed from a drainage pipe but was then shot in the hand and put in a pickup truck. In ensuing crossfire, Qaddafi was shot in the head, the government account said.

According to an account from Hassan Doua, a commander whose fighters found Qaddafi, the former leader already was wounded in the chest when he was seized near a large drainage pipe, and then was put in the ambulance.

Amnesty International urged the revolutionary fighters to report the full facts of how Qaddafi died, saying all members of the former regime should be treated humanely. The London-based rights group said it was essential to conduct "a full, independent and impartial inquiry to establish the circumstances of Col. Qaddafi's death."

After his death, Qaddafi's body was paraded through the streets of Misrata on top of a vehicle surrounded by a large crowd chanting, "The blood of the martyrs will not go in vain," according to footage aired on Al-Arabiya television. The fighters who killed Qaddafi are believed to have come from Misrata, a city that suffered a brutal weeks-long siege by Qaddafi's forces during the eight-month civil war.

Celebratory gunfire and cries of "God is great" rang out across Tripoli. Motorists honked and people hugged each other. In Sirte, the ecstatic former rebels celebrated the city's fall after weeks of fighting by firing endless rounds into the sky, pumping their guns, knives and even a meat cleaver in the air and singing the national anthem.

"We would have wanted him alive for trial. But personally, I think it is better he died," Bashaga said.

The capture of Sirte, the death of Qaddafi, and the death and capture of his two most powerful sons, gives the transitional leaders confidence to declare the entire country "liberated."

It rules out a scenario some had feared -- that Qaddafi might flee deep into Libya's southern deserts and lead a resistance campaign.

Information Minister Mahmoud Shammam told AP that Muatassim Qaddafi was killed in Sirte. Abdel-Aziz, the doctor who accompanied Qaddafi's body in the ambulance, said Muatassim was shot in the chest.

The justice minister said Qaddafi's son and one-time heir apparent, Seif al-Islam, had been wounded in the leg and was being held in a hospital in the city of Zlitan, northwest of Sirte. Shammam said Seif was captured in Sirte.

Following the fall of Tripoli on Aug. 21, Qaddafi loyalists mounted fierce resistance in several areas, including Sirte, preventing Libya's new leaders from declaring full victory. Earlier this week, revolutionary

fighters gained control of one stronghold, Bani Walid.

By Tuesday, fighters said they had squeezed Qaddafi's forces in Sirte into a residential area of about 700 square yards but were still coming under heavy fire from surrounding buildings.

In an illustration of how heavy the fighting has been, it took the anti-Qaddafi fighters two days to capture a single residential building.

Reporters watched as the final assault began around 8 a.m. Thursday and ended about 90 minutes later. Just before the battle, about five carloads of Qaddafi loyalists tried to flee the enclave down the coastal highway that leads out of the city. But they were met by gunfire from the revolutionaries, who killed at least

20 of them.

Col. Roland Lavoie, spokesman for NATO's operational headquarters in Naples, Italy, said the alliance's aircraft struck two vehicles of pro-Qaddafi forces "which were part of a larger group maneuvering in the vicinity of Sirte."

After the battle, revolutionaries began searching homes and buildings looking for any hiding Qaddafi fighters. At least 16 were captured, along with cases of ammunition and trucks loaded with weapons. Reporters saw revolutionaries beating captured Qaddafi men in the back of trucks and officers intervening to stop them.

The fighters looking like the same ragtag force that started the uprising jumped up and down with joy and flashed V-for-victory signs. Some burned the green Qaddafi flag, then stepped on it with their boots.

They chanted "God is great" while one fighter climbed a traffic light pole to unfurl the revolution's flag, which he first kissed. Discarded military uniforms of Qaddafi's fighters littered the streets. One revolutionary fighter waved a silver trophy in the air while another held up a box of firecrackers, then set them off.

"Our forces control the last neighborhood in Sirte," Hassan Draoua, a member of Libya's interim National Transitional Council, told the AP in Tripoli. "The city has been liberated."

President Barack Obama said Qaddafi's death marked the end of a "long and painful chapter" for the people of Libya.

"You have won your revolution," Obama said during an afternoon briefing in Washington, adding that the U.S. and its allies stopped Qaddafi's "forces in their tracks."

Britain's jets and helicopters backed the rebels during the NATO campaign, and the government on Thursday promised assistance to Libya's new leaders.

"Today is a day to remember all of Qaddafi's victims," British Prime Minister David Cameron said, referring to those in Libya and also the 270 people -- mainly British and American -- killed in the 1988 Pan Am bombing over Lockerbie, Scotland.

The only person charged in the bombing, former Libyan intelligence officer Abdel Baset al-Megrahi, was freed from a Scottish prison on compassionate grounds in 2009 because of illness. He remains alive and in Libya.

Senate Foreign Relations Committee Chairman John Kerry, D-Mass., said Qaddafi's death marks "the promise of a new" Libya.

"The United States demonstrated clear-eyed leadership, patience, and foresight by pushing the international community into action after Qaddafi promised a massacre," the Massachusetts senator said in a statement. "Though the Administration was criticized both for moving too quickly and for not moving quickly enough, it is undeniable that the NATO campaign prevented a massacre and contributed mightily to Qaddafi's undoing without deploying boots on the ground or suffering a single American fatality. This is a victory for multilateralism and successful coalition-building in defiance of those who derided NATO and predicted a very different outcome."

Best-Ever Topographic Map of Earth Released

Source: http://www.ouramazingplanet.com/best-topographic-map-of-earth-2117/

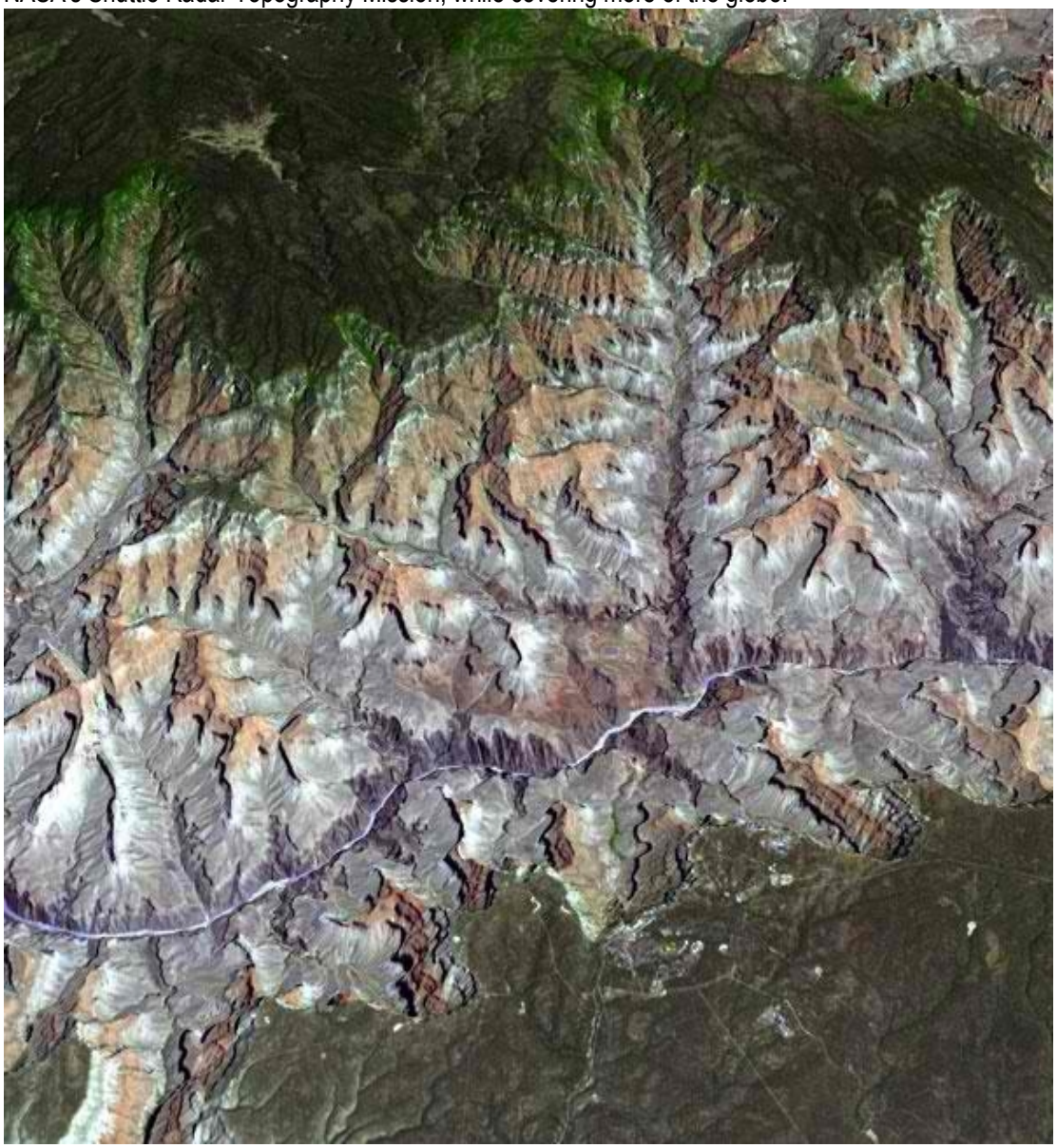
At 14,505 feet (4,421 meters) in elevation, California's Mt. Whitney, located in the Sierra Nevada Mountains on the west side of Owens Valley, is the highest point in the contiguous United States.
Image credit: NASA/GSFC/METI/ERSDAC/JAROS, and U.S./Japan ASTER Science Team

The most complete digital topographic ever made of the Earth was released by NASA today (Oct. 17). The map, known as a global digital elevation model, was created from images collected by the Japanese Advanced Spaceborne Thermal Emission and Reflection Radiometer, or ASTER, instrument aboard NASA's Terra satellite.

The 3-D effect is achieved by merging two slightly offset two-dimensional images (called stereo-pair images) to create depth.

The first version of the map was released by NASA and Japan's Ministry of Economy, Trade and Industry (METI) in June 2009.

"The ASTER global digital elevation model was already the most complete, consistent global topographic map in the world," said Woody Turner, ASTER program scientist at NASA Headquarters in Washington, D.C. "With these enhancements, its resolution is in many respects comparable to the U.S. data from NASA's Shuttle Radar Topography Mission, while covering more of the globe."



The Advanced Thermal Emission and Reflection Radiometer (ASTER) instrument on NASA's Terra spacecraft provided this spacebird's-eye view of the eastern part of Grand Canyon National Park in northern Arizona in this image, acquired July 14, 2011. Image credit: NASA/GSFC/METI/ERSDAC/JAROS, and U.S./Japan ASTER Science Team

The ASTER data cover 99 percent of Earth's landmass and span from 83 degrees north latitude to 83 degrees south.
The improved version of the map adds 260,000 additional stereo-pair images to improve coverage. It features improved spatial resolution, increased horizontal and vertical accuracy, more realistic coverage over water bodies and the ability to identify lakes as small as 0.6 miles (1 kilometer) in diameter. The map is available online to users everywhere at no cost.
"These data can be used for a broad range of applications, from planning highways and protecting lands with cultural or environmental significance, to searching for natural resources," said Mike Abrams, ASTER science team leader at NASA's Jet Propulsion Laboratory in Pasadena, Calif.

Islamic Law Conquering the U.S.

By Clare M. Lopez

Source:http://www.radicalislam.org/news/islamic-law-conquering-us?utm_source=MadMimi&utm_medium=email&utm_content=Shariah+Law+-+The+American+Threat&utm_campaign=RI+Newsletter+53&utm_term=_5BMORE_5D

Previously, we looked at the spread of Islamic law - shariah - throughout Western civilization, with a focus on how Western Europe already is slipping under its influence. In this segment, the focus is on the United States (U.S.) and how shariah is establishing a presence in this country as well.
In the U.S., the Muslim Brotherhood leads the

offensive to insinuate Islamic law into American society. Established in Egypt in 1928 by Hassan al-Banna, the Brotherhood (or Ikhwan) is committed, just like al-Qa'eda, to re-establishment of the caliphate and global imposition of Islamic law. Its Creed is: "Allah is our objective, the Qur'an is our law, the Prophet is our leader, Jihad is our way, and death in the way of Allah is our highest aspiration."
Many of the Brotherhood's internal documents have been made public, as during the 2008 Holy Land Foundation HAMAS terror funding trial in Dallas, Texas. From these documents, we know that nearly every single major Muslim organization in the U.S. is controlled by the Muslim Brotherhood or one of its derivatives.
Among these are CAIR (the Council on American-Islamic Relations), the Fiqh Council of North America, ISNA (the Islamic Society of North America), ICNA (the Islamic Circle of North America), IIIT (the International Islamic Institute of Thought), MAS (the Muslim American Society), MSA (the Muslim Students Association), NAIT (the North American Islamic Trust), and hundreds of others.
In myriad ways, these organizations work to insinuate shariah into American academia, courts, non-Muslim faith communities, government, military, the workplace, and society in general.
On university campuses across North America, MSA students campaign for shariah-compliant gender segregation at gyms and swimming pools, hold "Nakba" Day events

to commemorate the "catastrophe" of the 1948 founding of the State of Israel, and welcome speakers to campus who champion terrorist organizations like HAMAS and Hizballah and praise jihad as a means to spread shariah.

According to a June 2011 study published by the Center for Security Policy, "Shariah Law and American State Courts: An Assessment of State Appellate Court Cases," a total of 50 cases in 23 different states involved a "conflict of law" between shariah and American state law. The cases tell the story of Muslim American families, mostly Muslim women and children, who had turned to the U.S. courts to preserve their rights to equal protection and due process which are unavailable to them under shariah.

While in most of these cases, American law eventually took precedence over shariah, in three cases of this relatively limited study, shariah was found to be applicable. The very fact that shariah was invoked in this many cases of a limited study sampling suggests that Islamic law already has made deep inroads into the American legal system.

Across the diverse span of America's faith communities, the influence of Islam is growing. "Interfaith Dialogue" has become the favorite expression of well-meaning but naïve enablers who strive to outdo one another with invitations for Ikhwan-affiliates to grace their halls with the soothing cadence of taqiyya* messages. Given how enamored many of these faithful are of the concept of "bridges," it is doubtful any of them has ever read Sayyed Qutb's "Milestones."

"The chasm between Islam and Jahiliyyah** is great, and a bridge is not be built across it so that the people of the two sides may mix with each other, but rather only so that the people of Jahiliyyah may come over to Islam."

The U.S. Treasury Department not only promotes Shariah Compliant Finance among American banking and finance companies, but with its 2008 bail-out of AIG, forced U.S. taxpayers to become unwittingly complicit in ownership of one of the largest commercial divisions in the country dedicated to shariah-compliant financial products. Not only is complete information about Islamic law withheld from the American shareholder, but advice from Boards of Muslim clerical advisors on how each company's obligatory annual zakat*** tax is invested likewise is not fully transparent. According to shariah, all annual zakat tax must be invested in one or more of eight recipient categories: one of them is jihad.

Shariah's influence extends into the U.S. military. Bibles received in soldiers' mail are confiscated in Afghanistan and Iraq. Non-Muslim troops are dissuaded from touching the Qur'an and ISAF (International Security Assistance Force) enforces special protective treatment for the Muslim book, in accordance with shariah. American military chaplains engage in outreach to Afghan Muslims, in order to demonstrate U.S. tolerance and diversity. To his enduring shame, Gen. David Petraeus expressed outrage at Pastor Terry Jones' expression of his First Amendment rights to burn a personally-owned copy of the Qur'an in September 2010, saying it could "endanger troops and it could endanger the overall effort here." Perhaps the General forgot to which Constitution he took his oath of service: the American one pledges him and all who serve in uniform to defend Pastor Terry Jones' actions while the Afghan one, which is under shariah, would impose the death penalty.

Islamic law has penetrated the inner reaches of the U.S. Intelligence Community: this final example can be seen in the U.S. government's submission to shariah-compliant language codes. Whereas the 9/11 Commission Report, published in 2004, contains hundreds of references to Islam, jihad, and the enemy, official documents published after 2008 have scrubbed such words from the texts.

The 2008 Department of Homeland Security publication, "Terminology to Define Terrorists" took its vocabulary suggestions from advisors linked to the Brotherhood. Likewise, the National Counterterrorism Center's March 2008 guide "Words That Work and Words That Don't" advised employees to avoid invoking Islam, labeling things "Muslim," or using terms like "jihad" or "mujahedeen."

The 2009 FBI Counterterrorism Analytical Lexicon does not contain the words "Islam," "Islamic," or "Muslim" even once. And when the Obama administration published its official National Security Strategy in 2010, it went so far as to remove "Islamic extremist" from its pages. In effect, top levels of U.S. national security are now in compliance with Islamic law on slander.

When the enemy is able to insinuate the practice and encouragement of alien foreign law into American society on this scale, the battle to remain free of shariah is far along.

Glossary of Terms

* Taqiyya - Deceit or dissimulation sanctioned in Islam to protect the faith or individual believer but also a common tactic to mislead infidels as well.
**Jahiliyyah - Pre-Islamic pagan time that Sayyed Qutb applies to modern-day society as well.
***Zakat - Obligatory annual tax on all Muslims and shariah-compliant companies.

Clare M. Lopez, a senior fellow at the Clarion Fund, is a strategic policy and intelligence expert with a focus on Middle East, national defense, and counterterrorism issues.

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Muslims who change names

Source:http://www.salon.com/2011/10/26/ap_impact_nypd_shadows_muslims_who_change_names/

Muslims who change their names to sound more traditionally American, as immigrants have done for generations, or who adopt Arabic names as a sign of their faith are often investigated and catalogued in secret New York Police Department intelligence files, according to documents obtained by The Associated Press.

The NYPD monitors everyone in the city who changes his or her name, according to internal police documents and interviews. For those whose names sound Arabic or might be from Muslim countries, police run comprehensive background checks that include reviewing travel records, criminal histories, business licenses and immigration documents. All this is recorded in police databases for supervisors, who review the names and select a handful of people for police to visit.

The program was conceived as a tripwire for police in the difficult hunt for homegrown terrorists, where there are no widely agreed upon warning signs. Like other NYPD intelligence programs created in the past decade, this one involved monitoring behavior protected by the First Amendment.

Since August, an Associated Press investigation has revealed a vast NYPD intelligence-collecting effort targeting Muslims following the terror attacks of September 2001. Police have conducted surveillance of entire Muslim neighborhoods, chronicling every aspect of daily life, including where people eat, pray and get their hair cut. Police infiltrated dozens of mosques and Muslim student groups and investigated hundreds more.

Monitoring name changes illustrates how the threat of terrorism now casts suspicion over what historically has been part of America's story. For centuries, immigrants have Americanized their names in New York. The Roosevelts were once the van Rosenvelts. Fashion designer Ralph Lauren was born Ralph Lifshitz. Donald Trump's grandfather changed the family name from Drumpf.

David Cohen, the NYPD's intelligence chief, worried that would-be terrorists could use their new names to lie low in New York, current and former officials recalled. Reviewing name changes was intended to identify people who either Americanized their names or took Arabic names for the first time, said the officials, who insisted on anonymity because they were not authorized to discuss the program.

NYPD spokesman Paul Browne did not respond to messages left over two days asking about the legal justification for the program and whether it had identified any terrorists.

The goal was to find a way to spot terrorists like Daood Gilani and Carlos Bledsoe before they attacked.

Gilani, a Chicago man, changed his name to the unremarkable David Coleman Headley to avoid suspicion as he helped plan the 2008 terrorist shooting spree in Mumbai, India. Bledsoe, of Tennessee, changed his name to Abdulhakim Mujahid Muhammad in 2007 and, two years later, killed one soldier and wounded another in a shooting at a recruiting station in Little Rock, Ark.

Sometime around 2008, state court officials began sending the NYPD information about new name changes, said Ron Younkins, the court's chief of operations. The court regularly sends updates to police, he said. The information is all public, and he said the court was not aware of how police used it.

The NYPD program began as a purely analytical exercise, according to documents and interviews. Police reviewed the names received from the court and selected some for background checks that included city, state and federal criminal databases as well as federal immigration and Treasury Department databases that identified foreign travel.

Early on, police added people with American names to the list so that if details of the program ever leaked out, the department would not be accused of profiling, according to one person briefed on the program.

On one police document from that period, 2 out of every 3 people who were investigated had changed their names to or from something that could be read as Arabic-sounding.

All the names that were investigated, even those whose background checks came up empty, were cataloged so police could refer to them in the future.

The legal justification for the program is unclear from the documents obtained by the AP. Because of its history of spying on anti-war protesters and political activists, the NYPD has long been required to

follow a federal court order when gathering intelligence. That order allows the department to conduct background checks only when police have information about possible criminal activity, and only as part of "prompt and extremely limited" checking of leads.

The NYPD's rules also prohibit opening investigations based solely on activities protected by the First Amendment. Federal courts have held that people have a right to change their names and, in the case of religious conversion, that right is protected by the First Amendment.

The NYPD is not alone in its monitoring of Muslim neighborhoods. The FBI has its own ethnic mapping program that singled out Muslim communities and agents have been criticized for targeting mosques.

The name change program is an example of how, while the NYPD says it operates under the same rules as the FBI, police have at times gone beyond what is allowed by the federal government. The FBI would not be allowed to run a similar program because of First Amendment and privacy concerns and because the goal is too vague and the program too broad, according to FBI rules and interviews with federal officials.

Police expanded their efforts in late 2009, according to documents and interviews. After analysts ran background checks, police began selecting a handful of people to visit and interview.

Internally, some police groused about the program. Many people who were approached didn't want to talk and police couldn't force them to.

A Pakistani cab driver, for instance, told police he did not want to talk to them about why he took Sheikh as a new last name, documents show.

Police also knew that a would-be terrorist who Americanized his name in hopes of lying low was unlikely to confess as much to detectives. In fact, of those who agreed to talk at all, many said they Americanized their names because they were being harassed or were having problems getting a job and thought a new name would help.

But as with other intelligence programs at the NYPD, Cohen hoped it would send a message to would-be bombers that police were watching, current and former officials said.

As it expanded, the program began to target Muslims even more directly, drawing criticism from Stuart Parker, an in-house NYPD lawyer, who said there had to be standards for who was being interviewed, a person involved in the discussions recalled. In response, police interviewed people with Arabic-sounding names but only if their background checks matched specific criteria.

The names of those who were interviewed, even those who chose not to speak with police, were recorded in police reports storied in the department's database, according to documents and interviews, while names of those who received only background checks were kept in a separate file in the Intelligence Division.

Donna Gabaccia, director of the Immigration History Research Center at the University of Minnesota, said that for many families, name changes are important aspects of the American story. Despite the myth that officials at Ellis Island Americanized the names of people arriving in the U.S., most immigrants changed their names themselves to avoid ridicule and discrimination or just to fit in, she said.

The NYPD program, she said, turned that story on its head.

"In the past, you changed your name in response to stigmatization," she said. "And now, you change your name and you are stigmatized. There's just something very sad about this."

As for converts to Islam, the religion does not require them to take Arabic names but many do as a way to publicly identify their faith, said Jonathan Brown, a Georgetown University professor of Islamic studies.

Taking an Arabic name might be a sign that someone is more religious, Brown said, but it doesn't necessarily suggest someone is more radical. He said law enforcement nationwide has often confused the two points in the fight against terrorism.

"It's just an example of the silly, conveyor-belt approach they have, where anyone who gets more religious is by definition more dangerous," Brown said.

Sarah Feinstein-Borenstein, a 75-year-old Jewish woman who lives on Manhattan's Upper West Side, was surprised to learn that she was among the Americans drawn into the NYPD program in its infancy. She hyphenated her last name in 2009. Police investigated and recorded her information in a police intelligence file because of it.

"It's rather shocking to me," she said. "I think they would have better things to do. It's is a waste of my tax money."

Feinstein-Borenstein was born in Egypt and lived there until the Suez Crisis in 1956. With a French mother and a Jewish religion, she and her family were labeled "undesirable" and were kicked out. She came to the U.S. in 1963.

"If you live long enough," she said, "you see everything."

Top Muslim Declares All Christians 'Infidels'

Source:http://www.meforum.org/3085/muslim-declares-christians-infidels

To what extent was Egypt's Maspero massacre, wherein the military literally mowed down Christian Copts protesting the ongoing destruction of their churches, a product of anti-Christian sentiment?

A video of Egypt's Grand Mufti, Sheikh Ali Gomaa (or Gom'a), which began circulating weeks before the massacre, helps elucidate. While holding that Muslims may coexist with Christians (who, as dhimmis, have rights), Gomaa categorized Christians as kuffar — "infidels" — a word that connotes "enemies," "evil-doers," and every bad thing to Muslim ears.

After quoting Quran 5:17, "Infidels are those who declare God is the Christ, [Jesus] son of Mary," he expounded by saying any association between a human and God (in Arabic, shirk) is the greatest sin: "Whoever thinks the Christ is God, or the Son of God, not symbolically — for we are all sons of God — but attributively, has rejected the faith which God requires for salvation," thereby becoming an infidel.

Gomaa then offered a hypothetical dialogue between Christians and Muslims to illustrate Islam's proper position:

> **Christians:** You have the wrong idea about us; we don't worship the Christ.
>
> **Muslims:** Okay, fine; we were under the wrong impression — but, by the way: "Infidels are those who declare God is the Christ, son of Mary."
>
> **Christians:** But these are philosophical matters that we are unable to explain.
>
> **Muslims:** Okay, fine; God is one—but, by the way: "Infidels are those who declare God is the Christ, son of Mary."

As a graduate of and long-time professor at Al Azhar university and Grand Mufti of Egypt (a position second in authority only to Sheikh Al Azhar), Ali Gomaa represents mainstream Islam's — not "radical Islam's" or "Islamism's" — position concerning the "other," in this case, Christians. Regardless, many in the West hail him as a "moderate" — such as this U.S. News article titled "Finding the Voices of Moderate Islam"; Lawrence Wright describes him as "a highly promoted champion of moderate Islam":

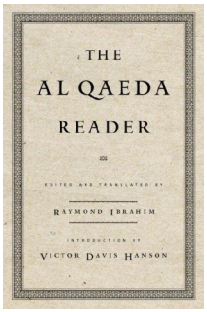
> He is the kind of cleric the West longs for, because of his assurances that there is no conflict with democratic rule and no need for theocracy. Gomaa has also become an advocate for Muslim women, who he says should have equal standing with men.

How does one reconcile such sunny characterizations with reality? The fact is, whenever top Muslim authorities like Gomaa say something that can be made to conform to Western ideals, Westerners jump on it (while of course ignoring their more "extreme" positions). It is the same with Gomaa's alma mater, Al Azhar, the "chief center of Islamic and Arabic learning in the world."

MEMRI, for instance, recently published a report titled "The Sheikh of Al Azhar in an Exceptionally Tolerant Article: Christianity, Judaism Share Basic Tenets of Islam." Of course, the day after this report appeared, this same sheikh — Islam's most authoritative figure — insisted that the American ambassador wear a hijab when meeting him: just as Muslim "radicals" compel Christian girls to wear the hijab, "moderate" Al Azhar compels U.S. diplomats.

In short, yes, many religions "share basic tenets," but they are secondary to the differences, which are more final and define the relationship. Or, to put it in Ali Gomaa's paradigm: Fine, Christianity and Islam have commonalities — but, by the way: "Infidels are those who declare God is the Christ, son

of Mary."
The fact is, this Quranic verse is as much a cornerstone of Islam's view of Christianity as the unity of God and Christ is a cornerstone of Christianity, articulated some 1700 years ago in the Nicene Creed. The issue is clear cut for all involved.
Accordingly, how can one fault Gomaa? As Grand Mufti, he is simply being true to Islam's teachings. Indeed, his consistency is more commendable than the equivocations of Western ecumencalists who, by falling over themselves to assure Muslims that they all essentially believe in the same things, demonstrate, especially to Muslims, that they believe in nothing.
Incidentally, if Gomaa upholds the plain teachings of the Quran concerning who is an infidel, is it not fair to assume he also upholds the Quran's teachings on how to confront them, as commanded in Quran 9: 29: "Fight … the People of the Book [Jews and Christians] until they pay the Jizya [tribute] with willing submission, and feel themselves subdued." Of course, prudent Muslims, undoubtedly like Gomaa himself, know that now is not the time to talk openly about such things.
Either way, here is another reminder of how Quranic verses and terms that Western people brush aside as arcane or irrelevant have a tremendous impact on current events — such as Egypt's Maspero massacre:



For the same word Gomaa, the nation's Grand Mufti, used to describe Christians is the same word Muslim soldiers used when they opened fire on and ran over Christian Copts; the same word twenty Muslim soldiers used as they tortured a protesting Christian; and the same word Muslims hurled at Christians during the funeral procession for their loved ones slain at Maspero: Infidel.

Raymond Ibrahim, author of The Al Qaeda Reader, is a Shillman Fellow at the David Horowitz Freedom Center and an Associate Fellow at the Middle East Forum.

DHS completes Multi-Band Radio testing

Source: http://www.fireengineering.com/articles/2011/10/department-of-homeland-security-to-conclude-final-multi-band-radio-pilot.html

Last week DHS completed testing on a sophisticated new multi-band radio that will allow first responders to communicate with multiple agencies and jurisdictions operating on different radio bands.
9/11 demonstrated a severe lack in interoperability as firefighters, police officers, and other emergency personnel from various agencies from across the United States could not communicate with one another using their existing radios. Each agency operated on a different band and required a third party to relay information.
To bolster communication among first responders, DHS launched its Multi-Band Radio initiative, which recently concluded its fourth and final pilot program test in Chicago.
"The final pilot in Chicago provides the opportunity to integrate all we have learned in previous tests and provide the updated multi-band radio to Chicago's finest for testing," said Tom Chirhart, the program manager for DHS' Science and Technology's Multi-Band Radio Program. "Pilot programs allow DHS to work closely with local responders to ensure the technologies align with their unique needs."
Previous tests were conducted in Phoenix, New Orleans, and Miami-Dade. Feedback from each test was used to tweak the program and create better radios.

Beginning in May 2012, first responders will have the opportunity to purchase the Harris XG-100 Unity radio system. The Unity radios can replace up to five different radios, roughly the equivalent cost of just one high-end portable radio.
Chirhart believes that the new multi-band radios will help reduce costs over time and increase effectiveness during disasters.
"DHS is working to ensure that the best radio equipment is available to emergency responders at all levels," said Chirhart. "Having multi-band radios with various options and capabilities available to agencies will not only improve selection, but will increase competition and drive prices down over time."

NOTE: This might be the solution to one of the most important gaps in all emergency planning.

More than 18,000 bridges in metro areas structurally deficient

Source: http://t4america.org/pressers/2011/10/19/new-report-ranks-deficient-bridges-by-metro-areas/

A recently released report found that more than 18,000 U.S. bridges in the busiest cities are "structurally deficient.
According to "The Fix We're In For," the latest report by Transportation for America, each day 75 percent of all traffic crosses one of these deficient bridges and in cities like Los Angeles, an average of 396 drivers cross a deficient bridge every second.
"There are more deficient bridges in our metropolitan areas than there are McDonald's restaurants in the entire country," said James Corless, the director of Transportation for America.
There are roughly 14,000 McDonald's compared to 18,239 deficient bridges.
Pittsburg, Oklahoma City, and Tulsa each contained the highest percentage of deficient bridges for a city of their size with 30.4, 19.8, and 27.5 percent respectively. Meanwhile Orlando, Las Vegas, and Fort Myers had the smallest percent of deficient bridges for cities of their size.
Currently an estimated 70,000 U.S. bridges are structurally deficient, but Corless said fixing the 18,000 bridges in metropolitan areas should be the first priority.
"These metropolitan-area bridges are most costly and difficult to fix, but they also are the most urgent, because they carry such a large share of the nation's people and goods," he said.
The Federal Highway Administration estimates that it would cost $70.9 billion to eliminate the backlog of potentially dangerous bridges.
The report comes on the heels of the sudden closure of a major commuting bridge in Louisville, Kentucky after officials discovered two dangerous cracks in the load-carrying portion of the bridge.

The closure has forced the 80,000 commuters who cross the bridge each day to find alternative routes.
"The recent shutdown of the Sherman-Minton Bridge between Kentucky and Indiana was yet another reminder of the urgent need to repair our nation's bridges," Corless said. "A sincere initiative to fix these bridges would put thousands of people to work while ensuring that these critical links continue to carry people safely to work and that goods can make it to market, now and well into the future."

Metros 500,000 - 1 million, ranked by percent of deficient bridges

Rank	Metro Population 2009	Metro Area Name	Percent Deficient	Total Deficient Bridges	Average Daily Traffic on Deficient Bridges	Drivers crossing deficient bridge every second
1	929,015	Tulsa, OK	27.5%	783	3,809,427	44
2	507,766	Lancaster, PA	26.5%	198	734,532	9
3	549,454	Scranton, PA	26.1%	239	1,157,189	13
4	562,906	Des Moines, IA	24.3%	358	559,735	6
5	816,012	Allentown, PA	21.5%	234	1,374,885	16
6	849,517	Omaha, NE	19.0%	492	466,802	5
7	562,963	Youngstown, OH	18.9%	228	789,241	9
8	536,919	Harrisburg, PA	18.4%	175	891,188	10
9	674,860	Stockton, CA	18.0%	115	2,453,016	28
10	714,765	Greensboro, NC	16.0%	199	1,014,005	12

Metros 1-2 million, ranked by percent of deficient bridges

1	1,227,278	Oklahoma City, OK	19.8%	685	1,857,956	22
2	1,839,700	San Jose, CA	18.7%	189	5,906,551	68
3	1,600,642	Providence, RI	18.6%	212	3,933,150	46
4	1,745,524	Charlotte, NC	12.1%	217	1,060,518	12
5	1,035,566	Rochester, NY	12.0%	142	1,171,304	14
6	1,801,848	Columbus, OH	11.1%	323	1,736,553	20
7	1,743,658	Indianapolis, IN	10.9%	346	2,069,074	24
8	1,304,926	Memphis, TN	9.9%	247	1,320,211	15
9	1,131,070	Birmingham, AL	9.7%	227	1,284,706	15
10	1,125,827	Raleigh, NC	9.7%	105	670,610	8

Metros over 2 million, ranked by percent of deficient bridges

1	2,354,957	Pittsburgh, PA	30.4%	1133	4,944,931	57
2	4,317,853	San Francisco, CA	20.9%	380	15,600,871	181
3	5,968,252	Philadelphia, PA	20.0%	907	9,355,193	108
4	2,127,355	Sacramento, CA	15.4%	211	5,135,871	59
5	4,143,113	Riverside, CA	12.2%	296	5,020,110	58
6	2,067,585	Kansas City, MO	12.1%	617	2,041,581	24
7	4,588,680	Boston, MA	11.7%	308	7,872,648	91
8	4,403,437	Detroit, MI	11.5%	286	4,212,716	49
9	2,091,286	Cleveland, OH	11.4%	213	2,453,811	28
10	19,069,796	New York, NY	9.8%	778	17,505,467	203

Andy Herrmann, the president-elect of the American Society of Civil Engineers, echoed Corless's sentiments stating, "The poor condition of our bridges is a problem that is not going away. Most of the nation's bridges were designed to last 50 years, and today, roughly a third are already 50 years or older."

To help fix these bridges, Transportation for America recommended providing states with increased resources to repair and rebuild and to ensure that those allocated funds can only be spent on bridge repairs.

NOTE: You can download full report from the website hosting the newsletter (CBRNE-CT Papers section)

COMMENT: Sometimes I wonder if information like this made public is serving any purpose. If the report spotted problems – as they did, it is an excellent opportunity to fix them. Why let ANYBODY out there to know certain weak points into urban infrastructure?

Digital Games and Learning

By Sara de Freitas, Paul Maharg
Preface by Henry Jenkins

- Pub. date: 31 Mar 2011
- 320 Pages, paperback

Description

The popularity of entertainment gaming over the last decades has led to the use of games for non-entertainment purposes in areas such as training and business support. The emergence of the serious games movement has capitalized on this interest in leisure gaming, with an increase in leisure game approaches in schools, colleges, universities and in professional training and continuing professional development.

The movement raises many significant issues and challenges for us. How can gaming and simulation technologies be used to engage learners? How can games be used to motivate, deepen and accelerate learning? How can they be used to greatest effect in learning and teaching? The contributors explore these and many other questions that are vital to our understanding of the paradigm shift from conventional learning environments to learning in games and simulations.

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"Kamikaze" drones

Source: http://www.homelandsecuritynewswire.com/us-army-deploy-kamikaze-drones

The U.S. Army is getting ready to add a "kamikaze drone" to its arsenal. The new drone is designed to hover quietly in the sky before it dive-bombs directly into a human target. Officially dubbed the Switchblade, the new drones come as part of the ever-expanding U.S. arsenal of unmanned aerial vehicles.

The new drone weighs less than two kilos and is small enough to be carried by ground troops in their backpacks. When it is ready to be deployed, the Switchblade is launched from a tube and its wings unfold as it begins to soar through the air.

Switchblade launch while watches drone-eye view // Source: avinc.com

Manufactured by AeroVironment, the drone is powered by a small electric motor and transmits video in real-time so troops can identify an enemy target.

"Upon confirming the target using the live video feed, the operator then sends a command to the air vehicle to arm it and lock its trajectory onto the target," the company said in a press release.

When given the kill order, the drone slams into the target and detonates a small explosive. As a safety feature, the drone can be called off at the last moment, even after the kill order has been issued, offering operators "a level of control not available in other weapon systems," the company said.

The Switchblade comes in response to rising criticism that drone strikes kill innocent civilians including women and children when they launch powerful Hellfire missiles or drop bombs. According to Daniel Byman, a senior fellow at the Brookings Institute, statistics collected in 2009 pointed to more than 600 civilian deaths from drone strikes, a number the CIA strongly disputes. The agency maintains that it kills very few non-combatants and that last year there were no civilian deaths.

In addition, the continuing drone campaign in Pakistan has continued to be a source of significant tension in the uneasy U.S.-Pakistan alliance. In recent years, the United States has come to increasingly rely on drone strikes in Pakistan, Yemen, and Somalia to target and kill terrorist leaders including Anwar al Awlaki, the radical American-born Yemeni cleric who has been credited with inciting several terrorist attacks including the Fort Hood shooting.

To help minimize the number of civilian casualties, the Switchblade has been introduced as a way to avoid killing innocent civilians. "Flying quietly at high speed the Switchblade delivers its onboard explosive payload with precision while minimizing collateral damage," the company said.

In June, the U.S. Army awarded a $4.9 million contract to AeroVironment to supply the new drones as soon as possible. It is unclear how many Switchblade drones the Army purchased or when they will be deployed downrange.

Taking the Hunt Underground

By Mickey McCarter

Source:http://www.hstoday.us/industry-news/general/single-article/taking-the-hunt-underground/7cdd9e0d11e4658957b5fd50719ce626.html

The proliferation of tunnels to smuggle narcotics and people under the Southwest border is a well-known problem for the US Border Patrol and the Department of Homeland Security (DHS), which has begun working to find ways to detect and defeat the threat.

The US military, however, has been fighting underground for decades. The modern Army often fought foes that hid in tunnels in the Vietnam War. The Viet Cong dug into the tunnels early in the war, taking advantage of their cover and using them to surprise American forces in attacks such as the 1968 Tet Offensive. The United States lacked any real means of detecting these tunnels and resorted to bombing them several times during the war.

Just as the Viet Cong moved fighters and supplies through their tunnels, the Taliban in Afghanistan have used tunnels for the same purposes. The mujahedin fighting the Soviet Union employed Afghan tunnels extensively in the 1980s. Those same tunnels have posed

challenges for the US military since Sept. 11, 2001. In addition, Afghan detainees have sometimes resorted to tunnels to escape prisons a strategy also occasionally employed by the Allies and Axis alike when escaping from prisoner of war camps during World War II.

The Department of Defense (DoD) has been stepping up its efforts to detect tunnels in Afghanistan, representing the military's first true attempts to apply technology to the challenges of tunnel detection. Now, DoD is bringing its experience and knowledge to bear on behalf of homeland security.

Indeed, while it is not unusual for DHS to seek technology transfer assistance from DoD, the structure and scope of tunnel detection efforts is more robust than most other collaborative programs. (See "Tunnel Vision" in the August issue of Homeland Security Today for coverage of DHS' anti-tunnel efforts.)

Joint capabilities

For many years, Border Patrol sought assistance in tunnel detection from the Joint Task Force-North (JTF-N), a component of DoD's US Northern Command (NORTHCOM) that supports counterdrug operations by US law enforcement agencies.

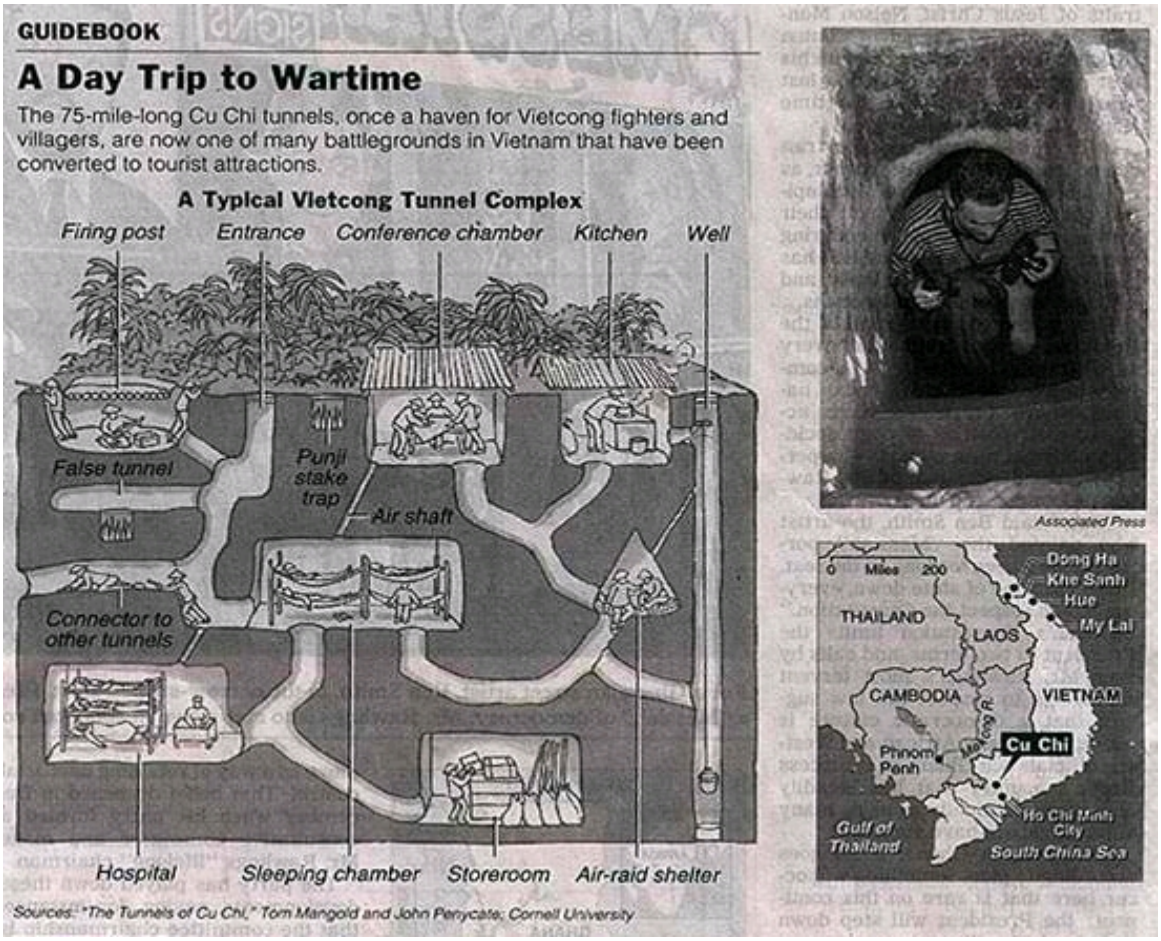
Initial testing did not fulfill expectations, and JTF-N was not prepared to engage private vendors. So JTF-N eventually asked NORTHCOM headquarters to become involved. NORTHCOM took over the project and hired Amy Clymer, who coordinated vendor demonstrations on the Southwest border and later became operations manager for the Rapid Reaction Tunnel Detection (R2TD) Joint Capabilities Technology Demonstration (JCTD) program.

"We started looking at how to engage with private vendors and other government agencies that had potential solutions and how to test those—evaluate what works and what doesn't," Clymer told Homeland Security Today.

At that point, the Army Corps of Engineers began modification of commercial technology for tunnel detection and became the technical lead on JCTD. The Army Corps had been working on complementary problems for US Central Command (CENTCOM), which was attempting to identify tunnels used by detainees to escape from prisons or by insurgents to transport illicit drugs and weapons in Iraq and Afghanistan. To tackle that problem, the Army Corps of Engineers began developing technology to locate clandestine tunnels.

According to a statement on the website of the Army Corps of Engineers, "Tunnel detection and interdiction has been a persistent battlefield challenge for decades. In Afghanistan, man-made underground canals, or Karez, move irrigation water from mountains to villages by gravity flow. The estimated 6,000 Karez are an emerging threat to our military forces there because they give insurgents a means to cache weapons and other materiel, infiltrate and exfiltrate the battlefield and move fighters and supplies."

The R2TD JCTD, which is the formal tunnel detection program, has four DoD components led by: Clymer, as operational manager at NORTHCOM; Jason McKenna, technical manager at the Army Corps of Engineers; Army Col. Brett Barraclough, DoD transition manager to move technology to DHS; and an oversight official at the Pentagon. Clymer receives direct advice from three geophysical subject matter experts on the project: Robert Horton with the US Geologic Survey, Greg Elbring with Sandia National



Laboratory and McKenna with the Army Corps of Engineers-Engineer Research and Development Center.
"It benefits a number of DoD entities as well as DHS," Clymer said of the tunnel detection effort. "It's been a problem for years. It's the Holy Grail of geophysics, subterranean detection. It's a hard problem to solve, finding things in the near-subsurface. So it's a big challenge, and it has to be a structured program or else we would continue to have a science-fair approach to testing different ineffective technologies continuously."
Clymer credited the Army Corps of Engineers with truly turning the project around.
"There were private vendors that had some promising capabilities that came from the mining industry and that type of thing. There was some capability in the private sector that we drew upon. All of those had to be vetted," Clymer said. "But the Army Corps has the engineering expertise, and it wasn't until they took over the program that we started having some success with the technologies. The challenge was not in the sensors that are put into the ground; it's in the processing of the noise and accumulation of the data that you get. The recent successes have come from significantly more capable processing of that information in a usable format."
Army engineers have produced software that reduces interference and produces a more reliable detection capability, Clymer said.

Project goals

The R2TD project seeks to integrate five specific technologies into a tunnel detection "system of systems." The technologies include a system called the Border Tunnel Activity Detection System, which uses seismic and acoustic linear and point sensors; an electromagnetic imaging system carried by a shielded vehicle; an active seismic imaging system to pinpoint subsurface targets in near-real time; mapping tools and other technology.

Clymer declined to provide other details on the technologies due to the sensitive nature of the project. But she emphasized that they are passive and active technologies. Passive technologies sit on the ground and listen for sounds that indicate the presence of tunnels. Active technologies, by contrast, emit energy of some sort and then show an operator information that returns to the device.

The three-year R2TD JCTD program, which is nearly half over, has successfully held two technical demonstrations and one operational demonstration to date. The technical demonstrations examined the technology's specifications, while an operational demonstration put a trained operator at the controls. The project's final test will consist of an operational demonstration in which an analyst can run all of the system's five technologies.

Sometime in fiscal 2012, R2TD managers will conduct a third technical demonstration, which will be followed by a second operational demonstration, Clymer said. The project then will conclude sometime in fiscal 2013.

At some future point, DoD and DHS may make use not only of the R2TD technologies but also technologies under development at the Idaho National Laboratory or under evaluation at the Mitre Corp., a not-for-profit operator of federally funded research and development centers (FFRDCs) that support both DoD and DHS.

Independent effort

Mitre started its tunnel detection project independently, designing a ground-penetrating radar system specifically for use by DHS along the US Southwest border.

Weiqun Shi, principal sensor systems engineer with Mitre and lead investigator on the DHS Systems Engineering and Development Institute FFRDC tunnel detection project, is involved in project meetings at DHS and DoD on various tunnel detection efforts. Mitre will transition its project to DHS at some point in the near future.

To overcome the obstacles confronting other tunnel detection technologies, Mitre has designed its sensors to go underground.

"Instead of placing sensors on the surface, we try to place sensors underneath the ground. The idea is to build a subsurface sensor grid. In that way, you can place your sensors away from the surface and urban noise. You can make the sensors yield much more stable performance. You can bypass those surface and noise conditions," Shi told Homeland Security Today.

To accomplish that, Mitre borrowed techniques from the telecommunications industry, which has become adept at drilling horizontal boreholes to place fiber optic cables underneath roads and buildings in the past decade.

"In recent years, that technology has really developed fast. The cost has gone down so it can be affordable," Shi said. "So we utilized that technique to drill underground and place our sensors into a borehole. We built a robot and that robot delivers our sensors into the underground boreholes to collect data and transfer data back for post-processing."

Mitre held a proof-of-principle demonstration in Bedford, Mass., which went well. As Mitre continues to work with DHS to evaluate technologies, Shi would like to run trials in testbeds operated by US Customs and Border Protection (CBP) along the Southwest border.

Once Mitre transfers its prototype into an operational system, researchers will continue to refine the technology with the goal of producing another prototype with a better signal-to-noise ratio. The current prototype uses off-the-shelf antenna components, but Shi foresees the incorporation of a directional antenna with a much larger gain in a few years.

Mitre also will continue to optimize its sensor system design, refine its data processing algorithm and research border soil conditions.

While Mitre's tunnel detection project was developed specifically for DHS, it also may offer applications for DoD, particularly in the detection and monitoring of underground facilities and underground weapons tests in hostile states.

Analysis

In July, the White House released a National Southwest Border Counternarcotics Strategy. US law enforcement agencies have detected more than 150 tunnels since May 1990, according to DoD sources. To date, six of these tunnels were discovered with emerging DoD technologies. The rest were discovered by human efforts. All but one originated in Mexico and exited in California or Arizona. Authorities suspect many more of these tunnels exist.

Authorities have uncovered the largest number of tunnels in the Tucson Sector, which includes Nogales, Ariz., in recent years. CBP uncovered 37 tunnels in fiscal 2009, 2010 and so far in 2011. Border Patrol agents found almost all of those tunnels in Nogales.

"Cross-border tunnels are constructed and used to move people and contraband across the Southwest border at an alarming rate. Recently, tunnels have been detected that exhibit a higher degree of engineering and sophisticated construction techniques. These tunnels are deeper and longer than previously encountered, and therefore new methods are required to detect them," the strategy warned.

The strategy called on DHS to strengthen its work on tunnel detection with DoD. The DoD Counter-Terrorism Technical Support Office has been working on technologies like portable ground-penetrating radar, underground communications, remote imaging and detection for underground anomalies using laser technology, and seismic-acoustic sensor kits.

Defense technology sharing would benefit DHS, as would the exchange of information on tunnel tactics and characteristics, the strategy concluded.

Tunnel Detection's Three Challenges

Any technology attempting to detect tunnels faces three major challenges, according to Weiqun Shi, Mitre's lead investigator on its tunnel detection project.

Most tunnels in the United States have been discovered in urban areas like San Diego or Nogales, Ariz., Shi told Homeland Security Today. Urban noise interferes with the ability of most technologies to listen to any subsurface noise that might indicate the presence of a tunnel.

"Urban areas can mask construction noise and vibrations. They also provide easy cover for the tunnel entrance," he remarked. "Technologies such as passive acoustic and seismic surveys have a hard time detecting that sort of thing in a civic and urban environment."

The depth of many tunnels poses a second challenge. Some tunnels can be as deep as 80 or 90 feet. When a target is 90 feet down and 6-feet high by 3-feet wide, it represents a very small footprint, which poses obstacles to sensor performance.

A third challenge lies on the surface—literally. Layers of clay found in areas near San Diego and Nogales prevent penetration by many sensors.

"Those clay layers can highly attenuate electromagnetic energy. So surface attempts are not working effectively," Shi said.

Of Dogs and Men

The Viet Cong made extensive use of tunnels during the Vietnam War, often staging food, medical supplies and communications equipment deep inside the tunnels, which were booby-trapped. Finding the Cu Chi tunnels today is simple, since many of the larger ones have been converted into tourist destinations in Vietnam. But during the 1960s, soldiers essentially had to scout the tunnels out manually. As with most tunnels along the US Southwest border today, all tunnels in Vietnam were uncovered through human intelligence. No reliable technologies were available to help the Army locate tunnels that could be hiding enemy forces.

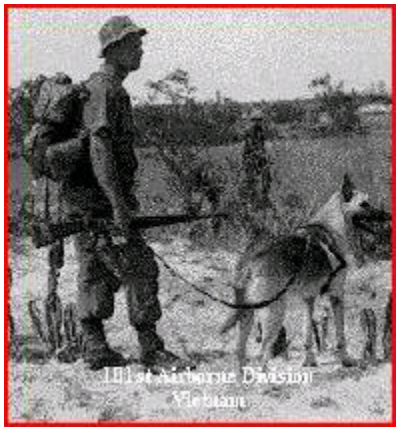
Allied forces fighting in Vietnam sent soldiers to excavate the Cu Chi tunnels. These soldiers, known as "tunnel rats," would enter tunnels lightly equipped with a gun and a flashlight and sometimes

explosives to destroy the tunnel. Tunnel rats could find themselves in close combat with the enemy or up against deadly traps.

Australian Army Capt. Sandy MacGregor led the most famous team of tunnel rats, an engineering group that explored and mapped an extensive maze of the Cu Chi tunnels. In fact, the term "tunnel rat" was coined from a press account of MacGregor's exploits.

Army combat tracker with his Lab

Military forces also relied upon scout dogs to find tunnels. After trials to test the ability of dogs to detect tunnels, the Pentagon deployed scout dog teams to Vietnam in 1969, according to Department of Defense records. During a 5-and-a-half month trial, the German shepherds in the tunnel detection teams found 108 tunnels and pits, according to Vietnam historian Michael Lemish in his book War Dogs: Canines in Combat.



In her 1998 master's thesis for the US Army Command and General Staff College, The Contributions of the American Military Working Dog in Vietnam Mary Kathleen Murray, a Navy lieutenant commander, wrote, "As early as April 1970, the Marine Corps project officer was reporting successful operations involving the first group of handlers and dogs. In the monthly report covering the period between 18 March and 30 March 1970, dogs were recorded as having detected several mines and booby traps in a variety of situations. Of particular interest to the Marine Corps was the fact that during the evaluation, the dogs that were specifically trained to detect mines and booby traps were also alerting to tunnels and punji pits. Although it would be impossible to quantify an exact figure, the final report does credit the dogs with certain savings of lives."

Perhaps US borders could use similar human or canine tunnel detection efforts?

Hizballah can fight Israel without aid from Iran or Syria

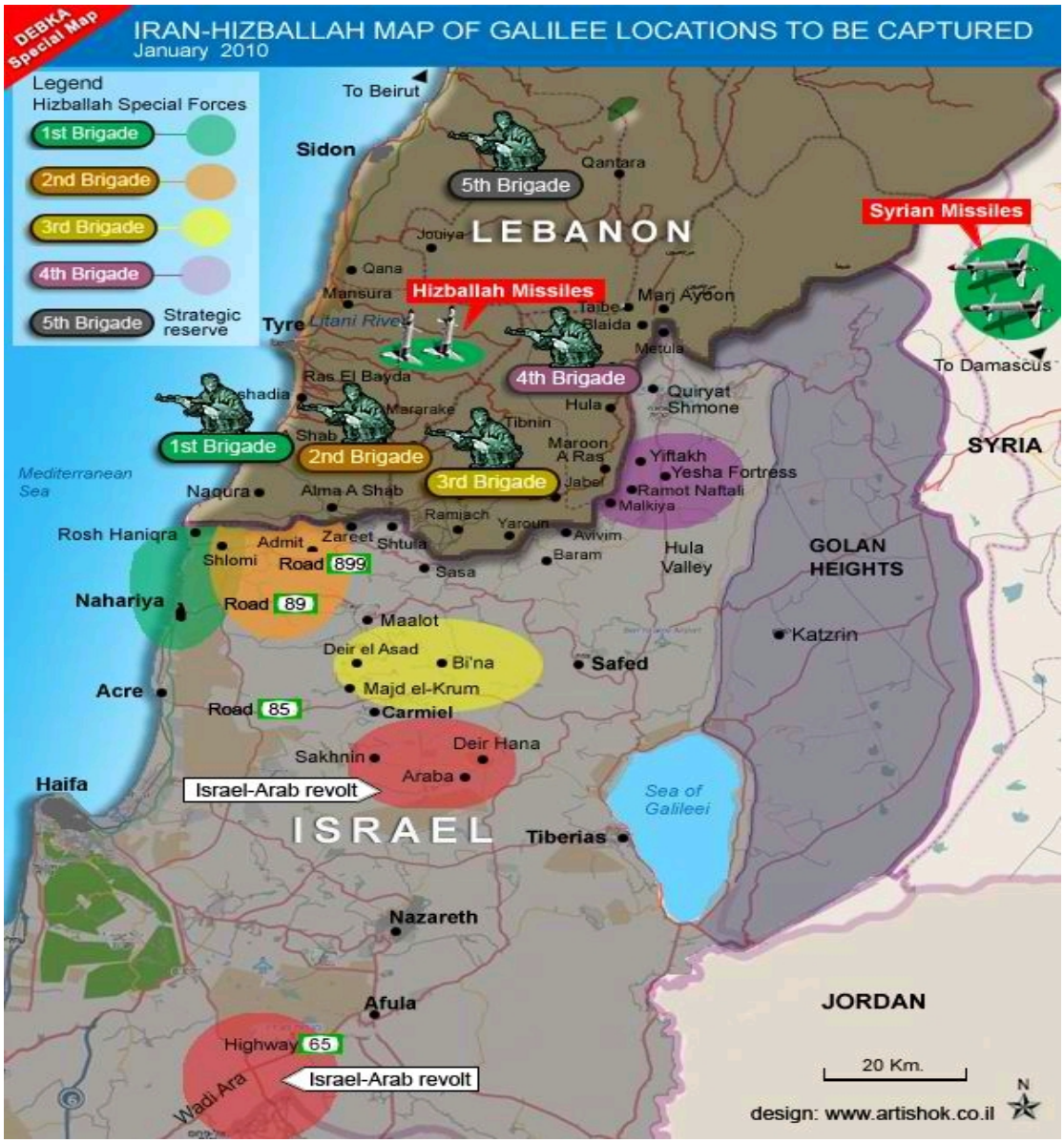
Source:http://www.debka.com/article/21451/

The Lebanese Hizballah leader Hassan Nasrallah, while inspecting his fighting units in the last two weeks, has briefed commanders on updated operational plans for firing 10,000 rockets at Tel Aviv and Israel's air force and reserve mobilization bases in a surprise attack, debkafile's military sources report.

"The Zionist enemy cannot stand up to a salvo on that scale," he told them. "He can't locate our secret launching bases or put a stop to a missile offensive that is sure to determine the war's outcome."

He assured the troops that Hizballah is capable of fighting Israel without Iranian or Syrian help.

In answer to questions, Nasrallah said the militia must be prepared to fight Israel without outside military assistance. "We don't know in what situation our war may find Iran. We do know Bashar Assad has been fighting a rebellion for the past ten months and is in no condition to come to our aid," he said.



To boost morale, Nasrallah reported the arrival of advanced weapons, including anti-tank and anti-air missiles from Libya. debkafile's sources report they were delivered to Lebanon by sea and air freighters from the Libyan capital of Tripoli.

A Hizballah purchasing mission in Tripoli and Benghazi bought the weapons from military units making up the National Transitional Council ruling Libya as an interim government. Iranian and Egyptian Muslim Brotherhood agents were on hand to pay for the merchandise on the spot.

In the briefings to his men, the Hizballah leader also dredged up a two-year old plan to use the projected massive rocket assault as cover for five commando brigades to surge into northern Israel and seize designated sectors of the Galilee up to the outskirts of Carmiel. He assured Hizballah troops that even if Israel Defense Forces units stormed into Lebanon, they were capable of taking the war across the border into enemy terrain.

Nasrallah's master plan first appeared exclusively inDEBKA-Net-Weekly issue 430 of Jan., 22, 2010, along with the map attached to this article.

In all his meeting with fighting units, the Hizballah chief makes a point of warning them to beware of American and Israeli spies who constantly try to penetrate their rank s. So far, they have not been able to locate the militia's secret rocket-launching facilities.

debkafile's sources comment that, while Israel's leading politicians and mass media hammer away at the whys and wherefores of a potential strike against Iran's nuclear sites on the strength of largely fictitious information deliberately disseminated to make a point, Israel faces a real and imminent threat of a cross-border flare-up with Hizballah and Syria.

Syrian President Bashar Assad made it clear in a British press interview Sunday, Oct. 30, that if he has his back to the wall as a result of foreign intervention in the uprising against him, he will "burn the Middle East." Three weeks ago, on Oct. 4, the Syrian ruler warned that if he faced foreign intervention, he would need "not more than six hours to transfer hundreds of rockets and missiles to the Golan Heights to fire them at Tel Aviv."

On Nov. 3, Birgul Ayman Guler, head of the Turkish opposition Republican People's Party, remarked after a visit to Damascus: "The West has written a plot about democracy and liberty. But this plot… is nothing but the plot for an invasion."

Our sources note that Ayman's party is against Prime Minster Tayyip Erdogan's policy of supporting the Syrian opposition to Assad. He has expanded this support by hosting rebel command posts and training facilities on Turkish soil and providing them with arms. The Turkish prime minister is seen as acting out the policy of intervention not just of his government but of NATO, of which his country is a full member.

Crisis Mapping: A Phenomenon and Tool in Emergencies

By Myriam Dunn Cavelty and Jennifer Giroux

Source:http://www.sta.ethz.ch/CSS-Analysis-in-Security-Policy/No.-103-Crisis-Mapping-A-Phenomenon-and-Tool-in-Emergencies-November-2011

The damage caused by the 2010 earthquake in Haiti is well known. Less known is the dynamic crisis mapping effort that emerged alongside disaster relief. To visualise the crisis space, volunteers combined

Selected crisis mapping initiatives

Case	Haiti January 2010	United States April 2010	Russia July – Sept 2010	Japan March 2011	Libya Spring/Summer 2011
URL	http://haiti.ushahidi.com/	http://oilspill.labucketbrigade.org/	http://russian-fires.ru/	http://www.sinsai.info/	http://libyacrisismap.net/
Crisis	Earthquake	Deep sea oil rig explosion	Wildfires	Earthquake/Tsunami	Political Crisis
Initiator	Individual/organisation	Grass root (Louisiana Bucket Brigade (LABB)	Individual	Individual/organisation	Intergovernmental Organisation (UN OCHA)
Main Partners	Emergency Information Service (EIS), InSTEDD, Ushahidi, Haitian Telcos, Tufts University & US State Department	Tulane University Disaster Resilience Academy	Russian bloggers	Georepublic Japan; OpenStreetMap Foundation Japan	UNOSAT, NetHope, & Volunteer Technical Community
Aim of map	Report emergencies; Public health issues; Security threats; Infrastructure damage; Natural hazards; services	Track oil spill effects & response; provide visible testimony of community impacts	To link those who need help with those who want to help; listed assistance centres	Reports & notices from public and private officials; News on disasters; Evacuation centres & requests for help	Track conflict events (armed confrontations, attacks, etc.); list needs & responses; track mass displacements
Who uses the map	Emergency responders; Diaspora community; Media; Government officials	Local stakeholders (citizens, universities, businesses, etc.); Media	Local stakeholders (those needing and offering help); Media	Local stakeholders; Diaspora Community; Public & Private actors; Media	Emergency responders; Diaspora community; Government officials; Media
Role of map	Test-ground for crisis mapping; better maps of Haiti; reference point for crisis responders	Provided public insight and accountability; info on clean-up efforts	Delivery of relief	Go-to map for corporations, government, and organisations; created transparency in crisis relief	Increased situational awareness
Role of government	Core partner in the effort (US government)	Not directly involved, aware of the map; provided information	Not directly involved; After crisis, Civic Chamber of Russian Federation became involved	Not involved initially, became involved by submitting reports	Intergovernmental body (UN) involved and led the effort

CSS Analysis in Security Policy No. 103, November 2011 (Center for Security Studies, ETH Zurich)

satellite imagery data with real-time crowdsourced crisis information using new media tools. Crisis mapping has since been used in various contexts – showing how non-state actors are using new media to provide and visualise information during crises. State actors should invest in understanding this phenomenon and the circumstances in which crisis maps are valuable contributions to crisis management.

NOTE: Download the full paper from the website hosting the Newsletter – CBRN-CT Papers section.

Ballistic clipboard protects police from gun fire

Source: http://www.homelandsecuritynewswire.com/ballistic-clipboard-protects-police-gun-fire

Cleveland, Ohio-based Impact Armor Technologies says it is now bringing its expertise in composite armor materials to police officers with its new Ballistic Clipboard, a bullet-proof clipboard that provides law enforcement officers reliable protection from point-blank gunfire.

Ballistic clipboard protects the center of mass // Source: unitedshield.com

The Ballistic Clipboard, which the company says was developed in response to a request from local law enforcement, provides multi-hit protection against 9mm, .357 magnum, .40 S&W, and .44 Rem. magnum rounds. In field testing, the Ballistic Clipboard withstood multiple shots, groupings of shots, eleven 9mm and six .44 mag rounds with no compromise, showing greater stopping power than other bullet-proof clipboards.

"Routine traffic stops, warrant calls and first responses have the possibility of being some of the most dangerous moments in the field," said Matt Raplenovich, director of operations, Impact Armor Technologies. "A standard issue clipboard provides little in the way of reliable protection in the event of gunfire. The composite substrates in our Ballistic Clipboard provide the strength and durability to protect the officer whether from a standoff distance even to point-blank range."

The Ballistic Clipboard weighs less than 2 lbs., so it is NIJ IIIA protection that anyone can carry. In addition, the company notes, the Ballistic Clipboard is ergonomically designed with a secure handle making it easy to grip in routine or crisis situations.

Impact Armor Technologies has been in the business of producing ballistic systems for the protection of vehicles, equipment, and individuals since 2006. The company started out developing protection for high-threat-level military applications. Their armor technology is designed to protect against blast threats like IEDs and EFPs.

"This is no ordinary clipboard," stated Raplenovich. "The Ballistic Clipboard is the result of years of research and testing. Our technology is now available to protect police officers everywhere."
The Ballistic Clipboard is currently priced at $150 per clipboard. Volume pricing is available on a purchase of six or more.

Boko Haram Wants to Put Nigeria Under Islamic Law

By Clare M. Lopez

Source:http://www.radicalislam.org/news/boko-haram-wants-put-nigeria-under-islamic-law?utm_source=MadMimi&utm_medium=email&utm_content=The+Creeping+Threat+of+Radical+Islam+in+North+Africa&utm_campaign=RI+Newsletter+54&utm_term=_5BMORE_5D

The armies of Islam arrived in the Nigerian kingdoms as early as the 9th century. The forcible conquest of North Africa—including present day Libya, Tunisia, Algeria, and Morocco—imposed Islamic law (shariah) according to the Maliki school of Sunni jurisprudence over this vast swath of territory. Over subsequent centuries, relentless jihadist raids (razzias) as well as the penetration of Muslim merchants, scholars, and traders into areas of the Sahel and sub-Saharan Africa eventually succeeded in subjugating Senegal, Gambia, Guinea, Burkina Faso, Niger, Mali and the entire northern half of the modern country of Nigeria to Islam.

Today, Nigeria is a large and populous West African country of some 160 million people, about half of whom are Muslim and half Christian and animist. Nigeria is comprised of 36 states, 12 of which have implemented shariah in the northern half of the country. As the renowned political

scientist, Samuel Huntington wrote, "Islam's borders are bloody and so are its innards." Islam in Nigeria, as in every other place on earth where it establishes power, has shown itself aggressive and

violent. Shariah commands Muslims to jihad to spread the faith and, especially throughout the second half of the 20th century, Nigeria's Muslims have obeyed: wars of domination against non-shariah-adherent Muslims like the Hausa exploded into jihad against non-Muslim tribes like the Yoruba and the Ibo (Biafra)

BOKO HARAM MILITANT ACTIVITY IN NIGERIA, APRIL- JUNE

ABUJA, FEDERAL CAPITAL TERRITORY

A Boko Haram suicide bomber detonated a vehicle-borne improvised explosive device in a parking lot outside the Nigerian police headquarters in Abuja on June 16 -- minutes after the convoy of its inspector general entered the facility. Security personnel diverted the car, and the blast killed only the bomber and one police security guard.

BAUCHI, BAUCHI STATE

Suspected Boko Haram militants attacked the Dutsen Tanshi police station in Bauchi, Bauchi state, with explosives and rifles April 1, injuring two police officers.

MAIDUGURI, BORNO STATE

A bomb was detonated at the Maiduguri office of the Independent National Electoral Commission on April 15 -- a day before the presidential election.

Alleged Boko Haram militants attacked a police patrol with explosives before engaging in a firefight with the police April 16 -- the day of the presidential election. Nobody was injured in the attack, and four of the gunmen were arrested.

Suspected Boko Haram militants shot and killed Muslim cleric Malam Zakari in Maiduguri, Borno state, along with a friend of Zakari on April 20.

Suspected Boko Haram militants ambushed a military patrol in Maiduguri, Borno state, on May 15. An unspecified number of soldiers and civilians were killed, according to witnesses.

Three separate explosions in Maiduguri, Borno state, left 10 individuals dead May 20. Boko Haram is suspected in the bombings.

Suspected members of Boko Haram shot and killed a prison guard in Maiduguri, Borno state, on May 26.

Suspected members of Boko Haram attacked the Damboa Divisional Police Station in Maiduguri, Borno state, with explosives and firearms May 27. Two civilians and three police officers were killed in the attack.

Alleged members of Boko Haram killed Abba Anas Umar, the brother of the Shehu of Borno, on May 30.

Suspected Boko Haram militants detonated two bombs June 1 at the Disease Control Unit of the Borno State Ministry of Health in Maiduguri, Borno state, destroying medical equipment and setting the building on fire.

Suspected Boko Haram militants detonated three bombs and engaged in firefights with police in Maiduguri, Borno state, on June 7. At least 16 people were killed in the attacks. Meanwhile, Ibrahim Birkuti, a Wahhabi cleric in Borno state, was allegedly murdered by Boko Haram militants outside his residence in Maiduguri.

Suspected Boko Haram militants killed Rev. David Usman, the pastor of the Church of Christ in Nigeria, and his assistant June 9.

Suspected Boko Haram militants on motorcycles shot and killed four men at a bar June 13 in Maiduguri, Borno state.

YOLA, ADAMAWA STATE

Alleged Boko Haram militants abetted in the escape of 14 inmates at Yola Prison in Yola, Adamawa state, on April 22.

leaving as many as a million dead. Shariah Implementation Committees drew up detailed plans to

establish Shariah Courts, train and hire shariah judges, create a Religious Affairs Ministry, set up a Zakat Board, codify the Islamic penal code (hudud punishments like amputation, lashing, and stoning), and make the educational curriculum shariah-compliant.

In 2002, a fanatic jihadist group calling itself "Boko Haram" emerged from among the vast network of Nigeria's savage Islamic militias, determined to conquer all of Nigeria, seize its oil wealth (largely concentrated in the south), and impose shariah on the entire population, Muslim and non-Muslim alike. "Boko Haram" means "Western education is forbidden" in the local Hausa language and expresses the group's visceral hatred of all things modern, Western, and non-Muslim. Boko Haram leaders have expressed solidarity with al-Qa'eda, explicitly rejected the Nigerian constitution and democracy, and demanded nation-wide implementation of Islamic law.

Since its inception, Boko Haram, which is loosely modeled on Afghanistan's Taliban, has unleashed a wave of vicious attacks against Nigeria's central states that border the Muslim north and Christian south. Abuja, the country's capital, is a planned city that was built mostly during the 1980s, became the official capital in 1991, and was deliberately positioned almost exactly in the middle of Nigeria. Unfortunately, this location puts Abuja squarely on the Nigerian fault line between the jihadist north and Christian south, sometimes called the "Middle Belt."

A steady stream of murderous Islamic attacks against Christian churches, towns, and villages across northern and central Nigeria exploded into large-scale terrorist assaults in early November 2011 that killed more than 100 people. A car bomb that killed a number of security personnel outside a military barracks in the northeast state of Yobe was followed by a night of rampaging gunmen who blew up a bank, and attacked multiple police stations and churches, leaving behind a trail of destruction. That wave of deadly attacks was followed by U.S. Embassy warnings that Boko Haram planned to bomb three luxury hotels in Abuja over the Muslim holiday of Eid al-Adha, which fell on November 8th this year. An August 2011 suicide car bomb attack against the UN Headquarters in Abuja that killed 24, including 12 UN staff, left no doubts about Boko Haram's willingness to attack targets identified with the West.

Media reports that describe the violence and refer to Boko Haram as "Islamists" or a "radical Islamic sect" miss the point: just like the Taliban in Afghanistan, the mullahs' regime in Iran, al-Shabaab in Somalia, or the al-Qa'eda rebels that have seized control of Libya, Boko Haram is following in the footsteps of Muhammad, obeying the command of Islamic law to wage war against infidels "…until all opposition ends and all submit to Allah." (Q 8:39) According to shariah, there is nothing particularly radical about this command, which is the same command given to every generation of Muslims since the time of the earliest Muslim warriors.

Mistaking Boko Haram's jihad for mere disgruntlement over poverty or wealth disparity plays into its hands, enabling this sophisticated Islamic terror organization, with possible ties to al-Qa'eda, to claim its war of conquest against non-Muslim Nigerians is nothing more than a righteous effort to end corruption.

Jihad is about waging war in the name of Islam in order to spread the religion. Nigeria, with its vast oil wealth, is a coveted prize and would make a formidable base from which the armies of Islam might link eventually with al-Qa'eda in the Islamic Maghreb (AQIM) to threaten all of West Africa.

Clare M. Lopez, a senior fellow at the Clarion Fund, is a strategic policy and intelligence expert with a focus on Middle East, national defense, and counterterrorism issues.

Source of figures:http://www.stratfor.com/weekly/20111109-rising-threat-nigerias-boko-haram-militant-group?utm_source=freelist-f&utm_medium=email&utm_campaign=111110&utm_term=sweekly&utm_content= readmore&elq=1fc5471d9f964dcd96dbb96d719338a1

Factbox

Source:http://www.reuters.com/article/2011/11/06/us-nigeria-violence-bokoharam-idUSTRE7A517U20 111106

THE GROUP

- ☑ Boko Haram became active in about 2003 and is concentrated mainly in the northern Nigerian states of Yobe, Kano, Bauchi, Borno and Kaduna.
- ☑ Boko Haram -- which in the Hausa language spoken in northern Nigeria means "Western education is sinful" -- is loosely modeled on the Taliban movement in Afghanistan.
- ☑ The group considers all who do not follow its strict ideology as infidels, whether they are Christian

or Muslim. It demands the adoption of sharia, Islamic law, in all of Nigeria.

- ☑ Boko Haram followers have prayed in separate mosques in cities including Maiduguri, Kano and Sokoto, and wear long beards and red or black headscarves.

MAJOR ATTACKS

- ☑ In July 2009, Boko Haram staged attacks in the northeastern city of Bauchi after the arrest of some of its members, and clashed with police and the army in the northern city of Maiduguri. Some 800 people were killed in five days of fighting in the two cities.
- ☑ Later that month, sect leader Mohammed Yusuf was captured by Nigerian security forces and shot dead in police detention some hours later.
- ☑ In early July 2010, Abubakar Shekau, a former deputy leader of the sect who was thought to have been killed by police in 2009, appeared in a video and claimed leadership of the group. He said he was ready to launch attacks on western influences in Nigeria.
- ☑ In December 2010 the group said it was behind bombings in central Nigeria and attacks on churches in the northeast that led to the deaths of at least 86 people.
- ☑ On June 16, 2011, a car bomb tore through a car park outside Nigeria's police headquarters in Abuja.
- ☑ The next day Boko Haram claimed responsibility for the blast, which officials said may have been the first suicide bombing in Africa's most populous country.

- ☑ On June 26 about 25 people were killed when several bombs exploded in the Dala ward of Maiduguri after suspected Boko Haram members threw bombs at a bar-cafe.
- ☑ Rights groups say more than 250 people have been killed by Boko Haram since July 2010.
- ☑ On August 25 Boko Haram members attacked Gombi police station in the northeast, killing four policemen and one soldier before driving to the First Bank and Union Bank where they killed seven staff and took an unspecified amount of money.

- ☑ On August 26 a suicide bomber struck the U.N. building in Abuja. At least 23 people were killed and 76 wounded by the bombing which gutted the ground floor and smashed almost all the windows. Boko Haram claimed responsibility on August 29, demanding the release of prisoners and an end to a security crackdown aimed at preventing more bombings.
  - The blast was the first known suicide bombing in Nigeria. It marked an escalation in the group's tactics and revealed an increase in the sophistication of explosives it uses.
  - At least 65 people were killed in the city of Damaturu and the village of Potiskum on November 4. The attacks, which included a spate of bombings in the northeastern city of Maiduguri, were some of the worst on record by the group.

Al-Qaeda's North Africa Branch Says Got Libya Weapons

Source: http://allafrica.com/stories/201111091866.html

Al-Qaeda's North Africa franchise acknowledged it had acquired part of slain Libyan dictator Moamer Kadhafi's arsenal, in comments by one of its leaders quoted Wednesday.

Mokhtar Belmokhtar, believed to be one of the leaders of Al-Qaeda in the Islamic Maghreb (AQIM), made the remarks to Mauritanian news agency ANI, which has carried interviews and statements from the group in the past. "We have been one of the main beneficiaries of the revolutions in the Arab world," said Belmokhtar, an Algerian national. "As for our acquisition of Libyan armament, that is an absolutely natural thing," he said, without elaborating on the nature of the weapons purportedly acquired.

Officials and experts have expressed concern that part of Kadhafi's considerable stock of weapons could end up in the hands of AQIM, which has bases in the Sahel and currently holds several foreign hostages.

According to several experts, AQIM has acquired surface-to-air missiles which could pose a threat to flights over the region.

Belmokhtar also claimed a level of ideological convergence existed between his movement and the Islamist rebels who eventually toppled Kadhafi last month and became Libya's new rulers. "We did not fight , alongside them in the field against the Kadhafi forces," he said. "But young Islamists, jihadis... were the ones spearheading the revolution in Libya."

The National Transitional Council now in charge of Libya owes its victory over Kadhafi's 42-year rule partly to Western military backing and claims to seek the establishment of a moderate Islamic administration.

COMMENT: This statement should be taken seriously under consideration from countries-targets. The conventional and asymmetric usage of MANPADs should be explored and solutions should be proposed. Thinking out of the box might help avoid unpleasant surprises – i.e. attacking anti-piracy fleet in the Gulf of Aden or commercial airplanes' attacks in major Western airports.

Improved medical countermeasures needed for terrorist attacks

Source: http://www.examiner.com/public-safety-in-national/improved-medical-countermeasures-needed-for-terrorist-attacks

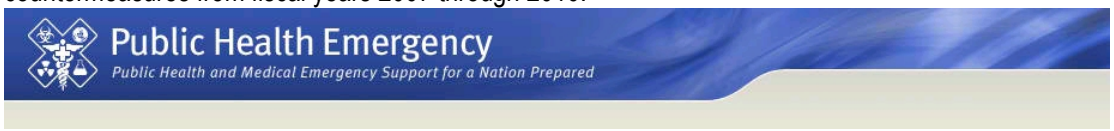
The United States remains vulnerable to terrorist and other threats posed by chemical, biological, radiological, and nuclear (CBRN) agents. Medical countermeasures -- drugs, vaccines, and

diagnostic devices -- can prevent or treat the effects of exposure, but few are currently available, according to a government report released on Wednesday.

The Department of Health and Human Services (HHS) leads federal efforts to develop and acquire countermeasures, primarily through the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE), an interagency body.

The Government Accountability Office's October 26 report examines the extent to which HHS based its priorities for developing and acquiring countermeasures on CBRN risk assessments; addressed its own recommendations to improve acquisition and development; and coordinated internally for these efforts.

GAO analysts reviewed relevant laws, agency documents, CBRN risk assessments, and reports from outside experts; interviewed HHS and industry officials; and analyzed HHS funding for CBRN countermeasures from fiscal years 2007 through 2010.



Through PHEMCE, HHS laid out its CBRN medical countermeasure development and acquisition priorities in 2007 in a publicly available plan based primarily on two types of CBRN risk assessments -- one from the Department of Homeland Security (DHS) and one from HHS -- but HHS has not updated the plan as intended.

The 2007 plan outlined spending for these priorities through 2013, when special federal funding for countermeasure acquisition will expire. HHS invested about $1.9 billion in development and $2.4 billion for acquisition of countermeasures to fulfill these priorities from fiscal year 2007 to fiscal year 2010. Since 2007, DHS and HHS have continued to assess the risks that CBRN agents pose to national security and public health, and HHS has reassessed decisions on the quantities and types of medical countermeasures needed.

However, HHS has not updated its plan, as it had intended to do biennially, to indicate whether any priorities have changed. Further, HHS has not provided specific information on anticipated budget priorities for countermeasure acquisition -- information desired by companies to help them decide whether to invest in product development.

HHS has begun to address most recommendations from its August 2010 review of PHEMCE and of HHS's countermeasure activities, but HHS has not developed an adequate strategy to monitor implementation. HHS's initiatives to address the recommendations are intended to improve product development and acquisition and PHEMCE's structure and management. These initiatives are led by different agencies and offices -- for example, the Food and Drug Administration has begun efforts to improve its regulatory framework, while the National Institutes of Health has begun to implement a program to increase the number of potential products in the pipeline.

HHS officials said they have a monitoring strategy that includes quarterly updates of a planning document and quarterly and annual reviews of progress. However, the planning document contains incomplete information and does not allow for measuring progress across all initiatives. Thus, HHS's monitoring strategy is not consistent with federal internal control standards and program management best practices. Given the initiatives' complexity and dispersed HHS leadership responsibilities, an adequate monitoring strategy would help HHS assess overall progress and provide information about whether HHS is meeting its countermeasure development and acquisition objectives.

HHS's establishment of PHEMCE in 2006 and its subsequent written agreements have facilitated intradepartmental coordination on the development and acquisition of CBRN medical countermeasures, but some coordination challenges remain. PHEMCE established an intradepartmental coordination process and documented the roles and responsibilities of its partners through written agreements.

However, some industry and outside experts have reported that HHS's agencies and offices do not coordinate well to advance products through development to acquisition, which hampers industry's efforts to supply countermeasures. HHS officials are renewing the PHEMCE intradepartmental memorandum of understanding and charter for the governing body.

These written agreements, once finalized, should continue to enhance and sustain intradepartmental coordination on countermeasure development and acquisition activities. In addition, effectively implementing some of the initiatives from HHS's August 2010 review may help mitigate these coordination challenges.
GAO recommended that HHS update its development and acquisition plan; provide budget priorities for acquisitions; and develop a strategy to monitor implementation of its initiatives. HHS agreed with the first two recommendations. For the third one, HHS said that it had a strategy to track implementation, but in GAO's assessment, the strategy does not meet standards and practices to allow for adequate monitoring.

Plan for cameras and mics in U.K. cabs draws sharp criticism

Source:http://www.independent.co.uk/news/uk/home-news/cctv-taxi-plan-a-staggering-invasion-of-privacy-6262221.html

Privacy advocates in Oxford, Britain are up in arms over plans to install security cameras and audio recording cameras in every taxi.
The city council recently passed a plan that would require every taxi driver in town to equip their cabs with the £460 devices by 2015 or have their license revoked.

In response, privacy advocates have rallied against the plan calling it another step in the growing surveillance culture of Britain.
"This is a staggering invasion of privacy being done with no evidence, no consultation and a total disregard for civil liberties," argued Nick Pickles, the director of Big Brother Watch, a civil liberties and privacy defense group in the United Kingdom. "To my knowledge this is the first time a council has brought in audio recording equipment like this in taxis."
James Welch, the legal directory of Liberty, a civil liberties campaign organization, echoed Pickles's sentiments adding, "Local Authorities have fallen foul of public anger and the law in relation to CCTV before - we urge anybody concerned about the legal position to get in touch with Liberty."

The city council maintains that the recording equipment will help protect drivers and passengers in addition to resolving disputes over fares.
"The council has an overall responsibility to promote the safety of the travelling public. The law allows the council to impose any conditions on hackney carriage and private hire licenses that it considers reasonably necessary," a spokeswoman for the Oxford City Council said.
The audio and video devices would begin recording as soon as the car is started and remain on until thirty minutes after the engine is turned off. The recorded data would only be accessible to the police and council officials.
Alan Woodward, the secretary of the City of Oxford Licensed Taxi Cab Association, supported the plan stating that the recording devices would make cab drivers feel safer.

"Cab drivers have been beat unconscious, we had cabs smashed up, we have had complaints against drivers," he said. "Surely they would feel safer if they knew everything in the car was being recorded?"
Under British law, audio recording devices can only be used in limited circumstances, and when it is, those being recorded must be made aware that a device is on.
"CCTV must not be used to record conversations between members of the public as this is highly intrusive and unlikely to be justified," explained a spokesperson from the Information Commissioner's Office (ICO). "A system without this facility must be chosen if possible. If a system comes equipped with a sound recording facility then you should turn this off or disable it in some other way."
The spokesman added that audio could only be used as a "proportionate and reasonable response to tackling and preventing crime and ensuring public safety."
The Oxford City Council said, "Signage will be placed on the outside of the vehicles to inform the public that CCTV and audio will be recording in the vehicle so they are aware before they step into the vehicle."
ICO is currently investigating the city's plans following complaints made by Big Brother Watch.

Game to improve defense, homeland security decision making

Source: http://raytheon.mediaroom.com/index.php?s=43&item=1972

Raytheon BBN Technologies has been awarded a $10.5 million multi-year contract to develop serious games that result in better decision-making by teaching participants to recognize and mitigate the effects of their own biases when analyzing information used to make decisions
The Intelligence Advanced Research Projects Activity (IARPA), through an Air Force Research Laboratory (AFRL) contract, has awarded Raytheon BBN Technologies a $10.5 million multi-year contract under the Sirius program. BBN is a wholly owned subsidiary of Raytheon Company. The goal of the Sirius program is to develop serious games that result in better decision-making by teaching participants to recognize and mitigate the effects of their own biases when analyzing information used to make decisions.
Under the contract, Raytheon BBN will develop game-based training methods and training systems to improve such decision-making by focusing on reducing biases. The team — which includes game designers, cognitive psychologists, and experts in intelligence analysis and in measuring game-player engagement — will design a relevant and engaging game that is based on an international detective theme, blending best research and practices in bias-mitigation with best practices in game-based teaching. The training system will focus on six specific types of bias that frequently affect decision-making adversely:

- Confirmation bias — the tendency to search for or interpret information in a way that confirms preconceptions.
- Blind spot bias — being less aware of one's own cognitive biases than those of others.
- Fundamental attribution error — over-emphasizing personality-based or character-based effects on behavior.
- Anchoring bias — relying too heavily on one trait or one piece of information.
- Representative bias — judging the likelihood of a hypothesis by its resemblance to immediately available data.
- Projection bias — assuming others share one's current feelings, values or thinking.

Alice Leung, Ph.D. and Sirius co-principal investigator at Raytheon BBN, said, "This program is a perfect opportunity for us to apply our expertise in creating effective and engaging training to a very challenging problem. The ability to recognize biases and reduce their effects on human information analysis could lead to better decision-making in a wide variety of critical areas."
"Additionally," said Talib Hussain, Ph.D. and Sirius co-principal investigator at Raytheon BBN, "the team will advance the science of game-based training by examining how various game design decisions impact training effectiveness. This forward-looking aspect of the Sirius program is very important because it will help us identify a more reliable set of design principles to build games that are effective for training a broad range of skills in the future."

EDITOR'S COMMENT: On Nov 17th, 2011 I participated in the Urban Crisis Workshop organized by the Serious Games Institute of Coventry University London Campus. It was a new area of involvement for me and a very exciting one. CBRNE operations is becoming a good candidate for serious gaming and the new International Risk, Resilience and Response Centre (IRRRC) of Coventry University in cooperation with University of Texas A&M is targeting this new area of expertise. After the introduction to serious games given below you can read the announcement of IRRRC.

Serious games

Source: Wikipedia

A **serious game** is a game designed for a primary purpose other than pure entertainment. The "serious" adjective is generally prepended to refer to products used by industries like defense, education, scientific exploration, health care, emergency management, city planning, engineering, religion, and politics.

Definition and scope

Serious games are designed for the purpose of solving a problem. Although serious games can be entertaining, their main purpose is to train, investigate, or advertise. Sometimes a game will deliberately sacrifice fun and entertainment in order to make a serious point. Whereas video game genres are classified by gameplay, serious games are not a game genre but a category of games with different purposes. This category includes educational games and advergames, political games, or evangelical games.[1] The category of serious games for training is also known as "game-learning".

Overview

The term "serious game" was actually used long before the introduction of computer and electronic devices into entertainment. Clark Abt discussed the idea and used the term in his 1970 book *Serious Games*,[2] published by Viking Press. In that book, his references were primarily to the use of board and card games. But he gave a useful general definition which is still considered applicable in the computer age:

Reduced to its formal essence, a game is an activity among two or more independent decision-makers seeking to achieve their objectives in some limiting context. A more conventional definition would say that a game is a context with rules among adversaries trying to win objectives. We are concerned with serious games in the sense that these games have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement.

It is not a new idea. Military officers have been using war games in order to train strategic skills for a long time. One early example of a serious game is a 19th century Prussian military training game called *Kriegsspiel*, the German name for wargame.

Mike Zyda provided an update and a logical approach to the term in his 2005 article in *IEEE Computer* entitled, "From Visual Simulation to Virtual Reality to Games". Zyda's definition begins with "game" and proceeds from there:

- Game: "a physical or mental contest, played according to specific rules, with the goal of amusing or rewarding the participant."
- Video Game: "a mental contest, played with a computer according to certain rules for amusement, recreation, or winning a stake."

- Serious Game: "a mental contest, played with a computer in accordance with specific rules that uses entertainment to further government or corporate training, education, health, public policy, and strategic communication objectives."

Long before the term "serious game" came into wide use with the Serious Games Initiative in 2002, games were being made for non-entertainment purposes. The continued failure of the edutainment space to prove profitable, plus the growing technical abilities of games to provide realistic settings, led to a re-examination of the concept of serious games in the late 1990s. During this time, a number of scholars began to examine the utility of games for other purposes, contributed to the growing interest in applying games to new purposes. Additionally, the ability of games to contribute to training expanded at the same time with the development of multi-player gaming. In 2002, the Woodrow Wilson International Center for Scholars in Washington D.C. launched a "Serious Games Initiative" to encourage the development of games that address policy and management issues. More focused sub-groups began to appear in 2004, including Games for Change which focuses on social issues and social change, and Games for Health which addresses health care applications.

Other authors, though, (as Jeffery R. Young) consider that Serious Games didn't obtain the success that was expected, and new theories, like "Smart Gaming" have appeared to replace it.

There is no single definition of serious games, though they are generally held to be games used for training, advertising, simulation, or education. Alternate definitions include the application of games concepts, technologies and ideas to non-entertainment applications. This can also include specific hardware for video games, such as exergaming.

Serious games are aimed for a large variety of audiences, including primary or secondary education, professionals and consumers. Serious games can be of any genre, use any game technology, and be developed for any platform. Some may consider them a kind of edutainment; however, the mainstay of the community are resistant to this term.

A serious game is not a simulation alone. It may be a simulation combined with elements of game-play, specifically a chance to win. All have the look and feel of a game, a chance to win, but correspond to non-game events or processes from the real world, including business operations and military operations (even though many popular entertainment games depicted business and military operations). The games are made to provide an engaging, self-reinforcing context in which to motivate, educate and train the players. Other purposes for such games include marketing and advertisement. The largest users (unsubstantiated by business intelligence) of serious games appear to be the US government and medical professionals.[*citation needed*] Other commercial sectors are actively pursuing development of these types of tools as well.

History

Gaming has been used in educational circles since at least the 1900s. Use of paper-based educational games became popular in the 1960s and 1970s, but waned under the Back to Basics teaching movement.[3] (The Back to Basics teaching movement is a change in teaching style that started in the 1970s when students were scoring poorly on standardized tests and exploring too many electives. This movement wanted to focus students on reading, writing and arithmetic and intensify the curriculum.[4]) With the proliferation of computers in the 1980s, the use of educational games in the classroom became popular with titles that included Oregon Trail, Math Blaster, and Number Munchers. Though these games were popular among teachers and students, they were also criticized due to the fact that they did not provide the player with new kinds of learning, and instead provided a “slightly easier-to-swallow version of drill-and-practice” learning.[5]

In the 1990s, newer games such as the Incredible Time Machine and the Dr. Brain series were introduced to challenge kids to think in new ways, apply their current skills, and learn new ones, but these games were unpopular among teachers because it was difficult to map these newer games to their curriculum, especially in a high school setting where in-class time is at a premium. The 1990s also saw the Internet being introduced to schools, which with limited computer resources took precedence over playing games.[6]

The early 2000's saw a surge in different types of educational games, especially those designed for the younger learner. Many of these games were not computer-based but took on the model of other traditional gaming system both in the console and hand-held format. In 1999, LeapFrog Enterprises introduced the LeapPad, which combined an interactive book with a cartridge and allowed kids to play games and interact with a paper-based book. Based on the popularity of traditional hand-held gaming systems like Nintendo's Game Boy, they also introduced their hand-held gaming system called the Leapster in 2003. This system was cartridge-based and integrated arcade–style games with educational content.[7]

In 2002 another movement had started outside of formal educational sector that was coined as the "serious game movement," which originated from the Woodrow Wilson International Center for Scholars, where David Rejecsk and Ben Sawyer started the initiative. The primary consumer and producer of serious games is the United States Military, which needs to prepare their personnel for enter a variety of environments, cultures, and situations. They need to understand their surroundings, be able to communicate, use new technologies and quickly make decisions.[8] The first serious game is often considered to be *Army Battlezone*, an abortive project headed by Atari in 1980, designed to use the *Battlezone* tank game for military training.[9] Two other well known serious games that were commissioned by the Army are America's Army (2002) and Full Spectrum Warrior (2004).

Outside of the government, there is substantial interest in serious games for formal education, professional training, healthcare, advertising, public policy and social change. For example, games from websites such as Newsgaming.com are "very political games groups made outside the corporate game system" that are "raising issues through media but using the distinct properties of games to engage people from a fresh perspective," says Henry Jenkins, the director of MIT's comparative media studies program. Such games, he said, constitute a "radical fictional work."[1]

Development

In recent years, the US government and military have periodically looked towards game developers to create low-cost simulations that are both accurate and engaging. Game developers' experience with gameplay and game design made them prime candidates for developing these types of simulations which cost millions of dollars less than traditional simulations, which often require special hardware or complete facilities to use.

Advantages to this include:

- Video and computer game developers are accustomed to developing games quickly and are adept at creating games that simulate—to varying degrees—functional entities such as radar and combat vehicles. Using existing infrastructure, game developers can create games that simulate battles, processes and events at a fraction of the cost of traditional government contractors.

- Traditional simulators usually cost millions of dollars not only to develop, but also to deploy, and generally require the procurement of specialized hardware. The costs of media for serious games is very low. Instead of volumes of media or computers for high-end simulators, SGs require nothing more than a DVD or even a single CD-ROM, exactly like traditional computer and video games.

require. Deploying these to the field requires nothing more than dropping them in the mail or accessing a dedicated web site.

- While SGs are meant to train or otherwise educate users, they often hope to be engaging. Game developers are experienced at making games fun and engaging as their livelihood depends on it. In the course of simulating events and processes, developers automatically inject entertainment and playability in their applications.

Education in Serious Games

Netherlands

Utrecht University offers an MSc in Game and Media Technology

UK

The University of Salford set up an "MSc in Creative Games" in 2005.

USA

Michigan State University offers a Serious Games MA, a Master of Arts graduate program and graduate certificate in serious game design.[10]

SWEDEN

The University of Skövde offers a Serious Games Master Programme

Classifications and subsets of serious games

The classification of serious games is something that is yet to solidify, there are however a number of terms in reasonably common use for inclusion here.

- **Advergames**: The use of games for advertising. The approach can include numerous different ways of advertising more or less well-known from other media. You can have product placement, banners in-game or just traffic triggers.
- **Edutainment**: A combination of education and entertainment.
- **Games-Based Learning** or "Game Learning"- These games have defined learning outcomes. Generally they are designed in order to balance the subject matter with the gameplay and the ability of the player to retain and apply said subject matter to the real world.[11]
- **Edumarket Games** - When a serious game combines several aspects (such as advergaming and edutainment aspects or persuasive and news aspects), the application is an Edumarket game. For example, *Food Force* combines news, persuasive and edutainment goals.
- **Newsgames** - Journalistic games that report on recent events or deliver an editorial comment. Examples include *September 12th*[12]
- **Simulations or Simulation Games** - games used for the acquisition or exercise of different skills, to teach effective behavior in the context of simulated conditions or situations. In practice, are widely used simulation driving different vehicles (cars, trains, airplanes; e.g. *FlightGear*), simulation of management of specific industries (e.g. *Transport Tycoon*), and universal business simulation, developing strategic thinking and teaching users the basics of macro-and microeconomics; the

basics of business administration (e.g. *Virtonomics*).

- **Persuasive Games** - games used as persuasion technology
- **Organizational-dynamic games**
- **Games for Health**, such as games for psychological therapy, or games for cognitive training or physical rehabilitation uses. Technology and mental health issues can use Serious Games to make therapy accessible to adolescents who would otherwise would not find a psychotherapist approachable.
- **Exergaming** - games that are used as a form of exercise.
- **Art Games** - games used to express artistic ideas or art produced through the medium of video games
- **Productivity game** - games which reward points for accomplished real-world tasks using to-do lists.[*citation needed*]
- **Training and Simulations** - See Gamification.
- **Games with a purpose** try to solve various tasks that require common sense or human experience in an entertaining setting.

Additionally Julian Alvarez and Olivier Rampnoux (from the European Center for Children's Products, University of Poitiers) have attempted to classify serious games in 5 main categories: Advergaming, Edutainment, Edumarket game, Diverted game and Simulation game.[13]

Examples

- *A Force More Powerful* (Windows) The video game is designed to teach the waging of conflict using nonviolent methods. Intended for use by activists and leaders of nonviolent resistance and opposition movements.
- *Amnesty the game* (Facebook and internet) a game that supports Amnesty International efforts to worldwide abolish the death penalty.
- *Close Combat: Marines* is the first version of Close Combat universe made specifically for military training purposes. Forces consist of USMC and OpFor troops.
- *CyberCIEGE* (Microsoft Windows): Computer network security sim game developed by the Naval Postgraduate School. Players protect assets while enabling "users" to achieve their goals.
- *Darfur is Dying* (Internet) An online game by mtvU that simulates life in a Darfur refugee camp.
- *DARWARS Ambush! Convoy Simulator* developed as part of DARPA's DARWARS project, designed to create low-cost experiential training systems
- *EteRNA*, a game in which players attempt to design RNA sequences that fold into a given configuration. Designs are evaluated to improve computer models predicting RNA folding, included selected designs actually synthesized to evaluate RNA folding dynamics against computer predictions.
- *FloodSim* (Internet) A flood prevention simulation/strategy game designed to inform the people of the United Kingdom about the dangers of flooding as well as to help gather public opinion on the problem that flooding presents to the UK. The player takes control of the UK's flood policies for three years and attempts to protect the people and the economy of the United Kingdom from damage due to floods.

- *Foldit* (Windows, Linux, Mac) Protein folding, puzzle game where results can be used in real science.
- *Food Force* (Mac/Windows) Humanitarian video game. The UN's World Food Programme designed this virtual world of food airdrops over crisis zones and trucks struggling up difficult roads under rebel threat with emergency food supplies.
- *Genomics Digital Lab* (Mac/Windows) A series of interactive science games where users learn about the importance of plants and their contribution to energy and the environment.
- *Global Conflict: Palestine* (Mac/Windows): A 3D-adventure/rpg-game. You are given the role of a reporter in Jerusalem, and have to write articles for your paper.
- *Harpoon* (Mac/Windows): Entertainment version was "dual use" from 1989 forward. Professional version *Harpoon 3 Professional* created in 2002 with help from Australian Defense Department, updated in 2006.
- *History of Biology game* (Mac/Windows):History of Biology is a browser based scavenger hunt style educational game designed to teach high school students and general interest groups about the history of biology covering topics such as early microscopes, classification, taxonomy, heredity, genetics, and evolution.
- *Houthoff Buruma The Game*: serious game for recruitment purposes, developed by Dutch law firm Houthoff Buruma.
- *IBM CityOne* (Internet): designed by IBM as part of the *IBM Smarter Planet initiative*. The game is designed to educate the player of the complex systems and how they connect in a modern city.

- *IntelliGym* (Mac/Windows/Linux): A series of computer based cognitive simulators that trains athletes and designed to enhance brain skills associated with sports-related performance.
- *Microsoft Flight Simulator* developed as a comprehensive simulation of civil aviation. Notably one of the few flight simulation games that does not concentrate on simulation of aerial warfare.
- *NanoMission* (Microsoft Windows): A series created for the non-profit group Cientifica in order to teach about nanomedicine, nanotechnology and associated concepts through a series of action games.
- *Novicraft HRD game* (Microsoft Windows): NoviCraft is a serious game for supporting business customers in social excellence, in learning to construct shared understanding together with different people in changing contexts.
- *Peacemaker* (Mac/PC) A commercial game simulation of the Israeli-Palestinian conflict designed to promote "dialog and understanding among Israelis, Palestinians and interested people around the world".
- *Phylo video game* (Internet): A game that invites players to give in to their addictive gaming

impulses while contributing to the greater good by trying to decode the code for genetic diseases.[14]

- *Re-Mission* (Microsoft Windows): 3-D Shooter to help improve the lives of young persons living with cancer.
- *Ship Simulator* (Microsoft Windows): a simulator which simulates maneuvering various ships in

different environments, although without the effects of wind and current.

- *Simport* (Mac/Windows): A simulation game in which players learn about the intricacies involved in construction large infrastructural projects, like a major sea port.
- *Steel Beasts Professional* (Microsoft Windows): Tank simulator, developed by eSim Games, and used by several armies around the world.
- *Super Columbine Massacre RPG!* (Microsoft Windows): RPG re-enacting the Columbine High School Massacre.
- *The 3D Model of The West Virginia Penitentiary* (Microsoft Windows): Players interact with a digital version of the facility to prepare for real world skills testing and riot simulation.[15] Developed for the West Virginia High Technology Consortium Foundation to provide situational awareness for attendees of the Mock Prison Riot held annually at the West Virginia State Penitentiary.
- *VBS1* & *VBS2* Training tool for the British Military and the USMC and other military forces around the world. Developed by BIA, and based on the game engine used in *Operation Flashpoint* and *Armed Assault*.
- *X-Plane* (Linux/Mac/Windows): a comprehensive civil aviation simulator. An FAA approved version exists which enables low cost flight training.
- *Funphysio* (Microsoft Windows): This game helps patients in yours physical therapy treatments.
- Time out (Mac/ Windows): it is a point and click game dealing with diabetes, created and produced by Demi-brume for Les Diablotines.

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International Risk Resilience & Response Centre

1. Purpose of IRRRC

1.1 Participants have been brought together today to consider the formation and development of an International Risk, Resilience and Response Centre. The centre will have two main transatlantic locations, one in Texas, USA, and the other in England, UK (there is also a future possibility to accommodate strategically located international hubs as required elsewhere).

1.2 The IRRRC will be formally constituted to provide a platform for international experts to develop, contribute and share in activities (as set out in section 4). The IRRRC will promote best practice knowledge enhancement, skills development, advanced research and a better understanding of international risk, resilience and response issues. It is proposed that our joint efforts will be directed best through a series of defined aims and agreed activities (set out in section 3 and 4).

2. Mission of IRRRC

2.1 The mission of the IRRRC is to foster a network of international experts and partners that jointly resolve to cooperate and actively participate in the advanced development of international risk, resilience and response capacity building issues from a global context.

3. Aims of IRRRC

3.1 To achieve our mission we have identified a number of key aims, which include the following:

a) To provide a forum for a new generation of emerging scholars, analysts, professionals and policymakers from different disciplines to connect and discuss international hazard and threat issues.

b) To promote and develop best practice, research, standards and technologies that help inform and consolidate key stakeholders around context specific hazard and threat issues.

c) To promote public and private partnerships that serve to improve mitigation, preparedness, response and recovery capabilities within communities affected by severe hazard and threat issues.

d) To support the international development of high quality education and training within the context of risk, resilience and response.

e) To encourage international dialogue between civil society, governments, non-governmental organisations, businesses and first responders in terms of meeting existing and future risk, resilience and response challenges.

4. Scope and Activities of IRRRC

4.1 It is proposed that the general areas of interest and activity within the IRRRC framework be tied to:

a) collaborative participation in funded and applied research opportunities

b) highlighting and reporting on current and emerging international hazard, threat and risk issues

c) cross party sharing of international lessons, policy, guidance, standards and advice

d) the design of specialist training development systems (for market delivery)

e) participation in short exchange programmes and internships

f) supporting serious games and other advanced technologies aimed at enhancing responder and community level capabilities and competences

g) developing cutting edge themed masterclasses, conferences and workshops

h) advancing the concepts of international exercising and testing approaches using technologies

i) the showcasing and sharing of international best practice approaches

j) scholarly activities such as publishing papers and supporting PhD supervisions

k) support the development of new international standards, and effective practice approaches in the field of risk, resilience and response planning.

If you are interested in participating in the IRRRC, please contact

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Muslims Use "Taqiyya" to Deceive Non-Muslims About Islam

By Clare M. Lopez

Source:http://www.radicalislam.org/content/muslims-use-taqiyya-deceive-non-muslims-about-islam?utm_source=MadMimi&utm_medium=email&utm_content=Taqiyya+-+The+Muslim+Wolf+in+Sheep%27s+Clothing&utm_campaign=RI+Newsletter+55&utm_term=_5BMORE_5D

The Arabic word Taqiyya means "deceit" or "dissimulation." Unlike the Christian or Jewish religions, Islam not only permits its believers to lie but actually commands it in some circumstances. For the most part, Muslims are not supposed to lie to one another; but, exceptions are made for smoothing over differences between friends ("He who makes peace between the people by inventing good information or saying good things, is not a liar," Bukhari vol. 3:857 p.533.), lying to one's wife, and lying in warfare. (Recall: Muhammad himself said, 'War is deceit," Bukhari vol. 4:267 and 269)

Lying to non-Muslims, though, is another matter. In fact, Islam permits Muslims to lie anytime they perceive that their own well-being, or that of Islam, is threatened. Taking it a step further, if there is an objective to be achieved that is desirable in Islam, then it is permissible for Muslims to lie in order to achieve that objective. The book of Islamic law, Reliance of the Traveller (or the 'Umdat al-Salik), states on pg. 746:

> *"Speaking is a means to achieve objectives. If a praiseworthy aim is attainable through both telling the truth and lying, it is unlawful to accomplish through lying because there is no need for it. When it is possible to achieve such an aim by lying but not by telling the truth, it is permissible to lie if attaining the goal is permissible…"*

This principle of lying in order to advance the cause of Islam results in serious consequences when it comes to the issue of Muslims seeking to spread Islam around the world and especially in places like the United States (U.S.) and the West, where the majority of people are not Muslim. Shariah-compliant Muslims routinely use deceptive tactics to polish Islam's image while at the same time avoiding, obscuring, or omitting any of the negative aspects of Islamic doctrine, history, law, and scriptures. This is often done with prospective converts as well as with audiences Muslims hope will be gullible, like academics, government officials, members of the media, and the public at large.

For example, Muslims often will cite verses from the (chronologically) earlier portions of the Qur'an (which generally were moderate, peaceful, and tolerant), while neglecting to mention that this was the period in Muhammad's life when he and his tiny band of followers lived in Mecca, where they were ridiculed, powerless, and mostly unaccepted. Yet, even as they cite such passages, they are fully aware that most of these early verses were abrogated (cancelled and replaced) by later passages of the Qur'an that Muhammad produced after the hijra (migration) to Medina. The replacement verses, from a time when Muslims grew powerful, reflect harsh intolerance for non-Muslims and command violence to subjugate infidels (unbelievers) to Islamic law (shariah).

Shariah Muslims do not always express their hostility to unbelievers openly, though. This is where taqiyya comes in. Based on verses from the Qur'an and hadiths (sayings of Muhammad), Muslims can pretend to befriend infidels (in violation of the teachings of Islam) and even display adherence with their unbelief, if this will advance the cause of Islam and protect the believer from harm. Here is one of those verses from the Qur'an:

> *"Let not the believers Take for friends or helpers Unbelievers rather than believers: if any do that, in nothing will there be help from Allah: except by way of precaution (prevention), that ye may Guard yourselves from them (prevent them from harming you.) But Allah cautions you (To remember) Himself; for the final goal is to Allah." (Q 3:28)*

Ibn Kathir was an Islamic scholar who wrote one of the most authoritative commentaries (or Tafsirs) on the Qur'an. This is what he said about this particular Qur'anic verse regarding Muslims pretending to befriend infidels:

> *"Unless you indeed fear a danger from them' meaning, except those believers who in some areas or times fear for their safety from the disbelievers. In this case, such believers are allowed to show friendship to the disbelievers outwardly, but never*

inwardly….'We smile in the face of some people although our hearts curse them.'" (Tafsir Ibn Kathir, vol. 2, 141)

So, according to this Islamic principle, if under pressure or threatened with force, not only may Muslims deceive non-believers, it is even legitimate for Muslims to behave in ways normally completely contrary to their faith. For instance, given such circumstances, a Muslim may drink alcohol, skip prayers and fasting during Ramadan, renounce belief in Allah and even pretend homage to a deity other than Allah, and utter insincere oaths. It is important to understand the concept of taqiyya so as not to be taken in by such tactics.

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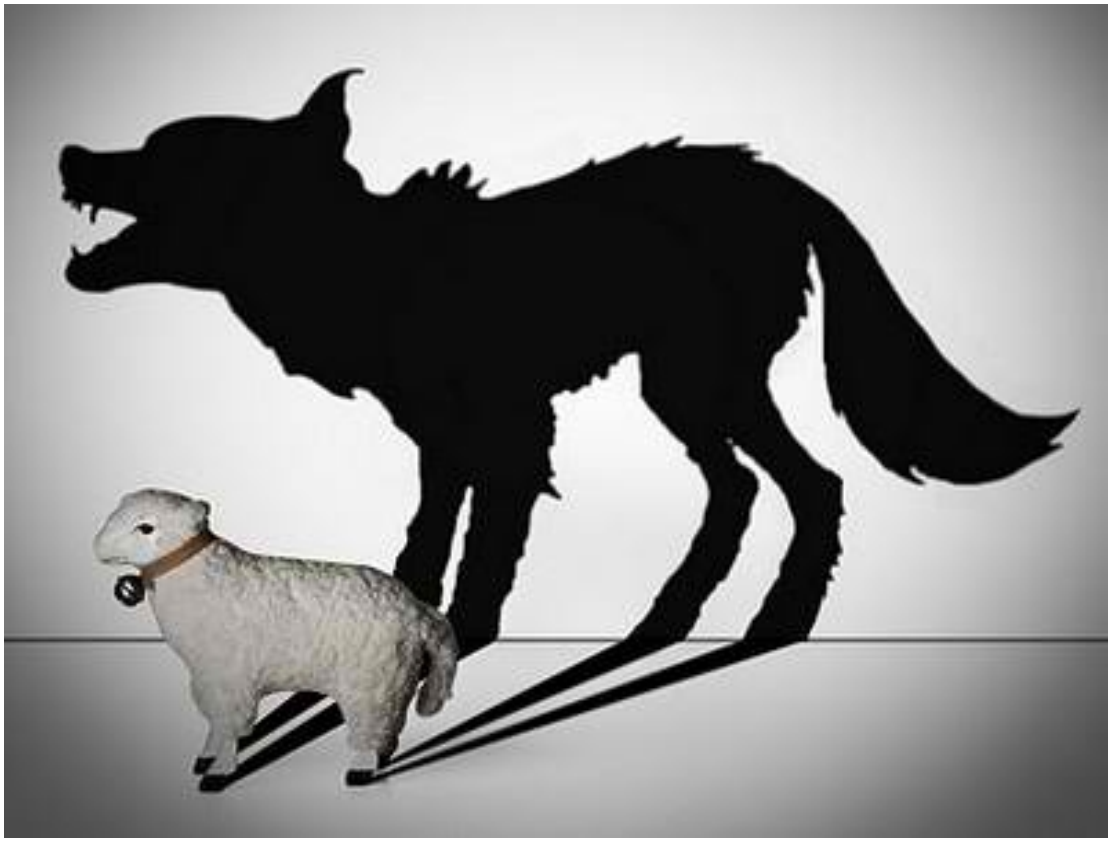

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Forecasting in the Real World: The Short-Term Outlook

Source:http://www.isn.ethz.ch/isn/Current-Affairs/Special-Feature/Detail?lng=en&id=134238&contextid774=134238&contextid775=134236&tabid=134236&dynrel=40db1b50-7439-887d-706e-8ec00590bdb9,4888caa0-b3db-1461-98b9-e20e7b9c13d4,0c54e3b3-1e9c-be1e-2c24-a6a8c7060233

Methods for futures thinking

Today the ISN considers the development and practice of short-term forecasting. We compare and contrast the respective approaches to short-term forecasting utilized by STRATFOR and the Center for Security Studies. In doing so, we discover that short-term forecasts seek to understand the not-too-distant future, but are

nevertheless informed by developments occurring in the 'here and now'.

Last week, we looked at the challenges associated with future forecasting, especially within an international system that is undergoing profound change. In particular, we looked at the general benefits and limitations of forecasting; we looked at the toe-stubbing problems of politicized futurology, how to account properly for future risks, and how to ensure methodological effectiveness. We closed the week, and pointed to this week's focus, by looking at how the U.S.'s 2010 U.S. *National Security Strategy* illustrates an inescapable fact of life in forecasting – practical, day-in, day-out futurology is not "pure". It invariably blends on-the-merit analyses with instrumentalized ones.

Having done such "heavy lifting" last week, we're now going to take a more practical approach. Over the next five days we will consider how practical forecasters from the private sector and academia predict change. This effort will take us beyond the more specific cases we looked at in Week 1 to consider predictions that have been made for the international system in the near, medium and long terms.

So, let us begin by looking at a selection of practitioners' short-term predictions about some of the key actors and trends shaping the international system. That this particular type of futurology maintains a narrow analytic focus should surprise no one. It concentrates on decisions and events that are likely to shape the geopolitical perspectives of global actors over the next one to two years. Short-term forecasting, in other words, is an immediate form of trend analysis that is more rigid and disciplined than its medium and long-term cousins. It is nothing if not about the 'here-and-now'.

STRATFOR's Annual Forecast 2011 clearly demonstrates this point. In particular, the forecast highlights 1) the changes in leadership that major global players will experience over the next two years, and 2) the dangers of a full and therefore premature U.S. troop withdrawal from Iraq by the end of 2011, and 3) the unpalatable prospect of allowing Iranian hard power to dominate and perhaps shape the Middle East. Given that the last two trends would leave Iraq open to increased Iranian suzerainty and only aggravate the lingering imbalance of power in the region caused by the 2003 Iraq War, STRATFOR fully expects the United States to maintain a strong military presence in Iraq. Yet this is unlikely to result in a direct military confrontation with Iran. Instead, the U.S. will seek to facilitate an eventual withdrawal from Iraq that accommodates both Washington's and Tehran's geopolitical interests.

A fourth area of concern in the STRATFOR forecast is China. The forecast expects Beijing's export growth to slow throughout 2011 and it also sees worrisome similarities between its 'miraculous' economic growth and some of its East Asian predecessors. As STRAFOR sees it, China's economy is currently driven by significant government investment and high levels of bank lending. It therefore has to walk a fine line between runaway inflation and an economic slowdown. The expectation is that a slowdown will trump inflation, that the Chinese leadership will avoid any risky strategic economic decisions, and that they will focus on the next-generation leadership transition. Ultimately, what this means is that China's future is fraught with difficulties. The longer that Beijing puts off making necessary economic policy changes, the worse things will be when China's economic miracle finally unravels.

Finally, STRATFOR notes that Russia is also on the verge of a political transition, but it does not see it imperiling Moscow's continued attempts to influence the Eurasian heartland by conciliating with near-neighbors like the Baltic States and those in the Caucasus region. Moreover, Russia continues to seek an enhanced relationship with Germany, thereby increasing its influence into Central Europe.

We should, however, not read too much into Russia's attempts at conciliatory and constructive dialogue with the West. What it is really doing is making a calculated move for influence in regions where the United States has been dominant since the end of the Cold War. Moscow is well aware that America, bogged down in Iraq and Afghanistan as it still is, is in no real position to confront its geopolitical adjustments with the West. Consequently, Russia is trying to make some major geopolitical gains before the United States can divert back its attention to greater Europe.

Just as STRATFOR does, ETH's Center for Security Studies (CSS) puts out annual, near-term forecasts of international trends. Its *Strategic Trends* series, however, is more conceptual and meditative than STRATFOR's "real world" approach. From the outset, in fact, CSS analysts emphasize that their short-term forecasts are modeled around the key theme of 'divergence'. They

believe that a multipolar international system is emerging, but it is one characterized by a lack of leadership and possible friction. Leaderless multipolarity, in turn, will thus make finding solutions to common problems increasingly difficult.

Strategic Trends 2011 specifically argues that 'divergence' has had the most profound impact upon three features of the international environment. First, the economic performance of emerging and Western markets has been markedly different. While both have been affected by the global financial crisis, the emerging markets have recovered faster from the initial financial shocks. What this signals, of course, is that the dynamics of global power are rapidly shifting towards Asia. The case for making China a *bona fide* rather than an emerging economic power is increasingly compelling. Indeed, emerging markets are no longer reliant upon Western demand. Instead, China is leading the way in forging economic links with non-Western countries, thereby helping to ensure that emerging markets have economic options beyond the West. As a result, the economic outlook and policies of the Asian-driven emerging world are having a profound impact on the geoeconomic shape of the international system.

In stark contrast, the United States and European Union (EU) are still grappling with economic problems. While the United States has not lapsed back into a recession, Washington has to confront a massive national debt and budget deficit alongside a period of limited economic growth. In Europe, the economic situation is equally grave. Cuts in public expenditure and debt restructuring are likely to remain integral to many EU countries' attempts to deal with their sovereign debt. Indeed, the economic plight of the EU demonstrates that the theme of 'divergence' not only applies to the international system itself, but also at the regional level. Germany now holds the reins of power regarding monetary union in Europe, but the terms and conditions it seeks to impose have many enemies. As a result, Europe's preoccupation with its financial problems means that it is unlikely to play a major global role within the international system for the foreseeable future.

Indeed, Europe's large scale withdrawal from the weft and warp of the international system counterpoints a third "divergence" – the changing power dynamics throughout the Middle East. *Strategic Trends 2011* predicts that the main beneficiaries of the decline of traditional Middle Eastern ruling elites will be the new regional powers of Iran and Turkey. At the same time, the oil-rich Gulf States may look to improve their ties with the rising powers of Asia while the North African states intensify their cooperation with Europe. Finally, while the U.S.'s long-standing influence in the Middle East may wane, its presence is assured. It will continue to safeguard its energy interests, protect Israel and attempt to manage what appears to be a growing list of other security challenges.

Interestingly, while *Strategic Trends 2011* makes a number of predictions that reflect STRATFOR's short term forecasts, they come with a number of caveats which also intersect with the volume's key theme of 'divergence'. For example, while the geoeconomic balance of power is seemingly moving towards emerging post-Western markets, there is little evidence to suggest that China is keen to replace the United States as the guarantor of global stability. Alongside STRATFOR, *Strategic Trends 2011* is adamant that China's main priorities remain domestic social and economic development. This, in turn, partially explains why it is highly unlikely that China will become a more influential actor on macro-level issues such as climate change and non-proliferation.

CSS's *Strategic Trends 2011* also adds a gloomy caveat to its near-term predictions about Europe. While it acknowledges that EU member states have shown some degree of unity with their debt-ridden colleagues, the decisive actions needed to stabilize Europe's economy have yet to appear. As a result of such events, the text makes no near-term predictions on the future shape of the EU. Regional fragmentation, deeper political integration and enhanced fiscal cooperation all remain viable possibilities.

Neither does the CSS place any cast-iron certainty that the United States will indefinitely maintain a robust presence in the Middle East. Both STRATFOR and *Strategic Trends 2011* are convinced that the U.S. should maintain its regional influence in the short term, but the continued diversification of its energy supplies beyond the Middle East, coupled with a general decline in the threat of jihadist terrorism, might increasingly permit Washington to divert its attention to Asia Pacific, where it will confront the growing influence of China. Indeed, the United States may even divert attention to issues that are closer to home. In the case of Mexico, the United States has a near-neighbor that is, in the opinion of

many, rapidly becoming a narco-state. But, as *Strategic Trends 2011* points outs, 'divergence' throughout the international system may complicate the United States' attempts to lead a coalition to break the narcotics-insecurity cycle.

In closing, it is only appropriate to ask what near-term predictions can tell us about the practice of future forecasting. First, since short-term forecasts are informed by contemporary developments, they are basically "boxed in". They are true extrapolations of imminent trends. The bold and brash need not apply. Thinking the unthinkable is not only incredible here, but also moot. Short-term forecasting is the domain of practical, largely predictable and generally unremarkable assumptions. If anything, it provides the building blocks for making effective medium and long-term predictions possible.

Having said all the above, how one presents short-term predictions remains a highly creative act. While STRATFOR and *Strategic Trends 2011* make very similar forecasts regarding the near-term future of the international system, they make their cases in very different ways. STRATFOR gets straight to the point; it tells its readers its primary short-term forecasts without imposing additional conditions or deviating from its script. *Strategic Trends 2011*, in contrast, takes a much more subtle approach. Yes, it identifies a number of key developments that are influencing the international system, but its predictions are modeled around more conceptual themes and remain subject to conditions. This does not mean that CSS analysts lack confidence in their short-term forecasts. Instead, it means that their short-term forecasting is directed to and utilized by a potentially more diverse audience than others. Whether these differences apply to medium and long-term forecasts is something we will look at as this week unfurls.

Radical Islam Passing through Greece

By Ioannis Michaletos

Source: http://www.defencegreece.com/index.php/2011/11/radical-islam-passing-through-greece/

Greece is an E.U., NATO and Eurozone country that has traditionally strong links with the Islamic world due to the geographical proximity with the Middle East and North Africa and the Ottoman rule that lasted four centuries, along with numerous historical encounters with Islam since the Middle Ages.

Currently the country faces a debt crisis that, apart from its obvious disastrous financial consequences both in a domestic and in a global scale, also raises security concerns related to terrorist networks of Islamist origin.

Recent upheavals in Maghreb and the Middle East pertain to Greek and European security as well.

Presently, the country hosts a Muslim minority that is a remnant of the Ottoman Empire, but also an expanding Islamic population from the Arab countries and Pakistan that enter Greece in significant number as illegal immigrants. Corporations in the country, such as banking institutions, tourist companies and real estate firms are in control of Islamic funds, whereas countries such as Egypt, Saudi Arabia, Iran, Turkey and Libya can be considered significant trade partners of Greece.

The wider picture

In Athens, Greece, the Iranian Saderat bank is hosted, which is a U.S black-listed institution due to alleged links with Hezbollah. Iran covers 25 percent of Greece's oil needs per annum and segments of its natural gas needs. There are indications that Hezbollah groups are operating in a logistical-support basis in Athens by gathering funds through tobacco contraband over the past years, as a 2007 report by American collective security research outlined.

In a broad sense, Greece, due to a mixture of its geographical placement, history and business links, is considered a gateway for the Islamic element in close proximity to the European Union and the Balkans, and over the past 10 years it has become one of the main transit territories for Islamic-originating illegal immigration to Europe.

Until now Greece does not seem to have a particular issue of Islamic fundamentalism. Nevertheless, as aptly described in a 2009 U.S. State Department report on terrorism, "Greece is increasingly an E.U. entry point for illegal immigrants coming from the Middle East and South Asia, and there was concern that it could be used as a transit route for terrorists travelling to Europe and the United States. The number of illegal immigrants entering Greece, especially through the Aegean Sea, increased dramatically in 2008 and 2009, with more than 100,000 illegal immigrants, nearly half of whom originated from North Africa, the Middle East and South Asia, arrested each year."

Presently in Greece, there seems to be activity within radical Islamic elements as well as gradual projection of Islamic political entities through the use of Greek nationals.

A revelation by the infamous WikiLeaks telegrams showed that the ex-U.S. ambassador in Athens, Daniel Speckhard, has noted the danger of the nexus between Greek domestic terrorist groups and Islamic groups, including those from Iran, as he was informed by the then-Greek minister of public Order, Michalis Chrysohoidis. The leaked telegram was presented by the Greek weekly paper To Vima along with further analysis that points out that the fears expressed are of valid nature.

In 2007 a rocket launch attack with an RPG against the American Embassy in Athens was carried out by the Greek group Revolutionary Struggle, which stated in its proclamation note support for Hezbollah in Lebanon. In 2009 the Greek weekly To Proto Thema reported that Greek leftist terrorists seem to have been trained in Lebanon in paramilitary camps operated by Islamists.

In a special report by the French daily Le Figaro, on December 21, 2010, the case of the route of Islamic terrorists from Lebanon to Europe was noted with significant details. The Lebanese Army Cornell Mahmoud Issa noted to the French journalists that since November 2010, some 20 extremists managed to escape from a camp where they were kept in Lebanon and found their way to the European Union. He stated that already the authorities had been notified on an international level, although he admitted that this is a difficult task. The French security authorities believe that this is the case of a new jihad mission heading towards European metropolises.

In classified documents that were in possession of radical groups in Lebanon, it was noted that three men managed to leave the camp through Syria and Turkey and up to Greece and Bulgaria with the assistance of illegal immigrant transport networks managed by Turks. They managed to acquire fake IDs and were finally caught by a common operation of the Bulgarian and Greek authorities. That case was closely monitored by British and French intelligence due to the fact that these two countries were the ultimate destination of the Lebanese group. Mahmoud Issa stated that more cases are to be found that evade the authorities so far.

Incidents of interest

According to the pre-9/11 French intelligence report, American interests in Greece and Cyprus were considered by Osama bin Laden's network as targets. Citing a DGSE document, To Vima reported that members of al Qaeda, mostly located in Beirut, in cooperation with Taliban officials and other armed groups, were planning to hijack airplanes between March and September 2000, yet it was never carried out due to various logistical and operational disagreements.

European intelligence agencies have also reported that about 20 Arab fundamentalists have been arrested in Britain, Italy, Portugal, France and the Netherlands for having in their possession forged Greek passports, according to a 2007 revelation by the Greek daily Ta Nea and for the period 2001-2006.

In another notable case, in September 2005 Moroccan Anwar Mazrar— one of the leading Al Qaeda operational terrorists in Europe—was arrested on the Greek-Turkey border while attempting to travel to Greece on the Istanbul-Thessalonica bus service. Mazrar had been accused of being a leading member of terrorist groups in Morocco and also of having ties with al Qaeda. It was revealed that Mazrar was planning to stay in Greece for a while as an illegal immigrant and then move on to Italy and plan two bombing attacks.

Mazrar regularly travelled from Milan, Italy, to Algeria, Syria and Turkey. Greek authorities suspected that he was interested in setting up a base of support in Greece and use the country as a safe haven between Italy and the Middle East. In 2005, immediately after the capture of Mazrar, there was a boost in surveillance by the Greek authorities of suspected Islamist radicals in the country.

Cooperation between Greece, the United States, France, Italy and the United Kingdom intensified in that sector.

Towards the end of 2010, various press reports claimed that radical Islamic action was increasing in the center of Athens, and the issue became widely publicized after it was brought to Parliament via the LAOS political party, which demanded state explanations on the issue and proper notification of security forces. According to statements by several Greek politicians, the country hosts amongst its illegal immigrant population radical cells and quite possibly "al Qaeda sleeping cells."

In another case in 2005, the so-called "Pakistani abduction case," 28 Pakistani immigrants were allegedly kidnapped by Greek intelligence agents in Athens. That case was connected to the cooperation between Greek and U.K. authorities following the July 2005 bombings in London, but was also the first notable case of accusation of the Greek state by Islamic organizations that Greece is actively turning against the Islamic element and taking harsh measures in the "war against terror." The Greek weekly newspaper Proto Thema disclosed the names of 15 alleged Greek agents and an MI6 spy chief allegedly involved with kidnapping and torturing the Pakistanis eight days after the London bombings of July 7, 2005. There was widespread support by leftist groups that demanded through a series of legal actions and demonstrations the punishment of the Greek and U.K. security members involved.

According to all data up to now, the Pakistani immigrants were somehow connected, probably via mobile phone SMS texting and conversations, with the terrorist group responsible for the July 2005 bombings in London. Although six years have passed, Greek and U.K. authorities have not revealed the extent of the involvement of these immigrants.

In early 2011, the Greek media revealed information mainly derived from WikiLeaks that U.S. diplomats in Athens had since 2006 information that there is a nexus between illegal immigrant trafficking networks from Pakistan and terrorists groups in that country that profit from that illicit market. American diplomats at that period in Athens met with their Pakistani counterparts and then provided to Greek authorities several names of traffickers suspected with links to terrorists.

According to the State Department, the Greek authorities didn't take any action, and one Pakistani diplomat who served in Athens at that period, in a conversation with an American officer, commented that he suspects "Greek security officials may be involved in covering the traffickers."

In July 2009 Abu Sanjat, am Iraqi citizen wanted by Interpol due to his involvement with terrorist attacks in Baghdad, was arrested in Greece. His arrest was a joint Greek-American-Iraqi operation. According to media reports, he was one of the main ringleaders of al Qaeda in Iraq who wanted to expand the network into Europe. He came to Greece as an illegal immigrant by crossing the borders with Turkey and joined a team of another 20 immigrants. When he was arrested he had forged papers identifying him as a Palestinian refugee claiming political asylum.

In 2006 another case of interest took place in the Athens international network. According to reportage by the Greek daily paper Kathimerini, an imam and Pakistani citizen wanted for terrorist attacks and homicide was arrested as he was flying from the United Kingdom, where he lived in a provincial town. The police investigation revealed that his purpose of visiting Athens was to enact a series of religious seminars for the expanding community of Pakistani immigrants in the city. Although there was an international arrest warrant against him by authorities of Pakistan, he was able to pass through the airport controls in London before taking his flight to Athens. That particular incident alarmed the Greek authorities who surprisingly were able to map an emerging social network of Pakistani radical Islamists in Greece before they were able to commit illegal activities or terrorist actions.

Overall

Greece's geographical placement, in addition to the wider culminations in the Mediterranean that have unfolded over the past year, has sounded alarm bells over the peril of the country being used as a regional logistics hub for international Islamic terrorists and a breeding ground of radicals amongst the communities of illegal immigrants from Islamic countries.

A Greek intelligence service report that was leaked in April 2011 in the Greek daily paper Ethnos points to a definite nexus between international organized crime, illegal immigration trafficking, and

the communities of Islamists in the country who in their turn finance and form NGOs in order to attain influence in the local society. The danger of infiltration of terrorists in all of the above is also highlighted.
The main known countermeasures that have been taken by the Greek authorities include increased exchange of intelligence with partner countries, technological upgrade of surveillance equipment, and infiltration of suspected radical and terrorist cells.

K-9 units outfitted with GPS collars

Source: http://www.homelandsecuritynewswire.com/dr20111206-k9-units-outfitted-with-gps-collars

Thanks to new GPS collars, Michigan State police officers are now able to keep track of their canine partners and locate them or their handlers if they become lost or injured
Thanks to new GPS collars, Michigan State police officers are now able to keep track of their canine partners and locate them or their handlers if they become lost or injured.
According to Sergeant David Yount, the commander of the state's Canine Unit, the decision to purchase GPS collars came after the department lost its first canine during operations last year.
"In November last year, the department lost its first canine during a search," Yount said. "If we are in this situation again, the GPS collars will provide an efficient way to track and retrieve a missing canine."
Each of the Michigan State Police's twenty-nine canines were fitted with the GPS units at a cost of roughly $5,000. The collars were purchased with the help of donated funds.
The canines are deployed throughout the state and assist other law enforcement agencies in tracking down suspects, locating missing persons, searching buildings, and detecting explosives or narcotics.

Dogs of war: the role of canines in the Second World War

Source: http://www.homelandsecuritynewswire.com/dr20111206-dogs-of-war-the-role-of-canines-in-the-second-world-war

A new book examines how dogs were used by the U.S. and Japanese militaries during the Second World War; the book goes beyond the battlefield duties of these four-legged soldiers and captures how dogs like New York City's "Skippy" and Tokyo's "Aren" mobilized their people to their nations' causes

USMC K-9 patrol, Bougainville in December, 1943 // Source: olive-drab.com

Seventy years since the United States entered the Second World War after the Japanese attack on Pearl Harbor, a BYU historian has a new look at an often overlooked breed of soldier.

In his book *Empire of Dogs: Canines, Japan, and the Making of the Modern Imperial World* (Cornell University Press), Professor Aaron Skabelund goes beyond the battlefield duties of these four-legged soldiers and captures how dogs like New York City's "Skippy" and Tokyo's "Aren" mobilized their people to their nations' causes.

"It may be surprising to some that dogs were used in a similar manner by all combatant countries, both Axis and Allies," Skabelund said. "They ran messages, carried ammunition, guarded prisoners and flushed out enemy soldiers that remained in the aftermath of certain battles." A Brigham Young University release notes that in America, an organization called Dogs for Defense encouraged people to enlist their dogs in military service.

The recruitment included school assemblies where the military could appeal directly to children. At Public School No. 66 in New York City, one 10-year-old girl enlisted Skippy, a shepherd-collie mix, while the rest of the student body sang The K9 Corps march.

For families that owned dogs too small for military specifications, Dogs for Defense provided an alternative: Sponsor another dog's training in your pet's name.

"In exchange for a financial donation, their dog was awarded a military rank, so Rover could become a general at the right price," Skabelund said.

In Tokyo, a teenage girl named Teshima Tamie was similarly honored for enlisting her German shepherd puppy. A newspaper quoted her as saying, "As a woman, I cannot stand on the frontline, so I asked Aren to go fight for me."

The release notes that in his research for the book — which has a Japanese focus — Skabelund located Teshima's own scrapbook. In it she had pasted several advertisements for the movie *Sensen ni hoeyu* (Barks at the battlefront). Contemporary critics of the 1936 film praised it for "moving, tear-jerking scenes" of dogs wounded after they captured an enemy spy without human help.

"Both film and literature at the time are full of stories about children who love their dogs and in the end part with them and give their dogs to the military," Skabelund said. "Ultimately this prepared children to part with their other loved ones: their father, their brother, their son, or even to prepare themselves to go off to war."

While the United States emerged from the war as a world superpower, Skabelund presents in another chapter how Japan became a "pet superpower," in part through the popularity of "pure Japanese breeds," such as the Akita and the Shiba.

Protecting first responders from a quiet killer

Source: http://firechief.com/health_safety/firefighting_heart_attacks_leading_2/

Emergency responders in Flagstaff, Gilbert, and Chandler, Arizona recently underwent a battery of medical tests to help minimize the risk of having a stroke or heart attack while in the line of duty.

As part of a pilot program, nearly twenty firefighters and police officers took a series of exams including CT scans, blood tests, carotid artery ultrasounds, and glucose tests.

The goal of the Heart Fit For Duty pilot program is to provide additional health checks for firefighters and police officers to detect heart conditions that may not appear in annual physical exams.

The program is critical for saving lives as heart attacks are the leading cause of death for firefighters. In a decade long study, the U.S. Fire Administration found that **44 percent of all firefighter deaths were the result of heart attacks or strokes.** In contrast internal and head injuries resulted in 27 percent of deaths and suffocation and burns 20 percent.

According to Kepra Jack, the director of Heart Fit For Duty**, firefighters are 300 times more likely to have heart disease.**

Experts believe that working in a high-stress environment like a crumbling, smoke filled building along with strenuous physical activity can place a large strain on the heart and exacerbate underlying conditions.

At the Gilbert Fire Department's Skills Center, firefighters are subjected to a tortuous training course called the Confidence Course, which has been nicknamed the "Claustrophobia Course." The drill consists of a wooden crawl space that simulates the inside of a building collapse. The walls can be manipulated so the path is unpredictable and a smoke machine along with a sound system fill the tunnel with thick fog and the scream of sirens.

Firefighters are forced to crawl through the tunnel in full gear, which weighs as much as sixty pounds.

Jack said it is this type of stress in real-life scenarios that can lead to heart problems, so it is crucial that we do everything we can to take care of first responders because they take care of us.

Eventually Jack hopes to be able to expand the Heart Fit For Duty Program to all first responders in the area.

Jihadists and Saudi Arabia in the Shadow of the Arab Spring

By Murad Batal al-Shishani

Source: http://www.jamestown.org

In the 1980s the Saudi Arabia-United States alliance supported the mujahedeen in Afghanistan in their battle against the Soviet Union. Hostility has since grown between al-Qaeda, which formed later and the Saudi regime. Hostilities started after the 1991 Gulf War when the Islamic opposition became incensed at the decision to invite non-Muslim troops (i.e. the Americans and their Western allies) to use Saudi soil to attack invading Iraqi forces in neighbouring Kuwait. By then the jihadists had theorized on the "infidelity" of the Saudi state; an ideology Jordanian Islamist Abu Muhammad al-Maqdisi described in one of his most famous works, *Al-kawashif al-jaliyya fi kufr al-dawla al-Sa`udiyya* (The Shameful Actions Manifest in the Saudi State's Disbelief).

If al-Maqdisi laid the foundation for the enmity between jihadists and Saudi Arabia, Osama Bin Laden took it to the next level in the mid-1990s when he turned from criticizing the Saudi state to considering it explicitly a *kafir* (non-believing) state against which Muslims were obliged to wage a jihad. In this stage several small bomb attacks were committed in the capital of Riyadh. The most significant of

these was the November 1995 car bombing that killed five U.S. citizens and two Indian citizens at the offices of the Saudi National Guard on Riyadh's al-Olaya road.
After 2000 the violence escalated between both parties until it reached a peak in 2003, when Saudi jihadists returning from Afghanistan launched a jihadi campaign that lasted until 2007. Saudi authorities dismantled the structure of the Saudi jihadist movement in that year, leading them to migrate to Yemen, where they merged with Yemeni jihadists to form al-Qaeda in the Arabian Peninsula (AQAP). The newly formed movement quickly became a national threat to Saudi Arabia.

The Challenge of the Arab Spring

The "Arab Spring," the disparate youth-led revolutions that toppled a number of long-lasting Arab despots, presented a challenge for both Saudi Arabia and the jihadists. The Saudis are concerned with their troubled neighbours of Bahrain and Yemen as well as the potential growth of political movements inside their own country. The jihadists, meanwhile, have lost much of their usual recruitment pool as the Arab youth movements provide an alternative to their violent ideology.
The Saudis have taken several steps to prevent any troubles within or along its borders, including the deployment of troops of the Gulf Cooperation Council's (GCC) Peninsula Shield Force (PSF) to Bahrain and supporting the GCC initiative for a transition of power in Yemen (for the PSF, see *Terrorism Monitor* Brief, March 24). Locally, Saudi authorities have resorted to a stick-and-carrot policy. In February King Abdullah, according to an official statement read on Saudi state TV, "boosted spending on housing by 40 billion riyals ($10.7 billion)… earmarked more funds for education… raised the social security budget by 1 billion riyals…and ordered the creation of 1,200 jobs in supervision programs and made permanent a 15% cost-of-living allowance for government employees" (Saudi TV 1, February 23; Bloomberg, February 23).
On other hand the Saudi government cracked down on any opposition voices in the country. Amnesty International recently released a report claiming that hundreds of people in Saudi Arabia "had been arrested, many of them without charge or trial." Prominent reformers had been given long sentences ranging from five to thirty years in prison following trials which Amnesty called "grossly unfair." [1] These trials increase anger among Saudi youth on social media outlets and have become a source of criticism of the Saudi government. Riyadh has witnessed several rarely-seen demonstrations demanding the release of prisoners.
The trial was conducted by a special criminal court in Riyadh and the 16 terror suspects sentenced to a total of 228 years in jail. The suspects - 14 Saudis, a Yemeni and a Syrian - reportedly belong to a cell called *Istiraha* (Rest House). The Saudi members of the group will not be allowed to leave the Kingdom after their release while the foreigners will be deported after serving their sentences. All of the defendants have rejected the court verdict while the public prosecutor said the suspects deserved tougher punishment (Arab News, November 23).
While many jihadists are among those imprisoned on political charges in Saudi Arabia since 2003, the Salafi-Jihadists — in line with new soft-political rhetoric they presenting since the Arab Spring movements swept, focused on the prisoners issue as a new campaign strategy in Saudi Arabia.

Why Has the Arab Revolution Not Reached the Gulf?

A well-known contributor to jihadist internet forums with the pseudonym Hamzah al-Bassaam was interviewed by a jihadi website regarding al-Qaeda and the Arab Spring. On the question of why the Arab revolution has not reached the Gulf countries, particularly the country of the two holy mosques [i.e. Saudi Arabia], al-Bassaam replied:
"Regarding the country of the two holy mosques, there is a good movement and what we've seen recently from the protests [demanding the] release of detainees and raising the voice of their families to the world is healthy evidence. It is important these protests continue…what prevents the movement [in Saudi Arabia from going further] are two things: first, the security grip and maltreatment of any dissenting voice or one calling for a revolution. Second is the official religious establishment, which the Sa'ud family places in the throats of those who want to lift the injustice and change the regime" (muslm.net, September 19)."

On November 18, Al-Qaeda in the Arabian Peninsula released an audio message from its Shari'a advisor, Shaykh Ibrahim al-Rubaish, entitled "A'la Khota al-Gharb" (Following in the Footsteps of the West) which focussed on the appointment of Prince Nayf Bin Abduk Aziz as Crown Prince in Saudi Arabia (Ansar1.com, November 18). Al-Rubaish, who had previously set political conditions to stop fighting the Saudi royal family, indicated the sort of changes that have occurred in the jihadists' thinking as a result of the Arab Spring:

"The most powerful way to release the prisoners is jihad because what has been taken by force can only be restored by force, but if this is not doable at least people [should] continue gathering in front of the Interior Ministry periodically until they find a solution to this issue [of prisoners to be released] and if some of them [are] imprisoned or force used against them they must be resilient. Some people should be on the frontline and sacrifice to [let others] enjoy [the victory] after them… the reality has proved the fact that the will of the people is unbreakable. [We need] a will to steadfastly confront the cronies of Ibn Sa'ud, similar to the will of the people of Tunisia [who] succeeded in the expulsion of [Zine al-Abidine] bin Ali, and the will of the people of Egypt in imprisoning Hosni [Mubarak], and the will of the people of Libya in killing [Mu'ammar] al-Gaddafi."

Al-Rubaish criticized King Abdallah bin Abd-al-Aziz's decision to grant women the right to take part in the municipal and Shura Council elections, saying that this decision was considered "a decisive victory" by the media and "scored a goal" for the liberals. He added that "the liberals deem the king's days a golden age because he follows in the footsteps of the West." Al-Rubaish believes this shows "the weakness" of the Islamists, who do not dare to advise the king or blame him for listening to the liberals. Al-Rubaish concludes his message by warning the Saudis against the "Westernization" of women, saying that this will open the door for giving leadership to women.

Conclusion

Although the Arab Spring movements created new challenges for both the jihadists and the Saudi state, the Saudis are more interested in preventing internal dissent inspired by youth movements while the jihadists feel challenged by the loss of their recruitment pool. It is unlikely that al-Qaeda will be successful in mobilizing young Saudis in political demonstrations as they do not have the tools required for public political mobilization. Therefore it is more likely that they will continue to rely on Yemen as a launching pad for attacks inside Saudi territories. However, developments inside Saudi Arabia indicate a level of frustration inside the kingdom which could lead to a political deadlock if the government takes further steps towards political reform.

Note:

1. See "Saudi Arabia: Repression in the name of security," http://www.amnesty.org/en/library/asset/MDE23/016/2011/en/126dda68-1c2f-4f3e-b986-3efa797d3b9d/mde2301 62011en.pdf .

Murad Batal al-Shishani is an Islamic groups and terrorism issues analyst based in London. He is a specialist on Islamic Movements in Chechnya and in the Middle East.

Frontline Medicine

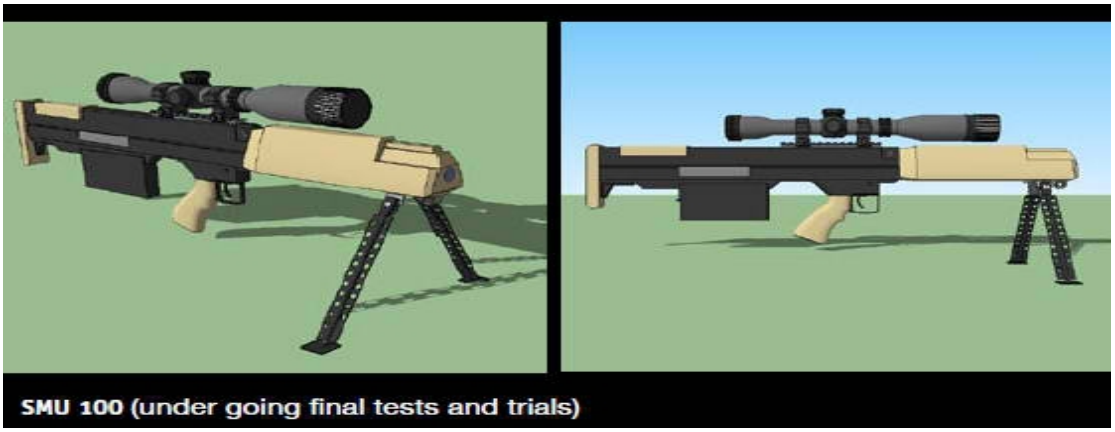
Two videos you have to see

Source1: http://www.youtube.com/watch?v=_8rKzUk1wPg

Source2: http://www.youtube.com/watch?v=JDdoqWZ9pdo&feature=related

British Police Testing Non-Lethal Laser Rifle That Temporarily Blinds Rioters

Source: http://publicintelligence.net/british-police-testing-non-lethal-laser-rifle-that-temporarily-blinds-rioters/



A shoulder-mounted laser that emits a blinding wall of light capable of repelling rioters is to be trialled by police under preparations to prevent a repeat of this summer's looting and arson.

The technology, developed by a former Royal Marine commando, temporarily impairs the vision of anyone who looks towards the source.It has impressed a division of the Home Office which is testing a new range of devices because of the growing number of violent situations facing the police.

The developer, British-based Photonic Security Systems, hopes to offer the device to shipping companies to deter pirates. Similar devices have been used by ISAF troops in Afghanistan to protect convoys from insurgents.

The laser, resembling a rifle and known as an SMU 100, can dazzle and incapacitate targets up to 500m

away with a wall of light up to three metres squared. It costs £25,000 and has an infrared scope to spot looters in poor visibility.

Looking at the intense beam causes a short-lived effect similar to staring at the sun, forcing the target to turn away.

A Home Office spokesman said scientists at its Centre for Applied Science and Technology believe the use of lasers "has merit" and that it will be piloted by at least one police force. However, they will have to be satisfied the technology does not cause long-term health damage before it can be approved by the Home Secretary.

Other technology being studied includes 'wireless electronic interceptors' that can be fired a greater distance than Tasers, and long-range chemical irritant projectiles, the newspaper said.

Improvised CBRN: A review of terrorist capability

By Andy Oppenheimer

With all the warnings of terrorist threats, what do we know of their real capabilities in the civilian arena? Does intent exceed capability? Ten years on from the world's worst terrorist atrocity, in considering the CBRN (chemical, biological, radiological, nuclear) threat it should be noted that the 9/11 attacks did not involve bombs or a standard CBRN component. However, they were most certainly weapons of mass destruction, and a mass Hazmat mass attack: at least 10,000 people are suffering long-term illness resulting from clouds of dust and toxins at the site of the WTC collapse.

Al Qaeda (AQ) is said to have declined since the killing of bin Laden and other AQ leaders and the pre-emption of many terrorist plots in the US and UK. The disparate AQ affiliates still intend to launch larger-scale attacks, however - while continuing with frequent, smaller-scale attacks. The intel horde from the bin Laden hideout will reveal some CBRN intentions. Meanwhile, suicide bombings of civilians are an almost everyday occurrence in Pakistan, India, Iraq, and Afghanistan deploying the perennial prime terrorist weapon - the IED - in varying sizes and sophistication.

Legacy weapons

The revolutions gripping North African and Middle Eastern countries mean an indefinite period of instability during which legacy weapons may become available to all-comers. Insurgencies waged by former regime loyalists during interim rebel governments could be prolonged through access to legacy weapons. The recent historical precedent is Iraq – where many hundreds of munitions, explosives, missiles and some chemical ordnance scattered all over the country provided ready-made materials for a wide range of IEDs and other insurgent means of attack, such as explosively formed projectiles (EFPs). Although successive UN inspection teams and occupying US forces have cleared much of Iraq's CW ordnance, abandoned chemical shells may provide the means for ICDs. Insurgents are viewed as likely to deploy basic forms of CB or R: attacks on civilians – such as organophosphate bottle bombs thrown into girls' schools in Kunduz, Afghanistan in early 2010, and chlorine tanker hijackings which injured hundreds of Iraqis in early 2007.

Libyan CW

During the Libyan uprising concerns emerged about the security of undismantled and undeclared stocks of sulphur mustard and precursor chemicals. According to the Organisation for the Prohibition of Chemical Weapons (OPCW), which oversees dismantlement of CW stocks as well as measures to prevent proliferation of CW, by 2010 Libya had destroyed nearly 15 tonnes of sulphur mustard, representing about half of its stockpile, and some 40% of CW precursors. Some 3,500 CW munitions for aerial dispersal had also been removed for destruction. Libya did not actually weaponise sarin or nerve gas; much of the undeclared stockpile is outdated.

More recently, the OPCW stated that Libya had kept 9.5 tonnes of mustard gas at a secret location – now uncovered during the rebel conflict. Around 800 metric tons of precursors remained in storage at a military depot near Waddan. On Libyan

territory there is also a small arsenal of short-range ballistic missiles and ground-to-air missiles. Human Rights Watch researchers also identified at least two weapon depots as holding a vast number of missiles which they believe can be weaponised as dispersible CW.
In September retreating pro-Gaddafi forces were reported to have abandoned boxes of thousands of NBC suits at an abandoned military depot 80 km west of Tripoli, along with hundreds of large gas containers, glass vials containing liquids. An estimated 500-900 metric tons of yellowcake uranium in 10,000 containers was also found at a military warehouse near Sabha in central Libya.
NATO has called on Libya's new leadership – the Transitional National Council (TNC) - to begin preparations for eliminating the left-over CW stocks. OPCW inspectors will complete CW disposal once there is an opposition government in place. More undisclosed CW stocks turned up after the rebels declared victory in October. It remains to be seen how many weapons and materials will go AWOL until the country eventually settles down.

Syria – an evolving threat
Syria is also increasingly an area of CW legacy concern, having developed stocks of VX and sarin nerve agent and mustard agent, which are stationed at some five sites, including Damascus, Hama, Latakia and Aleppo. Work on the al-Safir facility in the north-west of the country had started in 2005, in the aftermath of the Iraq war, and the facility has been developed further. The stocks are overseen by the Assad regime's security sector but may be less easy to control than some officials will admit. And there is the risk that the materials could be diverted by Syrian militants during and following anti-government riots. Israel has voiced concern that CW could be dispersed by ballistic Scud missiles with Israel the main potential target.

Civilian CBRN – lack of precedent
High on the list of CBRN threats are sporadic white-powder and incendiary attacks, most of which are hoaxes, and some of which involve criminal gangs and grudge attacks. Other terrorist groups and insurgents continue to create maximum disruption to civilian life, particularly transport and other major infrastructure. And extremist individuals have attempted non-conventional attacks to cause mayhem and bring attention to their various causes.

Disease and food/water poisoning outbreaks are also very hard to attribute: the delay between dispersal and infection then symptoms make bioterrorism the wildcard within the pantheon of CBRNE threats, and less likely to gain the instant, maximum publicity achieved by a major bomb attack. While the FBI claim the 2001 anthrax attacks were undertaken by a government scientist who committed suicide in August 2008, proof will not be conclusive as he was never tried.

As evidenced by the London, Madrid, and Moscow mass casualty incidents, transit systems remain prime targets with enclosed spaces on trains and planes enhancing explosive and toxic effects and the spread of contamination. Although the device hidden in a print cartridge intercepted from a cargo plane at East Midlands Airport in October 2010 was reported as an 'ordinary' IED, its discovery prompted a full response from the specialist HART (Hazardous Area Response Team) and the Health Protection Agency to ascertain first if the device had a toxic component.

Improvised Incendiary Devices
In the grey area where IEDs become weapons of mass effect reside napalm, fuel-air explosives, and thermobaric weapons, and car bombs adapted with incendiary enhancements – improvised incendiary devices (IIDs). For these, high-explosive is not needed as the vehicle becomes a self-igniting chemical device with flammable liquids or pyrotechnic and incendiary chemicals which are widely available.

In June 2007 a dual car bomb attempt in London involving patio gas canisters and another in May 2010 in Times Square, New York City, incorporating propane canisters each, thankfully, failed. It is worth noting why the London cars did not detonate. The first car was loaded with 60 litres of fuel, 6 13-kg Calor 'patio' gas canisters, and improvised

detonators – two cellphones wired to light bulb surrounded by match heads, and 2,000 nails. A phone call intended to trigger homemade device igniting the vapours swirling inside the cars. Just 1mm between phones and detonators broke the circuit. Only one detonator sparked - quickly snuffed out because mixture of petrol and gas too thick. An explosion would have occurred if car windows opened; there was insufficient oxygen to trigger the devices.

Moving up the scale, the September 2008 Islamabad Marriott attack involved an improvised thermobaric attack. About 600 kg RDX was mixed with TNT; mortars and grenades were included to enhance explosion. Metallised aluminium powder contributed to the acceleration and expansion of the bomb as the powder enhanced the incendiary effect to 400° C; burning aluminium produces a sub-sonic shockwave (deflagration) in thermobaric weapons.

Weaponisation – the main challenge

We know that today's terrorists and lone-wolf extremists can access materials and information online – with minimal facilities, space, and expense required to construct a food poisoning attack or improvised chemical device (ICD). Toxic industrial chemicals are in plentiful supply; chemical plants and shipments are not as secure as nuclear installations.

But as with all other forms of CBRN terrorism, precedent is rare – indicating possibly that safe and effective weaponisation is the problem, rather than lack of availability of materials and information. For deliberate biological releases, high-end biological and chemical weapon agents such as anthrax and nerve agent are very difficult to obtain, and specialist scientific and technical skills are required to disseminate them effectively as a weapon.

Successful weaponisation of biological agents depends on particle size, which needs to be less than 1 micron for inhalation. Indoor release of 'white powder' may be reduced by quality air filtration systems. Many environmental variables such as wind direction and speed, temperature, terrain, population density, and building materials can inhibit or enhance dissemination. ICDs may be crude, but no less harmful - as evidenced by attacks on girls' schools in Afghanistan in 2010, into which bottles of organosphosphate were thrown: over 30 students were hospitalised, some suffering cyanosis and coma. Terrorists do not need perfect weapons to cause mayhem. The Aum cult who released sarin nerve agent on the Tokyo subway in March 1995 spent millions of dollars, and employed qualified chemists. Despite this, they achieved less-than-weapons-grade quality - but the attacks injured thousands, many of whom suffer from long-term effects to this day. And the terrorists did not use bombs: the sarin was poured into 11 plastic bags - sealed, placed in larger bags, covered with newspapers, pierced, then the terrorists exited the trains.

It was, nevertheless, the one example of a terrorist organisation successfully weaponising and deploying a chemical as a WMD. The sarin was made by the ton in a production facility which was suspended due to accidents, so a batch was made up by hand using existing precursors. Today with enhanced countermeasures against terrorism, one would expect such activity to be spotted and pre-empted.

The 2001 anthrax attacks may be the main example of a CBRN terrorist attack which was also a force multiplier. Apart from killing five and infecting 22 with weapons-grade spores, the spore-ridden letters contaminated 23 sites, including high-profile government buildings and vital postal facilities - some 30 tons of waste was removed from Senate Office alone. Some 6,000 US citizens had to be tested; more than 1 million tests were conducted on 125,000 samples; and 32,000 people took next-generation antibiotics – possibly creating resistance in pockets of the population. And the incidents were a catalyst (pun intended) for the growth of the biodefence industry, particularly in the US, where government funding flowed during the post-9/11 years into the CBRN industry, propelling research programmes and equipment.

Rather than weapons of mass destruction, the use of nonconventional ingredients in a device is more to be for small-scale attacks, as mass-casualty CBRN requires

several more degrees of skill to weaponize unpredictable agents. In 2011 several cases in the US involved the attempted manufacture of ricin, one of the most potent poisons known – but none got further than possession of castor beans. However, in the UK in 2010, a father and son duo actually managed to make ricin: they were convicted in Newcastle of manufacturing enough to kill up to nine people, had they been able to deliver it to target (injection being the most effective means).

Delivery – small aircraft?

More recently, small aircraft entered the frame as a possible terrorist weapon delivery means when, in late September, an AQ supporter, Rezwan Ferdaus, was arrested in the US for planning to use three drone aircraft to attack targets in Washington, D.C. with explosive payloads, which he had allegedly accepted from undercover FBI agents. In 2008 a government report warned about hijacking of private aircraft (of which there an estimated 8,500 in Britain) from up to 500 landing sites in Britain, including farmers' fields and regional airports, where security is less stringent than international hubs.

Crop dusters and larger business aircraft have long been regarded as a potential platform for CBRN delivery. As remotely controlled aircraft become smaller with rapid technological advances, they are more easily transported. And with drones becoming big business, China, India, Iran, Mexico, Pakistan and Russia are among countries buying or producing their own unmanned aircraft.

RDDs and REDs

Questions continue over the severity of the threat from radiological dispersal devices (RDDs) in particular, as this is based on many variables regarding their acquisition, construction, deployment and effects. The main attempts so far have been by Chechen rebels, and smuggling incidents are often the result of police and intelligence sting operations. Radiological emission devices (REDs – non-explosive abandonment of rad sources) – and power plant accidents are far more common, and much more likely.

The paucity of RDD precedents despite continued trafficking may be due to the difficulties in making a bomb containing a deliverable radioisotope. Obtaining civilian isotope sources, mainly gamma emitters, from hospitals or industry involves the dangerous procedure of removing and unshielding the material in order to make it dispersible in an IED. Heavy shielding – necessary for protection even for a suicide mission - also makes the bomb unwieldy for transportation and deployment. When thieves have ruptured the metal shielding of the sources led to injuries; fatalities among radiological smugglers have occurred in Turkey, Estonia, Chechnya, Azerbaijan, and Thailand.

Radioisotopes are nevertheless smuggled and trafficked in varying amounts. According to Stanford University's Database on Nuclear Smuggling, Theft and Orphan Radiation Sources (DSTO), some 39 kg of HEU and plutonium have been seized by law-enforcement forces worldwide between 1992 and 2005. According to the IAEA Nuclear Trafficking database, from July 2009 to June 2010 there were 222 incidents, but only five involving small amounts of HEU (highly enriched uranium) or plutonium. However, according to VERTIC,* if only one kilogram in ten has been picked up, there could be very significant amounts of weapons usable material available on criminal markets. The other incidents involve civilian-use isotopes, most notably cesium-137 and cobalt-60, which emit tissue-penetrating gamma radiation.

Material is often not missed – it may be stolen by insiders and trafficked via criminal gangs, helped by corruption and officer immunity. Effective control is not implemented at all international border points, although radiation monitors were installed at border points in Russia and India in 2011. However, much trafficking is of dual-use materials, some of which are exported in large quantities for civilian use, and of weapons materials under false ship manifests and through front companies across continents. Civilian-use isotopes are controlled under complex export rules but these can be evaded.

Ports and ferry ports, which have less security than airports, are prone to

smuggling of CBRNe materials – as well as attack by speedboats, as in the 2008 Mumbai attacks. While monitoring has been introduced in many ports, this may only detect certain types and sizes of radiological shipments. Scanning needs to be close to source in cargo and materials are easily disguised; training is variable and delays at ports cause commercial damage.

Questions remain on where the smuggled items end up. One particular, very tiny, and very rare smuggled item ended up in the body of a Russian dissident, Alexander Litvinenko, in November 2006 – resulting in an unprecedented multi-agency response and a dry run for a possible future RDD attack. The victim's contacts had to be found and their urine sampled for traces of the alpha-emitting isotope, of which less than 0.1 microgram is lethal when ingested. Some 18 high-profile urban premises had to be decontaminated or off limits until its three-months-plus half life had run its course.

Infiltration of facilities

Access to weapons and expertise is greatly enhanced by infiltration of laboratories (the 2001 anthrax attacker, according to the FBI); organisations such as the NHS (the August 2007 London/Glasgow bombers), utility providers (the IRA infiltrated the Post Office and British Telecom) and universities (jihadi cells and individuals).

Of supreme concern is the threat to chemical, oil, nuclear and utility facilities. A new intelligence report from the US Department of Homeland Security, *Insider Threat to Utilities*, published in July 2011 warned that "violent extremists have, in fact, obtained insider positions" and that "outsiders have attempted to solicit utility-sector employees" to gain access to a control room and threaten to cause an electric power grid to short circuit, cause a pipeline to explode, or cause breakdown through cyber attacks. Corruptible security guards at both civilian and military nuclear facilities may divert material. An alleged US AQ recruit arrested in Yemen in 2010 was employed at five nuclear power plants in and around Pennsylvania after successfully passing federal background checks. There are also disgruntled employees: in April 2011 a worker at an Arizona water treatment plant took over the control room and, calling the 911 emergency services, attempted to create a giant methane gas explosion. He failed, but the incident illustrated the insider threat and the need for improved employee screening.

The terrorist next door

Much was made of the 'lone wolf' threat following the Breivik massacres in Norway in July – but there are many other precedents among white supremacists and other extremists, particularly in the US, and including attempts to deploy chemical weapons. This was alarmingly exemplified by the conviction in 2004 of a Texan couple, William Krar, a White supremacist, and his partner - of possessing 800g of pure sodium cyanide, as well as hydrochloric, nitric and acetic acids and an arsenal of guns, bombs, ammunition and explosives worthy of the IRA's Belfast Brigade. Most recently, in November 2011, Jose Pimentel was charged in New York for charged with plotting to use pipe bombs to kill returning US troops.

Economic deprivation may enhance the risk of people who become cut off from mainstream society from resorting to extreme measures, if they acquire the means and the ability to do so. The erosion of Al Qaeda's ability to launch major attacks has led to a more amorphous threat – of the unknown self-starter group and individual who may have arguably more hatred and intent than skill and capability. At least for now…

*Illicit Trafficking of Nuclear and Radiological Materials, Workshop on Legal Cooperation to Control Non-State Nuclear Proliferation: Extra-territorial Jurisdiction and UN Resolutions 1540 and 1373

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Academic Press, 2008). A UK-based defence analyst, he is a member of the International Association of Bomb Technicians & Investigators and lectures on all aspects of CBRNE worldwide.

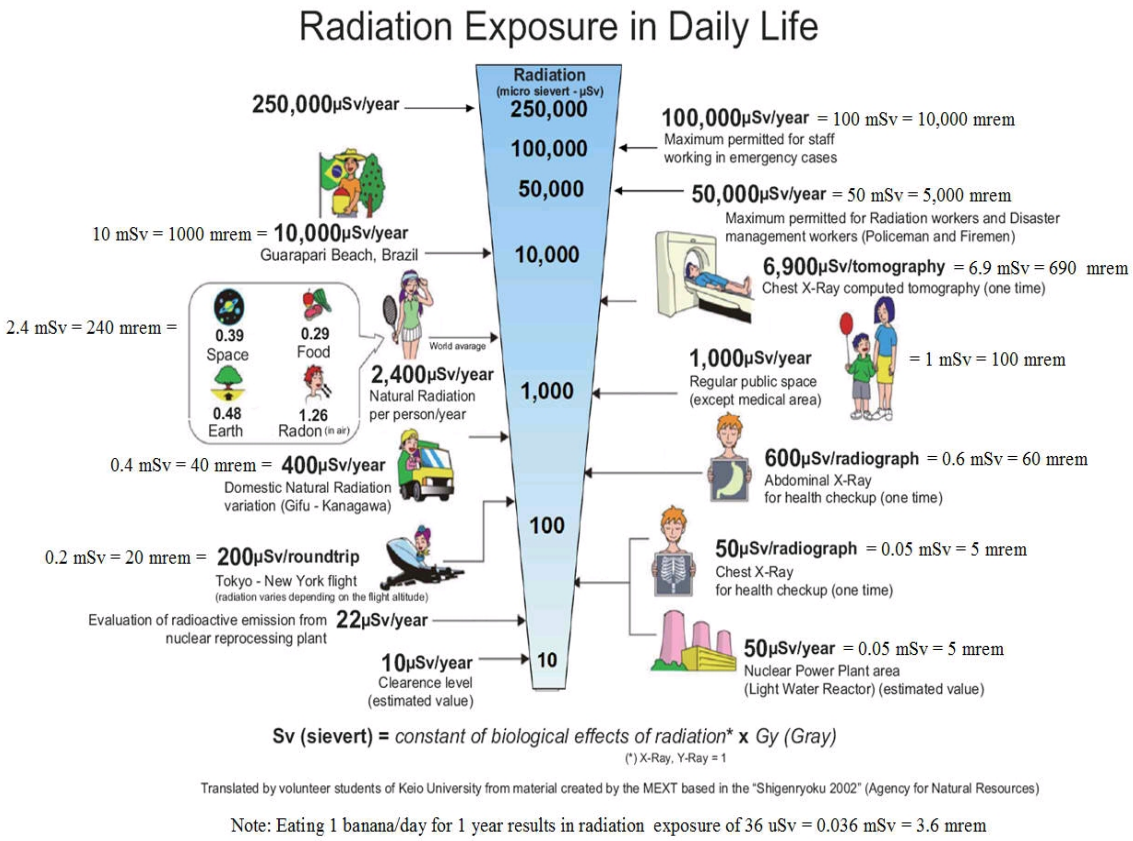
This article is based on his lecture Threats and Methods of CBRNe Attacks given at the CSARN (City Security and Resilience Networks) CBRNe and Mass Contamination: Threats and Resilience Conference, London, 7 October 2011.

Lessons learned: Detecting and identifying radiation sources in modern urban environments

By Dan Kaszeta

Introduction

It is a difficult and demanding proposition to search urban areas for potential terrorist radiological threats, whether the threat is a nuclear device (superpower-manufactured or improvised), a dispersal device ("RDD"), or simply a lost commercial or medical source. Many of the concepts of modern radiation detection need to be adapted to the dynamic nature of the modern city. Advances in technology mean that there are more radiation detection instruments, with greater sensitivity, in use on a daily basis for antiterrorism purposes in major cities around the world. In the last decade, isotope identification has migrated from the laboratory to the street. The combined effect of increased perceived threat, improved awareness, and increased availability of cheaper and more sophisticated detection equipment is that searches for radiation threats are no longer the province of specialized teams from scientific institutions. The average searcher is no longer likely to have an academic background. Therefore, work must be done to make the job of searching for radiological threats easier, particularly in dense urban areas which pose the likeliest targets for radiological terrorism. The author of this paper was heavily engaged in several large search operations in several US cities over the course of several years, in support of development of technology and operating concepts for radiological



antiterrorism. This paper is intended to capture some of the important lessons learned in the course of two years of development of an urban search capability in North America in 2006-2007.

Urban search poses unique problems

Successful application of radiation detection in an antiterrorist mode relies heavily on three factors: high probability of detection; high probability of identification; and operationally sound procedures. Mobile threat detection requires both a detector and a spectroscope, whether used separately or combined in the same instrument. Threat detection requires answers to several questions, the most important of which are: How much ionizing radiation is present, what isotope is present, and what is the exact location of the source? In urban search operations, in order to detect threat sources while disregarding anomalies or innocuous radiation sources, both detection probability and identification probability must be maximized. The complexities of the urban environment make it more difficult to successfully search for threat radiation sources. Much of the extant expertise in this area is derived from static monitoring (i.e. health physics and safety measurements) or interdiction operations, such as customs inspections at ports and border crossings. In both static monitoring and interdiction operations, there is a high degree of control over the environment. For example, customs personnel can control the speed at which vehicles transit through checkpoints or the speed at which they scan cargo containers. Mobile search operations in a city are much more complicated due to speed. In various permutations of the search scenario, the detector is in motion, the radiation sources (both benign and threatening) is in motion, or both. In nearly all circumstances, the speed of the source relative to detector adversely affects the "dwell time" (the time period in which the source's photons can be effectively intercepted by the detector material) and thus reduces probability of detection.

Understanding urban background radiation is vital

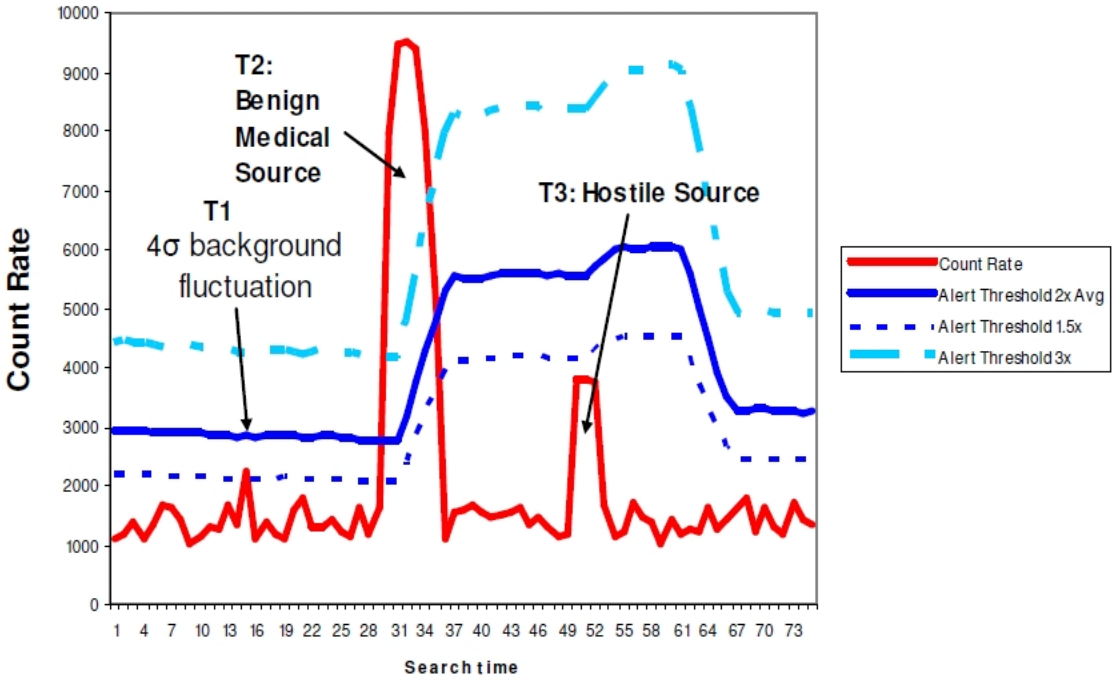
Background radiation in the urban environment varies tremendously, even within a small area. Count rates, particularly in the low energy end of the spectrum (<100 KeV), will fluctuate wildly. This is due to variations in cosmic, terrestrial (geologic), and artificial radiation sources used for legitimate purposes. Construction materials will contribute to this variance. The author's direct experience was that background routinely fluctuated by a factor of 10 in three different urban areas in the USA, with some notable regions with fluctuations of up to a factor of 20. Therefore, using an arbitrary alarm threshold, based on a background collected when the detector is turned on, while an adequate procedure for a fixed sensor, is clearly not an optimal approach for mobile detection. Significant anomalies will exist in every urban environment. Medical, industrial, and scientific radiation sources are fairly ubiquitous in modern cities. Search teams should have an awareness of the types and quantities of regulated and unregulated radiation sources in their search area so that search operations are not impeded by false alarms. It is also important to note that some types of anomalies will be transient in nature. The most common anomalies noted in the author's field work were people with temporary uptake of medical isotopes. Industrial radiography, usually undertaken as part of construction work, was a distant second. A useful guide to these sources is Technical Guide 238. (US Army, 1999) Because of the transitory nature of these situations, the search team must understand that there will be some fraction of anomalies that will be so transitory that they will not be able to be fully investigated. The user will have to adopt a risk management approach to anomalies consistent with local policies.

Alert thresholds and the dynamic background problem

Because background gamma levels will fluctuate in a city environment, arbitrary count rate alert thresholds are not very useful as they will permit many false alerts and allow for the possibility of valid threats being lost in the background radiation. In many monitoring and detection operations, the common approach is to use a reading of twice background as an alarm point. (One example, see Iowa, 2005) However, this is clearly insufficient for a complex urban area, where the range of readings will normally exceed this threshold. One approach that is commonly used is an

average background. Instead of an arbitrary background set at the beginning of operations, a rolling average over a period of time is utilized. Many detection systems use an average count rate over a previous period in time, (60 seconds, for example, or 5 minutes) to provide background information, either for the purposes of threat detection, or for isotope identification. This approach may be well suited for a static or low-speed situation. Figure 1 illustrates a simple detection scenario. In this scenario, typical of urban environments, the background count rate ranges between 1000 and 1800 counts per second (cps). Three different alert thresholds are depicted (1.5 x, 2 x, and 3x an average of the previous 30 seconds). The detector encounters three different situations. At point T1, there is an anomaly comparable to a count rate of four standard deviations above the natural background. At point T2, there is a benign medical radiation source (9500 cps), and at point T3 there is a threat radiation source (peak count rate 3800 cps.) The operators receive an alert when the count rate exceeds the alert threshold. Incidentally, at point T1, the detector may receive a false positive if the alert threshold were set to 150% of the average background. The anomalous background count rate was only 4 standard deviations from the mean, and therefore likely to occur at least occasionally in routine operation. Therefore, an alert threshold of 150% of average is likely to incur an unacceptable false positive rate. In practice, an alert threshold of twice the averaged background or higher is needed to suppress false positives from random fluctuations. Some users set an alert based on standard deviations (sigmas - σ) above an average. At least 4σ is required to avoid a punitive false alert rate. However, with a detector or a source in motion, it is altogether possible for these approaches to fail completely. In addition to nuisance alarms based on expected fluctuations, two types of false negative detection failures were discovered when using averaged background: "detector lag" and "ascending baseline."

Figure 1: Detector Lag



Detector lag

Detector lag occurs when a detection event temporarily increases background, thus screening possible threats. This is also illustrated in Figure 1. The mobile detector drives past a large gamma source at point

T2 (maximum count rate near 9500 counts/second (cps)), followed by another smaller source a few seconds later (count rate 3100 cps.) Since the detector is moving quickly, the source is only seen by the detector during a short period. The point T2 indicates successful detection, where the count rate exceeds the various alert thresholds. This is a successful detection of a potential threat. The detector then passes a second threat at point T3. However, the second threat is undetected, because the count rate never exceeds the alert threshold. The time period to the right of T2 has an artificially increased alert threshold that may act to screen hostile threats.

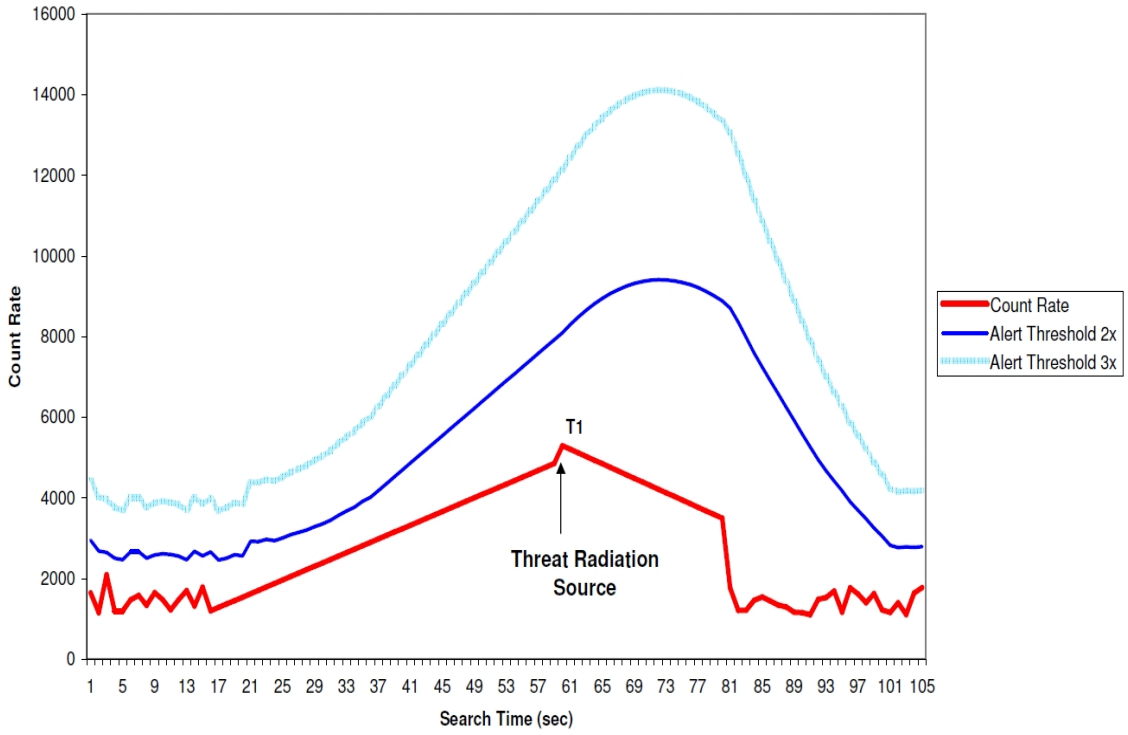
Ascending baseline

Figure 2 illustrates a different example. In this case, the search team is moving very slowly towards a threat source. The detector moves slowly towards the threat source (T1), which has a peak of around 5300 cps. In this example, the source is never detected. The slow increase of count rate gradually pushes up the alert threshold, and the count rate never exceeds the alert threshold. This is also a likely failure mode when the search team encounters a very large source at a significant distance. In such a situation, the count rates will initially be low and increase slowly.

Failure modes in isotopic identification

Mobile isotope identification presents similar failure modes. For an adequate identification of an isotope, a threat spectrum is compared to a background spectrum. A relatively clean and accurate background, free of anomalous gamma spectra, is required for an accurate identification. In a static situation, background will be relatively stable and can be set once a day or so. However, the background will change as the detector is moved. While driving around a city, constantly reacquiring a stable background for identification is difficult, and is likely to be impossible at road speeds. In other words, by the time a background spectrum has been saved, the detector is already in a different location. Under many mobile search situations, the background data used for identification is likely to be tainted. In both figures 1 and 2, isotope

Figure 2: Ascending Baseline



identifications would likely fail due to tainted background.

Technical solutions

The problems identified above can be significantly mitigated by appropriate technical countermeasures.

Detector design considerations

Equipment that has been designed to both detect radiation and identify isotopes tends to suffer from engineering trade-offs in the design process. Some detector materials that work well for detection do not work well for identification, and vice versa. The author's technical approach was to use separate devices for detection and identification, allowing for optimal selection of technologies. The ideal detector has good energy response across the spectrum of potential threat isotopes, from low energy emitters such as U-235 to high energy threats such as Co-60. Good sensitivity is also important. Sensitivity is, in part, a function of the size of the detection material. Probability of detection will be increased by increasing the surface area and/or volume of scintillation material. This is particularly important in mobile detection operations, as larger detectors effectively increase the "dwell time". The practical effect of these planning considerations is that larger, cheaper, lower resolution detectors made from scintillating plastic (e.g. anthracene doped polyvinyltoluene - PVT) are actually better detectors than their more sophisticated and more expensive alternatives, such as sodium iodide, cadmium-zinc-telluride (CZT), lanthanum bromide (LaBr3) or high purity germanium (HPGe).

Advantages of PVT as a detector

While it is often disregarded as an antiquated or inadequate technology, PVT scintillators have several advantages. Per unit of volume, PVT is roughly one thirtieth the cost of NaI. It is also much easier to manufacture and to use PVT in the fabrication of large detectors. The largest commercially NaI crystals routinely available commercially are a bit larger than 4000 cm3, whereas PVT can easily be made in much larger configurations. The other alternatives, LaBr3, CZT, and HPGe are even more expensive and are available in only much smaller configurations.

PVT is also significantly less dense than its competitors. PVT is approximately 1.03 grams/cm3, whereas NaI is about 3.67 g/cm3. LaBr3 and HPGe are denser, at over 5 g/cm3. Effectively, NaI is a rock. This means that some lower energy photons, which may be of interest to a search team, will penetrate a shorter distance into the detector material and elicit less of a response from the detector. Therefore, some radiation threats may actually be missed if you are using a detector constructed from one of the denser materials.

Classification

While PVT does not have the energy resolution to be able to identify isotopes, PVT detectors have sufficient capability to provide a general classification of the radiation detected. PVT detectors can be used to discriminate between low energy natural background and higher energy artificial sources. In addition to theoretical work in this area (Kwak, et.al. 2009), at least one manufacturer has fielded detector hardware that takes advantage of this capability. (Philliou/Craft, 2004) Effective use of this ability allows many false alerts to be rapidly screened out without having to use a sophisticated identifier, thus increasing the net effective speed of a search operation.

Background latching

One solution to the isotope identification problem is to use a suite of detectors rather than a single, sophisticated instrument. The detector should be separate from the identifier. The detector can be utilized as a trigger. Once an anomaly is detected, the isotope identifier can "latch" its background, nearly instantaneously. This would preserve a relatively clean background for use in isotopic identification. Operator discipline is required to "unlatch" the alert and resume background collection.

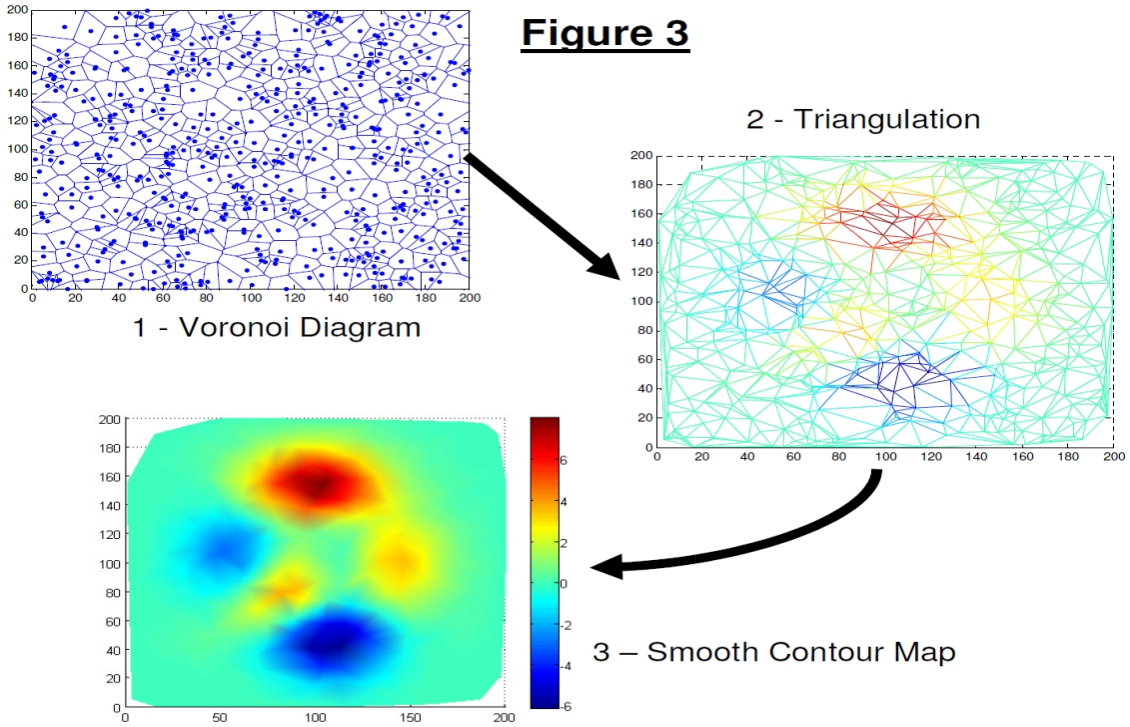
Background mapping

The most important lesson learned was that it is very important to develop and maintain good baseline information. This is only practical if a reasonable operating area is defined and assessed. A full methodology for doing this may be the scope for an

additional paper. The most important tool for handling baseline is a background map.

Once a GIS-based baseline is developed for an operating area, different alert thresholds can be

Figure 3



Detection equipment should be combined with a GPS system and a sufficiently detailed map. Commercially available software can provide the framework for excellent mapping capability. Geographic information systems (GIS) are invaluable in storing background information. Background radiation measurements can be collected and related geographically to specific geographic coordinates.

Situational awareness

By properly storing background radiation readings as a background map in a GIS platform, a skilled user can have a much higher degree of situational awareness of the normal radiological environment. Known anomalies can be catalogued, annotated, and analyzed. Zones of particular concern can be subjected to additional background collection to allow for a more accurate understanding of the area.

Search teams can use detection data to conduct trend analysis.

Using baseline data for alert thresholds

developed, utilizing background radiation baselines for a specific location. This technique, during the author's trials, was vastly superior to the time-based averaging methods discussed above. Net sensitivity is greatly increased, since alert thresholds can be set much lower without risking spurious false positives. False positive rates are decreased as well, as varying levels of background radiation from geological and architectural sources are adequately surveyed and built into the baseline.

Advanced data plottings

Once a user has an adequate data set for use a baseline, it is important to consider what techniques may be useful for processing this data into a useful map. Simple plotting techniques, such as plotting collected count rates onto a map in a grid, are useful only at an elementary level. A much more useful approach is to use the baseline data to create a Voronoi diagram of the operating area. In effect, this technique builds a baseline map around the background radiation data, rather than forcing data into arbitrary squares on the

map. Voronoi diagrams provide a much more useful basis for analyzing the data. (See Gold/Remmele/Roos.) Mathematical techniques such as Delaunay triangulation can be used to transform a set of data points into a highly accurate smooth contour map. These diagrams and techniques are routinely used in other disciplines, such as meteorology, to map data. Voronoi diagrams are often used to map rainfall data. Their utility has been studied for use in radiation measurement. (See Cortez et.al.) Figure 3 is an example of advanced data plotting. It shows a basic background survey turned into a Voronoi diagram. The Voronoi diagram is transformed, through triangulation, into smooth contours, which are a better representation of background than a square grid. These techniques will provide several advantages. First, it is easy to combine multiple data collection sessions into one baseline dataset. Second, the background data more closely matches the actual phenomena being measured, rather than being forced into arbitrary grid squares. Third, there are simple mathematical techniques that can be applied to determine the state of completion ("done-ness") of the background collection effort.

Conclusion

Searching for hostile radiation sources in an urban area is a very complex operation, fraught potential for false positives and false negatives. Some existing techniques are clearly unsatisfactory for operational use. A clearer understanding of the urban radiation environment allows for proper use of detection hardware, improved operating procedures, higher probability of successful detection and identification, and lower rates of false positives.

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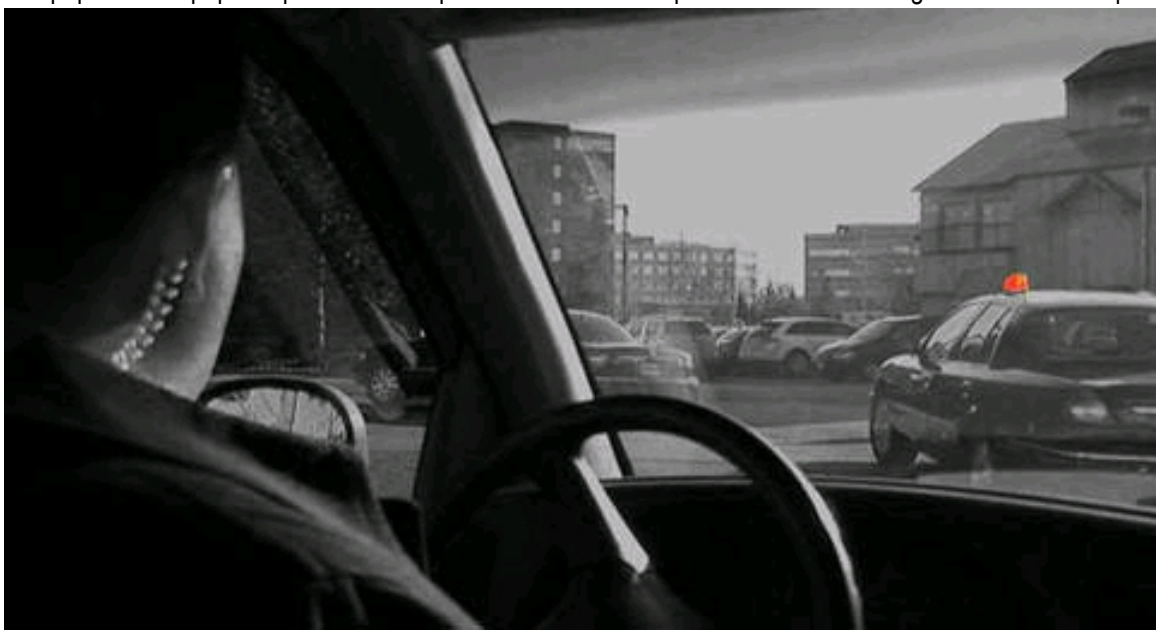
Protecting VIPs and political leaders from CBR threats

By Dan Kaszeta

Political leaders have required protection since antiquity. The technical means available to assassins, terrorists, and political rivals has evolved with history. Chemical, biological, and radiological (CBR) substances certainly have technical and operational characteristics that make them possible threats. By necessity, the assigned length of this paper dictates only an introductory discussion of this topic. The author apologizes for the necessary generalizations contained in this paper. This paper represents the opinion of the author and does not necessarily represent opinions or policies of his past or present employers. Within this document, the terms "close protection team" and "protective detail" are used interchangeably to refer to the small staff of bodyguards in the immediate vicinity of a protected person.



Scope of the threat

Protective security personnel need to look at the entire spectrum of potential CBR threats. Some CBR agents are more useful than others, for the purposes of attacking a political leader. Because chemical and biological agents were originally developed as military weapons, they have certain physical and logistical characteristics that do not necessarily overlap with the characteristics of desirable or plausible terrorist weapons. The classic examples are the mustard agents (H, HD, HN, etc.) which are classic military agents useful not only for causing casualties but for their usefulness in interdiction of terrain and equipment. However, the mustard agents have actually very low prompt lethality, have generally good warning properties (smell), and provide no immediate gruesome effects upon which the media and public can fixate. Potential threat agents can be assessed by their ability to create a desired effect, speed of action, routes of exposure, warning properties, physical characteristics, and technical complexity (plausibility/feasibility.) A detailed methodology could be used to examine each potential chemical warfare agent (CWA) or toxic industrial chemical (TIC) using these criteria. In close protection, however, it has far more utility to examine potential threat agents by their practical, immediate, and noticeable effect on the protectee or those around him/her.

Classifying threat agents into six threat profiles

The majority of the spectrum of threat CBR agents can be radically simplified for close protection work through categorizing potential threats by syndrome and countermeasure. In other words, threats can be classified by how they present themselves in human victims and what can be done about them at the field level. Perhaps 95% of the CBR threat in the close protection environment can be classified into six distinct threat profiles:

(1) Nerve agent syndrome: Organophosphates and carbamates, with either liquid or vapor exposure, provide a unique and discrete set of signs and symptoms readily recognized early in an incident. This syndrome is indicated by prompt nicotinic and muscarinic signs and symptoms. Miosis and the time honored and apocryphal acronym SLUDGE (generally given as standing for salivation, lachrymation, urination, defecation, gastrointestinal distress, and emesis)1

(2) Blood agent syndrome: This is the distinct set of signs and symptoms brought about rapidly by hydrogen cyanide and/or cyanogen chloride vapor.2

(3) Toxic inhalational syndrome: This is the set of prompt effects on the respiratory tract brought about by exposure to myriad toxic industrial chemicals in vapor, gas, aerosol, mist, or dust.3 Such classic threats as chlorine would be in this category, as would most riot control agents. While specific etiologies and mechanisms of injury (asphyxiation, topical damage, systemic effects etc.) vary widely, the actual decisions that must be made by a protective team and the required tactical course of actions are effectively the same. This syndrome may be accompanied by eye irritation and skin irritation, depending on the agent used.

(4) Skin and or eye irritation syndrome: This syndrome occurs when some corrosive or other irritant is applied to the skin, primarily in liquid form, but possibly in mist, aerosol, or vapor form as well. Acids would fall into this category, as would most riot control agents.

(5) Percutaneous ("needle stick") exposure: Exposure to an unknown agent through a cut, injection, or other breach of the skin. The Georgi Markov ricin assassination would be an example of this threat profile. These are likely to be asymptomatic.

(6) Asymptomatic episode: Exposure to unknown liquid, vapor, or powder with no signs and symptoms. This would include practically all ionizing radiation sources, agents with delayed onset of signs and symptoms (HD and phosgene, for example) as well as hoax incidents.

Operating concepts

Close protection in the CBR environment can be divided into three phases: advanced preparation, immediate response, and secondary/advanced responses. For the purposes of this paper, advanced preparation is everything that occurs prior to an incident, immediate response is the first five or so minutes of an incident and secondary response are operations that occur after the initial drama of an event.

Advance operations

Any person who has spent any time in VIP or executive protection will tell you that appropriate advance team work is the key to successfully protecting a political leader in dangerous environments. Advance operations from a CBR perspective are both an art and a science and can be the subject of an entire study themselves.

Apply normal security procedures

Planning for CBR response is supplemental to normal protective operations, not a substitute. Indeed, excellent general security practices designed to provide protection against conventional threats will also help prevent unconventional attacks, such as those with CBR agents. The advance team should understand the physical characteristics of the buildings and areas to be visited, develop multiple routes of egress, physically search the area to be visited to the greatest extent feasible within limits of policy and manpower, curtail personal access to the protectee to the extent practical, and maintain general vigilance for unusual activity.

Identify existing hazards
It is almost axiomatic that accidents happen more than incidents. Political leaders travel every day in proximity to CBR agents that are used for normal commercial, medical, and industrial purposes. Accidents occur; toxic industrial chemicals present for legitimate purposes can be used to create incidents. Event venues, residences, hotels, airports, and transportation routes should be thoroughly evaluated for the presence of existing hazards. An advanced team, or at least a single advance coordinator, should travel to the area sufficiently ahead of the protectee's visit to physically examine the entire operational area from this perspective. Known hazards, even exotic ones, can be planned for in advance.

Develop plans for each venue
Having distilled the CBR threat into six categories, the advanced team can survey the entire itinerary of the protectee. For each stage of the operation (and likely locations of impromptu movements), the advanced team can develop plans for each of the six threat profiles. There should be primary and alternative plans for each venue.

Assess local capability
The advanced team should assess the local ability to respond to CBR incidents. Within the limits of operational security and local capabilities, the advanced team should develop general and/or specific plans to react to CBR attacks during the protectee's visit.

Assess local medical capability
In most cases, the tactical objective of a protective detail in CBR environments is to deliver a live, stabilized protectee into the hands of definitive medical care. The advanced team should investigate the local area's ability to provide definitive medical care in CBR scenarios. The team should select a primary and secondary medical facility for each stage of the protectee's movements. Where practical, the medical facilities should be visited.

Immediate response
If the concept of a "golden hour" is axiomatic in emergency medicine, the analogue in close protection is the "golden minute." Having excellent follow-on support for decontamination and medical care is all very good, but if the protective team makes poor tactical decisions at the outset of an incident, probability of success plummets. The principle operating practices in the immediate response phase are: identification of a hazard; speed; use of protective equipment; and medical intervention.

Identification of hazards
While conventional attacks, such as firearms or explosives are easily recognized within a fraction of a second, the insidious nature of CBR threats is that their effects may be latent rather than immediate. Their physical characteristics may not be evident; they often have poor "warning properties." However, as discussed above, many of the threats with the highest potential for use in this context are either immediately acting (e.g. nerve agents and hydrogen cyanide) or have some kind of warning property, principally odors (e.g. phosgene). Exact identification of a threat agent is not needed for a protective team to react. The analogy would be that a protective team does not need to know the caliber or weight of bullets being shot at it to take simple protective measures against a firearms threat. A protective detail needs only to be able to recognize the six threat profiles discussed above.

The use of detectors, while excellent in principle, is only of limited utility in this context. The simple truth of the matter is that even the best detectors have false positives. The practical and operational penalties for false alarms are several orders of magnitude higher in this environment than in the military contexts for which most detectors were developed. A President or Prime Minister is likely to be evacuated and decontaminated only once for a false alarm. Additionally, the speed at which detectors sample the air and provide alerts is often unsatisfactory for close protection work. Protective details are better served by relying on their ability to recognize means of dissemination and signs and symptoms of agent exposure. Only the smallest, lightest, and fasted operating devices, such as the Smiths

LCD 3.2E, for example, have anything approaching the technical capability required.

Speed

Any CBR attack has a defined hazard area. The tactical imperative in these scenarios is to move quickly from the scene of the attack. Seconds matter. If proper advance work has been done correctly, multiple routes should be available to the protective detail. Tactical considerations prevail at this juncture; potentially the purpose of a CBR attack or a nuisance attack (such as smoke or riot control agents) can be a ruse to force a protective team into taking actions increasing their vulnerability to conventional attacks.

Equipment

Since we have defined the acute tactical threat above, we can focus on the minimum essential equipment required for protective operations. The last fifteen years have seen hundred-fold improvements in the variety and quality of quick-don masks, which are the primary requirement in this area. Small, lightweight decontamination equipment (kits, mitts, etc.) is also very important. It is not a likely scenario that any normal protective team under routine conditions will carry a full military-style respirator. However, sufficient quantities of quick-masks can either be carried with or near a protective team.

Medical interventions

Basic and advanced medical interventions are likely to be required. Basic interventions ("basic life support" in the USA) can be summarized by the acronym ABCD (airway, breathing, circulation, decontamination.) Advanced interventions ("advanced life support" in the USA) in the field CBR environment primarily consists of advanced airway management and drug therapy, such as antidotes. All protective team members should be trained to conduct basic interventions and have an appropriate cache of equipment available to them. At least one team member, or a member of a follow-on support team, should be trained and equipped to operate at the advanced level.

The narrowed threat spectrum provides framework for basic emergency medical protocols, which can be memorized and rehearsed. Six CBR medical protocols, one for each of the threat profiles above, would cover perhaps 95% of the potential scenarios. If a protective team develops a basic protocol for each of these six scenarios, they will be well served in most situations. The length limitations for this paper preclude a full discussion of examples of six protocols. Existing protocols, such as those published in the USA by the state of Maryland3 could be adapted from a purely medical procedure into a tactical procedure.

Secondary/Advanced response

The personnel and equipment of the immediate close protection team will be devoted primarily to conventional threats under most circumstances. If the providing agency's personnel and budget permit, significant consideration should be given to having a back-up team, even if it is only one or two persons, who can provide additional support to the protective team. A support team could follow the movements of a protectee, or stage nearby. In the event of an incident, the protective detail could rendezvous with the support team at pre-designated locations, or the support team could respond to the site of the incident.

Several countries, including the United States, have had some success with this model of operations. Such a team should be fully equipped for CBR situations and can be equipped with a higher level of protective equipment than the protective detail. The United States has fielded teams of 2 to 6 individuals for this purpose, with varying degrees of training and equipment. A support team should fill the following roles:

Replace the primary team: One or more members of the close protection team may have become victims of the attack. A support team should be at least minimally trained and equipped to assume the responsibilities of the primary team.

Medical care: The practical reality is that the primary close protection team may only have training at a basic life support level and is probably limited, in many situations to a backpack or suitcase for medical

equipment. A support team could provide additional medical support at the basic and advanced level, and could have significant additional equipment above that carried by the close protection team, not just for CBR incidents, but for conventional trauma and medical scenarios as well. Oxygen, advanced airways, defibrillation, antidotes for nerve agent and cyanides, and intravenous fluids can be carried. The team should be able to provide a competent hand-off to definitive medical care.

Decontamination: While the protective detail is likely only to be able to conduct a minimal emergency decontamination, a support team can provide a greater level of decontamination. Water and/or specialty decontaminants, such as Fuller's earth, reactive skin decontamination lotion, and US M291 kits could be carried in quantity.

Detection: While only the lightest and fastest equipment is of immediate use to the protective detail, heavier and more thorough detection equipment could be used. While the first two of the threat profiles effectively provide agent identification through observable phenomena, the other four do not. Although tactical operations during the first minutes of an incident are unaffected by the lack of agent identification in this model, a general classification or precise identification of the threat agent is essential for successful definitive care. Various detectors are now available that use Fourier transform infrared spectroscopy or Raman spectroscopy to provide reliable identification of unknown substances. Biological detection and identification is years behind chemical detection technology. However, recent advances, particularly in LATE-PCR, have yielded hand-held devices that would be of use in this context.

Liaison: The support team should be responsible for calling in additional support from local fire, medical, and hazardous materials units. The support team is probably better positioned to coordinate pre-arranged emergency plans with local authorities.

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The economic efficiency of chemical detection: How do we evaluate cost-effectiveness of chemical detection?

By Dan Kaszeta

Introduction

Sensors for detection, identification, and analysis of chemical threats are an important part of civil emergency response and military force protection. Large amounts of money are spent every year on the development, production, and procurement of sensors. Detection, however, is rarely an end unto itself. Sensors are used for intelligence, warning, incident response, surveys, health and safety monitoring, and myriad other uses. Sensors are rarely cheap; many are quite expensive. In comparison to training, protection, decontamination, and other possible expenditures, the author knows from direct experience that sensors can consume a rather large proportion of an agency's CBRN budget. In the author's opinion, there is a distinct lack of understanding of the economic practicalities of CBRN sensors. There is a lack of effective tools to evaluate the cost-effectiveness of CBRN sensors. Simply stated, does a 100,000 Euro chemical detector perform ten times as much work or provide ten times as much value as a 10,000 Euro detector? The answer is that nobody knows. The response community does not yet have the tools in its toolbox to accurately answer the question. How can officials and leaders make useful comparisons between different courses of action in chemical detection development, acquisition, and procurement without the necessary objective tools to perform a sound comparison?

Sensors as information tools

In professional response circles, the actual nature of sensors is often lost in the noise. Manufacturers and responders alike often speak of detection, identification, and monitoring as ends unto themselves. In reality, however, chemical sensors are only information tools. A sensor translates physical phenomena into information. This information can be used to make decisions and take actions. However, long before the advent of sensors, people have been making decisions and taking actions. So, clearly, it is possible to take actions without a detector. There is no clearly defined index or scheme of measurement that can be used to make fair comparisons between different types of detectors. Information provided by detectors could be measured both quantitatively and qualitatively. At the elemental level, information quantity can be measured directly as a flow of binary numbers. However, capturing and measuring the baud rate of data reported by a detector is, in itself, a useless task as such a measurement scheme does not provide for any measurement of what quality the information might have. Information can have negative quality. Bad information can lead to bad decisions and actions, and so bad information is of negative value. In order to develop a useful way to make useful comparisons between different detectors, we must find a way to use both quantity and quality as measures. A large amount of information of bad quality is of far less value than a small amount of information of good quality. There is no objective measurement scheme at present that accomplishes this task. Development of such a scheme would be of immense value and may

be an excellent line of inquiry in future symposia.

Economics of detectors

When a person invests money in a financial instrument, one can calculation the accrued benefits as a "return on investment." With automobiles, it is commonplace to use a miles-per-gallon or liters per kilometer approach to measure the vehicle's efficiency. Chemical detection provides no such easy measurement. It is only possible to make direct comparisons within a very narrowly defined subset of detection equipment. For example, handheld chemical warfare agent detectors can be directly compared to each other. It is also important to calculate indirect costs, as well as the direct expense of a detector. For example, some detectors might require an hour of training and few consumables or maintenance, but a more complicated detector might require a week or more of specialized training, expensive consumables, and/or significant maintenance over the course of its service lifetime. In the absence of a useful way of measuring both quantity and quality of detection information, the practical approach to use in this line of inquiry is to assess the concept of valued added by detection. In its most basic form, we can define and assess the "value added" by the use of chemical detectors. In situations involving chemical warfare, incidents, or accidents, the decisions made by people (leaders, commanders, responders) are made by human intellect based on inputs. These inputs can be intellectual, sensory (what we see and hear), or technological (what machines tell us.) A detector is a technological input to this human decision-making. The "added value" (AV) of a detector can be derived by determining what difference the detector made to actual operations. In other words, did the detector cause a different decision or course of action to be made? In a military context, added value can be measured in terms of operational impact: Broadly speaking, the value added provided by a detector can provide four categories.

1. Negative AV: The detector provides bad information that causes a situation worse than if the detector was not used. Example: Fatalities or injuries occurring due to excess traffic and panic if an evacuation is announced based on a faulty detection event.

2. Zero AV: The operator or decision-maker makes the same decision that they would have without the detector. Example: A detector has instilled so little confidence in its users that the alarm is turned off or ignored.

3. Moderate AV: Minor changes are made to a course of action, differing from the courses of action that would have been made without the detector. Example: A detector is able to discriminate between a persistent and a non-persistent chemical agent, affecting tactical decision-making.

4. High AV: Use of the detector has provided information that has made a substantial operational impact. Example: A detector operates correctly, provides warning, and saves lives.

It is important to note that evaluation of detectors using this admittedly crude categorization depends not just on the actual nature of the detector but also on the tactics, techniques, and procedures used in their employment. We cannot evaluate the usefulness of a detector in the abstract based solely on its specifications. It should be evaluated based on the intended use. Improper use of detectors can render them useless. Likewise, there are some situations where a skilled user can obtain useful information from a poor detector.

Specific comparisons

Using the basic categories listed above, it is now possible to make some basic comparisons between detectors. Detectors can be plotted on a chart, even if only crudely. Figure 1 shows a

basic scheme for plotting cost versus added value. Within the scope of a brief paper, the only way to illustrate the situation is to pose several example cases. For purposes of simplicity, this comparison will restrict the scope to the detection and identification of chemical warfare agents. This paper uses four types of commonly used chemical detection equipment. This paper makes no specific reference to any particular detector or manufacturer; generic examples indicative of detector types generally available on the market are used. In these scenarios, we will assume that all four detectors are used by the same operator, with a fundamentally sound concept of employment. This is necessary for a fair comparison. For each of our four scenarios, the cost and added value will be assessed, albeit crudely.

SCENARIO 1

Detection Paper: Detection paper is a venerable low-technology product used to characterize or even identify chemical warfare agents in liquid form. Cost: Detector paper tends to be extremely cheap and easy to use, often being issued to soldiers at the lowest level. Indirect costs are low, as training is simple and there is no lifecycle maintenance cost. Added Value: Employed properly, the information provided by detector paper can provide moderate amounts of tactically useful information. For example, the ubiquitous NATO M8 paper allows for detection and classification of visible amounts of liquid chemical warfare agent. Also, used properly, such detector paper can rule out the presence of liquid H, G, and V series chemical warfare agents. In many tactical situations, ruling out the presence of a chemical warfare agent is just as valuable as detecting its presence. Assessment: When plotted on our chart, this detector is low-cost but provides a low to moderate degree of information.

SCENARIO 2

Ionization-based Chemical point detector: The ion mobility spectrometry (IMS) or flame ionization-based chemical detector has been ubiquitous for over thirty years and is the most widespread automated means for detection of chemical warfare. Cost: Cost is generally moderate for this category of equipment. While certainly not cheap, these devices are cheap enough to become widespread in modern militaries and are certainly cheaper than some other categories of instruments. Some, such as the US JCAD, are being procured in such large quantities (and at a low price) as to become ubiquitous in the US military. Large contracts have allowed this category of detector to become a true mass production item, which has made for economies of scale, thus resulting in a cheaper product. When taking inflation into account, this category of detector has become much cheaper in absolute terms over the course of the last two decades. Indirect costs, such as training and consumables, are typically moderate for this category of equipment. Added Value: This category of detection is able to provide relatively sensitive and selective detection as well as classification or identification of the full scope of chemical warfare agents. Many such instruments are also capable of determining concentration, even at quite low levels. Technology has evolved to a state where this category of detector can be operated unattended and can be utilized in conjunction with wireless communication and GPS, so that the user has detection, concentration, identification, location, and time information from a single instrument at a single location on the battlefield. When used properly, this category of detector has high added value. Assessment: This type of sensor can be categorized as relatively low cost but providing a high degree of information.

SCENARIO 3

Gas chromatograph / Mass Spectrometer (GC/MS): The GC/MS is widely viewed as a "gold standard" tool for analysis of chemical vapors. The techniques of gas chromatography and mass spectrometry, when used together, can provide a highly accurate analysis of the composition of a vapor sample. Cost: Both the direct and indirect expense of these devices is quite high. The direct cost of GC/MS can be an order of magnitude higher than IMS devices described in scenario 2. The mechanical and electronic components of such a device are larger, more complicated, and more expensive to produce than IMS or flame ionization detectors. Training is more complex, maintenance is more expensive, and the general cost of ownership over a product's life-cycle is high. Added Value: In a military or emergency response setting, GC/MS this can provide extremely accurate information. The nature of the technology greatly reduces false alarms as interferents are accurately characterized. The information provided by such an instrument will have higher value. Similar to scenario 2, identification, concentration, time, and location will all be provided by good use of GC/MS. GC/MS provide slightly more added value than the scenario 2 detectors. Assessment: GC/MS provides high added value at a high cost, placing it in the top right corner of the evaluation chart.

SCENARIO 4

Passive standoff detectors: Standoff detectors have been available for twenty years. They typically use Fourier Transform Infrared techniques and examine infrared light from ambient background. These instruments measure the absorption of infrared light as it passes through a vapor cloud. This means that chemical warfare agent vapors can be detection, in principle, a number of kilometers away from the sensor. Cost: Direct and indirect costs are high for this category of equipment. Indeed, they are among the most expensive chemical detection instruments on the market. The cost of standoff detectors is in a similar order of magnitude as GC/MS sensors. Added Value: The information provided by such instruments can be useful. However, the scope of decisions that can be made based on this information is not any greater than that of an IMS point detector, and the quality and accuracy is certainly lower than that of a GC/MS detector. This is because this category of detector, while able to detect at a standoff distance, cannot provide useful range or concentration information. A deep but diffuse cloud appears the same as shallow and dense cloud. While range data might be conceivably possible using two or more detectors, this assumes favorable geometry and multiplies the cost. Assessment: Standoff detectors provide moderate value added, but at a very high cost. Figure two shows the four scenarios plotted on our chart.

Opportunity cost

It is important to note the concept of "opportunity cost." Financial resources are limited. No entity has unlimited resources for procurement of chemical detectors. Funds expended on one category of equipment means that fewer funds are available for other categories of equipment. A military that spends resources on a handful of very expensive high-end reconnaissance vehicles, with GC/MS and standoff detectors might do so to the detriment of point detectors proliferated among infantry companies and platoons.

Conclusion – Hypothesis for future research

The scenarios described above are relatively primitive abstract comparisons. We cannot yet answer the question "does a 100,000 Euro chemical detector perform ten times as much work or provide ten times as much value as a

10,000 Euro detector?" However, it is possible to estimate that the answer is probably a firm "No". The author believes that this general concept is a useful starting point of a more realistic approach to sensor procurement. An intelligent decision-maker will want to get the most possible added value for a given amount of budget. While sophisticated sensors gather much useful information, their direct and indirect costs conspire to ensure that they will always be scarce on the modern battlefield. Furthermore, money spent on scarce expensive sensors is not available for cheap and plentiful sensors. The author proposes the following hypothesis for future research: "Proliferation of cheap sensors around the battlefield is a superior policy than having a smaller quantity of more expensive and sophisticated sensors."

***Dan Kaszeta**, is the founder and managing director of Strongpoint. Dan has 20 years of experience in CBRN response, security, and anti-terrorism. Few people operating in this field can draw upon experience from multiple operational perspectives, but his degree and depth of expertise is relatively unique in Europe. He started in this field as a Chemical Officer in the United States Army, and served a total of 16 years as a military reservist, first in the US Army Reserve and then in the Maryland Army National Guard, reaching the rank of Captain. He was one of the founding members of one of the first Civil Support Teams. Of course, a military reservist needs to maintain a civilian career as well. He was very fortunate that he was able to apply his military CBRN skills in civilian life, and he worked in various capacities. He served for 12 years in the White House in Washington DC, from 1996 to 2008. He spent six years as a Defence Department civil servant detailed to the White House Military Office, where he worked as CBRN advisor and emergency plans program manager. 2002 brought a transfer to the Technical Security Division of the US Secret Service, where he was assigned to CBRN countermeasures and the HAMMER team as well as traditional technical security and protective missions. At various points in this career Dan has been trained and qualified as a military CBRN defence specialist (honour graduate at the US Army Chemical School), a fully trained Hazardous Materials Technician, a licensed Emergency Medical Technician (EMT), a Secret Service advance coordinator, an antiterrorist search adviser, and many other qualifications in the defence and security fields. He moved to the UK in 2008 and worked for Smiths Detection for several years as a business manager for the CBRN detection market in Europe before leaving to start Strongpoint. He has a B.A. degree in Political Science from Texas Christian University and a M.A. in International Affairs from George Washington University in Washington DC. Dan is the recipient of several awards and decorations, and have published a number of professional papers.*

Emergency response to terrorism for Fire Chiefs

By Al Mozingo

Introduction

Within the contents of this article I have two different themes: The Chief Officer and Terrorism Training. The information may be disjointed to some degree, but I feel it will be very valuable to the reader.

Over the last couple of decades I have noticed a trend taking place within the fire service. The chief officer has become more of an administrator, staff officer, and less of a line officer. As the progression of the fire department continues, we have become more and more technically advanced. In addition, the same has occurred within the administrative function of the fire department. The fire service has become very complicated and complex.

The Chief Officer

Over the last several years, maybe 15 or 20 years, the fire service has progressed into several different specialties. These special areas of training include hazardous materials, paramedic/medical training, bloodborne pathogens, swiftwater rescue, pre-fire planning, high angle rescue, heavy rescue, high rise firefighting operations, urban search and rescue, confined space entry, urban/rural wildland interface, and many more. Now a new one is being introduced all over the country by several different agencies, Emergency Response to Terrorism.

The administrative function of the chief officer continues to be demanding. The regulations and requirements from agencies such as OSHA (Occupational Safety and Health Administration) has become a critical focus to the administration of the fire department today. The NFPA Standards have also shared the spot light in their importance to the administration of the fire department. Let us take a brief look at just one: NFPA 1500 Standard "Fire Department Occupational Safety and Health Programs" with its' 66 pages and the 15 page checklist for compliance is an immense undertaking for any fire department to comply with. After working as a Battalion Chief myself, I can testify that the job of a Chief Officer, is a never ending job. The administration of a fire department today is a very demanding and a complex job to do it right.

The aspect I want to address in this particular article, is one in which everyone tries to ignore. Chief Officers are so busy in their administrative function they start to become deficient in their technical abilities. They are not keeping up with training for their line duties. Now this only applies with those chiefs that have the dual function of both staff and line duties. Many of these chiefs don't usually train or drill daily with their fire companies. They just can't work the drills or training into their busy schedules.

Now, I'm only commenting about this from my own experiences and observations. My own department, region and the various departments I come into contact throughout the United States. Maybe some fire departments have the chief officer actually drilling/training with their companies daily. I just know when we conduct major specialized drills such as hazardous materials, confined space, etc. the chiefs are often missing from the class. There have been numerous comments over the years by personnel at these training activities, "Where are the chiefs?"

I recently became an instructor, Emergency Response to Terrorism, by the National Fire Academy in cooperation with the Department of Justice. I saw a problem with this particular training program. The sixteen hour, 2 day, program is just too long for the chief officer to attend. As of a matter

of fact there are fire departments already indicating they will condense the program into a 8 hour (1 day) program for the their line personnel.

Safety Consideration

The main problem most people see with this particular situation is a training deficiency exist and the chief is normally in charge at the incident. If the chief officer hasn't had the same training or at least some sort of a condensed overview version. Then how smooth, safe, and efficient is the operation going to be?

Duties and Responsibilities

Taking a look at NFPA 1021, the Standard for "Fire Officer Professional Qualifications," we see the progressive need for additional training in certain areas from Fire Officer I to Fire Officer II, III, and IV. If we look at the section entitled, Emergency Service Delivery the job descriptions changes from: supervising emergency operations (Fire Officer I) to supervising multi-unit emergency operations (Fire Officer II) to managing multi-agency planning, deployment, and operations (Fire Officer II) and finally involves developing plans for major disasters (Fire Officer IV).

In order for the chief officer to accomplish the above vital duties and responsibilities, he or she must attend training program and develop their knowledge and skills. Today there is a great big push today to do just that in training firefighters, police officers, and emergency medical personnel about emergency response to terrorism.

The Solution

The problem is that most chiefs will not take the 2 day program. They won't take 2 days off from their administrative duties to attend the training. Therefore, my solution was to develop a condense accelerated version of the program just for chief officers. This is an overview of what the troops are being taught. This will up grade the skills and knowledge of the chief officer and will help him or her to be in touch with the same training as their personnel. In this particular training, I feel it is a necessity of the chief officer to be exposed to the material for personnel safety.

Terrorism is not just an idle/empty threat that just may occur. It is an absolute certainly, a threat to all of us in the emergency services today. Statistically, we are the target of approximately 32 percent of all terrorist attack world wide. These attacks have increased in frequency and in their danger (weapons of mass destruction). The terrorist are growing more sophisticated and are actually gaining technical support of sponsors throughout the world. We also are having a proliferation of secondary bombing devices that are planted to injury emergency service personnel.

Conclusion

The fire service is gaining more and more exposure and experience into these types of activities; with the bombings of the World Trade Center, Oklahoma, and Atlanta. Therefore, it is essential that the chief officer is part of this intense effort. The Chief Officer must train for this type of event. We all must become better prepared!

References:

1. NFPA 1500 - Fire Department Occupational Safety and Health Programs
2. NFPA 1021 - Fire Officer Professional Qualifications
3. Emergency Response to Terrorism: Basic Concepts, Security Awareness Bulletin, Number 3-96, December, 1996.

__Al Mozingo__ a well known author, trainer and consulting in the fire service today. He has been a leader within the fire service for approximately 35 years. Mr. Mozingo has authored several books, one relates to the subject matter entitled "Hazardous Materials and Incident Management" and a special column on hazardous materials. He has published over his career more than 350 articles in fire service journals throughout the United States.
Mr. Mozingo has been a seasoned training officer for a number of years, a college instructor, a consultant, and an adjunct instructor for the National Fire Academy and

several other agencies. He is certified nationally as an Incident Command System (ICS) Instructor, a Haz Mat Incident Commander Instructor, and Emergency Response to Terrorism Instructor. He has presented more that 2,500 classes, seminars, and workshops.
Al Mozingo has developed a condensed, accelerated, overview of this valuable 16 hour program for chief officers. It can be presented to your organization as a 4 hour session at your location. The program is entitled: Emergency Response to Terrorism for Chief Officers and Incident Commanders. His web site is: www.firemanager.com

Terrorism in schools: Why are these events happening?

By Al Mozingo

Everyday children go to school to learn. What do they learn at school? Do they learn to be cruel, mean and angry with others? Or do they learn to respect and be considerate of others. Children are not only learning from school, but also from their families and friends. Their whole environment plays a role in a development and behavior. Here is a listing of environmental factors:

Environmental Factors
Home
School
Church
Family
Friends
Peers
Music
TV
Movies
Video Games

Why terrorism in schools? Why are our children becoming so violent? How do our children cope with stress? Why are so many children so angry? How do they cope with anger? Why do they become so angry, that they kill other children?

I know one thing - Children today have an extreme amount of pressure on them. To be successful and to win is a main focus for them. They are frustrated with so many things and feel as if everything is out of control at times. They are still growing up and have not obtained the proper skills to cope with the world they live in. They have internalized their values from their environmental factors and other factors. These values that they have internalized cause their behavior, whether positive or negative behaviors. Below is a listing of behavior factors:

Behavioral Factors
Intelligence
Genetic Make Up
Emotional Stability
Physiological Make Up
Physical Development
Past Experiences

There are so many of these environmental and behavioral factors that are fixed unchangeable factors. However, there are many factors that can be changed. To help children in their development we can show them we care first. Hopefully, we can help them change into good, caring, respectful people. First, we can help them by our example and our behavior. Next, we can help them by moulding them into people that are considerate and have the ability to cope with life.

Unfortunately, today there are more and more children coming from a broken home. A divorce not only affects the husband and wife, but also the children. The breakup of a family definitely affects the children negatively. The final outcome can be emotional problems with the children.

Another area of concern is related somewhat to the above family aspect. People want to feel they belong to something (family, group, others). People want to connect to another person(s) and sometimes this can be negative. For instance connecting to another that develops into an unhealthy relationship of violence or abuse. Another example is joining a gang of some sort. It may be not a formal-recognized gang, but may be a group of undesirable individuals. These people will take the place of the ordinary family unit. The peer pressure between these individuals is very great at times. Causing people to act out violent behavior they

may otherwise not exhibit.

One factor about children is that they have emotional feeling just like us. However, children have not gained all of the necessary coping mechanisms to cope with their feelings. They are not mature adults yet. An example is when small children want their way they cry, yell, and present a variety of other behaviors - to get their way. What about if they get angry? Some children fight, hit, yell, and are just mean to others. Remember children can be mentally unstable also. Let's take a look at some of the emotions and feelings that a child encounters:

Emotional Factors

Anger
Fear
Sadness
Regret
Overwhelmed
Insecure
Resentful
Mistrust
Hopeless
Confused
Worried
Exhausted

Many children have a variety of problems that exist in their short life. A listing could literally be hundreds of different problems. Some of the problems that they encounter and must try to cope with are:

Problems Encountered

Bullied by others at school
Stress of homework
Stress of success/win orientation
Unresolved anger
Frustration from a variety of factors
Cruelty and ridicule from others

Bethami Dobkin, a professor at the University of San Diego, indicated the script of masculinity for males that may cause problems. (Source: The San Diego Union-Tribune, March 23, 2001)

Script of Masculinity

Take Risks
Be Daring
Hide Your Pain
Joke A Lot
Be Independent
Take Charge
Don't Be a Sissy
Be Cool
Win

So what is the answer to reduce violence and terrorist type activities from children? One thing we need to do is to teach them to cope with everyday problems. We need to teach them how to react to anger and frustration. We need to teach them about conflict management. We need to teach them proper decision problem solving techniques. We need to listen, communicate, and help them.

I believe this need is not going to go away. The problems we have listed in the above article are not going to disappear. After some recent shooting attacks in schools, I developed a workshop outline to be used at schools for teachers. This outline would be the beginning of a program that must be develop to help our teachers and to help children develop those much needed coping mechanisms. Below is the outline:

Terrorism in Schools

Terrorist Activities
Workplace Violence
Stress Management
Conflict Management
Teen Mediations
Strategic Planning

To summarize, we need to recognize and initiate action to support our children. We need to give them skills to cope with their problems. We need to provide a loving and caring environment. We need to validate their feelings and empathize with them. We need to give them an approving attitude. We need to help them in developing good, positive, and constructive goals. Most of all we need to open lines of communication and to really listen to them.

Al Mozingo *a well known author, trainer and consulting in the fire service today. He has been a leader within the fire service for approximately 35 years. Mr. Mozingo has authored several books, one relates to the subject matter entitled "Hazardous Materials and Incident Management" and a special column on hazardous materials. He has published over his career more than 350 articles in fire service journals throughout the United States.*
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Chem News

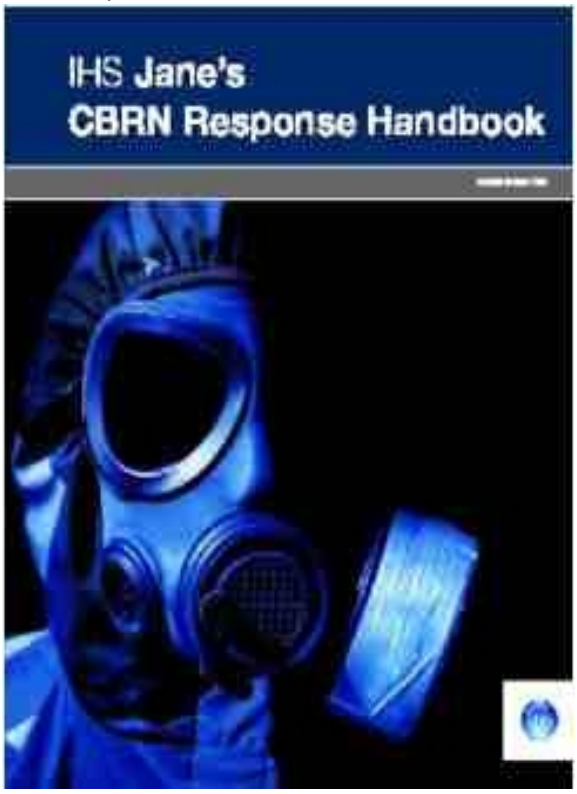
NEW Jane's CBRN Response Handbook 2011

By Antonio F. Garcia, Dan Rand, John Howrd, Jr. Rinard (Editors)

Sound training, robust emergency response plans, and efficient on-scene procedures form the basis for effective front-line defense against a chemical, biological, radiological or nuclear (CBRN) threat or hazard. The Jane's CBRN Response Handbook provides the most comprehensive single-source instruction for professional first-responders and anyone involved in responding to a CBRN-related incident.

- **Hardcover** : 378 pages
- **Publisher** : Jane's Information Group; 4th edition (1 Sep 2011)
- **Language** : English
- **ISBN-10** : 0710629982

As an expansion of the highly popular Jane's Chem-Bio Handbook that has become the standard among first-responders, this manual features new material on radiological responses. Organized to facilitate usability in the field, this handbook includes in-depth information on pre-incident planning, on-scene procedures, and post-incident management in line with current practices. It includes the latest information on chemical, biological, and radiological agents and their respective treatments. The Jane's CBRN



Response Handbook is an indispensible one-stop reference for first responders and emergency planners for use both in training and in the field.

NOTE: The Editor of the Newsletter participated in the editorial team that reviewed the new edition of the Handbook

U.S. looks to keep Libyan WMD scientists away from terrorists

Source: http://www.homelandsecuritynewswire.com/us-looks-keep-libyan-wmd-scientists-away-terrorists

With Libyan rebels consolidating their hold over the country, the United States is looking to restart a State Department program designed to keep top Libyan biological and nuclear scientists from working for terrorist organizations or hostile nations; Libya's new leaders have expressed their interest in working with the United States to keep track of Libyan WMD scientists and on other counter-proliferation programs, but the

interim government has yet formally to respond to U.S. requests.

For decades, Colonel Muammar Gaddafi had hundreds of experts working under him as he actively pursued nuclear and biological weapons. In 2003, Gaddafi agreed to stop building weapons of mass destruction and dismantle his research programs. Consequently, the United States launched a program to encourage Libyan weapons researchers into civilian research projects like water desalination, oil and gas production, and nuclear medicine.

According to an anonymous State Department official who spoke to the Associated Press, due to the instability of the country during the civil war, the United States was forced to suspend the program but is now looking to re-establish contact with the scientists.

The official said that Libya's new leaders have expressed their interest in working with the United States to keep track of Libyan WMD scientists and on other counter-proliferation programs, but the interim government has yet to formally respond to U.S. requests.

During the civil war, the State Department sought to keep track of Libya's WMD and scientists and so far has found no direct evidence that any had been lured away.

Last week, several Libyan WMD scientists re-established contact with U.S. officials and top U.S. scientists are working with the government to draft a list of key Libyan researchers that need to be located.

Bilal Saab, a Middle East expert from the Monterey Institute of International Studies, emphasized that securing Libya's WMDs and weapons experts was critical for the United States, but given the current state of Libya, the interim government had more pressing concerns like defeating the remaining Gadhafi loyalists and stabilizing the country.

When Libya agreed to end its WMD program and surrender its unconventional weapons, the country had amassed 1,300 tons of chemicals that could be used to make a deadly nerve agent, 3,600 chemical bombs, twenty-three tons of mustard agent, and several thousand tons of uranium yellowcake – partially refined uranium ore for use in nuclear weapons

Colonel Gaddafi cooperated with the United States and destroyed much of his weapons stockpiles, but the process was never completed and the country still holds roughly half of its store of mustard agent, large portions of its uranium yellowcake supply, and radiological materials that can be used to build dirty bombs.

Furthermore, Colonel Gaddafi had been highly cooperative in dismantling his nuclear program, but less forthcoming in the state's chemical program, which was used extensively against Chad in 1987.

CNN finds uranium 'yellow cake' being guarded by Libyan teens

Source: http://www.rawstory.com/rawreplay/2011/09/cnn-finds-uranium-yellow-cake-being-guarded-by-libyan-teens/

CNN's Ben Wedeman reported Thursday that his team had found two warehouses full of what appeared to be radioactive material on a military base near the Libya town of Sabha.

"We've come across two warehouses full of thousands of blue barrels — some of them marked radioactive — on the ground," Wedeman told CNN's Kyra Phillips. "In one of the warehouses, we found several large plastic bags full of what appears to be yellow powder, which had been closed also with this radioactive tape."

The team also found dosimeters and film that can be used to detect radiation.

"It was lightly guarded — I stress the lightly — by about three to four guys in their late teens, early 20s," he reported.
In a subsequent report, Wedeman described the materials as uranium yellow cake, a concentrated powder used in an intermediate step of manufacturing fuel for nuclear reactors and weapons-grade uranium.
"What it appears to be is yellow cake which is sort of one of the rudimentary — is a uranium oxide compound that is one of the precursors which after a lot of refining can become radioactive material or nuclear material for a weapon," he explained.
"According to the International Atomic Energy Agency (IAEA), they are aware or were aware of this site, that it contained nuclear material or atomic material. In fact, we did find one piece of hand-written paper that said, '350,000 tons declared,' which would indicate that this is somehow what Libya's government in 2004 when it decided to come clean on its nuclear weapons program, declared that they possessed this material, this yellow cake."
Prior to the invasion of Iraq in 2002, President George W. Bush bolstered his case for war by making the false claim that then-Iraqi dictator Saddam Hussein had sought significant quantities of yellow cake from Africa.

Chemical weapons captured in Libya

Source: http://news.xinhuanet.com/english2010/world/2011-10/02/c_131172462.htm

Chemical weapons had been seized in Libya, an official from its ruling National Transitional Council (NTC) said Sunday (October, 2). Nine tons of artillery shells containing mustard gas were found inside a warehouse in an unpopulated area in the southern town of Sabha, Hassan al-Saghir told local media. The NTC official said the weapons were brought into Libya by fallen Libyan leader Muammar Gaddafi's administration from an Asian country, but he did not name the country. With the help of the international community and organizations, Libyan authorities were taking necessary measures to dispose of the weapons in a safe way according to world standards, al-Saghir said. Some Western countries have said Gaddafi controlled a large stockpile of missiles and chemical weapons, including more than 10 tons of artillery shells containing mustard gas.

NEW HazMat Response World

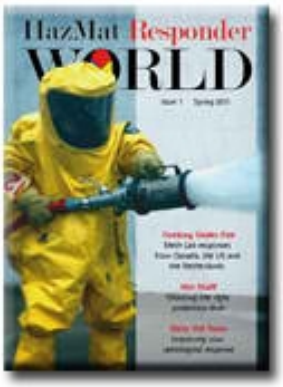
Source: http://www.hazmatresponderworld.com/

HazMat Responder World is the new magazine from the same Publishers that brought you the world leading CBRNe World and iCBRNevents.com. Published twice in 2011 and quarterly from 2012 it has been designed to meet the information needs of the hazmat responder across the world.

Spanning the whole **hazmat workspace** it will cover issues as diverse as air monitoring, risk assessment, railroad response, interoperability, communication systems, incident command systems, personal protective equipment, **WMD response** and clandestine labs.
Providing interviews with key individuals, case studies, articles from leading academics and opinion formers, news and technical information it will be the information interface for the hazmat responder community.

HazMat Responder World is the most effective advertising medium for companies wishing to reach buyers and specifiers in the hazmat market within the following fields: chemical detectors/monitors, SCBA, radiological detectors/ dosimeters, PPE, response vehicles, decontamination, met stations, neutralising agents, sorbents, training, biological detectors and respirators.

- **Editorial Panel** from some of the leading forces in the world, ensuring that the content is relevant to the responder community.
- The ONLY magazine dedicated to the blue light hazmat responder community.
- A track record for producing **magazines that lead their field**, a leading editorial team with many years experience of articles on detection, decontamination, consequence management etc.
- **BONUS DISTRIBUTION:** at trade shows throughout the world.



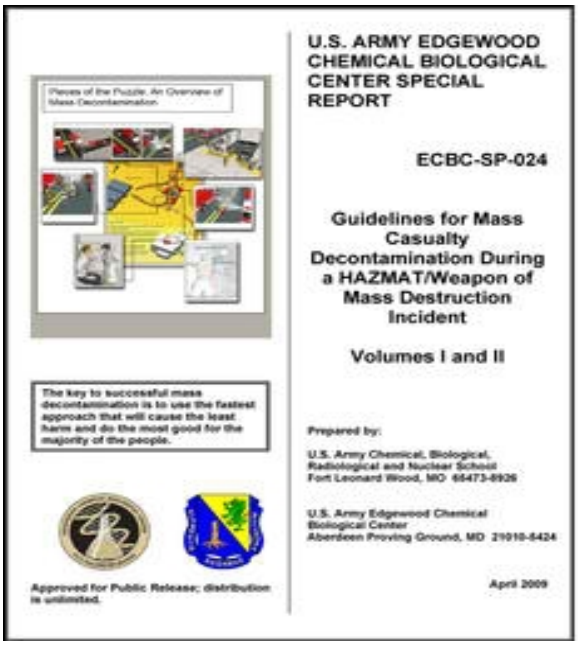
Current Members of the Editorial Panel

- **Chief Robert Ingram** - FDNY, Center for Terrorism and Disaster Preparedness
- **Chris Hawley** - IAFC Hazmat Committee
- **Chief Kim Ayotte** - Ottawa Fire, Chief of Special Operations
- **Eric Yap** - Singapore Civil Defence Force, Senior Director Emergency Services
- **Major Christophe Libeau** - Paris Fire Brigade, Director of Hazmat and CBRN Training Center
- **Ian Fensom** - UK Fire Service College, Hazmat Resilience Manager
- **Dr Eiraim Laor** - Chairman - Israel National Steering Committee for Disaster Reduction and UNDAC member

Guidelines for Mass Casualty Decontamination During a HAZMAT/ Weapon of Mass Destruction Incident

Source: http://www.edgewood.army.mil

Publisher: U.S. Army Edgewood Chemical Biological Center (ECBC)
Publication Date: April 2009
Author: ECBC
Pages: 98



In the recent past terrorist organizations have used different chemical, biological, and radiological (CBR) weapons to pursue their own agendas. In 1995, the Aum Shinrikyo cult released sarin onto the Tokyo subway system, killing 12 and injuring hundreds. In 2001, anthrax spores were sent through the U.S. postal service to U.S. senators, killing five postal employees and infecting 22 more. The increasing complexity and scale of these incidents suggest the possibility of a large scale attack with a Weapon of Mass Destruction (WMD) causing thousands of casualties on U.S. soil. Since these attacks are difficult to prevent and may happen anywhere and at any time, mass decontamination is one of the key

elements to managing the consequences of such an event, saving lives, and limiting the number of injuries.

These Guidelines are an update of the United States Army Soldier and Biological Chemical Command (SBCCOM)—now the United States Army Edgewood Chemical Biological Center (ECBC)—January 2000 *Guidelines for Mass Casualty Decontamination During a Terrorist Chemical Agent Incident* and January 2002 *Guidelines for Cold Weather Mass Decontamination During a Terrorist Chemical Agent Incident*. These Guidelines supersede these original 2000 and 2002 Guidelines and are expanded to include all chemical, biological and radiological hazards. These Guidelines represent the latest evolution in our approach to mass casualty decontamination .

These Guidelines were developed for first responders to provide information and suggested procedures for mass casualty decontamination following a hazardous materials (HAZMAT)/WMD attack. There is no perfect solution to mass casualty decontamination and no single process or method can account for all variables (e.g., hazard, time, number of victims, environmental conditions, resources). These updated Guidelines are intended to identify a simple, consistent mass decontamination process that could be applied with reasonable effectiveness to any HAZMAT/WMD incident. In other words, *to use the fastest approach that will cause the least harm and do the most good for the majority of the people.*

NOTE: You can download the full document from the Newsletter's website (CBRNE-CT Papers section)

Chemical Suicide Pacts 'On Increase'

Source: http://www.policeoracle.com/news/Chemical-Suicide-Pacts-On-Increase_38929.html

Concern is mounting that an escalating number of people are taking their own lives by using chemicals – and presenting a lethal hazard for officers attending the scene.

Supt Alan King, Deputy Head of Emergency Preparedness for the Metropolitan Police, said there had been several apparent suicide pacts involving this method.

And the officer pointed out that lethal substances including phosgene, hydrogen cyanide and even helium had been used by people taking their own lives.

He also revealed that there had been a recent upsurge in these types of incidents. But – to date – suicide victims taking their lives in this way had frequently put up signs warning others that dangerous chemicals had been used.

Supt King added that each incident needed to be dealt with by CBRN-trained officers, adding: "We have to be wary in environments that are very toxic.

"We have seen occasions where victims have got together in premises or vehicles – but fortunately they have put up signs to warn of what has happened."

He said it was saddening for those investigating incidents that the victims had reached a point of desperation and

felt there was no option but to take their own lives.
During recent suicide incidents in London and Essex, officers attending the scene had to wear full CBRN protection while they moved to recover bodies.

In another case reported in the media, emergency service workers were hospitalized after a man committed suicide by introducing pesticide tablets into water.

Army to phase out animal nerve-agent testing

Source: http://www.washingtonpost.com/national/health-science/army-agrees-to-phase-out-use-of-animal-nerve-gas-testing/2011/10/13/gIQA1p1PiL_story.html

After sustained pressure from animal rights groups and a member of Congress, the Army has agreed to stop injecting monkeys with high doses of a nerve-blocking drug meant to simulate a nerve gas attack.
The practice, carried out at Aberdeen Proving Ground in Harford County, Md., is designed to train Army medical personnel to respond to chemical attacks on troops.

Last month, Aberdeen received a shipment of 20 male African green monkeys from a Florida company, Worldwide Primates, for the tests, which the Army has been carrying out since at least 2005. Army documents show the monkeys were to be anaesthetized, injected with a nerve-blocking agent, physostigmine, and observed by Army medical personnel before receiving an antidote.
Worldwide Primates obtained the monkeys from the Caribbean island of St. Kitts, according to Army documents.
Army spokesman Michael Elliott confirmed Thursday that the Army Medical Research Institute of Chemical Defense at Aberdeen will "phase out" the nerve tests on the primates, also known as vervet monkeys, although he did not provide a timeline.
However, Rep. Roscoe G. Bartlett (R. -Md.), who pushed the Army to end the testing, said in a telephone interview that he met last month with two generals who indicated that they would halt the testing by the end of the year.
Instead, the Army will switch to trained actors, computer programs and high-tech, mannequinlike patient simulators.
"The Army is committed to providing its health care providers with the best possible training while reducing reliance" on animals, Elliott said in a statement.

In 2008, the Army sought 48 of the small monkeys for the tests, according to documents obtained via the Freedom of Information Act by the Physicians Committee for Responsible Medicine, an animal rights group.
An Army video also obtained by the group shows a vervet monkey

spasming after a physostigmine injection. The drug can cause seizures at high doses.

Physostigmine is used infrequently in humans to treat the nerve disease myasthenia gravis, but only in doses 30 to 60 times lower than those received by the Army monkeys.

In August, PCRM formally petitioned the Defense Department to end the tests, saying that they were inhumane and a poor training tool.

"Using African green monkeys to try to demonstrate effects of nerve gas exposure on humans is not accurate. The physiology is not accurate," said John J. Pippin, a physician with PCRM. "Many of the first signs in humans — sweating, dilation of pupils — can't be assessed. Also, participants in the course don't actually do anything except hold a bag to help the monkey breathe."

An independent expert agreed that patient simulators, which can be programmed to show symptoms of a nerve gas attack, would provide better training.

"It would be a little bit hard to look at a monkey with these symptoms and learn something about what a human would look like," said Eric Toner, an emergency physician and senior associate at the Center for Biosecurity, part of the University of Pittsburgh Medical Center. "The purpose of training like this is to have first-hand experience. I imagine it would be more effective to use patient simulators. They're getting more and more sophisticated all the time."

Other animal rights groups, including the People for the Ethical Treatment of Animals and the Humane Society International, had also protested the practice. The issue gained celebrity traction last month when actor Woody Harrelson wrote the Defense Department asking for an end to the monkey tests.

"I have a lot of respect for the U.S. Army," Harrelson wrote in an e-mail sent via his agent. "They're some of the bravest, most selfless people I've met, so it's gratifying to me to see them take this humane course of action."

Maj. Gen. James K. Gillman of the Army Medical Research and Materiel Command and Maj. Gen. Nick Justice of the Army Research, Development and Engineering Command disclosed the decision in a meeting with Bartlett in September.

"I'm very pleased they're phasing it out," Bartlett said. "If you want to see the reaction a live animal has, you can show a film of it. You don't have to repeat it over and over. There are lots of technologies they can use instead."

Before Bartlett joined Congress, he worked at the Navy's School of Aviation Medicine and performed medical tests on a squirrel monkey named Baker that was shot into space.

In the years since, Bartlett has argued against medical tests on non-human primates, except in limited circumstances.

Elliott, the Army spokesman, said the decision did not apply to any other military animal tests.

The military has a long history of testing drugs — and weapons — on animals. From 1998 to 2006, at least 11,000 military animal experiments were conducted, according to PETA, which found the information in an Army database.

AMYL NITRITE INHALANT, USP

Source: http://www.savalife.com/media/articles/instructions/Amyl%20Nitrite.pdf

DESCRIPTION: Amyl nitrite is a rapidly acting vasodilator administered by inhalation. 0.3mL is supplied in a covered thin glass capsule which is easily crushed between the fingers. Amyl nitrite is a clear, yellowish liquid having a peculiar ethereal, fruity odor. It is volatile, even at low temperatures, and is flammable. This product is stabilized with Flexol ™ 2 %.

The structural formula of amyl nitrite is:
(CH3)2CHCH2CH2ONO

CLINICAL PHARMACOLOGY: Amyl nitrite causes a non specific relaxation of smooth muscle with the most prominent actions occurring in vascular smooth muscle. This effect on vascular smooth muscle results in coronary vasodilation and decreased systemic vascular resistance and left ventricular preload and afterload. Myocardial ischemia is relieved in patients with angina pectoris, with an abatement of chest pain and possibly other related symptoms. Amyl nitrite vapors are absorbed rapidly through the pulmonary alveoli, manifesting therapeutic effects within one minute after inhalation. The drug is metabolized rapidly, probably by hydrolytic denitration; approximately one-third of the inhaled amyl nitrite is excreted in the urine.

INDICATIONS AND USAGE: Amyl nitrite is indicated for the rapid relief of angina pectoris. Its effect appears within 30 seconds and lasts for approximately 3 to 5 minutes.

CONTRAINDICATIONS: Since it may increase intraocular and intracranial pressures, amyl nitrite is contraindicated or should be used with great caution in patients with glaucoma, recent head trauma or cerebral hemorrhage.
Amyl nitrite can cause harm to the fetus when it is administered to a pregnant woman because it significantly reduces systemic blood pressure and blood flow on the maternal side of the placenta.

WARNINGS: Transient episodes of dizziness, weakness, or syncope or other signs of cerebral ischemia due to postural hypotension may develop following inhalation of amyl nitrite, particularly if the patient is standing immobile. To hasten recovery, measures which facilitate venous return such as head-low posture, deep breathing and movement of extremities may be used.

CAUTION: Amyl Nitrite is very flammable. Do not use where it might become ignited.

PRECAUTIONS: General -Tolerance to amyl nitrite may develop with repeated use of the drug for prolonged periods of time. Tolerance may be minimized by beginning with the smallest effective dose and alternating the drug with another coronary vasodilator.
High doses of nitrites may produce methemoglobinemia, especially in individuals with methemoglobin reductase deficiency or other metabolic abnormality that interferes with the normal conversion of methemoglobin back to hemoglobin.
Patient Information - Amyl nitrite should be taken by the patient when seated or lying down.

Drug Interactions - Taking amyl nitrite after drinking alcohol may worsen side effects and may cause severe hypotension and cardiovascular collapse.
Carcinogenesis, Mutagenesis, Fertility Impairment - Adequate long term studies to establish adverse carcinogenic potential of this drug have not been reported.
(over)
Pregnancy - Teratogenic effects:
Category C. Animal studies have not been conducted with amyl nitrite, It is also not known whether amyl nitrite can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Amyl nitrite should be given to a pregnant woman only if clearly needed.
Nursing Mothers - It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when amyl nitrite is administered to a nursing woman.
Pediatric Use - Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Mild transitory headache, dizziness and flushing of the face are common with the use of amyl nitrite. The following adverse reactions may occur in susceptible patients: syncope, involuntary passing of urine and feces, hypotension, pallor, cold sweat, tachycardia, restlessness, weakness, vomiting and nausea. Excessively high doses of amyl nitrite administered chronically may cause methemoglobinemia.

DRUG ABUSE AND DEPENDENCE:
Abuse - Volatile nitrites are abused for sexual stimulation, with headache as a common side effect.
Dependence - Tolerance to nitrites can develop; conditions and duration have not been established.

OVERDOSAGE: Symptoms - Inhaled doses of 5 to 10 drops of amyl nitrite may cause violent flushing of the face, accompanied by a feeling of imminent bursting of the head and very excessive heart action. The inhalation of larger amounts may produce a feeling of suffocation and muscular weakness. Symptoms comparable to shock may be produced (such as weakness, restlessness, sweating, pallor, nausea, vomiting, syncope and incontinence) attributable to pooling of blood in the post arteriolar vessels and failure of the venous blood to return to the heart.
Treatment - Measures which facilitate venous return such as head-low posture, deep breathing and movement of extremities may be used. The use of epinephrine aggravates the shock-like reaction. Methylene blue should be injected for treatment of severe methemoglobinemia with dyspnea. For treating cyanide poisoning, methylene blue is contraindicated where nitrites cause iatrogenic methemoglobinemia.

DOSAGE AND ADMINISTRATION:
With the patient in recumbent or seated position a capsule of amyl nitrite is held away from the face, crushed between the fingers, and held under the patient's nose. Two to six inhalations of the vapors from the capsule are usually sufficient to promptly produce therapeutic effects. Caution is recommended to avoid inhalation of excessive amounts of the drug when it is administered by someone other than the patient. If necessary, the dose may be repeated in 3 to 5 minutes.

HOW SUPPLIED: JAMES ALEXANDER brand amyl nitrite is furnished in covered glass capsules. Each capsule contains 0.3 ml in boxes of 12.
The capsule contents are FLAMMABLE and should be protected from light. Storage should be in a cold place, 2°-8°C (26°-46° F).

A toxic gas detecting wristband for first responders

Source: http://www.gizmag.com/chameleon-chemical-detection-device/19986/

To protect first responders from deadly toxic gases that are invisible to the human eye, Morphix Technologies has developed the Chameleon chemical detection wrist band.

Designed to be fastened to a first responder's forearm, the device can detect the presence of up to ten toxic gases. When the device's interchangeable disposable cartridges are exposed to toxic gases, they will change color alerting first responders of danger.

Originally designed for the U.S. Marine Corps, the rugged device requires no power or calibration and can continue detecting gases even after it has been submersed in fresh or salt water for up to an hour.

In addition, the chameleon is able to detect gases and vapors whereas other technology can only detect hazards in liquid or aerosol forms.

Depending on the needs of the mission, the cartridges can be easily configured for specific types of gases. The kit comes stocked with sensors for several gases including high pH (base), hydrogen sulfide, low pH (acid), phosphine, and sulfur dioxide. The company also offers sensors for chlorine/fluorine, diborane, and hydrazine with plans to introduce more sensors in the future.

Morphix is seeking to broaden its customer base by offering the Chameleon to police departments, fire fighters, and emergency medical personnel.

The company cites the growing dangers of chemical suicides which can make rescue operations deadly for first responders. With these suicides, individuals often mix common household chemicals to create a lethal cloud of poisonous gas in an enclosed space.

According to Morphix, the number of chemical suicides in the United States doubled in the first half of the year compared to the same period last year.

College chemical labs unsafe

Source: http://www.usatoday.com/tech/science/story/2011-10-19/college-lab-safety-chemistry/50818666/1

A recently released report found that college laboratories with their dangerous mix of volatile chemicals pose a danger to students and employees.

According to the Chemical Safety and Hazard Investigation Board (CSB), over the past decade there have been 120 severe accidents at university labs that resulted in large explosions and even deaths.

"The report serves as a cautionary tale for universities across the country," said Daniel Horowitz, CSB's managing director.

The latest CSB report comes as a result of an incident on 2 January 2010 at a Texas Tech lab

where a student lost three fingers, suffered severe burns, and damaged an eye when producing ten grams of an explosive compound – 100 times more than the lab limit.

"The report lays out a challenge to the academic community," said Neal Langerman, the head of Advanced Chemical Safety Inc. "We really need a 'safety culture' in university labs."

Lab accidents at schools and colleges occur ten to fifty times more frequently than in the chemical industry, said James Kaufman, the president and CEO of the Laboratory Safety Institute.

As evidence, the report detailed several other incidents including a chemical fire in 2008 where a UCLA graduate student died of her burns, a hydrogen explosion in which four University of Missouri students were injured in 2010, and an acid fire that burned two University of Maryland students last month.

The report concluded that a lack of good practice guidance recognized by the academic community, limited use of Occupational Safety and Health Administration guidelines for increasing safety in the laboratory, and a lack of involvement in safety regulations from agencies that issue research grants have created these potentially unsafe conditions at academic labs across the country.

To help improve safety, CSB recommended that the American Chemical Society, the world's largest scientific society, develop good practice guidelines that identify and describe ways to assess and control hazards in labs.

More specifically, CSB recommended that Texas Tech University revise and expand on its lab safety plan to ensure that physical safety hazards are addressed. In addition, the university should also develop and implement an incident reporting system that can be used to teach researchers proper safety procedures.

CSB concluded by stating that the chemical safety procedures at universities required further investigation.

"With over 110,000 graduate students and postdoctoral researchers estimated to be working in academic laboratories, these identified safety gaps and other issues deserve further examination and research in a larger, more comprehensive study on academic laboratory safety," the group wrote.

Found, Gaddafi's chemical weapons

Source:http://www.dailymail.co.uk/news/article-2053988/Gaddafis-chemical-weapons-hidden-despite-pledge-Tony-Blair.html#ixzz1c3RfRgJe

A secret cache of Colonel Gaddafi's chemical weapons has been found in Libya, the country's new rulers announced yesterday (Oct 26th).

The deadly arsenal proves the tyrant had refused to give up his weapons of mass destruction – despite promising Tony Blair he would relinquish them in the infamous 'Deal in the Desert'.

The National Transitional Council said the chemical warheads had been secured and would be made safe by experts.

A spokesman said: 'They are from the Gaddafi era and are under guard until they can be handed over.'

To this day, Mr Blair defends his decision to embrace Gaddafi by trumpeting the idea that he forced the dictator to give up his WMD programme.

His spokesman said earlier this week: 'Mr Blair, in office, had been responsible for getting Gaddafi to give up his chemical and nuclear

weapons programme and renounce terrorism.'

Gaddafi agreed to destroy most of his weapons of mass destruction in 2003 as part of moves to bring Libya, then a pariah state, in from the cold.

The agreement was sealed in 2004 when Mr Blair shook hands with Gaddafi in a tent outside Tripoli.

The disarming process was being overseen by the Organisation for the Prohibition of Chemical Weapons, but was never finished because of the outbreak of war.

It meant the dictator retained around ten tons of deadly mustard gas and other chemicals.

Throughout the uprising, rebels feared vengeful Gaddafi – who warned they faced the 'fires from Hell' – would unleash WMD on his own people.

In Misrata, panic gripped the population when forces loyal to Gaddafi were seen wearing gas masks.

Nato spy planes and satellites monitored suspected chemical weapons dumps at three separate locations, including the Rughawa site some 130 miles south of the tyrant's birthplace Sirte.

Nato is still flying sorties over Libya, mainly in an effort to hunt down Gaddafi's London-educated playboy son Saif, last seen making a dash for the desert border with Niger.

Libya's new leaders yesterday begged Nato to continue with the mission.

Mustafa Abdul Jalil, chairman of the National Transitional Council, said he wanted Nato help until 'the end of the year' in stopping Gaddafi loyalists fleeing justice.

But at the Brussels headquarters of the alliance, Nato officials recalled their UN mandate was to protect civilians, not target individuals.

A meeting of Nato ambassadors was postponed from yesterday until tomorrow to allow for further discussion, but is still expected to endorse a decision

to halt the Libya mission on October 31.

Meanwhile former Libyan foreign minister Musa Kusa – who defected to Britain – issued a fierce denial yesterday that he had any 'involvement of any kind or knowledge' of the Lockerbie bombing and the murder of WPC Yvonne Fletcher.

Kusa issued a statement through legal representatives in London following allegations made on the BBC's Panorama programme. The programme, broadcast on Monday, claimed he personally tortured prisoners and was involved in the 1996 massacre of more than 1,200 inmates at the country's notorious Abu Salim prison.

Kusa, who made a high-profile defection to Britain in March as Colonel Gaddafi's regime crumbled, accused programme-makers of making 'false allegations', claiming: 'I have never tortured anyone nor been involved in torture.

Neither was I present at the massacre at Abu Salim prison.'

He added: 'I also had no involvement of any kind or knowledge of the bombing of Pan Am Flight 103 over Lockerbie in 1988 or the murder of WPC Fletcher in 1984.

'I have voluntarily assisted the relevant investigatory authorities with their inquiries in relation to these matters.'

Kusa is now in Qatar, having been permitted to leave Britain, following an EU decision to lift sanctions against him.

He was head of Colonel Gaddafi's intelligence agency from 1994 and was reported to be a senior intelligence agent when Pan Am flight 103 was blown up over Lockerbie, killing 270 people.

Kadhafi avait caché du gaz moutarde

Source: http://www.europe1.fr/International/Libye-Kadhafi-avait-cache-du-gaz-moutarde-794601/

The new Libyan regime has recently discovered two storage sites of mustard gas, one containing weapons

ready to serve, which had been concealed by the former dictator Muammar Gaddafi to UN inspectors, said a Libyan expert . "Both sites are safe," assured the expert Yussef Safi ad-Din, a former Libyan army officer, in which he was the senior in charge of chemical weapons. The number two in the National Transitional Council (CNT) Mahmoud Jibril announced Monday the discovery of two sites of chemical weapons, without giving any details. A storage site near the town of Waddan (south), in the oasis of Djoffra, had already been mentioned in the press and was known to the UN, which had sent inspectors in 2004. Mustard gas therein, about 11 tons, is "neutralized" by additives drastically reducing its toxicity, said Safi ad-Din, based in Waddan.

CBRN: An Introduction to Respiration Solutions in Chemical, Biological, Radiological, and Nuclear Scenarios

By Gregg Lisicki

Source:http://www.adsinc.com/blog/industry-news-and-events/cbrn-an-introduction-to-respiration-solutions-in-chemical-biological-radiological-and-nuclear-scenarios/

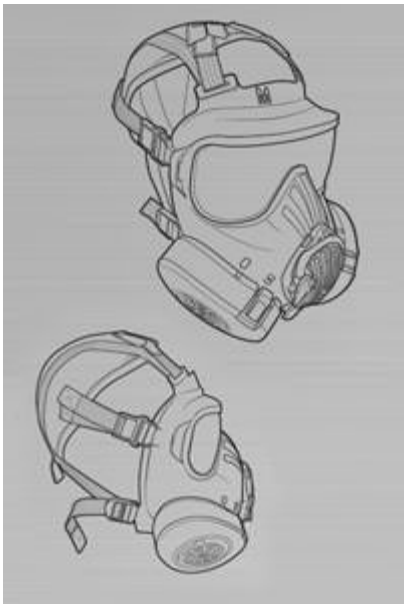
Anthrax, Ricin, Weapons of Mass Destruction; unfortunately these are words at the forefront of our nation's first responder community since September 11th 2001. With these new threats, today's tactical community needs to operate in a Chemical, Biological, Radiological and Nuclear (CBRN) posture and still be able to accomplish their mission. The gear we all thought of as "Fire and Emergency Service" equipment has become mission critical to tactical operators.

The Department of Homeland Security (DHS) has responded to this threat by allotting millions of dollars for state and local law enforcement agencies to purchase appropriate equipment specifically designed for CBRN scenarios. When it comes to researching CBRN equipment purchased via an awarded DHS grant, terms such as APR, PAPR, SCBA and NIOSH have become a common part of today's vernacular. The goal of this article is to educate the reader on the above terms and what they mean to first responders who now are challenged with operating in a potential CBRN environment.

There are two primary areas of Personal Protective Equipment (PPE) for first responders: respirators and ensembles. This article will focus on respiration. Respirators are designed to protect from an inhalation threat either by filtering outside ambient air or by breathing a self-contained air source. There are three levels of respiratory protection; Air-Purifying Respirator (APR), Powered Air-Purifying Respirator (PAPR) and Self Contained Breathing Apparatus (SCBA). The following are the Occupational Safety and Health Administration definitions of each:

Air-Purifying Respirator

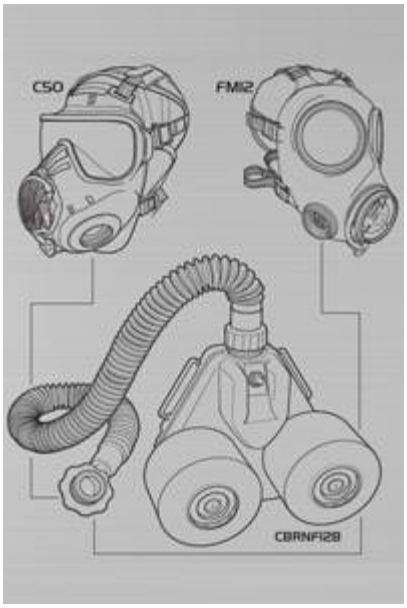
APR



A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Powered Air-Purifying Respirator

PAPR



An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Self-Contained Breathing Apparatus

SCBA

An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Images courtesy of avon-protection.com

APR

Before committing to any of the above respirator options, the team's mission must first be considered. An APR with appropriate filter protects against a range of CBRN threats including chemical warfare agents, toxic industrial chemicals (TICS), toxic industrial materials (TIMS), biological and radiological hazards, riot agents and nuclear environments. An APR should be distributed to first responders that have the potential, but not necessarily the primary mission, of responding to a CBRN threat. APRs benefits are they are lightweight, inexpensive and easy to operate. Disadvantages of using an APR, as opposed to a PAPR or SCBA, is potentially contaminated air can enter the mask

through a leak because of the lack of positive pressure. ADS Inc. works closely with multiple APR manufacturers. A few examples are the AVON FM53 and the MSA Millennium.

AVON FM53

MSA Millennium

PAPR

A PAPR is an APR with a powered air pump to move ambient air through the mask. The cooling effect of constant, filtered airflow into the respirator reduces potential for fogging, increases comfort and reduces pulmonary stress and claustrophobic feelings, while conserving the strength and mental acuity of the wearer. It helps ensure mission success by extending operational endurance of the user and facilitates heavier work performance, even in humid, heated and highly stressful environment. Because there is a positive airflow, if the seal of the mask were compromised, contaminated air would not be able to enter the mask. Some examples of PAPRs are the AVON C420 and MSA OptimAir.

AVON C420

MSA OptimAir

SCBA

SCBAs are designed for specialist applications where the end user needs to respond to changing operational conditions. SWAT or other Emergency Services Units that have a tactical mission in an area with a possible CBRN threat should consider using an SCBA. The main benefit of a SCBA is the operator carries a known air source, therefore eliminating any possibility of breathing unknown contaminated air. As with the PAPR, the positive pressure airflow eliminates the potential for contaminated air entering the system in case of mask leakage. Examples of SCBAs are the AVON ST53 and MSA Blackhawk.

AVON ST53

MSA Blackhawk

The National Institute for Occupational Safety and Health (NIOSH) is the determining organization for CBRN respirator standards. It is required that a NIOSH approved respirator be used to qualify for DHS funding.
Another good resource to refer to when trying to determine which equipment can be purchased via a DHS grant is the Responder Knowledge Base (RKB). The RKB provides a comprehensive list of personal protective equipment that has been approved for use by first responders for emergency response to CBRN events. The RKB is a government funded website that lists the AEL/SEL items the first responder community can purchase through grant funding.

Gregg Lisicki brings over 10 years in Naval Diving, Salvage, and Combat Underwater Photography in support of Underwater Construction Teams, Explosive Ordnance Disposal Teams and SEAL Delivery Vehicle Teams. Lisicki has been a Diving/Salvage Specialist and CBRN Subject Matter Expert in respiration, decontamination, and CBRN ensembles for over five years with ADS, Inc..

CBRN Decon – Expedient Personnel Decontamination Systems

By Gregg Lisicki
Source: http://www.adsinc.com/blog/industry-news-and-events/cbrn-decon/

CBRNE Decontamination

You are a first responder that has just encountered a potential CBRNE event. You are in your protective envelope (respirator, CBRN suit), but realize that the HAZMAT team with the decontamination shower is still 20 minutes away, and you have 10 minutes of air left on your self contained breathing apparatus (SCBA). In this scenario, the operator will most likely break their protective envelope, taking their chances between cross contamination or asphyxiation. What would your team do? This is just one of the scenarios I will address in this article that will hopefully give you a better idea of what types of decontamination set ups are available, and which is the right choice for your team.
CBRNE protection can be summed up in three words: Detection, Protection and Decontamination.

The first two articles in this series focused on protection (respiration & ensembles). In this article, I will discuss the decontamination aspect of CBRNE in terms of gross (large scale) and tactical decontamination. First, let's define decontamination, and then apply that definition to how it pertains specifically to Military/Federal/State & Local First Responders.

Focused responder decon

Decontamination: Removal of hazardous substances (bacteria, chemicals, radioactive material) from employees bodies, clothing, equipment, tools, and/or sites to the extent necessary to prevent the occurrence of adverse health and/or environmental effects.

For purposes of this discussion we are assuming that the first responder is already in their protective posture i.e. mask and suit, we will concentrate on the decontamination of that protective ensemble to minimize the risk of exposure when doffing that ensemble. Before we get into the actual decontamination equipment, we must determine which type of scenario you may be facing in terms of location, type of contaminate and whether or not there will be a designated HAZMAT Decontamination team on site. The location of the event will have a lot to do with what size footprint you will have to set up your contaminated control area (CCA). There are many options in terms of size and portability, but the concept is the same in that they are designed to contain the contaminate in a water collection basin after the person is completely washed down with copious amounts of water. The down side to this type of set up is that it is limited to the available space, availability of a water resource and

designated personnel to set up and operate the equipment.

currently utilizes an Alumina based sorbent that encapsulates the contaminate rendering it safe

TSGI SPEEDS® 24HE

Let's now discuss a system called, Expedient Personnel Decontamination System (EPDS) that will give the operator(s) the ability to self-decontaminate their entire team in the event that a HAZMAT team and full scale decontamination shower are not available. One of the fully validated EPDS's available is called SPEEDS, which stands for Special Purpose Expedient Event Decontamination System. SPEEDS have the ability to conduct either a dry or wet decontamination, depending on the threat. What does "dry or wet" decontamination mean? A dry decontamination will be conducted when the contaminate is chemical in nature. SPEEDS for the operator to disrobe without cross contamination. If the contaminate is either biological or radiological in nature, then a wet process is used. The wet solution is a combination of Calcium Hypochlorite (Bleach) and Surfactant (Soap). These two compounds are combined with a pre-measured amount of water to create the "wash" used for the wet process. This system was designed to be used in confined spaces, and has fully validated cut-out procedures for a majority of the protective ensembles currently in use by our first responders and Military personnel.

This type of system is generally used by Special Operations troops conducting operations in an

environment where traditional HAZMAT cannot be deployed. SPEEDS is the system that would be able to be used in the scenario I opened this article with. There are SPEEDS systems that are designed to fully decontaminate up to 24 operators, 12 operators and a 6 operators in a CBRNE scenario, depending on the size of your team.


2012
2nd CBRNE
Asia-Pacific
Conference
22-23 February 2012
Grand Copthorne Waterfront Hotel
Singapore
http://www.smi-online.co.uk/events/overview.asp?is=16&ref=3773

Tactical Response
Sep/Oct 2011

TR FIELD TEST CBRN Masks

SUMMARY

Tactical Response conducted a field test of five different CBRN APR masks from Avon, Drager, MSA, Scott and Sperian. Officers across the country rated them on criteria including: Initial Fit, Compatibility, Practical Use, Tactical Use and Scalable.

◀ The Avon FM53 CBRN mask ranked the highest in our tests at 4.3 out of 5

Field Test: CBRN Masks

CBRN APR Field Test: How Did They Rank?

By Jennifer Gavigan

Today's tactical officers face many different challenges, including the need to wear Chemical, Biological, Radiological and Nuclear (CBRN) air purifying respirators (APRs). Accessories such as these masks can prove to be critical for officer safety in the field. *Tactical Response* sought 10 of its readers to test five different CBRN APR masks.

The testers are tactical officers who used the equipment in tactical training, operations and other opportunities. They came from a wide cross-section of law enforcement, including both rural and urban departments and both large and small departments. They came from all over the country, including: Wisconsin, Texas, New York, Kansas, South Carolina and Florida. All the masks tested were in each of those states. The masks were tested for law enforcement/military operations, not sport or hiking. The field test period was three months.

Tactical Response magazine asked five of the top APR manufacturers to submit masks for testing and review. Each manufacturer was sent the criteria by which their masks would be evaluated. TR left it up to the manufacturer to pick the make and model. The only criteria were: 1) it must be CBRN; 2) it must be full-face; and 3) it must be appropriate for law enforcement.

The areas of evaluation rated by users included "Initial Fit" (ease and speed of donning, ease of strap adjustments, initial comfort, flexible enough, no pressure points, not too bulky or too heavy);

FIELD TEST ON CBRN MASKS: Download the full paper from the Newsletter's website – "CBRNE-CT Papers section" – and read how they ranked.

Use of chemical weapons by Turkish army a reality

Source: http://supportkurds.org/news/use-of-chemical-weapons-by-turkish-army-a-reality/

A delegation of IHD (Human Rights Association) and BDP (Peace and Democracy Party) members are going to Geliyê Tiyarê (Kazan Vadisi, Kazan Valley, Çukurca-Hakkari) to investigate the allegations that the Turkish army have, in recent operation, used chemical weapons.

Indeed it has been confirmed that as many as 35 Kurdish guerrillas have lost their life in the operation carried out by the Turkish Armed Forces between 22-24 October. Twenty-four bodies are held at Malatya Forensic Institute's morgue. Families and IHD officials who have seen the bodies have confirmed that they were torn to pieces and had burns all over, signs which indicates the use of some chemicals.

the IHD Diyarbakir branch had published a detailed report on the use of chemical weapons.

According to that report 437 guerrillas have lost their lives in 39 separate operations carried out with chemical weapons by the Turkish army since 1994.

The IHD "Report of Chemical Weapons" contains important information about the Turkish army operations in which chemical weapons have been used.

The report reminded that the allegation concerning the use of chemical weapons has been frequently brought to the agenda since the 1990s also gave examples from the military operations where chemical weapons were used.

The report states for example that 20 PKK

The Turkish Army is not new to the use of chemical weapons. Indeed in August this year militants, who lost their lives in the operation near the Ballikaya (Bilika)

village in Silopi district of Shirnak on May 11, 1999, were said to have been killed with chemical weapons. A chemical gas tube, claimed to have been used in the operation and found at the scene, was sent to Germany by militants for a criminal investigation. The report issued after the investigation in the criminal laboratory in Germany concluded that the material (the tube) was of a deadly chemical gas containing chemicals.

8 PKK militants including two women, who lost their lives in a clash in September 2009 Cukurca district of Hakkari, were killed by chemical weapons. Upon finding some photos and materials verifying the assertion, human rights organizations sent the materials to Germany for an investigation after which the German press wrote that the Turkish army used 'chemical weapons' against PKK militants. While German human rights activists and politicians demanded an international investigation into the issue, the University of Hamburg issued a report and proved the use of chemical weapons by the TSK (Turkish Armed Forces). Separately, expert Hans Baumann who examined the photos of the event proved that the photos were real images, while Hamburg University Hospital issued a report saying that the militants were most likely killed with chemical weapons.

PKK militant Bedran Kaya, who lost his life in the clash in Hakkari's Semdinli district on July 31, 2011, was as well claimed to have been killed with a chemical weapon. The assertion came up upon the notification of those seeing Kaya's body which had no bullet marks but an intense skin eruption.

Zafer Tanris who appealed to our branch on 29 April 2009 made the following statement; ''My brother Gökmen Tanris left home about 16 years ago and we have not heard from him since then. After some time we received unconfirmed information that he had joined the PKK. In addition, we did not have any information on

whether he was alive or not. However, 10 days ago we learned that my brother had been killed in a clash where chemical weapons were used in Samsavat region between Erzincan and Gümüshane provinces in 1994. We want to reclaim his body and to find out if he was killed with a chemical weapon or not. I demand you to make the necessary attempts for the identification and reclaimation of his body.'

22 students, who left Malatya to join the PKK but were slaughtered in mass on May 17, 1994 at the Bezar Mountain in Adiyaman yet before reaching the guerrilla area, and six PKK militants, who came to the area to meet the students, were also claimed to have been killed with chemical weapons. While few eye-witnesses confirmed the use of chemical weapons during the operation, journalist Evrim Alatas called attention to the use of chemical weapons in a review she wrote about Fidel Töre who was among these 22 students.

The bodies of 21 PKK militants, who were claimed to have been killed with chemical weapons in a clash in Çemisgezek district of Dersim on 11 April 1997, have still not been delivered to their families although their code names and birth places are already registered at the Office of Malatya Special Authority Chief Prosecutor."

People's Defence Forces press office HPG-BIM has reported that at least 24 guerrillas lost their lives as a result of severe clashes and air attacks where chemical weapons were used in Guze Resê and Gunde Pîre areas of Çukurca district on October 22.

The statement said that the 24 bodies at Malatya Forensic Medicine Institution are those of HPG guerrillas who lost their life in these clashes. HGP remarked that researches made had confirmed the usage of napalm bombs and chemical weapons during these clashes.

The statement underlined that altogether there was a unit of a total of 35 guerrillas who were in the region during intensive air assaults,

intensive chemical bombardment and clashes in Çukurca on 22-24 October. Contacts have been stopped since the bombing.

HPG released the names of all of the 35 guerrillas in that unit, not being able to declare for sure who are those lying in Malatya.

HPG ended the statement calling on all human rights organizations and democratic institutions and establishments to demand investigation into the usage of chemical weapon.

Twenty-four bodies in Malatya's morgue have been burned and torn to pieces, say families

Nurettin Muhikanci, father of Ebru Muhikanci whose body is among those lying at Malatya Forensic Medicine Institute since October 24, said that their children had been killed by chemical weapons as bodies had almost turned into coal.

HPG guerrilla Ebru Muhikanci was identified by her family who came from Istanbul to Malatya upon the news reported by RojTV two days ago that one of the 24 bodies belonged to Ebru Muhikanci.

"It is written on reports that 24 guerrillas lost their lives in the clash which broke out in Kazan Valley on October 19 but we don't know what kind of a clash this is. There wasn't a single bullet mark on my daughter's body", said father Muhikanci who remarked that the bodies were beyond recognition.

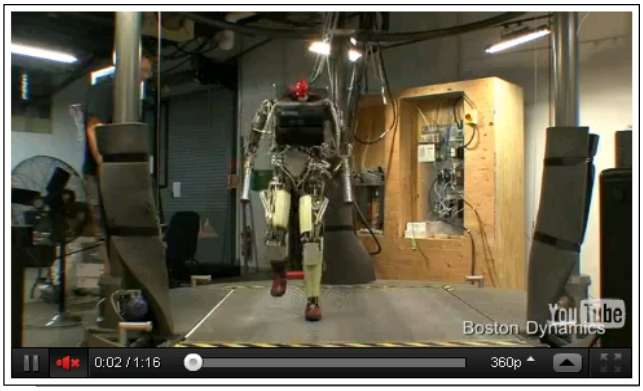
Mesopotamia Solidarity Association for Families of the Missing (MEYADER) Chairman Hüseyin Kugu remarked that a mass slaughter was made in Kazan Valley and said; "Families have fastened that these 24 guerrillas were killed with chemicals. In case that families commence legal proceedings, MEYADER will take legal steps with them."

HPG guerrilla Ebru Muhikanci will be buried at Kayabasi Cemetery today in Basaksehir district of Istanbul. Her body wasn't allowed in the plane from Malatya to Istanbul yesterday, although procedures had been fulfilled, on the pretext that no seats were available. Muhikanci family had to hire an ambulance to take their daughter to Istanbul.

Anthropomorphic robot testing chemical protection

Source: http://www.bostondynamics.com/robot_petman.html

Robotics company Boston Dynamics is promoting PETMAN — an anthropomorphic robot for testing chemical protection clothing used by the U.S. Army. The company says that unlike previous suit testers, which had to be supported mechanically and had a limited repertoire of motion, PETMAN will balance itself and move freely; walking, crawling, and doing a variety of suit-stressing calisthenics during exposure to chemical warfare agents.



PETMAN will also simulate human physiology within the protective suit by controlling temperature, humidity, and sweating when necessary, all to provide realistic test conditions.

The company notes that natural, agile movement is essential for PETMAN to simulate how a soldier stresses protective clothing under realistic conditions. The robot will have the shape and size of a standard human, making it the first anthropomorphic robot that moves dynamically as a real person does.

Boston Dynamics's partners for the program are Midwest Research Institute (MRI), Measurement Technologies Northwest, Oak Ridge National Lab, as well as Smith Carter CUH2A (SCC) and HHI Corporation, which will construct the chamber. The work is being done for the U.S. Army PD-CCAT-TI.

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Decontamination: Is Water King?

By Vincent J. Doherty

Source:http://www.fireengineering.com/articles/print/volume-164/issue-11/features/decontamination-is-water-king. html

In 1981, I was sworn into the Fire Department of New York (FDNY) and left my career in the chemical industry behind, or so I thought. In September 1984, I became a charter member of the newly formed Hazardous Materials (HazMat) Company #1, FDNY. I was one of 40 firefighters who had a desire to be part of a new exclusive unit dedicated to hazardous materials response. Fire was no longer our main focus; response to natural, accidental, or intentional chemical releases became our primary mission.

If you had asked any of the firefighters or fire officers forming the company that day the definition of a chemical warfare agent (CWA) or what nerve gas1 was, only a handful would have been able to answer correctly. Even then, most of us would have dismissed these items as military issues, more common to World War I battlefields and the Cold War of our era than to firefighters. We will never see anything like that on our shores, or so we thought.

CWAs, along with their sub-category nerve agents, were simply not on our radar as a threat to New York City, let alone the nation. We trained and drilled on petroleum products, acid/base, and other industrial chemical releases more common to the date and time. We spent little time or resources thinking about ways to respond to and decontaminate from the exotic weapons the military favored. If we were contaminated by and exposed to a chemical release, we would use soap and water to wash and decontaminate at the scene. Even the contaminated equipment was washed down before repacking. If civilians were affected, they were also given the same option: to wash using soap and water. The contaminated water was never an issue in the early days; we held by the motto "dilution is the solution."

During the first two weeks of Fall in 1984, HazMat Company #1 trained extensively trying to make firefighters into hazmat technicians prior to coming on line as a full-fledged hazardous materials response unit. We had chemical protective suits in three levels. We had the books to research the hazards of specific chemicals or chemical families. We trained on effective mitigation techniques for multiple scenarios. We had containment drums, chlorine kits, colorimetric tubes, and explosive gas meters—everything a state-of-the-art hazmat team would carry. But, most of all, we had absorbents to absorb and hose-lines to dispense our water, the mainstays of our new profession. When in doubt, absorb it up or water it down: "Dilution is the solution." Correct?

For two weeks, we ran through procedures and protocols. We laughed about stories related to our profession, such as the story of the old fire chief who went straight up to the open drum to smell the contents only to have his glasses become etched by the vapor of the chemical or the battalion chief who stuck his finger in the barrel and tasted the material to identify it. We mused that the wearing of a white helmet does not automatically bring wisdom; we knew better than that! We learned our lessons well. We were ready,

fog nozzle in hand. There was nothing for which we could not use water. On October 4, 1984, we came on line as the premiere hazmat response unit in New York City. We didn't know what we didn't know, especially how to properly decontaminate ourselves. We thought that all we had to do was use water. Correct?

Those were simpler times. Firefighters from all over the city began referring to the unit as "Mop and Glow" and began special calling the unit to dump pounds of absorbent over spills. But, when the situation soured, they called HazMat Company #1 to put the "genie back in the bottle"(i.e., contain, control, and mitigate a hazmat release). The motto on our truck was, "Better living through chemistry," and we were prepared for anything—or so we thought. We felt confident about assessing the incident. We were confident that our protective equipment would protect us. We were confident that we could confine and contain, but when it came to decon, water was all we had. The amount used would be the difference between a good decon and a better decon. We knew what we knew: Water was king. And we thought we had a good grasp of those things we did not know, the areas in which we were not prepared, but we were wrong.

The turning point

The hazmat world changed at midnight on December 3, 1984, when 42 tons of the toxic chemical methyl isocyanate exposed more than 500,000 people to toxic gases in Bhopal, India. That night, 2,259 people died; another 1,578 succumbed in the following days, weeks, and months.2 That day changed our thinking about response to hazardous materials. We began thinking about cataclysmic industrial accidents that could overwhelm our resources. We began asking ourselves questions: How can we better respond and mitigate the incident? How can we better treat the victims? If we use water for decontamination, would we be making the situation better or worse? We asked the questions, but there was nothing else available, so the answer was still the same: Use water. Little thought went into decontamination of the survivors or the response personnel because water was king.

Our thought process in regard to decon was that if responder equipment was contaminated, we could dispose of it; if the victims were contaminated, we would simply wash them down and dispose of their clothing; and if the scene was contaminated, we would wash it down into the sewer or call for a cleanup company. Things were still simple! We began to question the use of only water, but water was still king.

The 1980s saw an increase in response to two new hazards in the hazmat world: polychlorinated biphenyls (PCBs)3 and asbestos.4 Every incident required a hazmat response and a decontamination process. PCBs were oily, so we used strong soaps to mitigate the process. Asbestos was a solid, so we instituted filtration of the "gray water" effluent to protect the environment and control the spread of contamination. We began to devise tractor trailer-sized shower units to protect privacy. The bigger the unit, the larger the bragging rights. We could control the temperature and amount of water used. We could soap off non-water soluble chemicals and contain them for disposal—sometimes. Innovations became available. New equipment was used to complement water. But, water was still king.

The late '80s and early '90s brought a rising trend of state-sponsored terrorism and the use of CWAs against populations. There were claims that Saddam Hussein of Iraq used CWAs against Iran during its decade-long war in the '80s; he continued to use them against his own people, the Kurds, in northern Iraq. This was happening at the very time countries in the civilized world were beginning to disarm themselves of their chemical stockpiles. With these new developments, the hazmat community began to research CWAs and nerve agents. Protocols were developed on how to respond and recover (1987 was the first time I actually picked up a book on CWAs, a trend that continues for me today as an adjunct professor at the Homeland Security Management Institute at

Long Island University). Water was still king and the prominent decontamination solution, and dilution was still the solution.

More decontaminants

The first item that received our attention was our ability to respond and mitigate the incident. Our research led us to trust in our personal protective equipment and our hazmat mitigation skills learned over the past two decades, and we came to the conclusion that CWAs were just another "hazmat with an attitude." This did not hold true for our decontamination ability. The more we researched CWAs, the more we became uneasy with our decontamination protocols. All we had were water and soap. We were not neutralizing the chemical. We were not using any chemical reactions to render it safe. All we could do was wash it off. All that water did was transfer the problem. We asked the questions, but the solutions remained the same. Water was king.

The events of the 1990s revolutionized the way the hazmat community operated. A suite of training programs became available from the Department of Justice specifically for emergency responders to terrorism events. Funding through the Nunn-Luger-Domenici Domestic Preparedness Program5 created instructional training programs. Technology was transferred from the military in the form of equipment and identification methodologies to first responders. This technology gave the response community new tools that increased its response capability. The availability of the military **M291 kit**, a personnel-activated charcoal decontamination kit, gave it, for the first time, something to use other than water for decontamination. This was a giant leap forward, but few agencies embraced the methodology. Water was still the king.

In the late 1990s, the military was looking to replace the M291 kit with a Canadian product that boasted the ability to neutralize or remove known CWAs and T2 toxin6 from the skin if it was applied soon after contamination and exposure.

FDNY received its first experience with **Reactive Skin Decontamination Lotion** (RSDL®)7 through the U.S. Marines Chemical Biological Incident Response Force (CBIRF). FDNY developed a training relationship with CBIRF in the late 1990s, and CBIRF invited two members from FDNY Hazmat to accompany them on a trip to Canada for CWA training. Here the members used RSDL, along with other procedures, to decontaminate and save the lives of exposed pigs. The RSDL lotion was easy to use and effective. The results were so promising that on its return, FDNY Hazmat Operations immediately investigated the possibility of adding the technology to its arsenal of equipment. Water was not being replaced; it was just going to be augmented.

By early 2001, RSDL was fielded by the U.S. military, foreign militaries, and a number of foreign response agencies. The U.S. emergency response community was frustrated in its efforts to add RSDL to its equipment caches because the U.S. Food and Drug Administration had

not approved the reactive skin decontamination lotion for human use. It took a catastrophe like 9/11 for America to realize and come to terms with the fact that the oceans no longer protected it from terrorists. Terrorists had struck the nerve center of our financial sector and the hallmark of military power. The United States was vulnerable. If terrorists were able to appropriate or create chemical agents, could an event using CWAs be a possibility? Could we recover from such an ordeal? Water was still king, but other solutions were in the making in the minds of the hazmat community.

After 9/11, RSDL soon became available through the military to specific response organizations. Today, it is available nationwide and is the standard for the U.S. military. But are we as a community ready to use it? Will we ever get away from just water as the solution to decontamination?

The question is not whether we as a response community are ready to use an alternative to water. The question is, Can we ethically not use it? We, as a community, have not fully embraced RSDL or other decontamination solutions; however, we should not be focused on the issue of displacing water. What we should be doing is integrating RSDL and other decontamination solutions into our protocols and procedures of decontamination options. We should have all these solutions readily available or know where to access them in an emergency. Water will be the solution for a long time to come, but through technology, new solutions will be developed that will protect our responders and the victims. They will be equally effective on toxic industrial chemicals and toxic industrial materials as well as CWAs. RSDL is one possibility available now. It can neutralize or remove chemical agents, not just transfer the problem. Water is still the king, but water may need to share a small part of the throne.

If the unspeakable occurs and this nation falls victim to a chemical attack or an accidental or intentional release, emergency responders will be there with their hoselines. They will shower the victims down and do the best they can with the resources available. We need to give responders the tools that will help them fulfill their mission: protect the lives and property of the citizens they serve. To do anything less is ethically challenging. But, if we consciously know that more effective technology and products are available and we do not actively pursue their acquisition, can we truly say that we have done all that we can with a clear conscience?

I leave you with this final quote to contemplate from a friend and mentor of mine, Chief John Eversole, special operations chief, Chicago (IL) Fire Department: "Our department takes 1,120 calls every day. Do you know how many of the calls the public expects perfection on? 1,120."

Endnotes

1. "Chemical warfare agents" refers to a large group of toxic chemicals used by militaries around the world. Nerve gas is a misnomer. Chemical gases, like chlorine and phosgene among many more, were used by both sides during World War I to incapacitate the opponent's troops. Nerve agents, a group of chemicals related to organophosphate pesticides, contain both oily liquids with a high-vapor pressure (persistent) and liquids with a low-vapor pressure (no persistent) developed during and after World War II. These chemicals acted against the nervous system to incapacitate and kill the exposed victims. The term "nerve gas" was used to describe the group of chemicals used by the military as warfare agents before the term "chemical warfare agents" was coined. Nerve agents are not gases. Croddy, Eric. Chemical and Biological Warfare: A Comprehensive Survey for the Concerned Citizen. 2002. New York, N.Y.: Springer-Verlag; chapter 1, page 6.
2. These numbers are the official numbers by the government of Madhya Pradesh, India. A more generally accepted figure is that 8,000 to 10,000 died within 72 hours, and it is estimated that 25,000 have since died from gas-related diseases. Eckerman, Ingrid (2005). "The Bhopal gas leak: Analyses of causes and consequences by three different models," Journal of Loss Prevention in the process industry,(18:213–217); doi:10.1016/j.jlp.2005.07.007, and Eckerman, Ingrid (2006). "The Bhopal Disaster 1984 – working conditions and the role of the trade unions," (PDF). Asian Pacific Newsletter on occupational health and safety (13(2):48-49).
3. Polychlorinated biphenyls (PCBs) are mixtures of up to 209 individual chlorinated compounds (known as congeners). PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical

equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the United States in 1977 because of evidence that they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures, electrical devices containing PCB capacitors, and old microscope and hydraulic oils. Agency for Toxic Substances & Disease Registry (ATSDR) Web site.

4. Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire retardant. Because of its fiber strength and heat-resistant properties, asbestos has been used for a wide range of manufactured goods, mostly in building materials (roofing shingles, ceiling and floor tiles; paper products and asbestos cement products); friction products (automobile clutch, brake, and transmission parts); heat-resistant fabrics; packaging; gaskets; and coatings. U.S. Environmental Protection Agency Web site.

5. The Nunn-Lugar-Domenici Domestic Preparedness Program, led by the Defense Department (DOD), provides training and equipment to help U.S. cities respond to possible terrorist attacks that involve weapons of mass destruction (WMD). The Army's Chemical and Biological Defense Command designated a "train-the-trainer" program to build on the existing knowledge and capabilities of local first responders who would deal with a WMD incident during the first hours. The legislation also designated funds for the Public Health Service to establish Metropolitan Medical Strike Teams to help improve cities' medical response to a WMD incident. U.S. General Accounting Office, "Combating Terrorism: Observations on the Nunn-Lugar-Domenici Domestic Preparedness Program," Oct. 1998.

6.Trichothecene mycotoxin is a naturally occurring poison produced by fungi. Illinois Dept. of Public Health; http://www.idph.state.il.us/Bioterrorism/factsheets/trichothecene.htm.

7. RSDL is a copyrighted product of Bracco Diagnostics, Inc.

Vincent J. Doherty is the director for program outreach for the Center for Homeland Defense and Security at the Naval Postgraduate School in Monterey, California. He is also an adjunct professor for the Homeland Security Management Institute at Long Island University and consults on numerous programs for the Department of Homeland Security (DHS). He is a 25-year, highly decorated veteran of the Fire Department of New York, where he served as the company commander of Hazardous Materials Company 1, the executive officer of hazmat operations, and an acting battalion chief of the hazmat battalion in the Special Operations Command. Prior to his retirement in 2006, he served as a senior fellow/practitioner to the Preparedness Directorate, DHS. Doherty is a prominent speaker/lecturer and has a B.S. degree from St. John's and a Master of Arts degree in security studies: homeland security and defense from the Naval Postgraduate School.

UK sold chemical weapons to Gaddafi

Source: http://presstv.com/detail/210950.html

The British government has launched a misleading campaign, claiming to destroy stockpiles of chemical weapons while itself had sold chemical

components required for their production.

During the four decades that Muammar Gaddafi was in power, the Western powers have filled their pockets with money gained from selling arms to the oil-rich country. Despite the UN Security Council's Resolution 748, which had imposed an arms embargo on Libya in 1992, Muammar Gaddafi spent nearly USD 30bn on weapons, making a rich stockpile of weapons of mass destruction.

The British government that claims to be a signatory to the international Chemical Weapons Convention -- according to which the production, stockpiling, and use of chemical weapons is illegal -- has sold chemical components to brutal regimes, including the Gaddafi's, in order to produce weapons of mass destruction.

In a scathing article published in the Sunday Herald in 2002, Neil Mackay -- the newspaper's multi-award winning home affairs and investigations editor -- revealed the UK government's involvement in chemical weapons sales.

Driven by greed and a profound lack of morality, the British government violated the Chemical Weapons Convention by selling chemicals to brutal regimes that would produce weapons of war.

Gaddafi, who was not a signatory to the convention, was supplied with chemical components by the British government.

Moreover, Mackay explicitly revealed the British government's greed by disclosing the name of the most brutal regimes to which the UK had sold chemicals. Among the countries were Yemen, Israel, and Saudi Arabia.

Other countries to which Britain had sold chemical components were Cyprus, India, Kenya, Kuwait, Malaysia, Nigeria, Oman, Pakistan, Singapore, Slovenia, South Africa, South Korea, Sri Lanka, Tanzania, Turkey and Uganda.

The report stated that Britain's Department of Trade and Industry has clearly admitted that the British government had sold toxic chemical precursors, essential chemicals for creating weapons of mass destruction, to 26 countries.

Nevertheless, in a pose to present itself as a pro-democracy government, the British government has announced plans to send experts to Libya in order to destroy Gaddafi's newly disclosed stockpiles of chemical weapons which have been reportedly unknown to British officials who claim “Gaddafi has totally misled Tony Blair when he promised to destroy weapons of mass destruction.”

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Tracking nerve agents back to the source where terrorists got it

Source:http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=223&content_id=CNBP_028855&use_sec=true&sec_url_var=region1&__uuid=fce8f236-2b72-4b22-b1e6-a92699d73338

Scientists are reporting development of a first-of-its-kind technology that could help law enforcement officials trace the residues from terrorist attacks involving nerve gas and other chemical agents back to the companies or other sources where the perpetrators obtained i ngredients for the agent. A report on the technique, which could eventually help track down perpetrators of chemical attacks, appears in ACS' journal *Analytical Chemistry*.

An American Chemical Society release reports that Carlos Fraga and colleagues explain that nerve agents, like sarin (also called GB), are some of the most toxic and fast-acting chemical warfare agents in existence. As seen in the 1994 and 1995 GB attacks in Japan, symptoms — such as a runny nose and a tightness in the chest — can appear within seconds, followed by nausea and difficulty breathing. Although traces of the agent remain after such attacks, there has been no practical way of tracing the agent back to its source ingredients. Fraga's team sought to develop a way to do just that.

Fraga's group describes a method called "impurity profiling" that identifies impurities in a GB sample at a crime scene and matches them like a fingerprint to the impurities in the source chemicals, pinpointing the likely source.

They found that up to 88 percent of the impurities in source chemicals used to make GB can wind up in the finished product, and these impurities are unique, like a fingerprint. Using standard laboratory instruments, they performed impurity profiling and correctly identified the starting materials used for two different batches of GB. "This remarkable outcome may one day become a basis for using impurity profiling to help find and prosecute perpetrators of chemical attacks," say the researchers.

— Read more in Carlos G. Fraga, "Impurity Profiling to Match a Nerve Agent to Its Precursor Source for Chemical Forensics Applications," Analytical Chemistry 83, no. 24 (31 October 2011): 9564–72

Leading Chemical Weapons Preparedness Companies Announce Partnership To Deploy Break-through Diagnostic Test Internationally

Source: http://www.medicalnewstoday.com/releases/238245.php

ProQares a leading provider of testing, evaluation and certification services for protective equipment against chemical hazards announced a partnership with U.S.-based Rapid Pathogen Screening, Inc. (RPS®) a leading developer of point-of-care diagnostic tests, to deploy ChemTox™ in numerous countries throughout the European and Asia Pacific regions. ChemTox is the first-of-its-kind point-of-care diagnostic test for human exposure to chemical poisons in the blood, including Soman, Sarin, Tabun, and VX, and is capable of detecting low-level chemical nerve agent exposure in 10 minutes or less with only a simple finger-stick blood sample. "The partnership with RPS complements ProQares' mission to contribute to the protection of humans against toxic threats by providing fast and reliable test results," said Jack van Hoof, Managing Director of ProQares. "Through the partnership, ProQares will support RPS in marketing ChemTox to its worldwide network of government and industrial organizations." "This partnership will accelerate the deployment of this break-through technology and ensure that governments and other organizations charged with protecting the public from a chemical weapons attack have the most sophisticated tools available," said Robert Van Dine, Chief IP and Government Affairs Officer for RPS.

In June, in his address to the NATO Conference on WMD Arms Control, Disarmament and Non-Proliferation, Ambassador Ahmet Uzümcü, director-general of the Organisation for the Prohibition of Chemical Weapons (OPCW), focused NATO on his concern that "the future use of chemical weapons in a conventional military sense is remote. The misuse, on the other hand, of toxic chemicals, especially in an asymmetric sense, appears to be the more likely scenario."

A single chemical attack in an urban commercial or residential setting can result in tens of thousands of people that require immediate diagnosis and treatment. Treatment for chemical weapon nerve agent exposure often is most effective within the first 40 minutes. ChemTox responds to this need by providing a rapid, accurate and cost-effective diagnosis at the point-of-care. In early 2012, RPS expects to apply the CE mark to ChemTox and begin discussions with the U.S. Food and Drug Administration to bring it to market in the United States. The product is not currently CE-marked and is not yet available for sale in the United States.

Japanese attenuated smallpox vaccine shows promise in U.S. trial

Source: http://jid.oxfordjournals.org/content/early/2011/09/15/infdis.jir527.short

An attenuated smallpox vaccine that was developed in Japan in the 1970s compared well with a conventional smallpox vaccine in a phase 1-2 clinical trial in the United States, according to a report last week in the *Journal of Infectious Diseases*.

The Center for Infectious Disease Research and Policy (CIDRAP) says that the vaccine, called LC16m8, consists of vaccinia virus weakened by deletion of the B5R protein. It was tested extensively in Japan and has been used to vaccinate some military personnel there.

In the double-blind U.S. trial, 154 young adult volunteers at five centers were randomly assigned to receive LC16m8 or the conventional vaccine, Dryvax, and were monitored for immune response and adverse events. Local and systemic reactions to the vaccines were similar in the two groups. In immunogenicity testing, serum samples from both groups generated neutralizing antibody titers greater than 1:40 against vaccinia (the vaccine virus), smallpox (variola), and monkeypox viruses. The attenuated vaccine also generated "robust cellular immune responses" that trended higher than the Dryvax responses by one measure but lower by another.

The authors concluded that the vaccine was well tolerated, that it "may have efficacy in protecting individuals from smallpox," and that it warrants further development.

The U.S. Department of Health and Human Services (HHS) is in the process of adding twenty million doses of another attenuated smallpox vaccine, Imvamune, to its Strategic National Stockpile.

— Read more in Jeffrey S. Kennedy et al., "Safety and Immunogenicity of LC16m8, an Attenuated Smallpox Vaccine in Vaccinia-Naive Adults," Journal of Infectious Diseases (15 September 2011) (doi: 10.1093/infdis/jir527)

Pentagon rethinks bioterror effort

Source: http://www.nature.com/news/2011/110920/full/477380a.html

In the film Contagion, it takes just a few months for scientists to make a vaccine against a deadly virus. Yet a real US military programme that aimed to do just that is being dismantled after five years of trying.

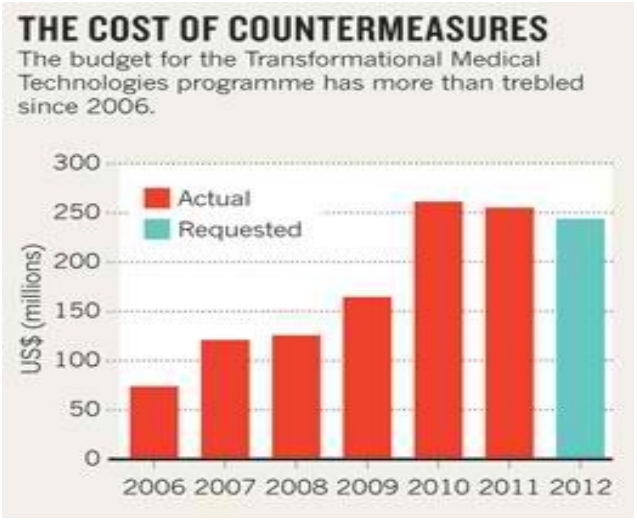
The Transformational Medical Technologies (TMT) initiative, born in the US Department of Defense in 2006, was originally conceived as a five-year, US$1.5-billion project that would substantially accelerate the development of countermeasures to protect soldiers against biological attacks. Made into a permanent programme in 2009, it set out to sequence the genomes of

potential bioterror agents, explore new drug technologies and develop 'broad-spectrum' therapies that would work against multiple bacterial and viral pathogens — especially haemorrhagic fever viruses such as Ebola and Marburg. Supporters of the programme point out that three candidate drugs developed under the programme, for pathogens including Ebola virus, are now in clinical trials.

The TMT programme, however, has ceased to exist as a stand-alone effort. Alan Rudolph, director of Chemical and Biological Technologies for the TMT's parent office, the Defense Threat Reduction Agency, is folding some TMT projects into other Pentagon efforts and reordering their priorities. Critics say that it has failed in its underlying objective to provide a faster, game-changing approach to biodefence. No antibiotics developed by the TMT have entered clinical trials. The drug candidates it has developed are designed for single pathogens, not multiple threats. And although the programme is set to award a major clinical-trial contract later this year, the drug being tested would treat not exotic, untreatable pathogens but ordinary influenza, a disease already heavily researched outside the Pentagon.

Michael Osterholm of the University of Minnesota's Center for Infectious Disease Research and Policy thinks that the programme was overambitious and ill-conceived. "They're wasting tonnes of money," he says.

The programme's architects have vigorously defended its record. "There is a success there that we need to build on," says Jean Reed, who, as deputy assistant to the secretary of defence for chemical and biological defence and chemical demilitarization, laid the plans for the TMT. Now a consultant to the National Defense University in Washington DC, Reed adds that the programme has become the archetype within the defence department for the "development of treatments for biologically engineered and naturally occurring disease threats".



"The TMT from its inception was a high-risk, high-payoff or high-failure effort," says David Hough, who became TMT programme manager in January 2007. He says that the effort has paid off: "If we get an engineered threat or something that we haven't seen before that is causing a lot of deaths, we think we can respond to that." He says that the programme's track record is better than that of the Pentagon's traditional chemical and biological defence research effort over the past decade.

Although the TMT aimed to transform biodefence, it encountered many of the roadblocks that have hindered the nation's biodefence effort as a whole, which has spent $60 billion since 2001 with only modest returns (see Nature **477,** 150–152; 2011). Developing broad-spectrum drugs for the battlefield has proved difficult because regulators are more accustomed to evaluating drugs that target one specific disease, and drug companies prefer to focus on diseases that affect many people rather than on obscure pathogens that could serve as bioweapons.

These considerations helped to lead the TMT into focusing on influenza in 2009. That year, US government officials were faced with the double threat of H1N1 swine flu, which threatened to explode into a devastating pandemic, and the more deadly H5N1 bird flu virus, which was continuing to infect small numbers of people.

Government officials were "practically paralysed by the fear that they were dealing with two strains at a time; they didn't know what they were going to do", says Darrell Galloway, Rudolph's predecessor at the Defense Threat Reduction Agency, who was a driving force for the TMT from its inception until he retired in January 2010. Galloway saw influenza as an opening to prove the programme's worth. In May 2009, he awarded a contract to AVI BioPharma of Bothell, Washington, to make a flu drug against the H1N1 virus, using its genetic sequence as a basis. Within months, the company had made a drug and tested it in ferrets.

Yet the move angered some within the Pentagon and perplexed observers, because influenza is the focus of considerable research funded by the US Department of Health and Human Services. "I'm having a really hard time making a connection between the investments we're making and the benefit to soldiers," said one staff member at the Defense Threat Reduction Agency.

The TMT also stumbled because companies attracted to biodefence tend to be small and inexperienced. Larger, established companies prefer to pursue more profitable markets, fearing that the federal government will commit to stockpiling only limited amounts of drugs developed for defence purposes.

The company behind all three TMT drugs now in clinical trials, AVI BioPharma, has never had a drug approved by the US Food and Drug Administration. The company's technology uses antisense, in which short pieces of genetic material bind to a pathogen's genes and block their production. The technology has led to few approved drugs owing to safety problems and a lack of efficacy. Still, the TMT and the Army awarded the company a $291-million, six-year contract last year to fund two clinical trials, for its drugs against Ebola and Marburg viruses. Now AVI BioPharma has set its sights on a contract for clinical trials of its antisense drug for H1N1.

AVI BioPharma's chief executive, Chris Garabedian, says that the company's technology is safer than that tested by other drug firms, and thus can be used in higher doses that are more likely to be effective than other antisense drugs that have failed in the past.

But critics say that it was a mistake for the TMT to invest so much in a technology that does not have a proven track record in infectious disease. "Everybody in that field thinks antisense is a failure, except the [defence department] programme manager," says one biodefence analyst, who did not want to be named.

Rudolph, who succeeded Galloway last September, controls the chemical and biological defence research budget, which includes standard drug- and vaccine-research programmes as well as the TMT. Rudolph is combining the TMT research money (see 'The cost of countermeasures') with that for traditional projects, and refocusing on four priorities: surveillance and diagnostics, sensors, countermeasures and decontamination technologies.

Rudolph has retained some TMT projects, such as the pathogen-sequencing studies led by Ian Lipkin of Columbia University in New York, who was a technical adviser on Contagion. But he has cut others, such as a five-year, $24.7-million contract awarded in 2008 to Peregrine Pharmaceuticals of Tustin, California, to find antibodies against haemorrhagic fevers. The TMT funding for AVI BioPharma's two clinical trials will continue, however, as the trials are managed separately by Hough.

Whether the dismantling of the TMT will improve the Pentagon's biodefence success rate remains to be seen, says Tom Inglesby at the Center for Biosecurity of the University of Pittsburgh Medical Center in Baltimore, Maryland. "In the end, the question will be, 'Did Rudolph make progress in the time he was there with the money that he had?' Ultimately, he will be held accountable."

Contaminated cantaloupe outbreak deadliest in decade

Source: http://www.homelandsecuritynewswire.com/contaminated-cantaloupe-outbreak-deadliest-decade

The recent listeria outbreak that has sickened seventy-two people and killed as many as sixteen, is shaping up to be the deadliest U.S. food-borne disease outbreak in more than a decade. On Tuesday, the Centers for Disease Control and Prevention (CDC) announced that it had officially confirmed the deaths of thirteen people, surpassing the previous record of nine deaths from the 2009 outbreak stemming from salmonella tainted peanuts.

Public health authorities have traced the outbreak to contaminated cantaloupes from Colorado which have made their way across the United States and killed consumers in Kansas, Missouri, New Mexico, Maryland, Nebraska, and Texas.

Dr. Robert Tauxe, the CDC's deputy director of the foodborne, waterborne, and environmental diseases division, expects the number of illnesses and deaths to rise in the next several weeks as listeria symptoms take a long time

to manifest themselves. After eating contaminated food, an individual may not become ill for up to four weeks.

"That long incubation period is a real problem," Tauxe said. "People who ate a contaminated food two weeks ago or even a week ago could still be falling sick weeks later."

Compared to salmonella and E. coli, which generally sickens more individuals during outbreaks, listeria is often more deadly. In 1998 twenty-one people died from a listeria outbreak linked to contaminated hot dogs and deli meats, while in 1985, fifty-two people died from listeria infected Mexican-style soft cheese.

Listeria is a bacterial infection that can cause fever, muscle aches, nausea, or diarrhea and in some cases people develop severe symptoms like meningitis, brain abscesses, and mental changes. One out of five individuals who contract the disease can die. The bacteria primarily infects the elderly, pregnant women, and those with compromised immune systems. According to the CDC, the median age of those sickened by Listeria is seventy-eight.

Jensen Farms, which grew the contaminated cantaloupe, has been hit by several lawsuits filed on behalf of the two Colorado residents and the one Texas resident who were sickened in the outbreak. In addition, Wal-Mart is being sued by one couple for selling the tainted fruit.

Solar UV disinfects drinking water

Source: http://www.homelandsecuritynewswire.com/solar-uv-disinfects-drinking-water

More than 800 million people around the world lack access to clean water; the water available for people to drink in many developing countries has not been treated to remove contaminants, including pathogenic microorganisms; half of the world's hospital beds are occupied by people who are sickened by the water they drink; Purdue University researchers have invented a water-disinfection system that uses the sun's ultraviolet radiation to inactivate waterborne pathogens

A team of Purdue University researchers has invented a prototype water-disinfection system that could help the world's 800 million people who lack safe drinking water.

The system uses the sun's ultraviolet radiation to inactivate waterborne pathogens. Sunlight is captured by a parabolic reflector and focused onto a UV-transparent pipe though which water flows continuously.

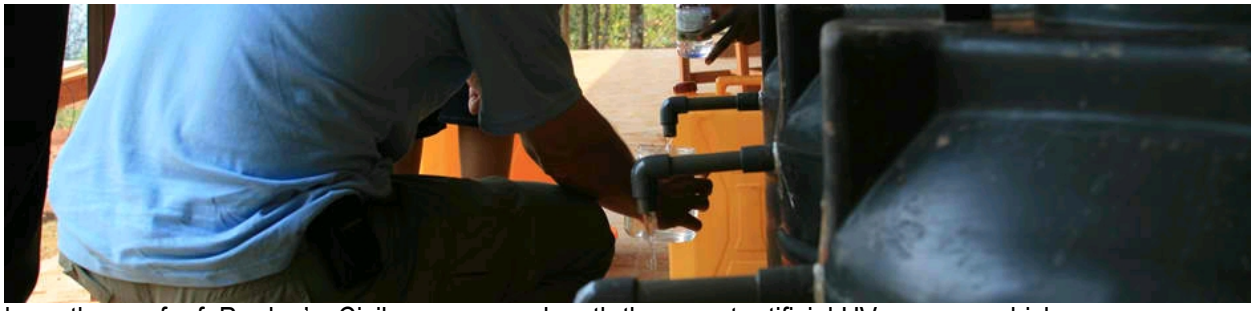
"We've been working on UV disinfection for about 20 years," said Ernest "Chip" R. Blatchley III, a professor of civil engineering. "All of our work up until a couple years ago dealt with UV systems based on an artificial UV source. What we are working on more recently is using ultraviolet radiation from the sun."

A Purdue University release reports that what motivated the research is the need to develop practical, inexpensive water-treatment technologies for a

large segment of the world's population in developing nations.

"More than 800 million people lack access to what we consider to be 'improved' water," Blatchley said. "The water available for people to drink in many developing countries hasn't been treated to remove contaminants, including pathogenic microorganisms. As a result, thousands of children die daily from diarrhea and its consequences, including dehydration. Half of the world's hospital beds are occupied by people who are sickened by the water they drink."

Blatchley built the parabolic reflector in his garage. The team, including an undergraduate student supported by a National Science Foundation (NSF) program, finished the prototype in the lab, lining it with aluminum foil. The system was then tested on the roof of Purdue's Civil Engineering Building.



"It turns out that the solar radiation we receive in Indiana at some times of year is intense enough to inactivate some waterborne microorganisms with this type of system," he said. "We demonstrated that we can disinfect water using sunlight. The reactor was very inexpensive to build, less than $100 for the materials."

The natural UV system inactivated E. coli bacteria. The system, however, must be able to kill dangerous pathogens such as Vibrio cholerae, which causes cholera, and Salmonella typhi, which causes typhoid, and Cryptosporidium parvum, which causes cryptosporidiosis, a parasitic disease that causes diarrhea.

"In the future we want to prove that our solar-UV system is going work against these other pathogens," said Blatchley, who has worked on the project with doctoral student Eric Gentil Mbonimpa, who is from Rwanda, and Bryan Vadheim, an undergraduate from Montana State University. "We also want to automate it and build sensors for it should be pumped through the system, depending on how sunny it is at any particular time."

The NSF funded Vadheim's work through its Research Experiences for Undergraduates program.

The parabolic reflector is made out of a wood called paulownia. "That material was selected because the tree grows very rapidly in regions near the equator, where many people lack safe drinking water," Blatchley said. "It is very light, strong and stable, so it's not going to twist or warp or bend or crack in a climate that's alternating between humid and dry."

The release notes that natural UV has a longer wavelength than most artificial UV sources, which means it has less energy. Blatchley's hypothesis, however, is that UV from sunlight will inactivate pathogens via the same mechanism as artificial UV: The radiation damages the genetic material of microbes, preventing them from reproducing.

"We are looking at other inexpensive reflecting materials, for example metalized plastic," Blatchley said. "It's similar to the material that's used to make potato chip bags. We've done measurements, and some of these materials are about twice as reflective as aluminum foil."

Improving water quality in developing countries is one of fourteen "grand challenges" established by the National Academy of Engineering and also has been named a "millennium development goal" by the United Nations.

Blatchley also is working on an inexpensive filtration system that uses layers of sand and gravel to clean water. The filters were developed by Aqua Clara International, a Michigan-based nonprofit

corporation. Purdue and Aqua Clara are teaming up with Moi University in Kenya on that project. Purdue students tested the behavior of the filters in a Global Design Team project in Africa through Purdue's Global Engineering Program.

Water flows slowly through the filter, allowing a bacterial film to establish near the top of the filter to remove organic contaminants while certain pathogens also are removed by attachment to the sand.

The water, however, may still require disinfection to kill remaining pathogens, and it might be possible to use the slow-sand filters in combination with a water-disinfection system like the new solar UV approach.

"We want to develop drinking water treatment systems that improve water quality for people in developing countries, using Kenya as an example," Blatchley said.

Aqua Clara has developed a business model for the filtration system.

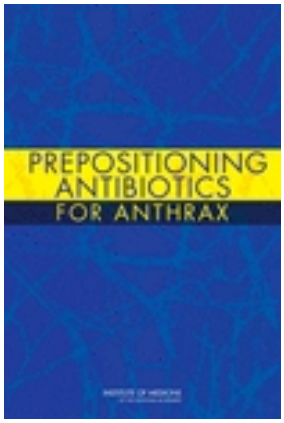
"This provides business opportunities for local entrepreneurs who are trained how to make these filters out of locally available materials," he said. "You can build one of these things for $10, and it's capable of producing something like 40 liters of water a day. It's intended to produce enough water for a family of four."

The use of the filters is becoming more widespread. "About 1,900 of the sand filters have been installed in villages throughout Kenya," said William Anderson, director of the Global Engineering Program. "More and more, Purdue's faculty and students are extending our land-grant tradition for the benefit of people throughout the world."

Prepositioning Antibiotics for Anthrax

Source: http://iom.edu/Activities/PublicHealth/PrepositionedCountermeasures.aspx

If terrorists released Bacillus anthracis over a large city, hundreds of thousands of people could be at risk of the deadly disease anthrax – caused by the B anthracis spores – unless they had rapid access to antibiotic medical countermeasures (MCM). The spores can be inhaled, be ingested, or come into contact with the skin. Inhalational anthrax is considered the most severe bioterrorism threat because the spores can travel significant distances through the air, and it has the highest mortality rate – approaching 100 percent if untreated. Although plans for rapidly delivering MCM to a large number of people following an anthrax attack have been significantly enhanced over the last decade, many public health authorities and policy experts fear that the nation's current systems and plans are insufficient to respond to the most challenging scenarios, such as a very large-scale anthrax attack or an attack on multiple cities.



The U.S. Department of Health and Human Services' Office of the Assistant Secretary for Preparedness and Response commissioned the IOM to examine the potential uses, benefits, and disadvantages of strategies for prepositioning antibiotics. This involves storing antibiotics close to or in the possession of the people who would need rapid access to them should an attack occur. The IOM defined and evaluated three categories of prepositioning strategies that could complement existing, centralized stockpiling strategies, including the Strategic National Stockpile maintained by the Centers for Disease Control and Prevention:

- Forward-Deployed MCM: MCM stored near the locations from which they will be dispensed
- Cached MCM: MCM stored at the locations from which they will

be dispensed, such as workplaces and health care facilities
- Predispensed MCM: MCM stored by the intended users

While prepositioning strategies have the potential to reduce the time between an anthrax attack and when an individual receives antibiotics, this potential benefit should be weighed against increased costs of associated with prepositioning strategies, a lower degree of flexibility to change plans following an attack if needed, and possible health risks involved with home antibiotic storage. The IOM committee developed a decision-aiding framework to help state, local, and tribal health officials determine which prepositioning strategies—if any—would benefit their communities.

NOTE: The full paper of this article can be downloaded from the Newsletter's website (CBRNE-CT Papers section).

U.S. inspects only 2 percent of all imported food

Source: http://www.homelandsecuritynewswire.com/us-inspects-only-2-percent-all-imported-food

Each year one in six Americans -- 48 million people -- gets sick, 128,000 are hospitalized, and 3,000 die from foodborne diseases; the FDA uses a risk-based system to isolate foods with high risk of contamination, but physically inspects only about 2 percent of all imported food

The U.S. federal agencies responsible for the safety of the U.S. food supply routinely fail to prevent bacteria-infected food from reaching grocery stores and restaurants, putting millions of Americans at risk.

A months-long News21 investigation found that food safety in the United States depends on ineffective regulations and underfunded government agencies that lack the authority to protect consumers.

the Centers for Disease Control and Prevention (CDC) estimates that each year one in six Americans — 48 million people — gets sick, 128,000 are hospitalized, and 3,000 die from foodborne diseases.

Iwatch news reports that just this year, contaminated hazelnuts, cantaloupe, bologna, sprouts, papayas, and two types of turkey all have caused outbreaks of E. coli and salmonella illnesses in the United States. Late last month the CDC reported that thirteen people died as a result of listeria food poisoning from eating cantaloupes produced at Jensen Farms in Granada, Colorado. Altogether, 72 people in 18 states were stricken, according to the CDC.

Food imports have quadrupled over the past decade. The U.S. Food and Drug Administration (FDA) expects 24 million shipments of goods for which it is responsible to pass through the nation's more than 300 ports of entry this year, up from six million a decade ago. The agency uses a risk-based system to isolate foods with high risk of contamination, but physically inspects only about 2 percent of all imported food.

Millions of yet-to-be-described viruses found in raw sewage

Source: http://www.homelandsecuritynewswire.com/millions-yet-be-described-viruses-found-raw-sewage

There are roughly 1.8 million species of organisms on planet Earth, and each one is host to untold numbers of unique viruses, but only about 3,000 have been identified to date; a new study reveals a vast world of unseen viral diversity that exists right under our nose -- in ordinary raw sewage, to be precise

Biologists have described only a few thousand different viruses so far, but a new study reveals a vast world of unseen viral diversity that exists right under our noses. A paper to be published Tuesday, 4 October in the online journal mBio explores ordinary raw sewage and finds that it is home to thousands of novel, undiscovered viruses, some of which could relate to

human health.

An American Society for Microbiology release reports that viruses are everywhere: every moment of every day, humans are exposed to viruses on surfaces, in foods, and in water. Our knowledge of the viral universe, however, is limited to a tiny fraction of the viruses that likely exist.

There are roughly 1.8 million species of organisms on planet Earth, and each one is host to untold numbers of unique viruses, but only about 3,000 have been identified to date.

To explore this diversity and to better gauge the numbers of unknown viruses that are out there, researchers looked for the genetic signatures of viruses present in raw sewage from North America, Europe, and Africa.

They detected signatures from 234 known viruses that represent twenty-six different "families," or types, of viruses. This makes raw sewage home to the most diverse array of viruses ever found.

Known viruses included human pathogens like Human papillomavirus and norovirus, which cause stomach flu. Also present were several viruses belonging to those familiar denizens of sewers everywhere: rodents and cockroaches.

Bacteria are also present in sewage, so it was not surprising that the viruses that prey on bacteria dominated the known genetic signatures. Finally, a large number of the known viruses found in raw sewage came from plants, probably owing to the fact that humans eat plants and plant viruses outnumber other types of viruses in human stool.

The release notes that raw sewage contains more mysteries than answers, however: the vast majority of viral genetic signatures belong to unknown viruses. This fact is significant, says the study's editor, Michael Imperiale of the University of Michigan. Unknown viruses like those found in sewage probably play many roles in human health and environmental processes that we simply do not appreciate yet, he says.

Of the unknown sewage viruses that come from humans, some of them may be opportunists that lie in wait for the human host's immune system to break down and provide an opening, he says.

Other viruses may be benign or even helpful. "There's a theory out there that we may be infected with viruses that don't cause any disease and may have beneficial effects," says Imperiale. There are examples of animal viruses that bear this out, he says, including a herpes virus in mice that makes them somewhat resistant to bacterial infections.

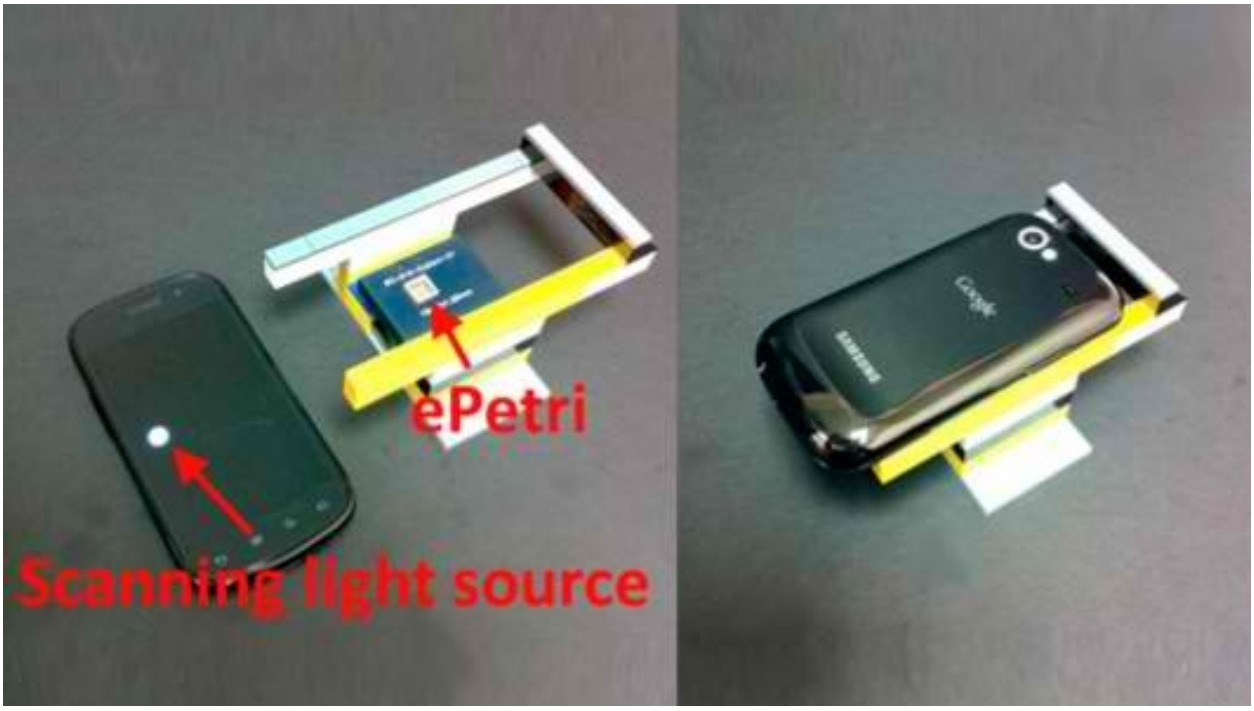
The study's authors plan to follow up their examination of sewage

viruses with studies of other environments around the world where viruses are likely to thrive.
Michael Imperiale expects more discoveries to come. “I think this is going to be the tip of the iceberg of how many viruses are out there,” he says. “I think the ocean is going to top raw sewage by orders of magnitude,” although they won’t be found in such densities as they are in sewage, he concedes.

Petri dish gets 21st Century update

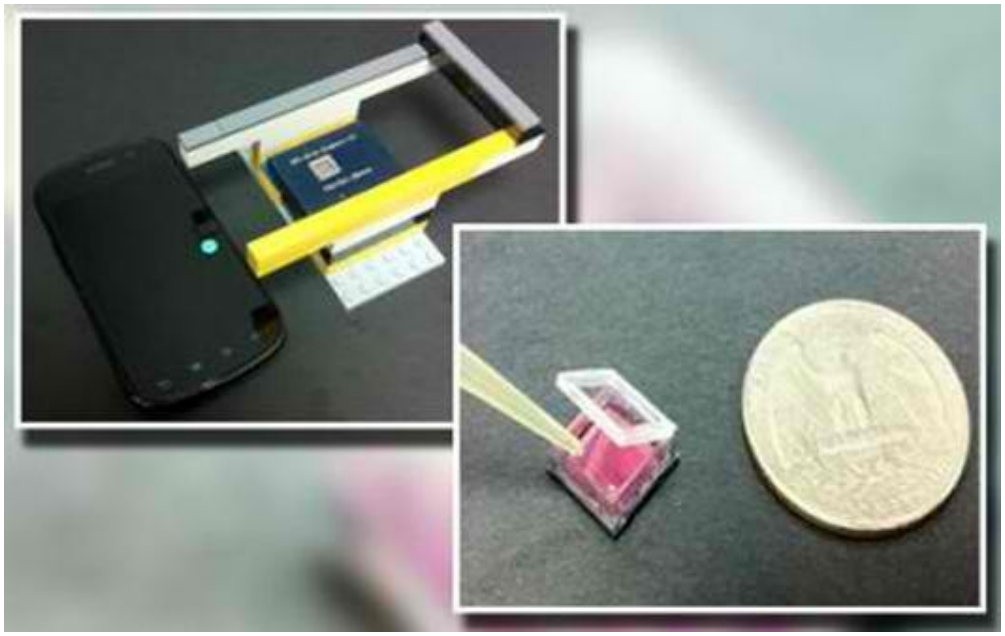
Source: http://www.gizmag.com/epteri-dish/20031/

When it comes to laboratory equipment, it doesn't get much more basic than the humble petri dish. Aside from moving from glass to plastic and the addition of rings on their lids and bases that allows them to be stacked, the petri dish has remained largely unchanged since its invention by German bacteriologist Julius Richard Petri and his assistant Robert Koch in the late 1800s. Now researchers at the California Institute of technology (Caltech) have dragged the petri dish into the 21st Century by incorporating an image sensor like those found in mobile phone cameras that does away with the need for bulky microscopes.



Whereas conventional petri dishes need to be removed from the incubator in which they are placed to allow the cells being cultured to grow so they can be studied under a microscope, the ePetri dish, as it's been dubbed, allows data from the dish to be sent to a computer without it being removed from the incubator.

The researchers built their prototype unit using a Google smartphone, a commercially available mobile phone image sensor, and some Lego building blocks. The culture is placed in the image-sensor chip and the phone's LED display is used as a scanning light source. When the device is placed in an incubator, a wire running from the chip to a laptop outside the incubator allows pictures of the culture captured by the image sensor to be sent out to the laptop.



The ePetri prototype uses an image sensor and a smartphone's LED display as a scanning light source (Image: Guoan Zheng, California Institute of Technology)

This allows the researchers to acquire and save images of the cells as they are growing in real time. They say that the technology is particularly adept at imaging confluent cells - cells that grow very close to one another and typically cover the while petri dish - which has traditionally been a highly labor-intensive process.

"Our ePetri dish is a compact, small, lens-free microscopy imaging platform. We can directly track the cell culture or bacteria culture within the incubator," explains Guoan Zheng, lead author of the study and a graduate student in electrical engineering at Caltech. "The data from the ePetri dish automatically transfers to a computer outside the incubator by a cable connection. Therefore, this technology can significantly streamline and improve cell culture experiments by cutting down on human labor and contamination risks."

The team, lead by Changhuei Yang, senior author of the study and professor of electrical engineering and bioengineering at Caltech, says the ePetri dish can also capture things that would otherwise be difficult or impossible - even with more complicated and expensive state-of-the-art light microscopes.

For example, Caltech biologist Michael Elowitz has tested the ePetri dish by observing embryonic stem cells. The lens limitations of a conventional microscope means that researchers are usually only able to focus on one region of the petri dish at a time, which isn't ideal for observing stem cells that can behave differently in different parts of a petri dish as they change into various types of other, more specialized cells. In contrast, the ePetri dish allowed Elowitz to follow the stem-cell changes over the entire surface of the device.

"With ePetri, you can survey the entire field at once, but still maintain the ability to 'zoom in' to any cells of interest," he says. "In this regard, perhaps it's a bit like an episode of CSI where they zoom in on what would otherwise be unresolvable details in a photograph."

In addition to simplifying medical diagnostic tests, the ePetri platform may be useful in various

other areas, such as drug screening and the detection of toxic compounds. It has also proved to be practical for use in basic research and could open up a whole range of new approaches to many other biological systems as well. Because it is a platform technology, its developers say it could be applied to other devices, such as providing microscopy-imaging capabilities for other portable lab-on-a-chip tools.
The team is also working on a self-contained system that would include its own incubator to make the system more useful as a desktop diagnostic tool. Such a device could be housed in a doctor's office to reduce the need for bacteria samples to be sent out to a lab for testing.
The Caltech team's study, entitled "The ePetri dish, an on-chip cell imaging platform based on subpixel perspective sweeping microscopy (SPSM)," appears online this week in the Proceedings of the National Academy of Sciences (PNAS).

10 Year Anniversary Of Anthrax Attacks

By Petra Rattue

Source: http://www.medicalnewstoday.com/articles/235307.php

With the 10th anniversary of the anthrax attacks in the United States coming up this October, Jeff Levi, PhD, Executive Director of the Trust for America's Health (TFAH) marked the occasion making the following statement:

"All of us at the Trust for America's Health want to take this anniversary to remember those we lost and their loved ones and to commemorate the public health community and other responders who worked tirelessly and heroically to respond and protect us. Public health officials were at the lead of the anthrax response - diagnosing and treating victims and running more than a million tests on 125,000 potentially life-threatening samples around the country in a short period of time. These officials were often working without adequate resources or training to respond to these types of attacks and had limited knowledge of the science involved in weaponized anthrax and how widely it was dispersed through the U.S. mail system. This was truly the first time public health came to be viewed as central to emergency response and national security on a wide-scale basis. Over the past decade, we made a lot of strategic, smart investments to improve preparedness in the United States. However, recent federal, state and local budget cuts threaten to put that progress into jeopardy. The most important way we can honor the past is to make sure we sustain enough resources to support the field of public health so they have the tools and expertise they need to do their jobs -- so we can prevent what we can and respond when we have to."

The TFAH and the Robert Wood Johnson Foundation (RWJF) released a report entitled "Remembering 9/11 and Anthrax: Public Health's Vital Role in National Defense" on the 1st September 2011. The report contains the evaluation progress and gaps of 10 years' public health preparedness and includes firsthand accounts from public health officials, laboratorians, clinicians and doctors who were on the frontlines after the anthrax attack. Features also include a timeline of the anthrax events and a summary of the lengthy criminal

investigation to identify the perpetrator.

Over the past decade significant improvements have been achieved in the following key areas:

- raising and upgrading staff and surge capacity
- legal and liability protections
- pharmaceutical and medical equipment distribution
- preparedness planning and coordination
- public health laboratories
- surveillance communications
- the Strategic National Stockpile
- vaccine manufacturing

Ten years later, work is still underway to address some areas which still need to be improved, including recent budget cuts, a shortage of well trained public health workers, an urgent need for more vaccine and pharmaceutical research, finding better ways of supporting communities so they can cope and recover from disasters, responding more effectively for demand for mass care during emergencies, and creating an integrated nationwide approach to biosurveillance.

Below are sample excerpts of the report's reflections, which include quotes of some of the people who were involved during or after the anthrax attack:

"What stands out most to me about the 2001 anthrax attacks is the notion that from that point on, bioterror was a reality and no longer an abstract concept.... Today, we know and can dispassionately describe exactly what happened. We know that of the people potentially exposed to anthrax in 2001, 22 people were infected, five of whom died. We know now that the attacks were unlikely a concerted effort by a group or organization intended to broadly affect our society and large numbers of people. We know that the attacks likely stemmed from the actions of a single individual who was probably mentally unstable. Today we know the anthrax attacks had a relatively limited and short-lived impact in terms of morbidity and mortality. However, at the time the entire event was surrounded by uncertainty."

-- Anthony S. Fauci, M.D., Director, NIAID/NIH

"My biggest concern is that the country is getting complacent and we might be losing focus on the importance of being prepared. We, as a nation, invested in building an infrastructure to ensure that the public health program is better prepared to respond to a biological attack. As time passes without an event and the budget continues to shrink, so does our ability to be fully prepared. The failure to maintain the infrastructure we have built can result in reverting us back to where we started."

-- Dr. Segaran Pillai, Chief Medical and Science Advisor, Ph.D. MSc, SM (AAM), SM (ASCP), Science and Technology Directorate, Department of Homeland Security, who was in Florida during anthrax when anthrax was first detected

Former colleagues: accused anthrax killer could not have done it

Source: http://www.homelandsecuritynewswire.com/former-colleagues-accused-anthrax-killer-could-not-have-done-it

Two former colleagues of Bruce Ivins, a scientist who worked at the U.S. Army Medical Research Institute of Infectious Disease (USAMRIID) in Frederick, Maryland, and who was accused by the FBI of being behind the 2001 anthrax attacks in the United States, said he could not have done

it (Ivins committed suicide in July 2008)

Colleagues of accused anthrax killer Bruce Ivins say evidence from the laboratory clearly demonstrates that Ivins could not have committed the crime.

Jeffrey J. Adamovicz (photo), now an assistant professor in the University of Wyoming Department of Veterinary Medicine and a researcher at the Wyoming State Veterinary Laboratory, will appear on the new PBS Frontline special "The Anthrax Files." The show will Tuesday, 11 October.

A University of Wyoming release reports that Adamovicz and UW Professor Gerry Andrews both worked in 2001 at the U.S. Army Medical Research Institute of Infectious Disease (USAMRIID) in Frederick, Maryland, where, according to the FBI, Ivins produced the anthrax used to commit the "country's most notorious act of bioterrorism."

The Frontline report focuses on the FBI's investigation into the 2001 rash of anthrax letters sent to media outlets and public officials at numerous U.S. locations. Coming so soon after the unforgettable events of 9/11, the anthrax scare caused a panic. Envelopes carrying deadly anthrax were delivered to U.S. Senate offices and network news divisions. Five people died and many more were infected before the attacks stopped.

Seven years later, after mistakenly pursuing one suspect, the most expensive and complex investigation ever undertaken by the FBI ended when Ivins was identified as the sole perpetrator of the attacks. The FBI made its announcement after Ivins had taken his own life.

Questions about the case continue. Earlier this year, a National Academy of Sciences panel raised doubts about the FBI's scientific conclusions. Also, many of Ivins' colleagues, including Adamovicz and Andrews, insist the FBI got the wrong man.

"The scientific evidence clearly shows that the (anthrax) wasn't produced in our laboratory (USAMRIID)," the two UW professors say. "The FBI based part of its case on unusual activity that took place in our lab for one week. There is no way he could produce that amount of spores in our lab during that time."

Other independent laboratories could not produce anthrax under similar lab conditions, and the FBI could not recreate the attack strain, Adamovicz says.

"The FBI's own evidence suggested a more advanced laboratory produced it," he says.

At UW, Adamovicz and Andrews are both working to develop a new vaccine for the livestock and wildlife disease brucellosis. They hold a patent for a therapeutic protein known as a monoclonal antibody that treats plague.

Focus on terrorism allowed foreign pests to slip into U.S.

Source: http://www.homelandsecuritynewswire.com/focus-terrorism-allowed-foreign-pests-slip-us

Following the 9/11 attacks the U.S. government assigned hundreds of agricultural scientists responsible for stopping invasive species at the border to anti-terrorism duties; the result has been that dozens of foreign insects and plant diseases managed to slip undetected into the United States.

The emerald ash borer, invader from China // Source: tn.gov

Experts now say that the problem has reached the point where the quality of the U.S. food supply is under threat.

The economic damage is not in dispute: scientists say that the foreign pest explosion cost billions of dollars in crop damage and eradication efforts from California vineyards to Florida citrus groves.

The New York Daily News offers these highlights:

— Nineteen Mediterranean fruit fly infestations took hold in California, and the European grapevine moth triggered spraying and quarantines in California's wine country.

— The Asian citrus psyllid, which can carry a disease that has decimated Florida orange groves, crossed the border from Mexico, threatening California's $1.8 billion citrus industry.

— New Zealand's light brown apple moth was detected in California, prompting the government in 2008 to bombard the Monterey Bay area with 1,600 pounds of pesticides. The spraying caused respiratory problems and killed birds. Officials spent $110 million to eradicate the moth, but the effort failed.

— The sweet orange scab, a fungal disease that infects citrus, appeared in Florida, Texas, Louisiana, and Mississippi, leading the states to impose quarantines.

— Chili thrips, rice cutworms and the plant disease gladiolus rust also got into Florida, which experienced a 27 percent increase in new pests and pathogens between 2003 and 2007.

— The erythrina gall wasp decimated Hawaii's wiliwili trees, which bear seeds used to make leis.

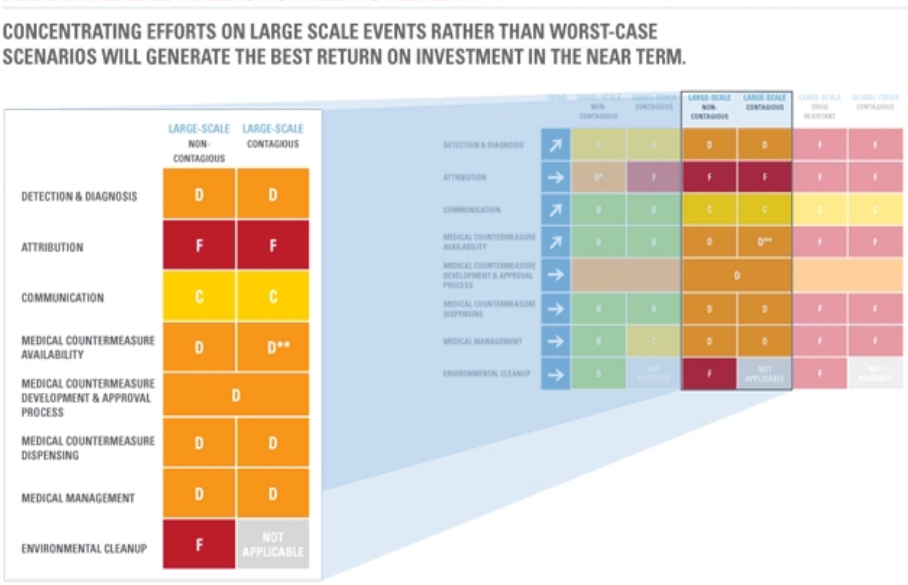
— Forests from Minnesota to Washington state were also affected by beetles such as the emerald ash borer, many of which arrived in Chinese shipping pallets.

The Daily News says that the number of pest cases intercepted at U.S. ports of entry fell from more than 81,200 in 2002 to fewer than 58,500 in 2006, before climbing back up in 2007, after complaints from the farm industry.

U.S. unprepared for large-scale bio-attack, report warns

Source: http://www.homelandsecuritynewswire.com/us-unprepared-large-scale-bio-attack-report-warns

On Wednesday, the WMD Center released its latest report that found the United States is unprepared for a large-scale biological attack, despite spending more than $65 billion on biodefense over the past decade.



The report warned that the threat of biological weapons is now greater than ever as a result of technological advances. Now, a small team of individuals with training in key disciplines using equipment readily available over the Internet can produce "the type of bioweapons created by nation-states in the 1960s."

Security experts have been well aware of the catastrophic potential of a biological attack, yet despite this knowledge, the government has largely failed to prepare the nation for a large-scale attack.

"If you look at capabilities of terrorist groups, if you look at their intentions and you look at our vulnerabilities … the threat is very high," said former Missouri Senator Jim Talent, the report's co-authors.

"There are going to be things in [the report card] that really make the people of Washington sit up and take notice about the progress we have not made," Talent added.

The "Bio-Response Report Card" concluded that the "nation does not yet have adequate bio-response capability to meet fundamental expectations ruing a large-scale biological event."

The WMD Center gave government leaders a "C" in detecting and diagnosing small-scale biological attacks, and largely assigned "Ds" and "Fs" for attribution, medical countermeasures, and medical management for large-scale attacks.

According to the report, one of the root causes for the lack of preparedness is a failure of leaders in Washington to understand the critical threat that biological weapons pose.

"The good news is that everybody who is aware of this threat wants to prevent it. The problem is that there's just not a high enough level of awareness," Talent said.

"Too few leaders in government or the private sector fully understand the growing threat of bioterrorism—and its potential consequences," the report warned.

"America needs leaders who will set clear priorities within the bio-response enterprise; assign authority; demand accountability; and inspire the confidence, commitment, and unity of effort necessary to strengthen bio-preparedness and response capabilities nationwide."

In addition, Talent noted that money for biodefense has either been insufficient or spent ineffectively. As an example, he pointed to the limited spending on developing methods to clean up biological pollution following an attack that could leave vast portions of an urban uninhabitable.

"We spend less on remediation than we do on the Marine Corps band," he said.

To help policymakers improve biological preparedness, the report urged leaders to "concentrate their efforts and resources on strengthening response capabilities required for large-scale contagious and large-scale non-contagious event."

In particular lawmakers should focus on "leadership that inspires confidence, commitment, and unity of effort," "mobilizing a 'whole of nation' bio-response capability," and "sustained investment in purpose-driven science."

Talent and Bob Graham, a former senator from Florida and the report's co-author, hope the report card leads to improvements in the White House and Congress.

"We're not leaving anybody with any excuse for inaction and response to this [report card]," Talent said. "It's intended to be constructive. It's also intended to be honest, and I think it is."

BIO-RESPONSE REPORT CARD

	TREND	SMALL-SCALE NON-CONTAGIOUS	SMALL-SCALE CONTAGIOUS	LARGE-SCALE NON-CONTAGIOUS	LARGE-SCALE CONTAGIOUS	LARGE-SCALE DRUG RESISTANT	GLOBAL CRISIS CONTAGIOUS
DETECTION & DIAGNOSIS	↗	C	C	D	D	F	F
ATTRIBUTION	→	D*	F	F	F	F	F
COMMUNICATION	↗	B	B	C	C	C	C
MEDICAL COUNTERMEASURE AVAILABILITY	↗	B	B	D	D**	F	F
MEDICAL COUNTERMEASURE DEVELOPMENT & APPROVAL PROCESS	→	D					
MEDICAL COUNTERMEASURE DISPENSING	→	B	B	D	D	F	F
MEDICAL MANAGEMENT	→	B	C	D	D	F	F
ENVIRONMENTAL CLEANUP	→	B	NOT APPLICABLE	F	NOT APPLICABLE	F	NOT APPLICABLE

A — MEETS MOST EXPECTATIONS
B — MEETS MANY EXPECTATIONS
C — MEETS MINIMAL EXPECTATIONS
D — MEETS FEW EXPECTATIONS
F — FAILS TO MEET EXPECTATIONS

ARROWS INDICATE CURRENT TRAJECTORY TOWARD MEETING FUNDAMENTAL EXPECTATIONS (ASSUMES BASELINE FUNDING)

↗ IMPROVING TREND
→ STATUS QUO
↘ DECLINING TREND

* D FOR ANTHRAX, FOR ALL OTHER PATHOGENS AND TOXINS F
** B FOR SMALLPOX

Argonne software help decode German E. coli strain

Source: http://www.anl.gov/Media_Center/News/2011/news111012.html

In the early days of annotating genomes in the mid-1990s, it took four or five scientists more than a year to analyze just one genome; now, with the help of Rapid Annotation using Subsystems Technology (RAST), which was developed by Argonne scientists, researchers needed only eight hours to sequence the genome of the rogue E. coli strain which struck Europe this summer; the next-generation RAST will cut this time to just fifteen minutes.

When a nasty strain of E. coli flooded hospitals in Germany this summer, it struck its victims with life-threatening complications far more often than most strains — and the search for explanation began.

Over a busy weekend after the rogue bacterium's genome was sequenced, scientists from all over the world submitted the E. coli genome to rounds of rigorous study. Thanks to a unique Argonne-developed computer program and cloud computing testbed, researchers mapped the strain's genes—and came a little closer to understanding the bacterium's secrets.

An Argonne National Lab release reports that a team of Argonne scientists developed the Rapid Annotation using Subsystems Technology (RAST) program in 2007. The program, which is free and open to any scientist, is designed to make sense of the jumble of letters that makes up an organism's DNA.

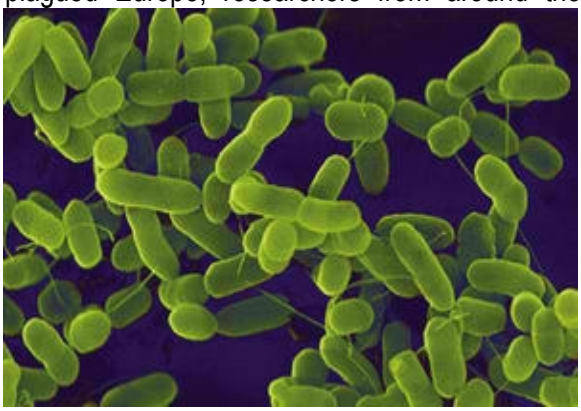
A genome is a long, incomprehensible string of letters in a four-letter alphabet: G, A, T, C. Sections of the string are divided into genes. Each one describes how to build a protein, and proteins build all of the parts of the cell.

"If we can figure out what DNA codes for which protein, and what that protein does, then we can look at any bug and have an idea of what it can do," explained Ross Overbeek, an Argonne computer scientist who helped design RAST.

"For example, bugs with multi-drug resistance often turn out to have little pumps that drain the drug out of the cell as fast as it comes in," Overbeek said. "Once you know what those pumps look like, you can think about how to get around them."

RAST matches sections of the new string with its enormous catalogue of previously sequenced genes and proteins. At the end it spits out an annotated genome with a sort of "Cliffs Notes" to the organism's probable genes and proteins.

When scientists, on 3 June, announced they had sequenced the genome to the E. coli strain that plagued Europe, researchers from around the



world began sending versions of the genome to RAST for annotation. They wanted to compare the new strain with past strains to tease out its origins and vulnerabilities.

"Genomes can vary even within a strain," Overbeek said. "You can get slightly different genomes in the same outbreak, even from the same patient. You compare genomes to see how the organism is mutating even as it's wreaking havoc."

The release notes that RAST servers were already overwhelmed by a flush of genomes and the new requests began to pile up — reaching more than 200 genomes an hour at one point. Its operators wanted to prioritize the E. coli work, so they turned to a resource designed for just such a possibility.

Magellan is a DOE test cloud computing project designed to boost research by making

additional servers available on demand for scientific computing. The program, partially funded by the Recovery Act, has two sites — one at the Argonne Leadership Computing Facility and one at the National Energy Research Scientific Computing Center in California — but is designed to give researchers across the nation access to computing power in times of need.

Low-temperature electron micrograph of a cluster of *E. coli* bacteria. Each individual bacterium is oblong shaped. Photo by Eric Erbe, digital colorization by Christopher Pooley.

The Argonne team duplicated the RAST server on Magellan, rapidly increasing the available computing power. "Our system is designed to use clusters, so we engineered it so that a piece of Magellan became part of the cluster that we use for RAST," explained Bob Olson, an Argonne computer scientist who maintains RAST.

It worked — so well that even more submissions poured in. Argonne and Virginia Tech teams worked around the clock that weekend to keep the servers running smoothly.

"They found exactly what they were looking for," Overbeek said. "The difference between this new strain and older ones came down to just a few genes. Apparently, the new strain included a combination of virulence factors present in other studied strains."

The operation was a perfect case for Magellan, Olson said, because each genome submission is an independent problem. Simply adding more processors to handle the extra jobs is easy—unlike many other computations, which often must solve successive problems; processors must wait to start their jobs until another processor finishes.

Overbeek remembered the early days of annotating genomes in the mid-1990s, when it took four or five scientists more than a year to analyze just one genome. "Now we can spit them out in a few hours," he said, and the team has already tested the next generation of RAST — a version so fast that it cuts the time for annotating a typical E. coli genome from eight hours to just fifteen minutes.

"RAST is really revolutionary," Overbeek said. "It's turned a problem that used to be insurmountable into one that is trivial."

There is even an iPhone app to submit and receive genomes from RAST servers.

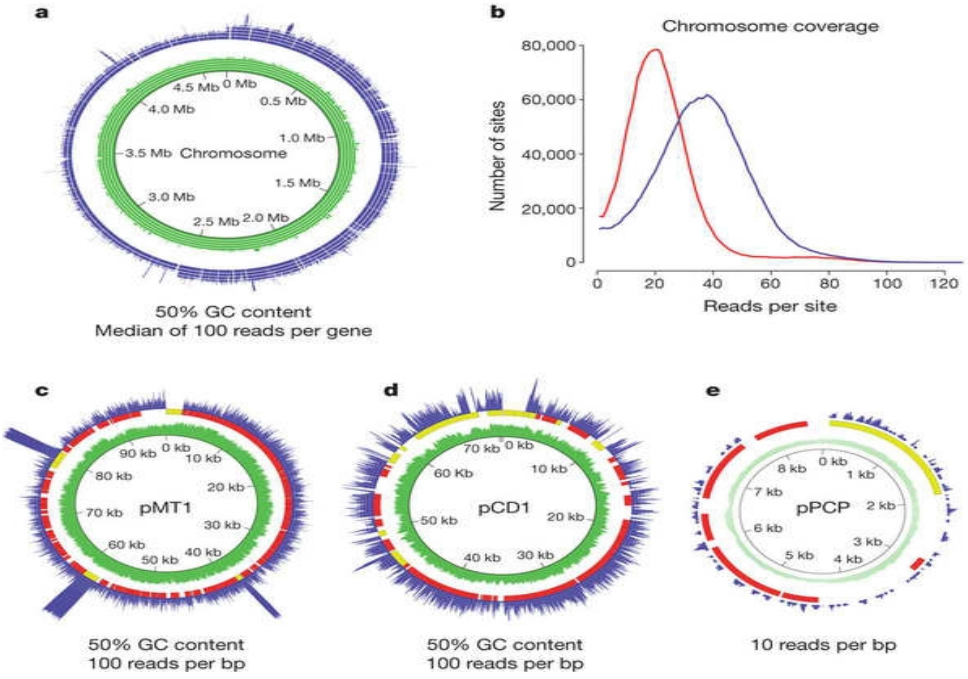
Developed at Argonne, RAST is funded through the National Institutes of Health (NIH) and run by the Pathosystems Resource Integration Center (PATRIC) at the Virginia Bioinformatics Institute. PATRIC keeps a publicly available database of sequenced genome information.

A draft genome of Yersinia pestis from victims of the Black Death

Source: http://www.nature.com/nature/journal/vaop/ncurrent/full/nature10549.html

Technological advances in DNA recovery and sequencing have drastically expanded the scope of genetic analyses of ancient specimens to the extent that full genomic investigations are now feasible and are quickly becoming standard[1]. This trend has important implications for infectious disease research because genomic data from ancient microbes may help to elucidate mechanisms of pathogen evolution and adaptation for emerging and re-emerging infections. Here we report a

reconstructed ancient genome of Yersinia pestis at 30-fold average coverage from Black Death victims securely dated to episodes of pestilence-associated mortality in London, England, 1348–1350. Genetic architecture and phylogenetic analysis indicate that the ancient organism is ancestral to most extant strains and sits very close to the ancestral node of all Y. pestis commonly associated with human infection. Temporal estimates suggest that the Black Death of 1347–1351 was the main historical event responsible for the introduction and widespread dissemination of the ancestor to all currently circulating Y. pestis strains pathogenic to humans, and further indicates that contemporary Y. pestis epidemics have their origins in the medieval era. Comparisons against modern genomes reveal no unique derived positions in the medieval organism, indicating that the perceived increased virulence of the disease during the Black Death may not have been due to bacterial phenotype. These findings support the notion that factors other than microbial genetics, such as environment, vector dynamics and host susceptibility, should be at the forefront of epidemiological discussions regarding emerging Y. pestis infections.



The Black Death of 1347–1351, caused by the bacterium Yersinia pestis[2, 3], provides one of the best historical examples of an emerging infection with rapid dissemination and high mortality, claiming an estimated 30–50% of the European population in only a five-year period[4]. Discrepancies in epidemiological trends between the medieval disease and modern Y. pestis infections have ignited controversy over the pandemic's aetiologic agent[5, 6]. Although ancient DNA investigations have strongly implicated Y. pestis[2, 3] in the ancient pandemic, genetic changes in the bacterium may be partially responsible for differences in disease manifestation and severity. To understand the organism's evolution it is necessary to characterize the genetic changes involved in its transformation from a sylvatic pathogen to one capable of pandemic human infection on the scale of the Black Death, and to determine its relationship with currently circulating strains. Here we begin this discussion by presenting the first draft genome sequence of the ancient pathogen.

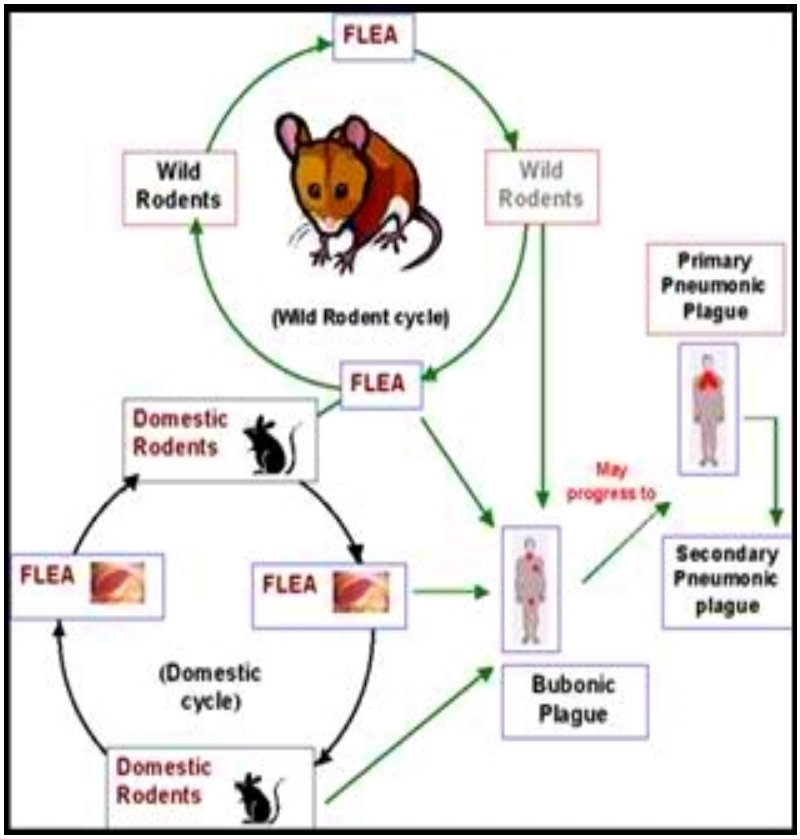
Y. pestis is a recently evolved descendent of the soil-dwelling bacillus Yersinia pseudotuberculosis[7], which in the course of its evolution acquired two additional plasmids (pMT1 and pPCP1) that provide it with specialized mechanisms for infiltrating mammalian hosts. To investigate potential evolutionary changes in one of these plasmids, we reported on the screening of 46 teeth and 53 bones from the East Smithfield collection of London, England for presence of the Y. pestis-specific pPCP1 (ref. 3). Historical data indicate that the East Smithfield burial ground was established in late 1348 or early 1349 specifically for interment of Black Death victims[8] (Supplementary Figs 1 and 2), making the collection well-suited for genetic investigations of ancient Y. pestis.

DNA sequence data for five teeth obtained via molecular capture of the full Y. pestis-specific pPCP1 revealed a C to T damage pattern characteristic of authentic endogenous ancient DNA9, and assembly of the pooled Illumina reads permitted the reconstruction of 98.68% of the 9.6-kilobase plasmid at a minimum of twofold coverage3.

To evaluate the suitability of capture-based methods for reconstructing the complete ancient genome, multiple DNA extracts from both roots and crowns stemming from four of the five teeth which yielded the highest pPCP1 coverage3 were used for array-based enrichment (Agilent) and subsequent high-throughput sequencing on the Illumina GAII platform10. Removal of duplicate molecules and subsequent filtering produced a total of 2,366,647 high quality chromosomal reads (Supplementary Table 1a, b) with an average fragment length of 55.53 base pairs (Supplementary Fig. 4), which is typical for ancient DNA. Coverage estimates yielded an average of 28.2 reads per site for the chromosome, and 35.2 and 31.2 for the pCD1 and pMT1 plasmids, respectively (Fig. 1a, c, d and Supplementary Table 1b, c). Coverage was predictably low for pPCP1 (Fig. 1e) because probes specific to this plasmid were not included on the arrays. Coverage correlated with GC content (Supplementary Fig. 6), a trend previously observed for high-throughput sequence data11. The coverage on each half of the chromosome was uneven due to differences in sequencing depth between the two arrays, with 36.46 and 22.41 average reads per site for array 1 and array 2, respectively. Although greater depth contributed to more average reads per site, it did not increase overall coverage, with both arrays covering 93.48% of the targeted regions at a minimum of onefold coverage (Supplementary Table 1b). This indicates that our capture procedure successfully retrieved template molecules from all genomic regions accessible via this method, and that deeper sequencing would not result in additional data for CO92 template regions not covered in our data set.

Figure 1: Coverage plots for genomic regions sequenced.

a, c–e, Coverage plots for the chromosome (a) and the plasmids pMT1 (c), pCD1 (d) and pPCP (e). Coverage in blue, GC content in green. Scale lines indicate 10-, 20-, 30-, 40- and 50-fold coverage and 10%, 20%, 30%, 40% and 50% GC content. For plasmids, red corresponds to coding regions, yellow to mobile elements. Chromosome shows median coverage per gene. Plasmids show each site plotted. Coverage distributions for the plasmids are shown in Supplementary Fig. 5. b, Distributions show



chromosomal coverage of array 1 (blue) and array 2 (red), indicating that deeper sequencing increases the number of reads per site, but does not substantially influence overall coverage.

Genome architecture is known to vary widely among extant Y. pestis strains12. To extrapolate gene order in our ancient genome, we analysed reads mapping to the

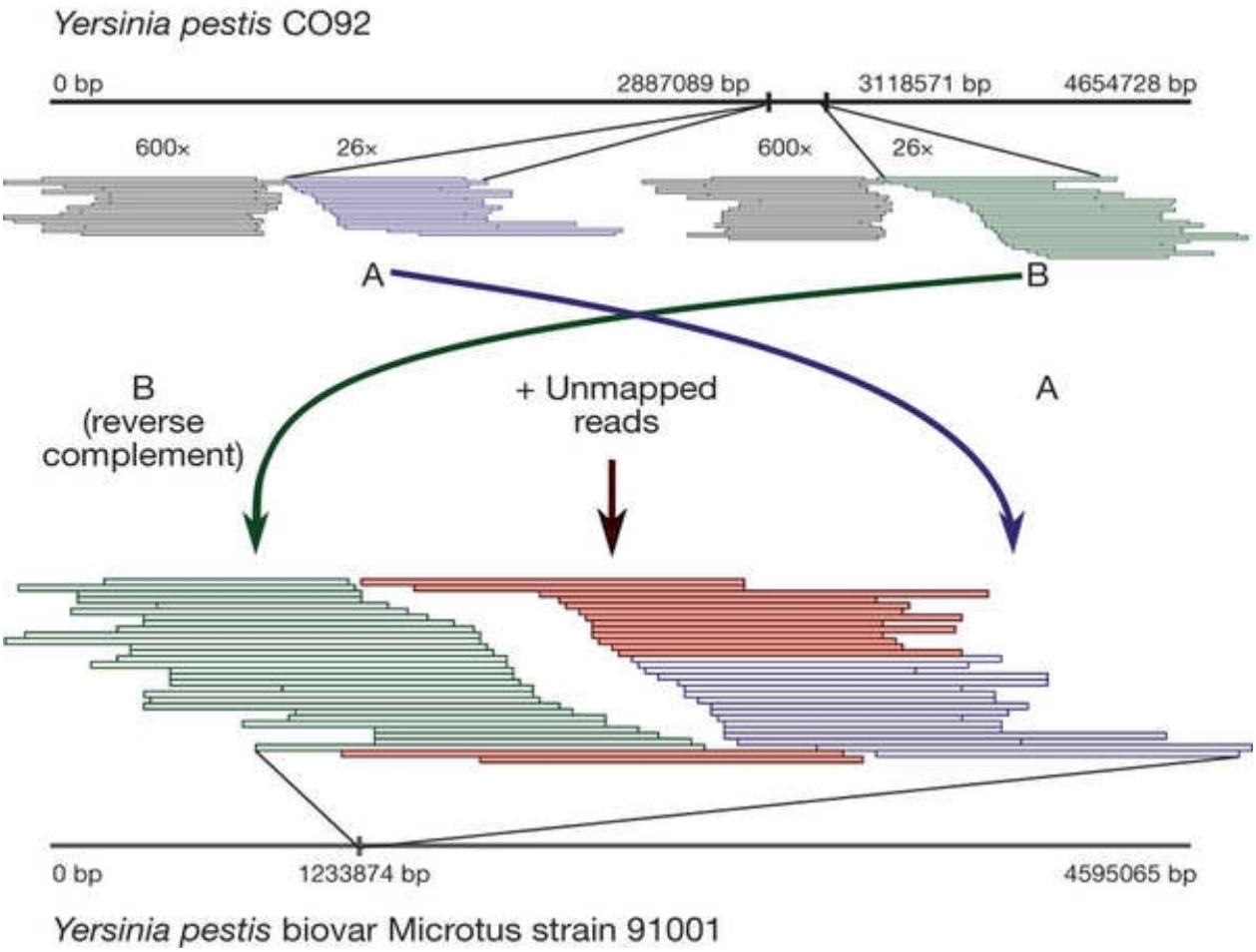
CO92 reference for all extracts stemming from a single individual who yielded the highest coverage (individual 8291). Despite the short read length of our ancient sequences and the highly repetitive nature of the Y. pestis genome, 2,221 contigs matching CO92 were extracted, comprising a total of 4,367,867 bp. To identify potential regions of the ancient genome that are architecturally distinct from CO92, all reads not mapping to the CO92 reference were in turn considered for contig construction. After filtering for a minimum length of 500 bp, 2,134 contigs remained comprising 4,013,009 bp, of which 30,959 stemmed from unmapped reads. Conventional BLAST search queried against the CO92 genome identified matches for 2,105 contigs. Evidence of altered architecture was identified in 10 contigs (Supplementary Table 2). An example of such a structural variant is shown in Fig. 2, where reference-guided assembly incorporating unmapped reads to span the breakpoint validates its reconstruction. This specific genetic orientation is found only in Y. pseudotuberculosis and Y. pestis strains Mictrotus 91001, Angola, Pestoides F and B42003004, which are ancestral to all Y. pestis commonly associated with human infections (branch 1 and branch 2 strains13, 14). Furthermore, discrepancies in the arrangement of this region in branch 1 and branch 2 modern Y. pestis strains indicate that rearrangements occurred as separate events on different lineages.

Figure 2: Alignment of mapped reconstructed contigs against CO92 and Microtus genomes.

Reads mapped at positions A (blue) and B (green) are 231 kb apart in the linearized CO92 genome. Adjacent sequence is high coverage although only 18× and 20× is shown due to space constraints (black) for A and B, respectively. The structural variant was assembled using reads that did not map to CO92 (red). Its position is shown on the linearized Microtus 91001 chromosome where the 9,096 bp contig maps with 100% identity.

Single-nucleotide differences between our ancient genome and the CO92 reference surprisingly consisted of only 97 chromosomal positions, and 2 and 4 positions in the pCD1 and pMT1 plasmids, respectively (Supplementary Table 3), indicating tight genetic conservation in this organism over the last 660 years. Twenty-seven of these positions were unreported in a previous analysis of extant Y. pestis diversity[14] (Supplementary Tables 3 and 4). Comparison of our ancient genome to its ancestor Y. pseudotuberculosis revealed that the medieval sequence contained the ancestral nucleotide for all 97 positions, indicating that it does not possess any derived positions absent in other Y. pestis strains. Two previously reported chromosomal differences[3] were not present in our genomic sequence data, suggesting that they probably derived from deaminated cytosines that would have been removed in the current investigation via uracil-DNA-glycosylase treatment before array capture.

To place our ancient genome in a phylogenetic context, we characterized all 1,694 previously identified phylogenetically informative positions[14] (Supplementary Table 4), and compared those from our ancient organism against aggregate base call data for 17 publicly available Y. pestis genomes and the ancestral Y. pseudotuberculosis. When considered separately, sequences from three of the four victims fall only two substitutions from the root of all extant human pathogenic Y. pestis strains (Fig. 3a), and they show a closer relationship to branch 1 Y. pestis than to branch 2; however, one of the four victims (individual 6330) was infected with a strain that contained three additional derived positions seen in all other branch 1 genomes[14]. This



suggests either the presence of multiple strains in the London 1348–1350 pandemic or microevolutionary changes accruing in one strain, which is known to occur in disease outbreaks[15]. Additional support for Y. pestis microevolution is indicated by the presence of several variant positions for which sequence data from one individual shows two different nucleotides at comparable frequencies (Supplementary Table 5). Position 2896636, for example, is a known polymorphic position in extant Y. pestis populations[14], and this position shows the fixed derived state in one individual (6330) and the polymorphic state in another (individual 8291) at minimum fivefold coverage (Supplementary Fig. 7). This provides a remarkable example of microevolution captured during an historical pandemic. The remaining variance positions are unchanged in the 18 extant Yersinia genomes, thus they may be unique to the ancient organism and are, therefore, of further interest. Additional sampling of ancient genomes will assist in determining the frequency of these mutations in co-circulating Y. pestis strains, and will clarify the emergence of branch 2 strains that are as yet unreported in ancient samples.

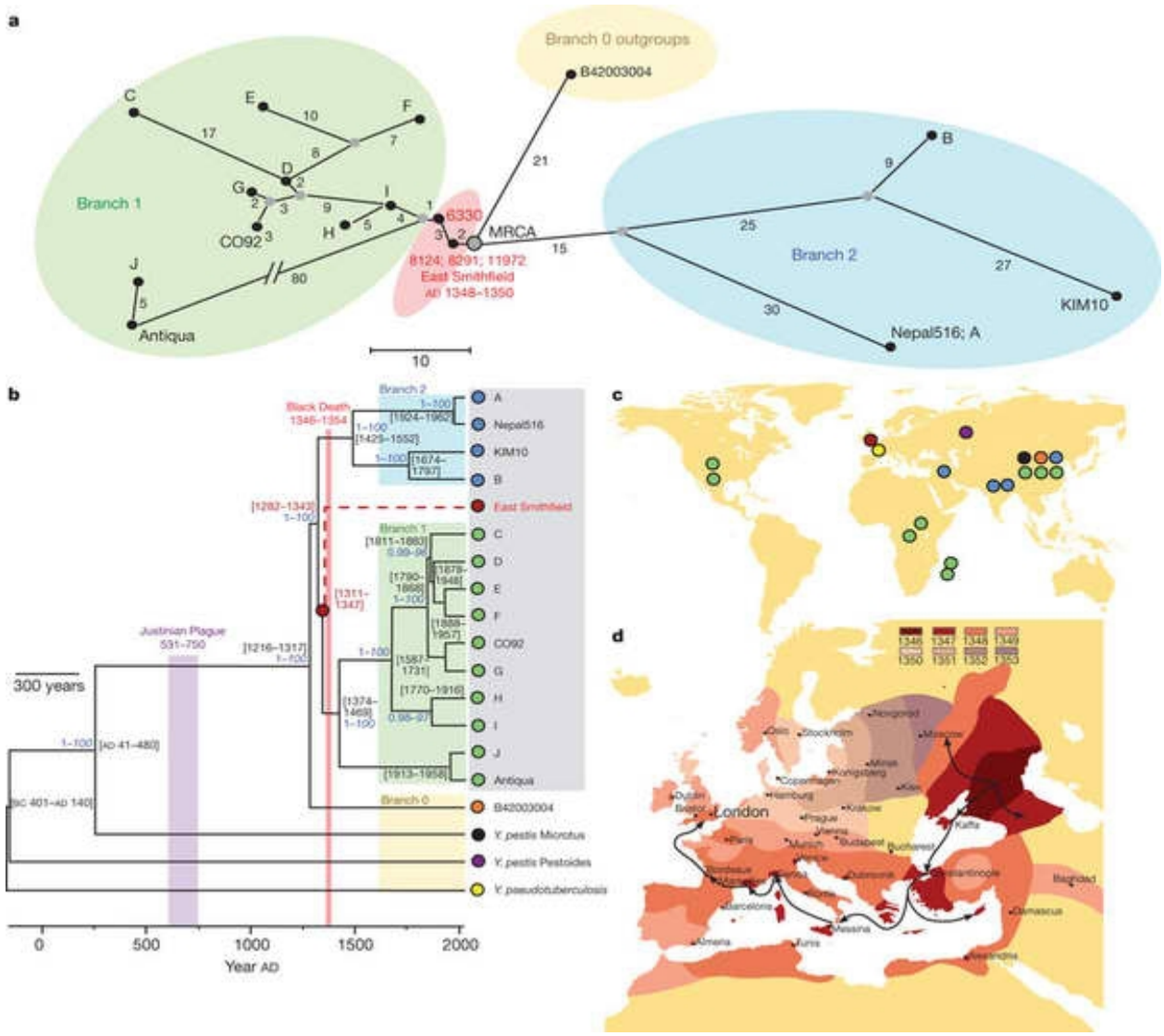


Figure 3: Phylogenetic placement and historical context for the East Smithfield strain.

A, Median network of ancient and modern Y. pestis based on 1,694 variant positions in modern

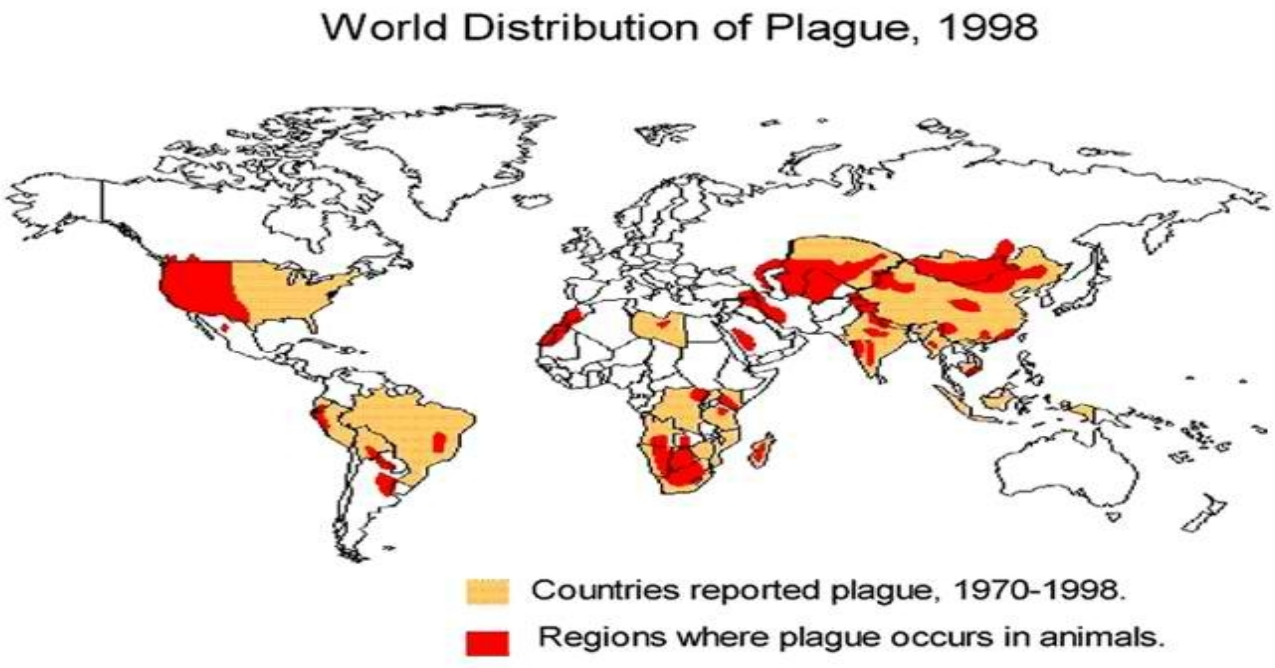
genomes14. Coloured circles represent different clades as defined in ref. 13. Gray circles represent hypothetical nodes. b, Phylogenetic tree using 1,694 variable positions. Divergence time intervals are shown in calendar years, with neighbour-joining bootstrap support (blue italic) and Bayesian posterior probability (blue). Grey box indicates known human pathogenic strains. A, NZ ACNQ01000; Nepal516, NC 008149; KIM10, NC 004088; B, NZ AAYT01000; C, NZ ABAT01000; D, NZ ACNS01000; E, NZ AAYS01000; F, NZ AAOS02000; CO92, NC 003143; G, NZ ABCD01000; H, NZ AAYV01000; I, NC 014029; J, NZ AAYR01000; Antiqua, NC 008150. c, Geographical origin of genome sequences used in a and b. d, Geographical spread of the Black Death from infection routes reported in ref. 4.

Consistent tree topologies were produced using several construction methods and all major nodes were supported by posterior probability (pp) values of >0.96 and bootstrap values >90 (Fig. 3b and Supplementary Figs 8 and 9). The trees place the East Smithfield sequence close to the ancestral node of all extant human pathogenic Y. pestis strains (only two differences in 1,694 positions) and at the base of branch 1 (Fig. 3b). A secure date for the East Smithfield site of 1348–1350 allowed us to assign a tip calibration to the ancient sequence and thus date the divergence time of the modern genomes and the East Smithfield genome using a Bayesian approach. Temporal estimates indicate that all Y. pestis commonly associated with human infection shared a common ancestor sometime between 668 and 729 years ago (ad 1282–1343, 95% highest probability density, HPD), encompassing a much smaller time interval than recently published estimates14 and further indicating that all currently circulating branch 1 and branch 2 isolates emerged during the thirteenth century at the earliest (Fig. 3b), potentially stemming from an Eastern Asian source as has been previously suggested14. This implies that the medieval plague was the main historical event that introduced human populations to the ancestor of all known pathogenic strains of Y. pestis. This further questions the aetiology of the sixth to eighth century Plague of Justinian, popularly assumed to have resulted from the same pathogen: our temporal estimates imply that the pandemic was either caused by a Y. pestis variant that is distinct from all currently circulating strains commonly associated with human infections, or it was another disease altogether.

Although our approach of using an extant Y. pestis reference template for bait design precluded our ability to identify genomic regions that may have been present in the ancient organism and were subsequently lost in CO92, genomic comparisons of our ancient sequence against its closest outgroups may yield valuable insights into Y. pestis evolution. The Microtus 91001 strain is the closest branch 1 and branch 2 relative confirmed to be non-pathogenic to humans16, hence genetic changes may represent contributions to the pathogen's adaptation to a human host. Comparisons against this outgroup revealed 113 changes (Supplementary Table 6a, b), many of which are found in genes affecting virulence-associated functions like biofilm formation (hmsT), iron-acquisition (iucD) or adaptation to the intracellular environment (phoP). Similarly, although its virulence potential in humans has yet to be confirmed to our knowledge, Y. pestis B42003004 isolated from a Chinese marmot population17 has been identified as the strain closest to the ancestral node of all Y. pestis commonly associated with human plague, and thus may provide key information regarding the organism's evolution. Full genome comparison against the East Smithfield sequence revealed only eight single-nucleotide differences (Supplementary Table 6c), six of which result in non-synonymous changes (Supplementary Table 6d). Although these differences probably do not affect virulence, the influence of gene loss, gene gain or genetic rearrangements, all of which are well documented in Y. pestis12, 18, is as yet undetermined. In more recent evolutionary terms, single-nucleotide differences in several known pathogenicity-associated

genes were found between our ancient genome and the CO92 reference sequence (Supplementary Table 3), which may represent further adaptations to human hosts.

Through enrichment by DNA capture coupled with targeted high throughput DNA sequencing, we have reconstructed a draft genome for what is arguably the most devastating human pathogen in history, and revealed that the medieval plague of the fourteenth century was probably responsible for its introduction and widespread distribution in human populations. This indicates that the pathogen implicated in the Black Death has close relatives in the twenty-first century that are both endemic and emerging[19]. Introductions of new pathogens to populations are often associated with increased incidence and severity of disease[20] and although the mechanisms governing this phenomenon are complex[21], genetic data from ancient infectious diseases will provide invaluable contributions towards our understanding of host–pathogen coevolution. The Black Death is a seminal example of an emerging infection, travelling across Europe and claiming the lives of an estimated 30 million people in only 5 years, which is much faster than contemporary rates of bubonic or pneumonic plague infection[22] and dissemination[7, 8]. Regardless, although no extant Y. pestis strain possesses the same genetic profile as our ancient organism, our data suggest that few changes in known virulence-associated genes have accrued in the organism's 660 years of evolution as a human pathogen, further suggesting that its perceived increased virulence in history[23] may not be due to novel fixed point mutations detectable via the analytical approach described here. At our current resolution, we posit that molecular changes in pathogens are but one component of a constellation of factors contributing to changing infectious disease prevalence and severity, where genetics of the host population[24], climate[25], vector dynamics[26], social conditions[27] and synergistic interactions with concurrent diseases[28] should be foremost in discussions of population susceptibility to infectious disease and host–pathogen relationships with reference to Y. pestis infections.



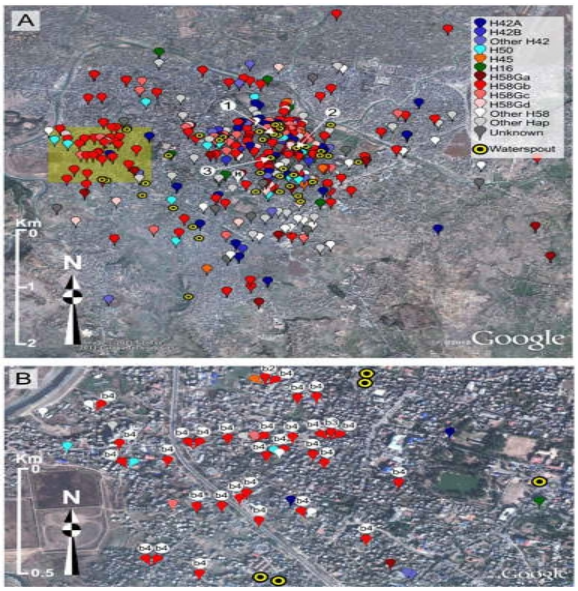
Methods

DNA from dental pulp was extracted and converted into

sequencing libraries as previously described3. Potential sequencing artefacts resulting from deaminated nucleotides were eliminated by treatment of the DNA extracts with uracil-DNA-glycosylase and endonuclease VIII. DNA extracts were subsequently converted into sequencing libraries and amplified to incorporate unique sequence tags on both ends of the molecule. Two Agilent DNA capture arrays were designed for capture of the full Y. pestis chromosome (4.6 megabases), and the pCD1 (70 kb) and pMT1 (100 kb) plasmids using the modern Y. pestis strain CO92 (accession numbers NC_003143, NC_003131, NC_003134) for bait design with 3 bp tiling density. Serial array capture was performed over two copies of each array using the enriched fraction from the first round of capture as a template for a second round. The resulting products were amplified and pooled in equimolar amounts. All templates were sequenced for 76 cycles from both ends on the Illumina GAII platform, and reads merged into single fragments were included in subsequent analyses only if forward and reverse sequences overlapped by a minimum of 11 bp. Reads were mapped against the CO92 genome using the software BWA, and molecules with the same start and end coordinates were removed with the roundup program in the same tools suite. Reference-guided sequence assembly was performed using Velvet version 1.1.03, with mapped and unmapped reads supplied in separate channels. Single-nucleotide differences were determined at a minimum of fivefold coverage and base frequency of at least 95% for both a pooled data set for all individuals and one in which all individuals were treated separately. A median network was constructed on these base calls using SplitsTree4. Phylogenetic trees were constructed using parsimony, neighbor-joining (MEGA 4.1) and Bayesian methods, and coalescence dates were determined in BEAST using both a strict and a relaxed molecular clock.

Google Earth typhoid maps traces disease outbreaks

Source:http://www.homelandsecuritynewswire.com/dr20111018-google-earth-typhoid-maps-traces-disease-outbreaks



Recent advances in DNA sequencing have allowed scientists accurately to track the spread of some diseases by measuring mutations in the pathogen's DNA when the DNA replicates; tracing the spread of typhoid, however, has proved challenging because these mutations are small in number and not detectable by most techniques in use.

Typhoid fever is caused by two bacteria — Salmonella typhi and Salmonella paratyphi. Both of these bacteria are found in Kathmandu, and they usually spread through water or food contaminated with feces. Symptoms of the disease include fever, abdominal pain and vomiting.

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replicates. Tracing the spread of typhoid, however, has proved challenging because these mutations are small in number and not detectable by most techniques in use.

A Wellcome Trust release reports that tracing outbreaks of typhoid in Kathmandu also carries its own problem: street names are not used in Nepal, so capturing the addresses of typhoid cases — and accurately mapping the outbreaks - has proved challenging to health workers.

In research published today in the journal Open Biology, scientists at the Wellcome Trust Major Overseas Program in Vietnam and the Oxford University Clinical Research Units in Kathmandu, Nepal, and Ho Chi Minh City, Vietnam, have found a way accurately to map typhoid outbreaks in the city. Their research combines DNA sequencing technology and GPS signaling and maps the data onto Google Earth.

"Until now, it has been extremely difficult to study how organisms such as the typhoid-causing bacteria evolve and spread at a local level," explains Dr. Stephen Baker from the Oxford University Clinical Research Unit in Vietnam.

"Without this information, our ability to understand the transmission of these diseases has been significantly hampered. Now, advances in technology have allowed us for the first time to create accurate geographical and genetic maps of the spread of typhoid and trace it back to its sources."

To capture the information, health workers would visit a patient's home and use GPS to capture the exact location.

They would also take a blood sample from the hospitalized patient to isolate the organism and to allow analysis of the typhoid strain's genotype - its genetic make-up. This genotyping used sequencing technology able to identify single changes in the "letters" of DNA — the A, C, T, and Gs that make up the code.

The researchers found extensive clustering of typhoid infections in particular locations. Yet, perhaps counterintuitively for a disease that spreads among humans, this clustering was unrelated to the density of the local population.

The release notes that, in fact, the study showed that people living near to water spouts, for whom these provide

Government considers testing anthrax vaccine on children

Source: http://www.homelandsecuritynewswire.com/government-considers-testing-anthrax-vaccine-children

The U.S. government is considering testing its anthrax vaccine on children to determine if it has any potential side effects. The National Biodefense Science Board (NBSB), a group of federal advisors, convened last month specifically to debate the issue.

The government's anthrax vaccine has only been tested on adults and members of the board argued that there had been no tests to determine the effectiveness of the vaccine on children.

According to Dr. Nicole Lurie, the assistant secretary for preparedness and response at the Department of Health and Human Services, waiting until a national crisis to use the vaccine for the first time would be problematic as it presents "an array of logistical, clinical and communication challenges during a public health crisis."

Daniel B. Fagbuyiof, of the Children's National Medical Center in Washington and the chair of NBSB, echoed Dr. Lurie's thoughts stating, "At the end of the day, do we want to wait for an attack and give it to millions and millions of children and collect data at that time? Or do we want to say 'how do we best protect our children?'"

"We can take care of grandma and grandpa, uncle and auntie. But

right now, we have nothing for the children," Fagbuyiof said.
So far the anthrax vaccine has been thoroughly tested on adults and more than 2.6 million members of the armed forces have been inoculated, but the government lacks data on how well the vaccine works on children and if it is safe.
Opponents of the suggestion have sharply criticized it on the grounds that it is unethical to test a vaccine on children especially if there is no immediate threat.
"It's hard to believe that it's something that makes a great deal of sense," said Joel Frader, a bioethicist with the Northwestern University Feinberg School of Medicine. "It would be difficult to justify testing it on kids simply on the hypothetical possibility that there might be an attack."
Dr. Lurie acknowledged the criticism, but maintained that it was critical to ensure the safety of the vaccine on children in the event that it had to be administered. "If you had a situation where a vaccine has never been given to a child, it's pretty hard to think what you could say to people about its safety and efficacy," she said. "To be honest, the safest and easiest thing to do would be to not make a decision and kick the can down the road," Lurie said. "But it seemed to me that would be socially irresponsible. I would hate for a lot of children to die because we didn't have enough information for the public to feel comfortable getting [the] vaccine." The board is set to meet again on Friday to vote on its controversial recommendation.

What Will the Next Influenza Pandemic Look Like?

By Katherine Harmon

Source: http://www.scientificamerican.com/article.cfm?id=next-influenza-pandemic&print=true

Contagion, a film released earlier this month, depicts a gruesome outbreak of an exotic and deadly new virus. In the real world, a not-so foreign infection is circulating among animals every day of every year. If it picks up just a handful of certain mutations, it could start spreading among people, with a mortality rate as high as 60 percent. What is this potent virus? The flu.
Although the 2009 pandemic of influenza A H1N1 ended up being relatively mild—killing about one in 10,000 people who came down with it—it still claimed more than 14,000 lives across the globe. The relatively low mortality rate was a relief to forecasters because the outbreak's origin in Mexico and type had taken many by surprise.
Such surprises have turned out to be one of the few constants in the virus world: "Expect the unexpected," Ab Osterhaus, a professor of virology at the Erasmus Medical Center in Rotterdam, said here Tuesday at the fourth European Scientific Working Group on Influenza (ESWI) conference.
The uncertainty factor makes global preparedness particularly challenging. And given the basic questions that remain to be answered—such as why some healthy people die of the flu and others do not—researchers are using new technologies to look for leads in victims as well as in the virus itself.
Because, as scientists and public health experts seemed to agree: "What is clear is that it is when, not if," Frederick Hayden, of the University of Virginia School of Medicine, said here on Tuesday, referring to the next influenza pandemic—one of many proclamations of coming plague during the meeting that was tinged with just enough urgency to generate attention (and research funding) but not ignite an all-out panic.
Ongoing research is providing some new clues about what type of virus might become pandemic, where it might emerge and who it is most likely to kill.

Mysterious mutations

Topping the worst-case scenario list for most flu experts is a pandemic of H5N1, the "bird flu" which has killed about six in 10 people who have gotten it—a total of at least 550 people since 2003—and has laid to waste hundreds of millions of domestic fowl and wild birds.

Fortunately, so far, it has not been transferred from human to human and has passed to us only via direct contact with animals. But any flu can change rapidly, mutating in each new host. So researchers wonder: Could the dreaded H5N1 ever morph into a disease that could spread among people, via a cough or sneeze, to attach to nasal or tracheal membranes, as the seasonal flu does every year?

To help answer this question, Ron Fouchier, also of Erasmus Medical Center, and his team "mutated the hell out of H5N1" and looked at how readily it would bind with cells in the respiratory tract. What they found is that with as few as five single mutations it gained the ability to latch onto cells in the nasal and tracheal passageways, which, Fouchier added as understated emphasis, "seemed to be very bad news."

The variety that they had created, however, when tested in ferrets (the best animal model for influenza research) still did not transmit very easily just through close contact. It wasn't until "someone finally convinced me to do something really, really stupid," Fouchier said, that they observed the deadly H5N1 become a viable aerosol virus. In the derided experiment, they let the virus itself evolve to gain that killer capacity. To do that, they put the mutated virus in the nose of one ferret; after that ferret got sick, they put infected material from the first ferret into the nose of a second. After repeating this 10 times, H5N1 became as easily transmissible as the seasonal flu.

The lesson from these admittedly high-risk experiments is that "the H5N1 virus can become airborne," Fouchier concluded—and that "re-assortment with mammalian viruses is not needed" for it to evolve to spread through the air. And each of these mutations has already been observed in animals. "The mutations are out there, but they have not gotten together yet," Osterhaus said.

The exact likelihood of an H5N1 pandemic moving into humans is still unknown, pointed out Derek Smith, a professor of infectious disease informatics at the University of Cambridge in the U.K. From a scientific perspective, he noted, "one expects that's a low probability, but it's a really high-impact thing to prepare against—it's like preparing against terrorism."

Despite all of the concern about H5N1, scientists are also keeping an eye out for other emerging varieties. With 16 known forms of influenza hemagglutinin (the "H" in the strain name), nine known varieties of neuraminidase enzyme (the "N" in the name), and different subtypes within each type, the potential for new enzymatic combinations—and recombinations—is great.

Even H1N1 is not yet in the clear. Since the 2009 outbreak in humans, H1N1 has become much more prevalent in pig populations, and, currently, "we are seeing quite large numbers of re-assortments," Malik Peiris, of the University of Hong Kong, said at ESWI. And a swine-origin triple re-assortment of the H3N2 strain had recently infected two children in the U.S., the Centers for Disease Control and Prevention in Atlanta reported earlier this month.

But the basic dynamics of how these diseases spread are still being worked out. "We don't know enough about how they transmit from human to human—whether re-assortments in pigs makes it more likely or less likely" to spread among humans, Smith said.

In addition to shifts in virulence and method of spread, slight mutations in the virus can also lead to major changes in how easily it can be treated. A single-point mutation, for example, can render it resistant to commonly used antiviral medications, such as Tamiflu.

The body enigmatic

One of the most disconcerting things about influenza pandemics, as opposed to the seasonal flu, is their tendency to sicken—and often kill—the young and

seemingly healthy. Underlying risk factors, such as heart disease and neurological conditions, have been linked to higher fatality rates. But as Maria Van Kerkhove, of the Imperial College London's (I.C.L.) School of Public Health, found in a survey of global data following the H1N1 pandemic, no chronic conditions were reported among some 40 percent of people who were hospitalized for the flu and then died.

There is a "massive difference in the way people respond" to the same strain of influenza, noted Peter Openshaw, director of the Center for Respiratory Infection at I.C.L. He and his colleagues are studying samples from hundreds of people, many of whom became severely ill from the H1N1 pandemic strain, to look for clues as to why one apparently healthy 40-year-old might wind up in intensive care whereas another will fight the virus off just fine at home. But because too little is known about these varied reactions, the team is looking everywhere: in human and viral genetics, for traces of bacterial infections, and elsewhere for hints about what might release the "cytokine storm" that kills some people, now seemingly at random, Openshaw said.

Unknown origins

The 2009 outbreak of H1N1 caught most people off guard—not in the least, those charged with tracking new flu strains and outbreaks. Especially after the 2003 emergence of SARS in Asia, most pandemic plans were centered on a Southeast Asian or Asian emergence for the next flu epidemic.

Modeling had predicted that a Southeast Asia–based strain would take some two to four months to spread extensively and arrive in Europe and North America about one to three months after that. That delay would give Western countries three to seven months to develop comprehensive treatment and vaccination plans.

When the flu emerged in Mexico, instead, North America endured the peak of the epidemic without a vaccine.

An outbreak's point of origin can also play a large role in determining how quickly a pandemic is detected. Regions such as Africa and some places in Southeast Asia are still lagging in surveillance capabilities, noted Maria Zambon, of the U.K. Health Protection Agency.

To the advantage of epidemiologists and the public, "the severity of a virus will determine how quickly we detect it," Neil Ferguson, a professor of mathematical biology of infectious diseases at I.C.L., said on Tuesday. The 2009 H1N1 virus had already been circulating in Mexico for some months before the full scope of its potential came to light. "We detected the 2009 virus as late as we did just because it was as mild as it was," he noted. And lingering immunity in the older population further reduced its spread. But if the next virus is more virulent and more rapidly transmitted, "we will detect it earlier," he said.

Subsequent analysis of the spread of the 2009 pandemic showed that it matched up with commercial air traffic from Mexico—spreading more rapidly into the U.S. and Spain, which are strongly socially connected to the Latin American country. If an outbreak were to begin in Asia, however, South America is "a great place to be," because there is very little direct air traffic from Asia to the region, Smith noted on Monday. So by the time the pandemic would arrive in force, a vaccine would likely already be available.

Asia is still at the focus of pandemic watchfulness, especially for hints of H5N1 spread. The virus is relatively common among migratory birds, which it usually does not sicken. As Osterhaus noted, "dead birds don't fly," so the well ones that still carry the disease are free to travel, infecting other flocks—and domestic poultry as well. It can also be spread via human activity, with exports of birds, feathers and other related products.

A recent study of the H5N1 virus in Laos found that some 0.6 percent of ducks sampled showed traces of the infection. And in places like Laos, where local poultry markets facilitate the movement of fowl around the country, the spread of the infection is of great concern to local and foreign health officials. The country has seen a documented

outbreak of H5N1 every year since 2006.
Surveillance of the virus has been ramping up throughout Southeast Asia. In Bangladesh, for example, backyard farms predominate, putting fowl in close contact with both humans and migratory birds, so spread to the dense human population is of particular concern. "Bangladesh is in the front line now," explained Syed Ahmed, of the University of Southern Denmark.

Preparing for the unpredictable

With the virus mutating in the dark, hidden cells in billions of birds, pigs and other animals, tracking their changes might seem impossible. "If we're going to [create] the best interventions that we can, we need to understand how they circulate around the world," Smith said of flu viruses. Surveillance of animal populations worldwide has improved vastly in the past decade, boosting the chance that scientists will spot new potentially dangerous mutations early.
But researchers are not simply watching and waiting. Scientists are continually developing new proto, so-called seed vaccines, to test against newly emerging strains of the flu.
And there is plenty to do on the logistics side. The H1N1 pandemic hit Europe later than it did South and North America. And even though the outbreak was milder, thanks to the arrival of the vaccine during the pandemic peak, as I.C.L.'s Openshaw pointed out, many places were still running out of respirators, hospital beds and nursing staff.
"We know that it takes at least four to six months to have a vaccine," noted Sylvie Briand, of the World Health Organization (WHO). And for countries that receive the early waves of a pandemic, a vaccine will likely not come in time to protect people against the virus. "So it's very important to improve clinical response," by having ample medication and facilities to treat those at risk and reduce overall mortality.
Advancing preparedness in one fell swoop, however—even within the comparatively well-equipped European Union—has proved difficult, as Cambridge's Smith pointed out, because countries that are less prepared are so for different reasons—making a one-size-fits-all approach to improving preparedness impractical. And when countries the world-over are thrown into the mix—many of which have far fewer scientific, medical and infrastructural resources—the task is even more of a challenge.
At the end of the day, much of the preparation lays in the hands of policymakers—within "the realpolitik of the department of health," Openshaw noted, adding that he realized that science was only part of the equation that politicians and governmental officials must consider.
In addition to battling the mercurial virus and any political roadblocks, those trying to mitigate a future pandemic face another unpredictable force: public behavior.
In the first days of a pandemic, scientists and policymakers are forced to make consequential decisions—about containment, treatment, prophylaxis—with relatively limited information, "based on a perception," Briand said. And communicating the appropriate message to the public, which might not be well versed in risk and uncertainty, is a difficult task. Cry wolf, and it is likely to cause panic as well as subsequent criticism of overreacting. But fail to instill adequate caution, and the reaction—and mortality rate—will be even worse.

Ill-advised

In 2009, for example, the WHO eventually declared the H1N1 pandemic a level 6—the highest designation possible. But that, Briand pointed out, was not indicative of the disease's severity, but rather the extent of its spread. This distinction, which is great in the eyes of epidemiologists, was typically unaddressed in the media and thus in public perception, leading to later claims that officials had oversold the virus's danger.
So, in addition to lab work on the viruses, some scientists are hard at work "thinking about how best to communicate the uncertainty" that is undoubtedly going to arrive with the first wave of the next outbreak,

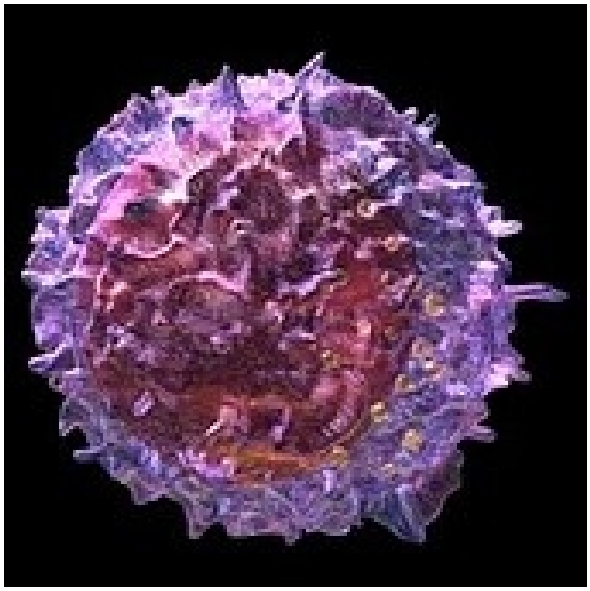
I.C.L.'s Van Kerkhove said. "We learned that from the last pandemic, and we can expect that from the next one."

Unlike other human plagues, such as polio or smallpox, however, "eradication of the flu is impossible," Osterhaus said. The latest scientific and social research has pointed to three important steps to best meet the next pandemic head on, Briand said. Officials must make a variety of plans based on different scenarios; they must remain flexible to respond to rapidly changing situations; and they must keep plans up to date—refreshing stockpiles and reevaluating plans based on the latest science.

Elusys Initiates Third Clinical Safety Study of Anthim, a New Anthrax Treatment; Company Successfully Completes Manufacturing at Commercial Scale

Source:http://www.prnewswire.com/news-releases/elusys-initiates-third-clinical-safety-study-of-anthim-a-new-anthrax-treatment-company-successfully-completes-manufacturing-at-commercial-scale-132477188.html

Elusys Therapeutics, Inc. (Elusys), a biopharmaceutical company focused on the development of antibody therapeutics, announced today that it is initiating a new clinical study to further demonstrate the safety of Anthim (ETI-204), the company's anti-toxin in late-stage development for prevention of disease and death from exposure to inhaled anthrax. The company also announced it has successfully manufactured Anthim at commercial scale. Anthim is an anti-



toxin that significantly increases survival in anthrax-infected animals and is a promising candidate for the treatment of anthrax infection in people following a biowarfare attack.

The double blind, placebo-controlled dose-escalating study will include a total of 108 healthy human subjects and is designed to collect additional safety and pharmacokinetic (PK) data on Anthim.

"Our development timeline for Anthim is right on track, and this additional safety and PK data will further prove Anthim's utility as a strong candidate for addition to the Strategic National Stockpile," said Elizabeth Posillico, PhD, President and Chief Executive Officer of Elusys. "Anthim is demonstrating the potential to deliver significant therapeutic benefit to Americans infected with anthrax in a bioterrorism emergency."

Dr. Posillico will be presenting an update on Anthim's development program at the 10th Annual BIO Investor Forum in San Francisco on October 26.

"We have successfully manufactured Anthim at commercial scale, and look forward to finalizing our commercial production process to ensure the large-scale capacity needed to deliver high quality, consistent quantities of Anthim for the long term," added James Porter, Vice President of Development and Manufacturing at Elusys.

Anthrax is a life-threatening infectious disease caused by the bacterium Bacillus anthracis and

remains one of the nation's top biowarfare threats. Inhaled anthrax is usually fatal, despite treatment with antibiotics, unless the patient is treated soon after exposure.

If all activities in the Anthim development program are completed to the U.S. Food and Drug Administration's (FDA) satisfaction, the federal government could purchase Anthim for the Strategic National Stockpile (SNS) under Project BioShield. Project BioShield was established in 2004 to provide much needed funding to procure important countermeasures to protect the American public in the event of a biowarfare attack.

Elusys has the potential to receive funding totaling up to $143 million for a base plus four option year contract, awarded December 2009, for development of Anthim for treatment of symptomatic patients. The company also received the first U.S. government contract, awarded September 2011, for a base plus three option year contract for $68.9 million, to develop an anthrax anti-toxin for pre- and post-exposure prophylaxis (PEP) use via intramuscular injection (IM).

About Anthim

Anthim is a high-affinity, humanized and deimmunized monoclonal antibody that targets the protective antigen of B. anthracis and neutralizes the lethal effects of anthrax toxins. It is being developed for prevention and treatment of inhalational anthrax following a biowarfare attack. Anthim has been extensively tested for efficacy and safety in animals and safety in human volunteers. It shows excellent potential as an effective, life-saving therapeutic for the treatment of people infected by or exposed to

Natural killer cells may be the best defense against anthrax

Source: http://www.utmb.edu/newsroom/article7294.aspx

One of the things that makes inhalational anthrax so difficult for biodefense experts to deal with is the speed with which a relatively small number of inhaled anthrax spores can turn into a lethal infection; by the time an anthrax victim realizes he or she has something worse than the flu, it is often too late

One of the things that makes inhalational anthrax so difficult for biodefense experts to deal with is the speed with which a relatively small number of inhaled anthrax spores can turn into a lethal infection. By the time an anthrax victim realizes he or she has something worse than the flu and seeks treatment, it is often too late; even the most powerful antibiotics may be no help against the spreading bacteria and the potent toxins they generate.

Now, University of Texas Medical Branch at Galveston (UTMB) researchers have found new allies for the fight against anthrax. A University of Texas Medical Branch at Galveston release reports that these allies, known as natural killer cells, are a part of the immune system normally associated with eliminating tumor cells and cells infected by viruses. Natural killer cells, however, also attack bacteria — including anthrax, according to the UTMB group.

“People become ill so suddenly from inhalational anthrax that there isn’t time for a T cell response, the more traditional

cellular immune response," said UTMB assistant professor Janice Endsley, lead author of a paper now online in the journal Infection and Immunity. "NK cells can do a lot of the same things, and they can do them immediately."

In test-tube experiments, a collaborative team led by Endsley and Professor Johnny Peterson profiled the NK cell response to anthrax, documenting how NK cells successfully detected and killed cells that had been infected by anthrax, destroying the bacteria inside the cells along with them. Surprisingly, they found that NK cells were also able to detect and kill anthrax bacteria outside of human cells.

"Somehow these NK cells were able to recognize that there was something hostile there, and they actually caused the death of these bacteria," Endsley said.

In further experiments, the group compared the anthrax infection responses of normal mice and mice that were given a treatment to remove NK cells from the body. All the mice died with equal rapidity when given a large dose of anthrax spores, but the non-treated (NK cell-intact) mice had much lower levels of bacteria in their blood.

"This is a significant finding," Endsley said. "Growth of bacteria in the bloodstream is an important part of the disease process."

The release quotes Endsley to say that the next step is to apply an existing NK cell-augmentation technique (many have already been developed for cancer research) to mice, in an attempt to see if the more numerous and active NK cells can protect them from anthrax. Even if the augmented NK cells don't provide enough protection by themselves, they could give a crucial boost in combination with antibiotic treatment.

"We may not be able to completely control something just by modulating the immune response," Endsley said. "But if we can complement antibiotic effects and improve the efficiency of antibiotics, that would be of value as well."

— Read more in Christine M. Gonzales et al., "Antibacterial Role for Natural Killer Cells in Host Defense to Bacillus Anthracis," Infection and Immunity (17 October 2011) (doi:10.1128/IAI.05439-11)

How Ready Are We for Bioterrorism?

By WIL S. Hylton

Source:http://www.nytimes.com/2011/10/30/magazine/how-ready-are-we-for-bioterrorism.html?_r=1&pagewanted=all

A few days after 9/11, a retired Air Force colonel named Randall Larsen entered the northwest gate of the White House, crossed a courtyard to the Eisenhower Executive Office Building, stepped through the front door and stopped dead in his tracks.

In place of the usual security checkpoint, there was an elaborate upgrade that included not only metal detectors but also machines to sniff out radiation and explosives, elaborate pat-downs and a mandatory search of all personal belongings. It was the search that worried Larsen most.

After passing through a body scan, he stood quietly while a guard thumbed through the contents of his briefcase. It was mostly books and papers, but after a few seconds, the agent pulled out a respirator mask and shot Larsen a quizzical look. "That's just for demonstration," Larsen said quickly. "You saw Mayor Giuliani wear one at ground zero, right?" The agent turned the mask over a few times, then stuffed it back in the briefcase. Seconds later, Larsen was through.

Inside the building, he followed a long corridor to a room where Vice President Dick Cheney and members of the national-security staff soon joined him. Also in the room were Tara O'Toole, who is now the Obama administration's top official for biodefense research at the Department of Homeland Security, and Thomas Inglesby, who runs the Center for Biosecurity. Three months earlier, Larsen, O'Toole and Inglesby collaborated on a national-security exercise to simulate the effects of a smallpox attack. Now, with the twin towers in ashes, they had come to brief the vice president on their findings.

As O'Toole began the presentation, Larsen studied Cheney's expression. The vice president showed no reaction as O'Toole listed the officials who participated in the simulation, the complications they encountered as they tried to develop an emergency response and the arguments that broke out as they watched the disease spread beyond control. She concluded by telling the vice president that the country was unprepared for a biological attack.

Cheney nodded. "O.K.," he said. "But what are we looking for? What does a biological weapon look like?"

At this, Larsen reached into his briefcase and pulled out a small test tube. "Mr. Vice President," he said, "it looks like this." Inside the tube was a weaponized powder of Bacillus globigii, almost genetically identical to anthrax. "And by the way," Larsen said, "I just smuggled this into your office."

At one of the most secure buildings in the world, in a moment of unprecedented alarm, the White House guards had searched Larsen's briefcase — and never even saw the powder. "They were looking for the wrong things," Larsen says now. "They still are."

The specter of a biological attack is difficult for almost anyone to imagine. It makes of the most mundane object, death: a doorknob, a handshake, a breath can become poison. Like a nuclear bomb, the biological weapon threatens such a spectacle of horror — skin boiling with smallpox pustules, eyes blackened with anthrax lesions, the rotting bodies of bubonic plagues — that it can seem the province of fantasy or nightmare or, worse, political manipulation. Yet biological weapons are as old as war itself. The ancient Hittites marched victims of plague into the cities of their enemies; Herodotus described archers' firing arrows tipped with manure. By the 20th century, nearly every major nation developed, produced and in some cases used a panoply of biological weapons, including anthrax, plague, typhoid and glanders.

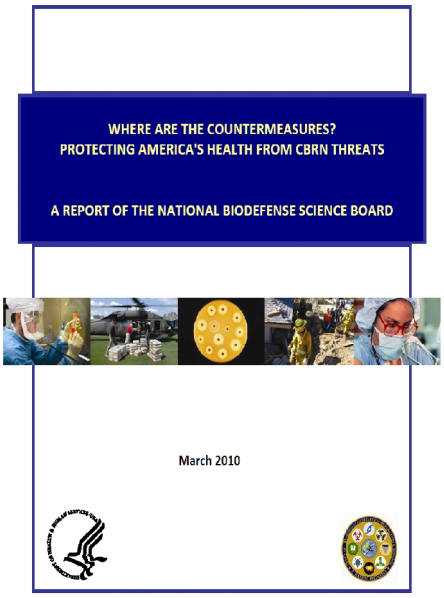
A decade after the 9/11 attacks, it is easy to forget the anthrax letters that sprang up just a few weeks later and to dismiss the fear that swept the country as a relic of a fragile moment that already belongs to history. But in the wake of those events, many national-security experts began to reconsider the risk of a biological attack — and reached some unsettling conclusions. Since the collapse of the Soviet Union, most scientists had assumed that the difficulty of building a bioweapon was far beyond the ability of a terror cell, but looking again in the early 21st century, many experts came to believe that advances in laboratory technology brought the science within reach. "What took me three weeks in a sophisticated laboratory in a top-tier medical school 20 years ago, with millions of dollars in equipment, can essentially be done by a relatively unsophisticated technician," Brett Giroir, a former director at the Defense Advanced Research Projects Agency (Darpa), told me recently. "A person at a graduate-school level has all the tools and technologies

to implement a sophisticated program to create a bioweapon."

Even some nuclear experts began to wonder if the risk of a biological attack had eclipsed the nuclear threat. Graham Allison, the founding dean of Harvard's John F. Kennedy School of Government and a leading expert on nuclear proliferation, told me: "Nuclear terrorism is a preventable catastrophe, and the reason it's preventable is because the material to make a nuclear bomb can't be made by terrorists. But in the bio case — oh, my God! Can I prevent terrorists from getting into their hands anthrax or other pathogens? No! Even our best efforts can't do that. I think the amazing thing is that one hasn't seen more bioterrorism, given the relative ease of making a bioweapon and the relative difficulty of defending."

How a biological attack might unfold depends on a number of variables, including which biological agent is used, the extent of its weaponization, the amount released and the method of delivery. Some agents, like the smallpox virus, are highly contagious and could spread widely from a small release. Others, like the plague and tularemia bacteria, are not typically contagious but are relatively easy to make into wet slurry and disperse. Some of the most vivid descriptions of how such an attack might look come from the national-security exercises used to develop biodefense policy. The exercise briefed to Dick Cheney in 2001, for example, was known as Dark Winter and was coordinated by the Center for Strategic and International Studies and the Johns Hopkins Center for Civilian Biodefense Studies. It took place over two days at Andrews Air Force Base, with former Senator Sam Nunn playing the role of president, David Gergen acting as national-security adviser, the former C.I.A. director James Woolsey leading intelligence and the retired four-star general John Tilelli serving as chairman of the Joint Chiefs of Staff. As the smallpox virus began to appear, first in Oklahoma and then in pockets across the nation, the participants quickly discovered that the country had no standing response plan and only enough vaccine to protect 5 percent of the public. Within weeks, as many as a million people in the United States were estimated dead.

Not all experts are convinced that simulations like Dark Winter offer a realistic view. Milton Leitenberg, a prominent arms-control expert, has argued that the exercise relied on faulty premises to increase the death toll and "assure a disastrous outcome." In particular, Leitenberg objects to the rate of secondary transmission assumed in the Dark Winter exercise. This is the figure to describe how many additional people each patient would infect, and it is highly contextual, depending on biological traits, like the genetic vulnerability of the target population; social habits, like the number of personal interactions by each victim; and meteorological conditions, like the weather and the time of year. Because the exercise was set in winter, which is favorable to smallpox, and because Americans are not routinely vaccinated, planners assumed a transmission rate of 10 new infections by each victim. Leitenberg says that number should be three. Other estimates vary. The Centers for Disease Control and Prevention uses a range of five to seven; the last comparable cases of smallpox to appear in Europe averaged between 9 and 17; and the authors of a 1999 article in Science magazine used the same figure as Dark Winter. But if Leitenberg is right, the death toll from the exercise would be much lower — most likely in the tens of thousands.

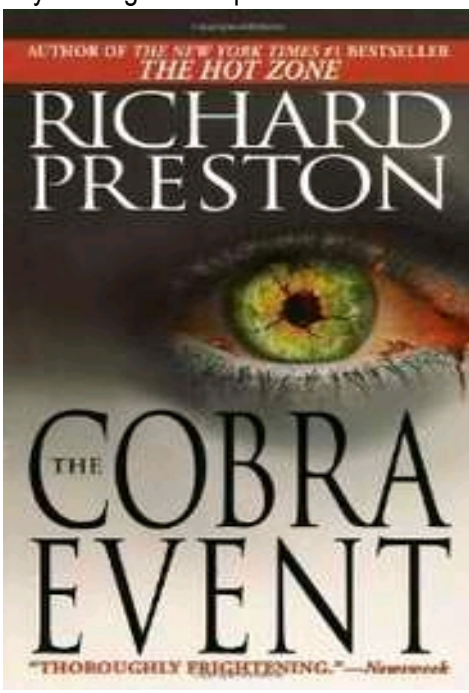


Whatever the transmission rate of smallpox, the more salient question for biodefense may be whether an attack will happen at all. On this, the expertise of microbiologists is limited, but there is surprisingly

broad agreement among the officials in charge of national security over the past 10 years. Since 2001, senior members of both the Obama and Bush administrations, who have reviewed classified intelligence, have consistently placed biodefense at or near the top of the national-security agenda. In 2004, a report from the National Intelligence Council warned, "Our greatest concern is that terrorists might acquire biological agents." Michael Chertoff, the secretary of Homeland Security between 2005 and 2009, told me, "In terms of catastrophic attacks, bio was at the top of the list." In 2008, the director of national intelligence, Adm. Mike McConnell, described a biological attack as "my personal greatest worry." In 2009, McConnell's successor in the Obama administration, Dennis Blair, warned the Senate Select Committee on Intelligence that "the terrorist use of biological agents represents a growing threat." In November 2009, the National Security Council estimated that a biological attack could place "hundreds of thousands of people" at risk of death and cost more than $1 trillion. Heidi Avery, a top biodefense official in the White House, told me recently that biological terrorism poses "the ultimate asymmetric threat; it should be considered in the same class as the nuclear threat." And a report by the Congressional Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, formed in 2007, concluded: "To date, the U.S. government has invested most of its nonproliferation efforts and diplomatic capital in preventing nuclear terrorism. The commission believes that it should make the more likely threat — bioterrorism — a higher priority."

To heighten the nation's biodefenses, the federal government has invested more than $60 billion since 2001, developing and distributing air sensors, educating doctors about the symptoms of bioterror pathogens and distributing medical supplies for biodefense to hospitals around the country. At the root of these efforts is a list of specific biological agents, known as "material threats," that have been identified by the Department of Homeland Security as the most urgent pathogens to defend against. These include smallpox, anthrax, ebola, plague and a handful of lesser-known organisms.

Since 2004, the Department of Health and Human Services has overseen a program called Project BioShield to develop and stockpile vaccines and treatments, known collectively as "medical countermeasures," to defend against the pathogens. After seven years, the achievements of BioShield are measurable. According to Robin Robinson, who directs the countermeasure program at Health and Human Services, there is currently enough smallpox vaccine in the stockpile to inoculate every United States citizen; enough anthrax vaccine to respond to a "three-city attack"; and a variety of therapeutic drugs to treat the infected. Yet many other goals of the program are incomplete and, in some cases, not even begun. After spending hundreds of millions of dollars, for example, to develop a new vaccine for anthrax that would replace the controversial formula developed 50 years ago by the Army — which is known to have serious side effects and has never been approved for children — there is still no new vaccine. There also are no new broad-spectrum antibacterial drugs in the stockpile and no new antivirals. "We don't even have candidate products" for antivirals, Robinson told me.



Last year, two separate review boards evaluated the state of the country's biodefense program, and each report came back scathing.

The National Biodefense Science Board, a nonpartisan task force created in 2006 to oversee countermeasure development,

delivered a 103-page **report** (left) to the secretary of Health and Human Services, Kathleen Sebelius, describing "lack of urgency," "lack of coherence," "lack of prioritization" and "lack of synchronization." The title of the report was "Where Are the Countermeasures?" And the commission created by Congress in 2007 to evaluate all defenses for chemical, biological, radiological and nuclear threats delivered its final report, offering letter grades in several categories. For attention to the safe storage of toxins, the government received an A. For openness and transparency, a B-minus. For biodefense, the grade was an F.

"The lack of U.S. capability to rapidly recognize, respond and recover from a biological attack is the most significant failure identified in this report card," the commission wrote. "Especially troubling is the lack of priority given to the development of medical countermeasures — the vaccines and medicines that would be required to mitigate the consequences of an attack."

Even within the biodefense community, there is a widespread sense that the countermeasure program is failing. Early this year, Sebelius described the effort as "full of leaks, choke points and dead ends," and in more than 100 interviews with senior officials from each of the federal agencies related to countermeasure development — including past and current program heads at the White House, the Pentagon, the National Institutes of Health and the Departments of Homeland Security and Health and Human Services — I heard an endless series of grim diagnoses on the health of the nation's biodefenses. As one senior official in the Obama administration put it: "We need a new model. This is never going to work."

Since the 1990s, the United States' approach to biodefense has been redesigned at least three times. Each time, the new approach was presented as a remedy; each time, the remedy failed to cure.

The story that circulates among officials is that the first modern president to focus on biodefense was Bill Clinton in 1998: after staying up all night reading "The Cobra Event," by Richard Preston, a thriller about a terrorist strike with modified smallpox, Clinton called a high-level meeting of scientists, ordered the F.B.I. to review the plot and began pushing copies of the book on other politicians. By 1999, the White House and Congress had created a new division of the C.D.C., known as the National Pharmaceutical Stockpile, to store medicines for crises. But in the absence of an actual crisis, financing for the stockpile was fairly minimal. By summer 2001, it held only 15 million doses of smallpox vaccine and little else.

After the anthrax letters in October 2001, everything changed: by 2002, spending on biodefense rose to more than $4 billion, from $633 million, with an emphasis on expanding the stockpile. One of the program's first priorities was to increase the supply of smallpox vaccine. Smallpox is regarded by biodefense experts as the most threatening biological weapon, because it can spread as easily as the flu and kills about one in three victims. To expand the stockpile, the Bush administration called in a legendary epidemiologist. In the 1960s and '70s, D. A. Henderson led the World Health Organization's program to eradicate smallpox in nature, chasing outbreaks through villages in Brazil, the mountains of Yugoslavia and the jungles of India before finally containing the last known cases in the Horn of Africa in 1977. Today, smallpox is the only human infectious disease ever eradicated by science.

Returning to public service in 2001, Henderson called in another legend of microbiology, Maj. Gen. Philip K. Russell, a former commander of the Army's medical research program and a figure so revered that one commanding general was known to keep a bumper sticker on his wall that read, "What would General Russell do?" Between 2001 and 2004, Henderson and Russell, along with leaders at the National Institutes of Health and civilian research laboratories across the country, raced to develop new production techniques and expand the smallpox-vaccine supply. Today, the stockpile holds more than 300

million treatment courses.

Officials at Health and Human Services were also determined to produce and store a large supply of anthrax vaccine, but they were unsatisfied with the existing formula. Some veterans blamed the vaccine for gulf war syndrome, citing research at Tulane University, and after vaccination was made mandatory in 1998, hundreds of service members actually refused the shots. Some resigned from service in order to avoid it; a few were court-martialed for insubordination. In 2002, the most comprehensive study of the vaccine, by the Institute of Medicine at the National Academy of Sciences, concluded that while the vaccine was "reasonably safe," a new vaccine was "urgently needed."

Developing a new vaccine is vastly more complicated than increasing the supply of one that exists. In the pharmaceutical industry, the cost to develop a new drug or vaccine averages about $1 billion. To encourage companies into development, the Bush administration in 2003 announced the creation of a special fund within Project BioShield, filled with $5.6 billion for the purchase of countermeasures like a new anthrax vaccine, yet by the middle of 2004, not a single large pharmaceutical company had begun development. "The belief was: Fund it and they will come," Senator Richard Burr, who is prominent in biodefense, told me. "Well, they didn't come." Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases (N.I.A.I.D.) at the National Institutes of Health, told me $5.6 billion was simply not enough money. "The Mercks and the GlaxoSmithKlines and others looked at it and said, 'Forget it,' " he said.

Officials at Health and Human Services turned to smaller drug companies, instead. In November 2004, they offered the first major contract under BioShield to a young company called VaxGen, based in California. If VaxGen could develop and deliver a new anthrax vaccine, the government promised to purchase 75 million doses for $877 million.

From the outset, the choice of VaxGen proved controversial. The company had never produced a drug before, it had been delisted from Nasdaq a few months earlier for failure to file timely financial statements and it was embroiled in an ethical dispute in Thailand over human testing of another drug. But VaxGen did have certain advantages, not least that it had been working on a new anthrax vaccine for two years already, financed by $100 million from Fauci's N.I.A.I.D.

To add another layer of confidence to the deal, officials at H.H.S. structured the VaxGen contract with unusually stringent terms. During the proposal process, VaxGen executives submitted a 1,000-point outline to show the approach they hoped to take. H.H.S. officials now made the outline binding: according to the former chief executive of VaxGen, Lance Gordon, officials notified the company two weeks before the deal became public that if VaxGen could not stick to the plan, the company risked breach of contract. In retrospect, Gordon told me, VaxGen never should have taken the terms. "It's impossible," he said. "In the history of mankind, nobody has been able to predict 1,000 tasks for hundreds of people over a five-year period. Life doesn't work that way."

Vaccines especially don't work that way. Their development is notoriously complex and requires frequent adjustment as complications arise in the lab. Predictably, within months of signing the contract, VaxGen slipped off schedule and was technically in breach. At the same time, officials at H.H.S. were discovering that the VaxGen contract did not add to the countermeasure program's appeal: by 2006, the third year of the contract, not one other major project was in development under BioShield.

It was time for a third overhaul. In the summer of 2006, Burr instructed his legislative staff to figure out what was wrong in the countermeasure program. He came to believe that the problem was institutional. If the early research at the N.I.H. was producing valuable leads for new drugs, and the money in Project BioShield offered an incentive at the end of development, then what was missing was an agency in between to help guide companies

across what Burr's staff called the Valley of Death. "What we saw," Burr says now, "was that we had to become more than a procurer. We had to become a partner." That July, Burr introduced a bill to establish a new agency at H.H.S., known as the Biomedical Advanced Research and Development Authority (Barda), with an annual budget of $1 billion, to finance the development of countermeasures and steer companies through the gantlet of clinical trials and F.D.A. approval. That December, the bill passed both houses of Congress unanimously — but even as executives at VaxGen watched to see how the new agency might help them, H.H.S. announced that the VaxGen contract would be canceled.

Five years later, the cancellation of that contract is still a matter of fierce debate in biodefense circles. Many experts say that the decision had less to do with science than politics. Scott Lilly, a senior fellow at the Center for American Progress, recently studied the role that lobbying may have played in VaxGen's demise. Between 2004 and 2006, Lilly writes in a new study, the company that produced the old anthrax vaccine, which is now called Emergent BioSolutions, employed an army of lobbyists to undermine the VaxGen contract. "Each time VaxGen's test results were less than had been hoped for," the report says, "Emergent pounded VaxGen with a highly orchestrated campaign to overstate the problems and discourage government support of the effort."

Executives at Emergent acknowledge the campaign against VaxGen but say it was not directed at the company so much as the structure of the BioShield contract. "Our issue was not with respect to VaxGen," the president of Emergent, Daniel Abdun-Nabi, told me. "It was with respect to the approach of moving to a single supplier with an unproven technology. We thought it was premature. We thought it added risk to the country." According to Abdun-Nabi, the company's message to legislators was: "You shouldn't put all your eggs in one basket. There's a role for multiple suppliers." The fact that this lobbying contributed to the implosion of VaxGen and another five years in which Emergent was the only supplier of anthrax vaccine, which has earned the company $1.5 billion, also troubles Abdun-Nabi, he said. "It puts us in a very difficult position to be the sole supplier. I mean, the whole nation is reliant on Emergent. And in one sense, we're very honored to be in that position, but it's a tremendous responsibility."

General Russell, who led the early countermeasure program, told me: "It was Emergent lobbying that killed VaxGen. Period. Emergent bought the Congress. Congress killed VaxGen." Several current officials share Russell's view. When I asked one senior biodefense official about the lack of a new anthrax vaccine, the official nearly exploded: "Why don't we have a second-generation anthrax vaccine? The reason is Emergent lobbying!" Even the director of Barda, Robin Robinson, acknowledged that politics played a role in the decision. "Should we have kept it? I think there's a long debate," he said. "They had brought in some really top-flight people in there, and Lance Gordon was really good at judging talent. Unfortunately, there was a lot of political pressure."

Soon after the VaxGen contract failed, the company folded into another, and Emergent bought the rights to develop the new anthrax vaccine it had spent three years lobbying against. Abdun-Nabi told me his company was still trying to develop that vaccine, but critics question whether Emergent, which signed another contract this month to deliver $1.25 billion more of the old vaccine to the stockpile, is pursuing the replacement vaccine as enthusiastically as possible. "They bought the technology and buried it," Russell says. "We are five or six years behind where we should be. We should be working on a third-generation vaccine."

If the pursuit of a new anthrax vaccine has been halting, the pursuit of many other vaccines has halted altogether. In fact, other than the vaccines for anthrax and smallpox, there are no vaccines in the stockpile for any other agents on the material-threat list, nor are any of those vaccines in the advanced development program, nor will any of them enter the

program any time soon.

Robin Robinson, the director of Barda, is a big, easy fellow, with a trim goatee and a light Southern drawl. The first I met him, two years ago, we sat at a long table with his new boss, Nicole Lurie, who had just been appointed by the Obama administration as the assistant secretary for countermeasure development. Lurie had an air of unpretentious surety and a sudden, piercing laugh, and she and Robinson wasted no time trying to hide the failings of their program. Although Barda was established in 2006 with an annual budget of $1 billion, it never actually received the money. In 2006, the agency received $54 million; in 2007, $104 million; in 2008, $102 million; and by the time I sat down with Robinson and Lurie in 2009, Barda had received in four years about half of what it was intended to receive in one. Lurie reminded me of the high cost required to develop drugs. “What does it take in the pharmaceutical industry?” she asked. “A billion dollars per product! The advanced development part of that might be about $350 million, so that’s the part that we should be funded for.”

“For each product!” Robinson said.

“For each product,” Lurie agreed. “So, we’re nowhere near it. We’re nowhere near the level that we need to be, to be able to protect the American public.”

In the two years since that conversation, financing for Barda has gone up, but with many of the goals still incomplete and criticism pouring in — two weeks ago, the Bipartisan W.M.D. Terrorism Research Center in Washington gave the agency a D for performance — the affinity between Robinson and Lurie is less apparent. Lurie, for example, has removed from Barda all contracting officers, instructing them to report to her instead of Robinson. This many seem minor, but companies working with Barda suggest that it has led to ballooning bureaucracy at an agency that was specifically created to attract business. “Now you really have two bosses,” Eric Richman, the C.E.O. of PharmAthene, which is one of four companies still working on a new anthrax vaccine, told me. “We actually spend as much time managing our contracts as we do developing our drugs. It’s a real burden.” Other C.E.O.’s echoed Richman’s concern, and friends of Robinson’s suggest that the move has compromised his ability to lead the program effectively. “This becomes very frustrating for him,” an H.H.S. official told me. “What does he tell the companies — ‘Now I have to go ask for permission’?”

But the gap between Robinson and Lurie also seems to extend to basic matters of policy and fact. Nowhere is the division in countermeasure development more apparent than on the question of vaccine development. Because a vaccine is only effective against a single pathogen, and because development is so expensive, Barda has focused much of its energy on therapeutic drugs — which may not offer protection to the healthy but can treat a broad range of diseases.

When I visited Barda recently to speak with Robinson and Lurie again, I heard two very different explanations for the move away from vaccines. Lurie described the decision as an unfortunate but necessary concession to the budget. “You’d like to have vaccines further along in the pipeline for all the threats we have, and you’d like to have a way to manufacture them quickly,” she told me. “But I don’t think there’s anywhere near enough money in the system.” Yet Robinson insisted that the move would have happened even if financing was not an issue. “There are only two biothreats — smallpox and anthrax — that we feel vaccination is the appropriate way to go,” he said. When I asked if that meant he would not even want a vaccine for other agents, like tularemia, he said: “I don’t think there’s a case to be made for that. What we’re doing is therapeutics.”

The debate over vaccine development is by no means limited to Robinson and Lurie. Ten years after the anthrax attacks, and with more than $16 billion committed to countermeasure development, there is still broad disagreement among officials over whether the stockpile should include other vaccines. When I asked Tara O’Toole, who leads

the Science and Technology Directorate at the Department of Homeland Security (where the list of biological material threats is created and the countermeasure process begins) whether she believed the stockpile should include vaccines for other agents, she snapped: “Vaccines are essential. If there’s a bio attack, people are going to want their children vaccinated. It’s the only defense against reload.”

By “reload,” O’Toole was referring to a concept first developed by Richard Danzig, who is a former secretary of the Navy under Bill Clinton and one of the leading intellectuals in biodefense. Danzig currently serves as chairman of the board at the Center for a New American Security, sits on the Defense Policy Board at the Pentagon and is a member of the President’s Intelligence Advisory Board. The reload concept, he told me recently, describes a fundamental difference between biological weapons and all other weapon types. “When we talk about terrorists’ acquiring a nuclear weapon, we’re talking about just that — they’re acquiring a weapon,” Danzig said. “With biological weapons, we’re talking about acquiring the ability to produce weapons. So if you acquire the ability to produce 100 grams of anthrax, you can keep doing that. You really have to think about biology as potentially the subject of a campaign, where somebody keeps attacking, rather than a one-shot incident.” When I asked Danzig how the reload concept influences the debate over vaccines, he said: “You can reassure people that there will be antibiotics available for them, and you can keep producing ever greater numbers of antibiotics. But you can see that if you had the ability to vaccinate people and protect them, it would provide a larger degree of protection. So to the extent that these things come to pass, I think there will be more pressure to develop vaccines.”

Brett Giroir, who directed the Defense Sciences Office at Darpa and is now vice chancellor for strategic initiatives at Texas A&M University, shared Danzig and O’Toole’s belief that other vaccines should be developed. “Vaccines are critical components of a biodefense posture, and anybody who thinks they’re not isn’t thinking seriously about how we approach this,” Giroir told me. “If we got sprayed with tularemia in College Station and a biodefense sensor went off, that would be an ideal opportunity for vaccine.”

Tularemia is an especially difficult case. Found naturally in animals around the world, it can be transmitted during butchering and spread by ticks. Although it is highly infectious, it is seldom lethal. But during the 1950s and ’60s, Army researchers became interested in weaponizing tularemia.

It has been more than 40 years since the American bioweapons program shut down, and many of the details remain classified. Last fall, the final director of the program, William Patrick, died of cancer at 84, but in the final months of Patrick’s life, Robert Kadlec, the former biodefense chief in the second Bush White House, and Joel McCleary, a former aide to Jimmy Carter, spent hundreds of hours interviewing him on the history and accomplishments of the program. Over the past year, McCleary has delivered a presentation on the bioweapons program to members of Congress, the White House national-security staff and senior officials at the Departments of Defense, Homeland Security and Health and Human Services. One night this summer, I stopped by McCleary’s house to see the presentation myself.

Finding McCleary’s home in Georgetown was a bit like passing through the looking glass. I started down a cheery row of town houses, but as I approached the right number, I realized there was no house — just a gravel path that trailed away from the street with vines and shrubs surrounding it. I followed the path and came to a gate and, finding no bell or button, fiddled with an iron latch to enter a lush green courtyard shaded by a walnut tree. It was as if I made a wrong turn in Georgetown and wandered into the English countryside. In the center of the yard sat a small cottage, as wide as it was tall. I rang the buzzer a few times and rapped a brass knocker on the door, and after a few minutes, McCleary burst outside in a pair of bright red

slippers. He is a large man, brimming with energy, and we stood in his yard admiring the flowers for a moment, then retreated inside to review the last known record of the American quest for a microbial army.

It was immediately apparent that the Army's research on tularemia went far beyond what is commonly known. In hundreds of experiments, scientists weaponized the bacteria to extraordinary potency and then proceeded to mix the slurry with another agent, known as S.E.B., which multiplied the effects logarithmically, shattering the human immune system just as the tularemia plunged in. In several large outdoor tests, scientists drifted clouds of tularemia over cages of live monkeys to evaluate the infectivity. At high doses, the weaponized bacteria were determined to have an incubation period of just a few hours. If left untreated, the combination of tularemia and S.E.B. was projected to cause death within the same period. Patrick called these "killing winds." In one video, he calmly warned, "Between 50 and 60 pounds of freeze-dried tularemia produced in our production facility would eliminate about 60 percent of the population of London, England."

When I asked Robinson, who knew Patrick and has seen McCleary's presentation, whether the extreme weaponization of tularemia suggests the limits of a therapeutic response and a role for vaccination, Robinson became circumspect. "I've got to be careful on this one," he said, "because there is classified information." Then he went on to explain that Barda is considering the possibility of such an attack but still hopes to respond by treating the sick, rather than by vaccinating the healthy. "What we're doing," he reiterated, "is therapeutics."

To date, the United States has never developed an original vaccine for tularemia. Instead, for the past 50 years, scientists who study tularemia must be vaccinated with a weakened version of the bacterium, which was first obtained through mysterious means from the Soviet Union during the early days of the cold war and then modified. But today, supplies of the live vaccine are running thin. In fact, they are virtually gone. Although some lab workers still receive it, the official literature of the C.D.C. lists the tularemia vaccine as "not currently available," and Karl Klose, who runs a tularemia lab at the University of Texas, San Antonio, told me that federal research into tularemia has dwindled over the past few years. "They're basically just abandoning the effort," he said. "It's like the A.D.D. has kicked in."

There is one vaccine candidate for tularemia currently in development. Although it is not a novel product and represents a different formulation of the old Soviet vaccine, it is currently in clinical trials at several locations around the country. Typically, the point at which a product becomes eligible for all the support and financing of the advanced development program at Barda is when the product enters Phase II testing. The new tularemia product entered Phase II this fall, but without interest from Barda, it has remained under the auspices of the early development program at N.I.A.I.D. If this seems organizationally confusing, it makes sense in at least one way. Since 2002, the financing for N.I.A.I.D. has outpaced that for advanced development by as much as 15 to 1. Partly, this is a result of N.I.A.I.D.'s being an older, established institution; partly it is a consequence of the institute's powerful director, Fauci, who has led the agency since 1984 and is sometimes called the J. Edgar Hoover of biology. On the heels of the anthrax attacks in 2001, Fauci vigorously promoted N.I.A.I.D. as the best agency to lead countermeasure development and since 2003 has received about $1.6 billion each year for biodefense research. Some of that money goes into projects like the tularemia study, which would not be financed otherwise. Much more has gone into other kinds of projects entirely. A close look at Fauci's budget last year shows that the director has steered about 70 percent of his biodefense funds toward research into natural disease, including AIDS, SARS and malaria — choosing to define "biodefense" however he likes.

The offices of N.I.A.I.D. lie within the sprawling N.I.H. campus in Bethesda, Md., just below the rim of the Washington Beltway. Among the stately grounds of the N.I.H., the N.I.A.I.D. building is mostly remarkable for how unremarkable it is: the exterior is smudged with mildew and laced with steel electrical conduit, and the corridors are dim and yellowing with age. One day recently, as I stood with Fauci in his seventh-floor office, he paused to admire the dishevelment around him. “Look at this!” he cried, running a hand over the dented surface of his desk. “I inherited this from my predecessor!” He pointed to an old sofa in the corner. “If there’s ever a Congressional investigation, I don’t want them to say I spent it all on myself!”

Fauci is a small, muscular man with an outsize manner. He is from New York in the most obvious ways. After three decades leading one of the most prestigious research programs on earth, he retains a booming Brooklyn patois that sounds, even when he is discussing matters of virulence and pathogenesis, as if he is shouting a pizza order to the back. As we sat together in his library, he explained that although he has overseen most federal spending on countermeasure development since 2002, he does not fully embrace the mission. The list of material threats, he said, reflects an outmoded way of thinking. “It’s less of a priority to say, ‘O.K., now here’s our menu for the Strategic National Stockpile,’ ” Fauci said. “We call that the military model.” He added, “Do we have this little thing in the stockpile or not? I don’t judge the safety of the country on that basis. To me, the idea of a naturally occurring threat is infinitely greater.”

Many agents on the list, Fauci said, were a product of the cold war, when the U.S. military kept a list of “Category A” pathogens being developed by the Soviet bioweapons program. “So when the decision was made to make an investment into developing countermeasures,” he told me, “that was essentially their matrix from the beginning: these are what we know the Soviets had. We know they have stockpiles. This is what we’re going to protect against.” He mentioned the bacterium glanders, which was reportedly used by Germany in World War I and by Japan in World War II but seemed to Fauci a comparatively minor threat today. “I think the unknown threat of a mutant microbe is infinitely greater than someone coming and dropping a glanders on us!” he said. “I mean, seriously! Get real about that!”

When I mentioned Fauci’s comments to O’Toole, who oversees the biological-threat list at the Department of Homeland Security, she said he was “completely wrong” to suggest that the list is rooted in cold-war thinking. “We use current intelligence as an integral part of every material-threat determination,” O’Toole said. “I’m surprised anyone in N.I.H. would think otherwise, particularly since the details of the material-threat determination process are briefed at the White House. It does raise a troubling question about how seriously N.I.H. is engaged in the biodefense mission.”

Whether or not Fauci is right about the origins of the material-threat list, his observation that a natural outbreak is more likely than a biological attack is difficult to dispute. Each year, seasonal flu leads to about 200,000 hospitalizations and several thousand deaths in the United States. Although a biological attack could be much larger, there is no certainty that such an attack will ever happen. How to balance the unlikely but catastrophic potential of bioterror with the steady advance of natural disease is one of the most puzzling challenges for biodefense policy going forward.

To some extent, this is also a question of framework. Fundamentally, the countermeasure program is a public-health project, yet with its reliance on classified intelligence and secret-threat assessments, it is more closely aligned in many respects with the methodology of other national-security projects. Where biodefense fits into government bureaucracy will have a profound impact on its financing. In public health, the $12 billion necessary to develop new vaccines for a dozen material-threat agents can seem a

towering, even absurd, figure. Within the realm of national security, the same amount represents less than a quarter of the cost of the military's experiment with the V-22 Osprey heli-plane, or about what the U.S. will spend in Afghanistan between now and Christmas.

"We spent trillions of dollars in the cold war preparing for a potential nuclear exchange that never occurred," says Kenneth Bernard, who was the senior biodefense official in the Clinton White House from 1998 to 2001 and then again in the Bush White House from 2002 to 2005. "We're not spending that kind of money to prevent a bio attack because the people who work on biology are not trained to think like that. They are much more interested in dealing with the three particular strains of influenza that are in the dish this year than they are in thinking about a plague attack in 2018."

Even if the leadership and financing for biodefense were to shift toward a national-security framework, the task would still require complex coordination among agencies with expertise in disparate spheres. This challenge is not made easier by the personal hostility that has emerged among many current program heads — some of whom have close ties to the competing companies they oversee. In the course of several months of reporting, I heard senior officials from each of the major countermeasure agencies question the motives and professional credentials of the others, sometimes in a manner involving spittle. At times it seemed that the most virulent pathogen in biodefense was mutual hostility, and everybody had it.

Senior officials in the Obama administration say that the president is committed to improving coordination on biodefense and is entering a fourth major overhaul of the countermeasure enterprise. Last year, officials from the countermeasure agencies met weekly with the White House staff to discuss the merits and drawbacks of the current approach. Officials who attended those meetings say the administration hopes to develop a more "nimble, flexible" program, in which a single drug can treat multiple diseases and a single manufacturing plant can produce multiple drugs. If that plan, after 10 years and hundreds of millions of dollars trying to create a new anthrax vaccine that is still not ready, sounds optimistic, it is. Whether it is also realistic, only time will tell. Critics are quick to note that, three years after taking office, the administration is still holding meetings and announcing bold new plans.

A number of former and current officials also point out that no one in the Obama White House is focused exclusively on biodefense. In both the Clinton and Bush administrations, there was a biodefense director whose primary job was to coordinate the agencies. Today, there are four senior White House officials with partial responsibility for biodefense, but each of them is also responsible for a raft of other issues, like natural disasters, terrorism and large-scale accidents like the Deepwater Horizon oil spill. Whatever you think U.S. biodefense policy should be, it is difficult to imagine that it would not benefit from clear, central leadership. Kenneth Bernard, the biodefense czar in both the Clinton and Bush administrations, told me, "The only way that you can get all of those people in the room is to call them into the White House, and to have a coordinating group under a single person." Robert Kadlec, who was the senior official for biodefense in the second Bush term, said, "Unless someone makes this a priority, it's a priority for no one."

Randall Larsen, who first smuggled a tube of weaponized powder into the meeting with Dick Cheney 10 years ago — and went on to become the executive director of the Congressional Commission on Weapons of Mass Destruction — said: "Today, there are more than two dozen Senate-confirmed individuals with some responsibility for biodefense. Not one person has it for a full-time job, and no one is in charge."

Wil S. Hylton is a contributing writer for the New York Times Magazine.

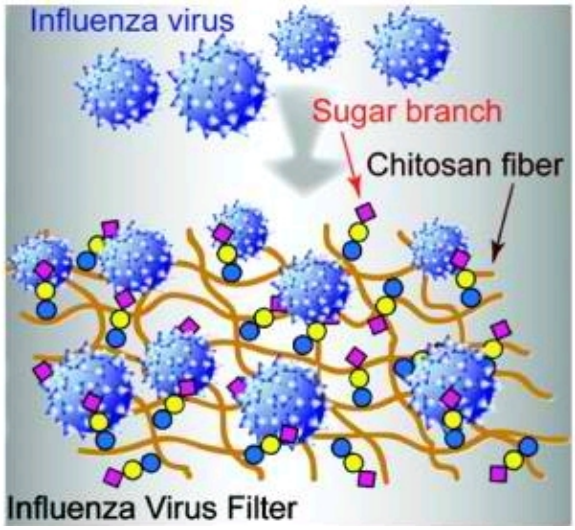
"Vampire" bacteria may serve as living antibiotic

Source: http://www.homelandsecuritynewswire.com/vampire-bacteria-may-serve-living-antibiotic

A vampire-like bacteria that leeches onto specific other bacteria — including certain human pathogens — has the potential to serve as a living antibiotic for a range of infectious diseases, a new study indicates.

The bacterium, Micavibrio aeruginosavorus, was discovered to inhabit wastewater nearly thirty years ago, but has not been extensively studied because it is difficult to culture and investigate using traditional microbiology techniques. A University of Virginia release reports that now, biologists in the University of Virginia's College of Arts & Sciences, Martin Wu and graduate student Zhang Wang, have decoded its genome and are learning "how it makes its living," Wu said.

The bacterium "makes its living" by seeking out prey — certain other bacteria — and then



attaching itself to its victim's cell wall and essentially sucking out nutrients. Unlike most other bacteria, which draw nutrients from their surroundings, M. aeruginosavorus can survive and propagate only by drawing its nutrition from specific prey bacteria. This kills the prey — making it a potentially powerful agent for destroying pathogens.

One bacterium it targets is Pseudomonas aeruginosa, which is a chief cause of serious lung infections in cystic fibrosis patients.

"Pathologists may eventually be able to use this bacterium to fight fire with fire, so to speak, as a bacterium that will aggressively hunt for and attack certain other bacteria that are extremely harmful to humans," Wu said.

His study, detailing the DNA sequence of M. aeruginosavorus, is published online in the journal BMC Genomics. It provides new insights to the predatory lifestyle of the bacterium and a better understanding of the evolution of bacterial predation in general.

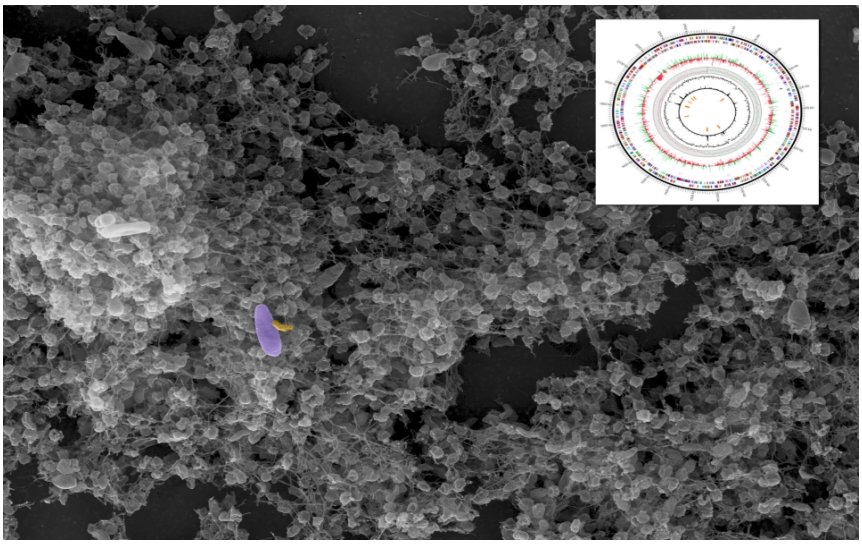
"We used cutting-edge genomic technology in our lab to decode this bacterium's genome," Wu said. "We are particularly interested in the molecular mechanisms that allow it to hunt for and attack prey. This kind of investigation would have been extremely difficult and expensive to do only a few years ago."

He noted that overuse of traditional antibiotics, which work by either inhibiting bacteria propagation or interfering with cell wall formation, are creating so-called "super bugs" that have developed resistances to treatment strategies. He suggests that new approaches are needed for attacking pathogens without building up their resistance.

Additionally, because M. aeruginosavorus is so selective a feeder, it is harmless to the thousands of beneficial bacteria that dwell in the general environment and in the human body.

"It is possible that a living antibiotic such as M. aeruginosavorus — because it so specifically targets certain pathogens — could potentially reduce our dependence on traditional antibiotics and help mitigate the drug-resistance problem we are now facing," Wu said.

Another benefit of the bacterium is its ability to swim through viscous fluids, such as mucus. P. aeruginosa, the bacterium that colonizes the lungs of cystic fibrosis patients, creates a glue-like biofilm, enhancing its resistance to traditional antibiotics. Wu noted



Wu said M. aeruginosavorus requires further study for a more thorough understanding of its gene functions. He said genetic engineering would be required to tailor the predatory attributes of the bacterium to specific uses in the treatment of disease.

The bacterium Micavibrio aeruginosavorus (yellow), attached to and leeching on a Pseudomonas aeruginosa bacterium (purple), surrounded by dead P. aeruginosa (gray) cells.

that the living cells of M. aeruginosavorus can swim through mucus and biofilm and attack P. aeruginosa.

The release notes that M. aeruginosavorus also might have industrial uses, such as reducing bacteria that form biofilms in piping, and for medical devices, such as implants that are susceptible to the formation of biofilms.

"We have a map now to work with, and we will see where it leads," he said.

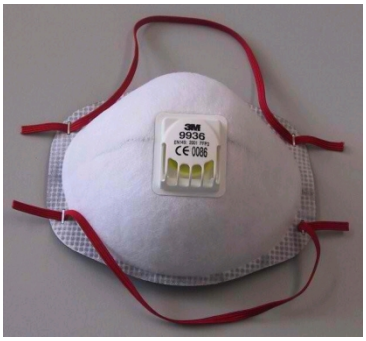
Wu and Wang's co-author is Daniel E. Kadouri, a researcher at the New Jersey Dental School. Kadouri is interested in M. aeruginosavorus as an agent for fighting oral biofilms, such as plaque.

— Read more in Zhang Wang et al., "Genomic insights into an obligate epibiotic bacterial predator: Micavibrio aeruginosavorus ARL-13," BMC Genomics 12:453 (21 September 2011)

New material claimed to filter flu virus out of air

Source: http://www.gizmag.com/filter-flu-virus-prevention/20377/picture/146523/

Staying healthy during flu season is about to get easier thanks to researchers at China's Academy of Sciences and Academy of Agricultural Science, and it doesn't involve painful injections. Instead, the team has developed a way to improve air filter technology to specifically target influenza viruses, effectively stopping them before they get inside our bodies and make us ill. The nice thing about air filters is that they work both ways, so sick individuals wearing the modified filters will end up shedding less viruses into the environment too, which can also help reduce the rate of new infections.



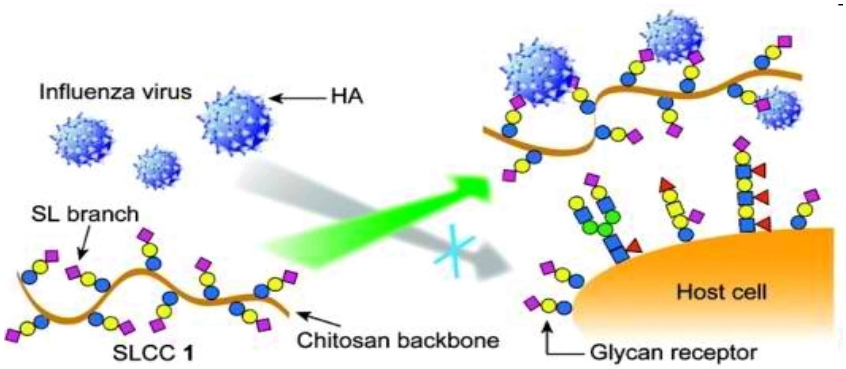
In their study recently published online in the journal, Biomacromolecules, researchers Xuebing Li, Peixing Wu et al, point out that worldwide every year, on average, nearly 300,000 succumb to flu viruses. Millions more are sickened, which, aside from the suffering, translates into substantial economic losses.

Antibiotics don't work on viruses and so don't enter the equation, but there are numerous anti-viral drugs (amantadine, oseltamivir, rimantidine and zanamivir, to name a few) which, while initially effective, are beginning to lose some of their clout. It doesn't help that the little buggers are

constantly mutating into new strains either, meaning pharmaceuticals and vaccines are always playing catch-up.

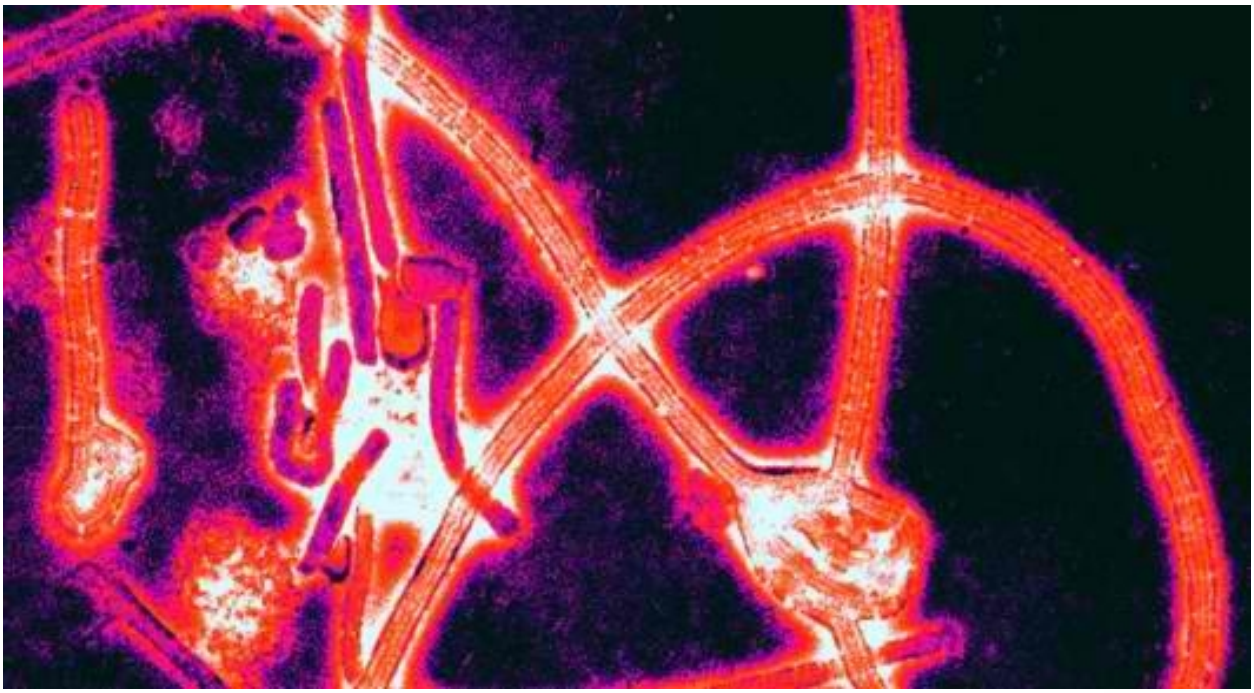
Since viruses can only replicate inside of living host cells, Li and his group reasoned that a new approach was needed to help stop these deadly pathogens from multiplying and hit upon an adaptation of the very mechanism viruses use to infect cells.

When a virus targets a host cell, a protein which peppers its outer surface, hemagglutinin (HA), seeks out and binds to multiple sugars or glycans (the bound monosaccharides sialic acid and lactose- SL) on the host's membrane surface. The researchers found that the versatile linear polysaccharide, chitosan, made from the chitin found in crab and shrimp shells, was an ideal substance to bind SL to otherwise pristine filter fibers. As the diagram below shows, viruses now have to run a gauntlet of fibers festooned with the very substance they're attracted to, effectively stopping them in their tracks. That's news that should help all of us breathe just a little bit easier. The research is published in the ACS journal Biomacromolecules.



New biosensor quickly detects viruses such as Ebola

Source: http://www.gizmag.com/new-biosensor-quickly-detects-viruses/17051/



A new biosensor can instantly detect viruses such as Ebola (pictured), with little or no sample preparation (Image: Thomas W. Geisbert, Boston University School of Medicine)

While there are already effective methods of screening samples of body fluids for viruses such as Ebola, these tend to require a fair amount of sample preparation time and a decent technological infrastructure. Time isn't always in abundance at places such as airports, while infrastructure is lacking in many developing nations. Fortunately, researchers have created a diagnostic tool that can detect viruses quickly and easily, and that's about the size of a quarter.

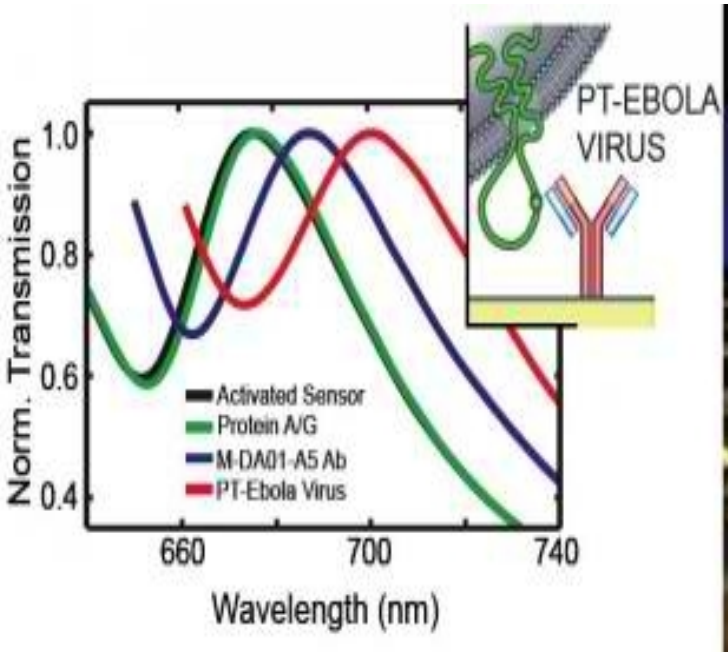
The biosensor was developed by a team led by Assistant Professor Hatice Altug of Boston University's College of Engineering, and Assistant Professor John Connor of the School of Medicine.

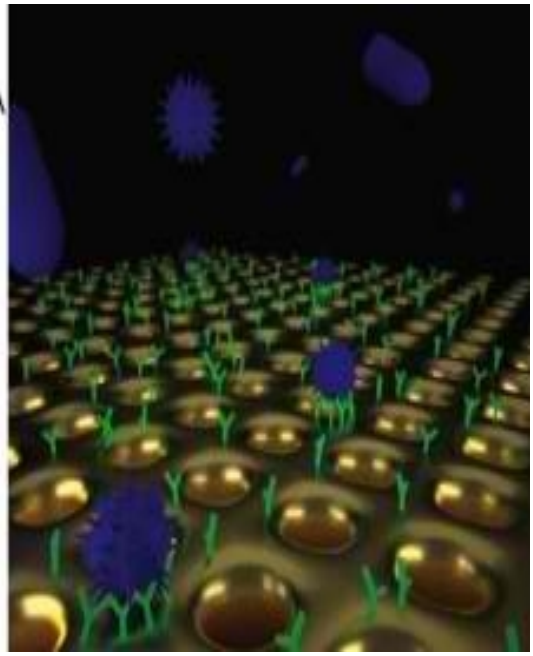
The device incorporates plasmonic nanohole arrays, which are described as "arrays of apertures with diameters of about 200 to 350 nanometers on metallic films that transmit light more strongly at certain wavelengths." Fluid samples such as blood or serum are placed on the biosensor, at which point any live viruses present will bind to its surface. This causes the refractive index of the solution in that area to change, which in turn causes a shift in the resonance frequency of the light being transmitted through the nanoholes. The concentration of the virus within the solution can be determined by the magnitude of that frequency shift.

Samples require little or no preparation before being tested by the biosensor. More traditional testing methods require samples to undergo a process of enzymatic amplification, or fluorescent tagging.

While the team has already demonstrated the device's ability to detect a number of viruses within a laboratory setting, they plan on creating a highly-portable version that can be used in the field with little training. "Our platform can be easily adapted for point-of-care diagnostics to detect a broad range of viral pathogens in resource-limited clinical settings at the far corners of the world, in defense and homeland security applications as well as in civilian settings such as airports," said Altug.

The research was recently published in the journal Nano Letters.





UK man arrested, terrorism bribe

Source: http://www.terrorismwatch.org/2011_02_13_archive.html

South African police arrested (Feb 2011) a 64-year-old man on terrorism charges for threatening to deploy a biological weapon.

"The suspect repeatedly, through letters and emails, demanded an amount of $4 million in exchange for not deploying a biological agent within the borders of the United Kingdom," the national police force said in a statement. "This biological agent, if deployed, would have caused the destruction of property and resulted in major economic loss."

National police spokeswoman Sally de Beer said investigators could not release details on the biological agent involved, but the statement said police considered it a "very serious threat." A similar threat had also been made against the United States, police said.

The arrest followed a six-month investigation by South African and British police and the US Federal Bureau of Investigation, the statement said.

The man was arrested Saturday morning near the small resort town of Hartbeespoort in South Africa's North West province, and will appear in court Monday, police said.

Alien species: a dangerous new bioterrorism threat

Source:http://www.upi.com/Business_News/Security-Industry/2011/11/09/Bioterrorism-threat-seen-in-alien-or-invasive-species/UPI-29271320864203/

Federal counterterrorism officials have a potentially catastrophic new threat to worry about – invasive alien species. According to the Department of Agriculture, an invasive species is anything non-native to an ecosystem that can cause serious environmental, health, or economic harm as it is incompatible with a specific ecosystem. Native plants and animals are often defenseless against these invaders and tend to suffer from large declines in population as a result.

The threat is so serious, Lawrence Roberge, an associate professor of anatomy and physiology at Laboure College, warned that terrorists could use invasive species as biological weapons.

“In the hands of a rogue nation, terrorists, or an individual bent on destruction, an invasive species could have an affect similar to better known potential biological weapons such as smallpox or anthrax,” Roberge said.

Unlike most weeds, striga attacks the host roots, robbing it of nutrients // Source: .icrisat.org

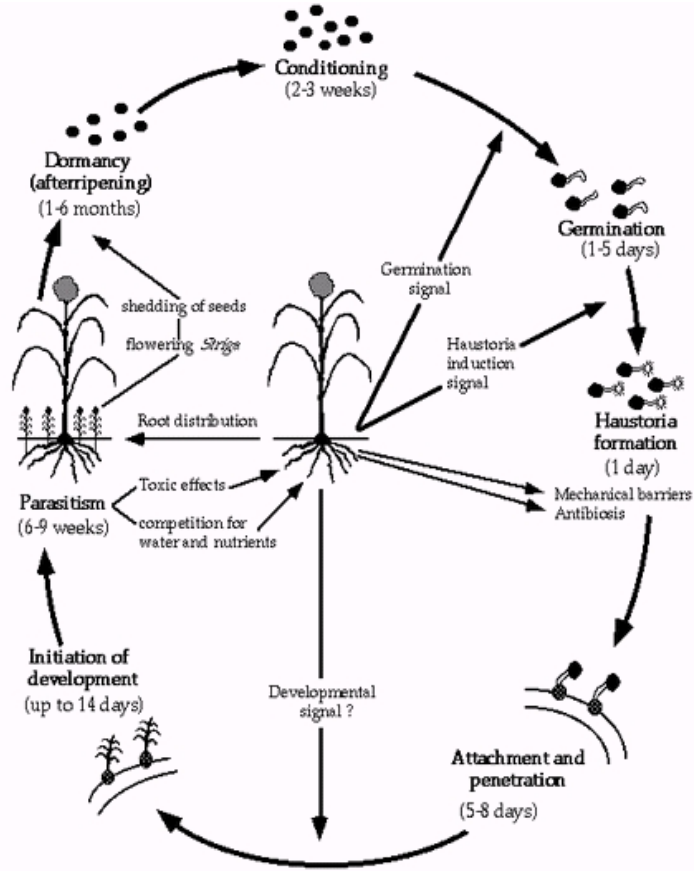
Invasive species like weeds have been known to displace or destroy vegetation in natural habitats, while some have spread deadly diseases that ravaged animal populations like bats and frogs.

Roberge recently completed a study that explored the threats of invasive species consumed or carried by animals, insects, and plants and found terrorists could use them to selectively destroy parts of society and cause chaos, food shortages, and other forms of mass destruction.

For instance, the striga plant parasite is capable of laying waste

to corn crops thereby devastating commodity markets and biofuel production. Meanwhile barberry plants eaten by birds could spread wheat stem rust, which could result in a drastic decline in wheat production.

In addition, feral pig could also be used to carry the Nipah virus and spread the disease among humans, cattle, and wildlife.



Roberge also concluded that a tropical bont tick can carry the heartwater pathogen, a microbe that can cause heart and pulmonary edema. When bitten by the ticks, deer, cattle, and other wildlife could die and the disease could potentially be transmitted to humans. According to Roberge, invasive species are particularly effective weapons.

"These types of weapons are inexpensive to produce and hard to detect immediately, so they can cause extensive damage before they can be controlled," Roberge explained.

Responding to such attacks would also prove to be challenging, which is why the United States must prepare itself by conducting more research into the matter, he said.

To help combat the threat, Roberge is pushing for the creation of a global database of biocontrol agents such as predators, pathogens and parasites, expansion of global reporting on invasive species and genomic mapping for known and high-risk, non-indigenous organisms.

Israeli drill simulates biological terror attack

Source: http://news.xinhuanet.com/english2010/world/2011-12/01/c_131280510.htm

Israel launched a large exercise Wednesday, simulating a biological attack involving mass casualties. The exercise, coded "Orange Flame 6", is being held in northern Israel and aims to evaluate the preparedness of the security establishment and health services to deal with the outbreak of a biological catastrophe initiated by militants or caused by accidents.

The Israeli army's Home Front Command and defense and health ministries are overseeing the exercise. Hospitals, emergency rescue teams and police are participating in the exercise, which is scheduled to conclude on Thursday.

As part of the exercise, local governments in the cities of Afula, Tiberias and Nazareth have set up Mass-Prophylaxis Treatment Centers, which simulate the provision of preventive treatment to civilians who are suspected of exposure to biological agents. Each center is being drilled in treating some 5,000 people a day. Medical staff are being tested in treating those who are already displaying symptoms of a disease.

"It's important to emphasize that today's event is routine and was planned in advance," Brigadier General Ze'ev Snir, the assistant minister of defense for chemical, biological, radiological and nuclear defense, said at a press briefing.

"Israel is yet to experience a biological attack, and we can't assess the probability of such an attack taking place, but our approach (to the issue) says that it's better to be prepared than have to later explain why we weren't," Snir said.

He would not comment on the types of biological agents currently available to some of Israel's enemies, only asserting that "no specific threat exists at the moment."

But a table of biological warfare materials and their symptoms posted on the walls of Afula's Ha'emek Hospital's emergency ward, where soldiers and civilian volunteers played out the victims, listed Anthrax, Ebola, Q-Fever, Yellow Fever and Small Pox, among others.

Israel has held numerous large-scale drills simulating scenarios of mass casualties since the war in 2006 with Lebanon, when thousands of rockets fired by the guerrilla group Hezbollah slammed into major cities and communities in northern Israel. A state-appointed probe panel later concluded that Israel's emergency services and a host of other official bodies were ill-prepared or equipped to handle the emergency.

However, senior officials in charge of Wednesday's exercise said its goal centers not on missiles armed with biological warheads, but on what they call a "silent event" initiated by a militant cell against popular targets, such as a crowded shopping mall. They said its added bonus is the opportunity to drill medical staff in responding to non-terror emergencies, such as Swine Flu, which claimed the lives of a few dozen Israelis in 2007.

The exercise's initial challenge is to identify the material involved in an attack. In a real-life situation, blood samples would be rushed for analysis at the Israel Institute for Biological

Research in Ness Ziona, south of Tel Aviv. To make the drill as realistic as possible, volunteers trained to behave like people who have been exposed to biological agents are placed in hermetically-sealed oxygen tents.
U.S. Army Colonel Alicia Tate-Nadeau, who was recently appointed to serve as the liaison officer to the Israeli army's Home Front Command, said her impression of the drill was positive.
"Anytime you exercise a plan it makes you better prepared," said Tate-Nadeau.
Her colleagues said Israel was "very well prepared" to deal with a biological attack or any other unconventional attack.

Detecting botulinum toxin

Source: http://www.quanterix.com/news/pressReleases/DHS.html

Cambridge, Massachusetts-based Quanterix Corporation, a specialist in molecular diagnostic tests based on Single Molecule Array (SiMoA) technology, announced it has been awarded a one year $250,155 contract from DHS to develop an assay capable of detecting single molecules of botulinum toxin (BoNT) within complex environmental samples. In collaboration with the Botulinum Research Center (BRC) at UMass Dartmouth, Quanterix will develop and validate a high sensitivity assay capable of measuring extremely low levels of the BoNT agent.

"The detection of low copy numbers of toxins and pathogenic bacteria for both clinical and environmental applications requires highly sensitive and rapid detection technologies capable of measuring relevant targets within complex sample mixtures," said David Duffy, Ph.D., vice president of research at Quanterix. "The 1,000–fold increase in sensitivity enabled by SiMoA will facilitate the direct detection of the toxins produced by active bacteria at much lower levels than is possible today. As a result, the detection of BoNT protein will provide important functional information on the presence of bacteria that complements nucleic acid identification. We believe that this approach could be extended to other bacteria and applications, for example, hospital acquired infections." Dr. David Hodge from DHS added, "Quanteri's technology is expected to address a number of challenges currently faced by DHS for identifying active agents of bioterrorism, and offers great promise for a variety of applications in both the private and public sectors."
"Early and accurate detection of botulinum toxin is critical for our national security and public health. The ability to detect extremely low levels of toxin could significantly improve the diagnosis of botulism and better protect humans in biomedical and bio–defense scenarios," said Dr. Bal Ram Singh, BRC Director, and a world leader in the research and detection of botulinum toxin.

World vigilant after Dutch lab mutates killer virus

Source:http://gold-silver.us/forum/showthread.php?56732-World-vigilant-after-Dutch-lab-mutates-killer-virus

World health ministers said Friday they were being vigilant after a Dutch laboratory developed a mutant version of the deadly bird flu virus that is for the first time contagious among humans.

"We need to be very vigilant. This is something that we talked about a lot this morning," French Health Minister Xavier Bertrand said on the sidelines of a meeting of the Global Health Security Initiative (GHSI) in Paris. The GHSI comprises the G7 group of industrialised nations along with Mexico, the European Union's Commission and the World Health Organisation (WHO). A research team led by Ron Fouchier at Rotterdam's Erasmus Medical Centre said in September it had created a mutant version of the H5N1 bird flu virus that could for the first time be spread among mammals. The H5N1 strain of bird flu is fatal in 60 percent of human cases but only 350 people have so far died from the disease largely because it cannot, yet, be transmitted between humans. The announcement led to fears the mutant virus could find its way into nature or that the publication of the research on how the virus was mutated could be used by terrorists. EU Health Commissioner John Dalli told journalists he had received assurances from Dutch authorities that the virus was secure. "The Dutch authorities confirmed that the virus itself is stored in a very secured way and that the necessary permits were given and that the researchers are bound by a code of conduct," Dalli said. "One of the issues ... is to ensure that any information coming from this research is well controlled and without sensitive details about mutation being given," he said. Fouchier said in a statement his team had discovered that transmission of the virus was possible between humans "and can be carried out more easily than we thought."

"In a laboratory, it was possible to change the H5N1 into a virus ... that can easily be spread through the air. This process (mutation) could also happen naturally," Fouchier said.

Innovative molecular detection system spots food-borne pathogens

Source:http://www.homelandsecuritynewswire.com/dr20111214-innovative-molecular-detection-system-spots-foodborne-pathogens

St. Paul, Minnesota-based 3M says that after

decades of transforming the food processing industry with 3M Petrifilm Plates, it is again introducing an innovation into the industry – this time in the area of pathogen detection. The other day, 3M Food Safety introduced the 3M Molecular Detection System, a method of detecting dangerous pathogens like Salmonella, E. coli O157, and Listeria, that can shut down businesses and threaten public health.

The Molecular Detection System is based on a combination of technologies involving isothermal DNA amplification and bioluminescence detection.

"Leveraging 3M's record of innovation, including close collaboration with our customers, we believe we've found a transformational solution that makes for a faster and simpler way of accurately detecting pathogens," said Francine Savage, vice president and general manager, 3M Food Safety. "Just as 3M Petrifilm Plates succeeded by melding sophistication with simplicity, the 3M Molecular Detection System optimizes technicians' time and productivity, improving bottom lines, protecting brands and ensuring public health."

The 3M Molecular Detection System targets and amplifies nucleic acid in enriched samples. The technology has been evaluated with a variety of food types, including produce, meats, processed foods, pet food, and food processing-related environmental samples. The company notes that instrument is sleek and compact – taking up less counter space than a laptop computer.

The company says that as part of its Molecular

Detection System platform, individual, pathogen-specific assays, or procedural tests, will be sold as a test kits. Each assay test kit uses the same software interface and same DNA extraction protocol for testing between one and ninety-six samples per run. Assays for

Salmonella, E. coli O157 (including H7), and Listeria are available immediately; a test for Listeria monocytogenes is expected in early 2012. The company says it will continue to invest in developing a full portfolio of pathogen testing solutions to address customer needs.

"In our evaluation of the Listeria species assay, we liked the small footprint of the system as well as the quick delivery of results after sample enrichment," said Dr. Martin Wiedmann, a professor in Cornell University's Department of Food Science who studied the system's analyses of samples taken from meat-packing, seafood processing and retail locations. "This system definitely illustrates the potential of isothermal methods for rapid detection of food-borne pathogens."

Original Research

Unusual epidemic events: A new method of early orientation and differentiation between natural and deliberate epidemics

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SUMMARY

Objective: To develop a model for quick and accurate evaluation of unusual epidemic events (UEE), based on the original model of bioterrorism risk assessment.
Methods: A new scoring system was developed for quick differentiation between a biological attack and other epidemics, using eight qualitative and six quantitative indicators.
Results: A new scoring system was applied to three UEEs: (1) a spontaneous outbreak of a new or re-emerging disease ('swine flu'); (2) a spontaneous outbreak following accidental release of a pathogen (Sverdlovsk anthrax); and (3) a spontaneous natural outbreak of a known endemic disease that may mimic bioterrorism or biowarfare (Kosovo tularaemia). The disease agent was found to be the most important and the most informative UEE component of the scoring system.
Conclusions: This new scoring system may be useful for public health institutions and federal civil and military officials responsible for bio-attack investigations.

NOTE: You can read the full paper at the website of the Newsletter – "CBRNE-CT Papers" section.

Three Mile Island, Chernobyl, and Fukushima: An analysis of traditional and new media coverage of nuclear accidents and radiation

By Sharon M. Friedman

Source: http://bos.sagepub.com/content/67/5/55.full

Abstract

The Internet made an enormous amount of information on Fukushima available, far more than was provided by the media during the Three Mile Island and Chernobyl accidents. While journalists contributed much of the news about Fukushima, citizens actively participated in blogs and on Facebook, Twitter, and YouTube, exchanging views and directing others to important news articles or videos. The Internet also gave the traditional media many opportunities for better coverage, with more space for articles and the ability to publish interactive graphics and videos. Coverage in *The New York Times*, for example, included an abundance of background and explanatory information about the Fukushima accident and radiation releases in multiple formats and gave readers the opportunity to better understand technical information. Consequently, radiation coverage of the Fukushima accident was better than that of the Three Mile Island or Chernobyl accidents. Television reporting, however, still presented some problems.

Media coverage and discussion of the Fukushima Daiichi Nuclear Power Station accident has been massive. A little more than four months after the Fukushima accident began, Google returned 73,700,000 results for the search term "Fukushima" and 22,400,000 results for the search terms "Fukushima and radiation." On Google News, which tracks news coverage, there were 201,000 results for "Fukushima" and 20,100 results for "Fukushima and radiation."[1] Coverage of the nuclear accident far overshadowed other news of the Tohoku earthquake and tsunami aftermath.

Although heavy print and broadcast coverage also followed the Three Mile Island and Chernobyl accidents in 1979 and 1986, respectively, coverage did not grow as quickly or become as vast as what occurred for Fukushima. The extensive Fukushima coverage has altered, perhaps for years to come, the way the public obtains information about major nuclear plant accidents, their effects, and their ramifications.

The Internet, websites, and social media are major reasons for the deluge of Fukushima information, and they have changed the definition of mass media in many ways. "We live in the Internet age where people can be selective about what news they get and expect to provide feedback about it," nuclear energy blogger Dan Yurman has observed, adding that the mainstream media no longer rule the air (2011). Instead, this spring, hundreds of sources provided Fukushima information on websites and blogs. Traditional media outlets and web publications, government agencies, pro- and anti-nuclear groups, and numerous experts on nuclear issues all contributed to discussions of what was happening.[2] Scientists offered extensive online tutorials about nuclear plants and radiation, and science journals such as *Nature* and *Science* posted articles on their online news pages.

Many private individuals and groups with Internet and social-media connections presented their own "news," their interpretations of news from traditional media or their points of view on blogs, Facebook, Twitter, and YouTube. Hundreds of Twitter conversations

appeared under a variety of hashtags—such as #fukushima, #nuclear, and #meltdown—with people keeping each other up to date on events and where to find articles to read or videos to watch. Anyone who wanted a timeline for Fukushima events could also turn to Wikipedia, which compiled a day-by-day account, including radiation readings.

All of these Internet activities, plus traditional print publications and television and radio broadcasts, played a major role in informing people about Fukushima events and related issues, such as nuclear energy policies in various countries. The speed of the online dissemination had its good and bad points. Although information appeared quickly, if something went viral, it was widely distributed without much thought about its accuracy or the credibility of its sources. For example, an early blog post asserting that there was no chance that "significant radiation" would be released from the damaged reactor was reposted on hundreds of websites and message boards and was even used as a link by some reliable media sites (Elliot, 2011).

While the advent of the Internet breached the media's gate keeping control of information long ago, this breach was very apparent in the Fukushima coverage. During the early days of the accident, when the Tokyo Electric Power Company and the Japanese government held news briefings to provide minimal and somewhat optimistic information, their reports were quickly interpreted, supplemented, and contradicted online by scientists, government personnel, nuclear industry or anti-nuclear sources, and private individuals. The global nature of the accident also diluted gatekeeper opportunities, as journalists, organizations, and citizens not only from Japan but also from the United States, Southeast Asia, Europe, Russia, Canada, and elsewhere shared news and comments about the accident.

Similarities among accidents

While there were differences in the quantity and centralization of coverage of the Three Mile Island, Chernobyl, and Fukushima accidents, there were also some important similarities. One was that reporters covered all three accidents in real time as they unfolded over a number of days or weeks. This meant that for the first few days, the demands of breaking news required almost constant updates, leaving little time to ensure accuracy. As the accidents progressed, coverage became more accurate and detailed.

Another similarity was that, because all three accidents involved complex technical situations, many engineers and government spokespersons had a hard time avoiding technical jargon when explaining what was happening. They found it difficult to use terms journalists and laypeople could understand. Complicating this situation even further, many reporters lacked technical knowledge about nuclear plants or radiation, so they did not know what questions to ask. Some seasoned specialty reporters who were knowledgeable about nuclear energy covered the accidents, but they were in the minority.

During all three accidents, people wanted to know about radiation, how much radioactivity was escaping, and whether there were health hazards. Reporting about radiation is inherently complex because of the many terms used for different measurements and the different US and international terminology. Trying to carefully describe potential health effects also is difficult, particularly

because of public fears about radiation. To overcome some of these translational problems and put radiation information into a risk context, some journalists used explanations and comparisons. This practice, however, was not the same for all three accidents; it evolved and improved over time. A comparison of coverage of the three accidents—and of radiation in particular—highlights some of the media changes that have occurred.

Three Mile Island coverage

In a time before the Internet and cellular phones, the journalists covering the 1979 accident had to scramble for phone access, standing in lines at telephone booths or paying local residents to use telephones to report back to editors or news directors. Telephone lines were often overloaded, and calls could not get through (Report of the Public's Right to Information Task Force, 1979).[3] Between 300 and 500 journalists descended on Middletown, Pennsylvania during the first week of the accident, mostly from the United States but also from Japan and Europe.

Many reporters who initially covered the accident were those who were simply available for assignment—political reporters who covered activities in the state capital and local reporters from the region. Few had more than a rudimentary knowledge of nuclear power or knew how a reactor worked or what a meltdown was. They did not know what questions to ask about the releases of radioactivity to help the public evaluate health risks. Some science and medical writers who knew about nuclear technology and radiation came to the site while others provided assistance from their home base. Even though many reporters were on the scene, most of the nation's media relied on somewhat centralized coverage supplied by the Associated Press and United Press International wire services; newspaper syndicates, including *The New York Times*, *The Chicago Tribune*, and *The Los Angeles Times-Washington Post*; and the three broadcast networks: ABC, CBS, and NBC (Report of the Public's Right to Information Task Force, 1979: 5, 171).

While the number of articles and television broadcasts never approached the huge numbers for Fukushima, the public had plenty to read and watch about the accident, according to a content analysis of coverage in five newspapers and on ABC, CBS, and NBC from March 28 to April 3, 1979. The analysis was done for the Public's Right to Information Task Force, which investigated communication issues for the President's Commission on the Accident at Three Mile Island. Each network presented about 200 minutes of accident news, spread among morning and evening news programs and specials. While the number of articles in the four major newspapers ranged from 45 to 85, one local newspaper printed 148 articles (Report of the Public's Right to Information Task Force, 1979: 187–188).[4]

Reporting on the accident reflected the confusion among personnel from the utility, the state government, and the Nuclear Regulatory Commission (NRC) about what was happening in the nuclear plant during the accident and about radiation releases. It also reflected the previously mentioned language gap among the engineers, government officials, and journalists. One reporter said he left a news conference hoping that Harold Denton, then-director of the NRC's Division of Nuclear Reactor Regulation and President Jimmy Carter's personal representative at Three Mile Island, had not announced a meltdown in language so technical that the reporter had not understood it.

Radiation reporting at Three Mile Island was problematic, because it was almost always incomplete. Part of the blame lay with officials, who were not giving out radiation information regularly, but reporters did not know enough to ask the right questions, either. Out of 243 radiation reports reviewed in the content analysis, only 16 were complete. To be complete, according to the Task Force's strict standard, a radiation report had to include the amount; the unit, rate, time,

and duration; where the reading was taken; the nature and the type of radioactive material; and the type of exposure. While the amount and unit were almost always included in the articles, almost everything else was missing. A number of news organizations repeated sources' comparisons to X-rays to help put radiation levels into context for readers and viewers, but the Task Force considered this comparison misleading because it failed to take into account whole-body exposure. A more appropriate comparison would have been to background radiation (Report of the Public's Right to Information Task Force, 1979: 11, 215–217).

The Task Force concluded that the public's right to know was not well served by the radiation reporting, and blamed both the sources, who did not provide this information, and the reporters, who "confused matters with improper comparisons, insufficient background information, and factually impossible statements." Radiation reporting, according to the Task Force, "was abysmally inadequate" (Report of the Public's Right to Information Task Force, 1979: 217).

Chernobyl coverage

Covering the Chernobyl accident was daunting, given that it occurred in a country with a controlled press. Mikhail Gorbachev, then-president of the Soviet Union, reported that while he was informed on April 26, 1986 about the accident, initial reports "were cautious in tone" (2011). It was only on April 27 that he learned about the extent of the accident and that radioactive material had been released into the atmosphere. The first extensive Soviet public report on the accident appeared on May 6—10 days after the accident began (Amerisov, 1986).

During the first week of the accident, official information was in short supply, so reporters primarily used European or US sources. Many reports speculated about high numbers of casualties, including an early United Press International report of 2,000 deaths. According to one analysis, US government sources did little to discourage speculation about a Soviet cover-up or about the numbers of injuries and deaths (Dorman and Hirsch, 1986). This analysis also noted that the US nuclear industry went to great lengths to convince citizens that this type of accident could never happen in the United States.

European governments provided most of the early radiation readings, but many were superficial. As reported in the US media, some only stated that radiation levels were safe but did not explain what safe meant. Others noted that levels had dropped two or three times from what they had been earlier but did not reveal current or past levels. A few provided complete readings (Friedman et al., 1987).

A content analysis of the first two weeks of the accident coverage in five US newspapers and on the three major television networks found that 46 percent of the 394 articles and 60 percent of the 43 newscasts included some radiation information.[5] However, information about radiation levels was infrequent and unspecific. The most common explanation was to say that the levels were high, moderate, or low without a numerical reading. The next most common way was to use the same high-moderate-low approach and combine it with a comparative radiation level. There were only 52 numerical radiation readings in the articles and four in the newscasts, and they included about half of the information the Task Force said should be present (Friedman et al., 1987: 63, 77).

The most frequently used comparison was to background or normal radiation levels, an important improvement over the wide use of chest X-ray comparisons at Three Mile Island. Television newscasts, however, still used chest X-rays almost a quarter of the time. Only a limited effort was made to explain radiation information, and few illustrations, graphics, or glossaries of radiation terms appeared in the newspapers. Television coverage included graphics in almost all of the newscasts but these were mostly maps showing the spread of a radioactive cloud and a simplistic illustration of a nuclear reactor burning or in the process of a meltdown. More than 80 percent of the articles and 93 percent of the newscasts included general risk estimates for American citizens; most said there was little or no risk.

The content analysis showed that the Chernobyl radiation coverage was better than that at Three Mile Island for a number of measures. Still, there was not enough coverage of the actual radiation levels or enough explanatory information to help readers and viewers better understand their risks. Opinions about the radiation coverage were mixed among experts. David Rubin, who headed the Three Mile Island Public's Right to Information Task Force, said that it was "just as much a mess as ever." Conversely, a nuclear engineering professor who was a member of the President's Commission on the Accident at Three Mile Island said, "Chernobyl stories were more factual and less pejorative" (Friedman, 1991: 80). The Atomic Industrial Forum (the predecessor of today's Nuclear Energy Institute) said that both the US print and electronic media, with few exceptions, provided fair reporting of Chernobyl with few excesses (Friedman et al., 1992: 307).

Fukushima coverage

Fukushima provided a major test of whether Internet resources could be used to provide better nuclear disaster coverage. Many media organizations in the United States—including *The Wall Street Journal*, *The Los Angeles Times*, *The Washington Post*, *The Christian Science Monitor*, and National Public Radio, among others—rose to the challenge, using creative approaches to reporting and giving more space and airtime for long-form articles and in-d epth reporting, along with complementary infographics and multimedia projects.[6] These and other media outlets not only included information on accident events but also had links to and updates from other web and social media resources. Readers' comments were posted online, giving feedback to journalists and enabling dialogues that included opinions, answers to questions, and suggestions for other websites to view.

The New York Times is an excellent example of a news organization that mastered effective nuclear-accident storytelling, particularly complex and nuanced radiation reporting. Its website pushed the traditional radiation narrative into a creative and visual nonlinear structure. Complex interactive and animated diagrams helped explain changing evacuation zones, possible paths of the plume of radioactivity, the hazards of storing spent fuel, the International Nuclear and Radiological Event Scale, the dangers of radiation for workers, and radioactive

water problems at the power station. Radiation information included not only interactive diagrams but also a table that discussed levels of radioactivity in air, soil, water, and food at the plant, near the plant, in Japan, and around the world. Another graph of radiation levels gave measurements at the Fukushima Daiichi main office, the station's gates, and the plant perimeter from March 12 through April 18—comparing them with cumulative typical radiation doses for a whole-body CT scan, annual US doses for all sources and for natural sources, and a chest X-ray. This effort provided almost all the information the Three Mile Island Task Force had said was needed for accurate reporting on radiation levels. These graphics and others helped readers visualize complex topics, providing a level of explanation not seen in either the Three Mile Island or the Chernobyl coverage.

Conventional reporting, as well, was at its best in *The New York Times*. A search of its website for the term "Fukushima" from March 11 to June 26, 2011 found 440 articles; 258 were found using the search terms "Fukushima" and "radiation." Although the large number of articles and ongoing coverage precludes a systematic content analysis, a June 26, 2011 search of *The New York Times* archives for articles with the most radiation content showed that the first 10 articles retrieved focused on parental concerns for children's exposure to radiation, worker exposures, and the radiation levels at and around the Fukushima plant. Articles about breaking news, such as the June 6 announcement that radioactive emissions were more than double those reported earlier in the accident, were often accompanied by explanatory articles by energy, science, and health reporters. They produced articles that put the radiation news into perspective, exploring the continuing scientific dispute over the effects of long-term exposure to low doses of radiation (Wald, 2011), as well as the degrees of danger from radiation (Broad, 2011a) and how radioactive elements travel in the atmosphere, are deposited, and work their way into certain foods (Broad, 2011b). In addition, there were several background articles about health effects, two of which included information about measuring radioactive elements and their effects on human cells (Grady, 2011a, 2011b). Other informative articles on radiation covered the potential spread of radioactivity in Japan and other countries, changing evacuation zones and hot spots, contamination of food products, concerns about sea and marine life pollution, and people's fears of nuclear fallout, among others.

Fukushima on television

Many people watched the Fukushima events unfold on television or watched videos of

newscasts on the Web or YouTube. A number of Fukushima stories appeared on US national newscasts during the first days of the accident, frequently overshadowing coverage of the earthquake and tsunami damage, deaths, and recovery efforts. According to the Tyndall Report, there were 29 nightly newscasts from ABC, CBS, and NBC that included coverage of the nuclear accident (2011). The networks reported on the accident every night until March 18. Then Fukushima coverage faded as other news topics took precedence, such as the violence in

Libya. The three national networks covered the nuclear accident again on March 28, when leaks of highly radioactive water appeared, but after that, as of June 28, the nightly newscast on NBC had covered Fukushima events seven times, compared with three for CBS and one for ABC. All of the networks employed graphics, video, and experts to help them explain radiation issues at Fukushima, but often these reports were quick snapshots due to the brevity required on newscasts.

CNN, operating on a much longer news cycle than the network news shows, had much more time to provide explanations and graphics, but instead endlessly repeated video of the same scenes on a series of its shows during its early coverage. Filling so much airtime tended to highlight when the anchors, reporters, or commentators were not well prepared. Tim Goodman, chief television critic for *The Hollywood Reporter* (2011), noted that both Anderson Cooper and Dr. Sanjay Gupta seemed at a loss for what to do while reporting from Japan. He also criticized irrelevant interviews, such as when Piers Morgan interviewed Yoko Ono about how she felt seeing the Japanese "carnage."

Some CNN commentators also were either unprepared or full of hyperbole. For example, Bill Nye the Science Guy gave an incorrect answer to a question about cesium-137 (Grossman, 2011).[7] Michio Kaku, a theoretical physicist and frequent commentator, often used bombastic terms, such as calling Fukushima "a ticking time bomb" (2011). Despite these shortcomings, Goodman concluded that CNN covered the nuclear accident better than the other cable networks.

However, he roundly criticized US television coverage, saying that "the words 'meltdown,' 'catastrophe,' and 'radiation' were tossed about in such a way that it seemed news agencies were willing it all to happen" to increase ratings (Goodman, 2011: F-1). He urged that reporters and anchors be much better prepared and that incessantly simplistic questions and runaway speculation stop. He recommended watching videos from NHK WORLD English, the BBC, and Al Jazeera English as the best options for Americans who wanted good Fukushima information.

Errors and hype also plagued some of the coverage in the print and online media. The Japanese Foreign Ministry blasted the foreign media for "excessive" reporting and asked them to be more objective (Matsumura, 2011). *The New York Times* reporter Matthew Wald criticized some of the television and online coverage as sometimes overly simplified or incorrect, in part because some of the reporters involved were in "over their heads" in terms of the technical side of the nuclear disaster (Leahy, 2011). Others, particularly scientists and those with technical knowledge criticized both the traditional and the social-media coverage, saying scare tactics once again rode the media waves and increased the public's nuclear phobia.

Conclusion

Coverage of radiation from large-scale nuclear accidents has evolved since the days of Three Mile Island, when it was called abysmal. It improved somewhat during the Chernobyl accident, with more coverage of radiation, although this was often general and not informative about specific radiation levels. Radiation coverage at Fukushima has been much more extensive and much better in many cases because of the emphasis on explanations and background information and the visual and graphics capabilities of a number of media organizations.

The size of the Fukushima information explosion on the Internet, and the speed of transmission to readers and viewers worldwide, however, presented problems for traditional journalists. While finding expert sources to help journalists understand and explain events was not as difficult as it had been during the earlier accidents, at Fukushima "the problem wasn't *getting* expert sources; it was *vetting* expert sources," according to Peter Sandman (2011), a risk

communication consultant and a member of the Three Mile Island Public's Right to Information Task Force. In his opinion, the extent to which each reporter made intelligent, discriminating use of the glut of online expertise was the main difference between outstanding and routine coverage.

Vetting expert sources is easier for specialty reporters, who have had long experience in a particular field, and experience is especially important when that field is highly technical. With a controversial topic, such as nuclear power, balancing pro- and anti-nuclear opinions and knowing who can offer both knowledgeable and objective interpretations of information is something at which experienced specialty reporters excel. Unfortunately, one of the Internet's impacts on US newspapers is that they are downsizing and consequently buying out or laying off many specialty reporters in the science, environmental, and health fields. Although some of these reporters are now working for online publications or blogging independently, their experience no longer enriches newspaper coverage. To properly cover science, technology, and health issues, particularly on the scale of the Japanese nuclear disaster, the knowledge and experience of specialty reporters is greatly needed—and not only for newspapers but also for television because of expanded online coverage opportunities.

Despite these problems, the Internet also has brought advantages. A different media world exists today than in 1979 or 1986. News events such as Fukushima draw millions of people worldwide, and the Internet gives them the ability to participate in discussions with journalists and among themselves, as well as to provide information about these events. This is the "new media," as it is called in journalism, with active citizen participation and news selection. From a new-media perspective, Fukushima has become iconic because of the massive outpouring of global information and interest, and its coverage in both the traditional and social media will be a standard against which future reporting, particularly of radiation, will be measured.

Notes

- 1 The number of results from Google and Google News often vary from day to day, even when the same search terms are used. These numbers are presented to show the large number of results available on Google for these topics and should not be considered absolute. These searches were done on June 26, 2011.
- 2 Searching Google in addition to searching Google News is important for understanding the contributions of information sources beyond the traditional media.
- 3 Most of the information in the Three Mile Island section is summarized from the Report of the Public's Right to Information Task Force of the President's Commission on the Accident at Three Mile Island. The 14 members of the task force conducted numerous interviews with both print and broadcast journalists, as well as with utility personnel and citizens in the region around the accident site. They viewed transcripts of government meetings and press conferences about the accident, as well as formal depositions. There was both a quantitative and qualitative content analysis. The final task force report used here was a summary of many other reports written by task force members on a variety of topics about communication and the accident.
- 4 The five newspapers used in the Public's Right to Information Task Force quantitative content analysis, and the number of articles they ran, were: *The Harrisburg Evening News*, 148 articles; *The New York Times*, 85; *The Philadelphia Inquirer*, 61; *The Los Angeles Times*, 49; and *The Washington Post*, 45. Although *The Philadelphia Inquirer* had fewer stories than *The New York Times*, it devoted more space to the stories. *The*

Inquirer dedicated major resources to Three Mile Island reporting, fielding more than 24 reporters as an investigative team, and it won a Pulitzer Prize for its coverage of the accident.

- 5 The five newspapers included in the Chernobyl content analysis, and the total number of articles followed by the number of radiation articles they published, were: *The New York Times*, 132 and 66; *The Philadelphia Inquirer*, 111 and 53; *The Washington Post*, 107 and 48; *The Wall Street Journal*, 25 and 10; and Allentown's *The Morning Call*, 19 and 7. The number of television network newscasts, followed by those including radiation, were: ABC, 14 and 9; CBS, 15 and 9; and NBC, 14 and 8. (Two newscasts were not obtainable and were not coded.)
- 6 This brief list does not include many other news organizations in the United States and abroad that provided good Fukushima coverage. A systematic content analysis of Fukushima coverage in the media, including radiation coverage by specific media outlets, will provide more definitive information but will require some time to accomplish. Although there is still much left to be examined in the future, these preliminary findings provide some valuable information.
- 7 News of Bill Nye's appearance on CNN became a "trending topic" on Twitter shortly after his appearance on March 12, 2011, with many tweets expressing delight about seeing him on television again while others pointed out his errors.

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The radiological and psychological consequences of the Fukushima Daiichi accident

By Frank N. von Hippel

Source: http://bos.sagepub.com/content/67/5/27.full

Abstract

The release of radioactivity into the atmosphere from the Fukushima Daiichi accident has been estimated by Japan's government as about one-tenth of that from the Chernobyl accident. The area in Japan contaminated with cesium-137—at the same levels that caused evacuation around Chernobyl—is also about one-tenth as large. The estimated number of resulting cancer deaths in the Fukushima area from contamination due to more than 1 curie per square kilometer is likely to scale correspondingly—on the order of 1,000. On March 16, 2011, the Nuclear Regulatory Commission advised Americans in the region to evacuate out to 50 miles (NRC 2011a). If the Japanese government had made the same recommendation to its citizens, it would have resulted in the early evacuation of about two million people instead of 130,000. Because contaminated milk was interdicted in Japan, the number of (mostly non-fatal) thyroid cancer cases will probably be less than 1 percent of similar cases in Chernobyl. Unless properly dealt with, however, fear of ionizing radiation could have long-term psychological effects on a large portion of the population in the contaminated areas.

On April 12, 2011, one month after a 9.0-magnitude earthquake and tsunami disabled the oldest four reactors at the Fukushima Daiichi Nuclear Power Station, the Nuclear and Industrial Safety Agency (NISA), Japan's regulatory body, announced that the subsequent releases of radioactivity into the atmosphere qualified it as a "major accident," or a Level 7 emergency, the highest level on the International Nuclear and Radiological Event Scale. The agency compared these releases to the 1986 Chernobyl accident, the only other Level 7 accident in history (NISA, 2011). In June, three months after the disaster, Japan reported to the

International Atomic Energy Agency (IAEA) that the radioactivity released into the atmosphere from the fuel of the Fukushima Daiichi reactors was very roughly one-tenth of that released during the Chernobyl accident (see Table 1). This is not unreasonable, since the Chernobyl releases went directly into the atmosphere. At Fukushima, much of the radioactivity that was released from the reactors was captured in the water inside the reactor buildings.

Table 1

	Estimated releases of radioactivity to the atmosphere from Fukushima Daiichi	Estimated releases of radioactivity from Chernobyl
cesium-137	0.41	2.3
iodine-131	4.3	50

Source: Japanese government, 2011: VI-1.[1]

The Japanese government's estimates of the releases into the atmosphere from the 2011 Fukushima Daiichi Nuclear Power Station accident compared with the estimates from the 1986 Chernobyl accident, in millions of curies[1]

It is not clear what the long-term health consequences of the Fukushima Daiichi accident will be. About 16,000 Chernobyl-caused cancer deaths are projected during the lifetime of those who were exposed in Belarus, Ukraine, and western Russia and in Europe farther downwind. About half of these deaths are projected among the six million people living in areas contaminated with levels of radioactive cesium-137 above 1 curie per square kilometer—and half among the remaining population of about 570 million in Europe, who live in less contaminated areas (Cardis et al., 2006). The average estimated increase in cancer deaths in the two populations are about 0.1 and 0.001 percent, respectively. For comparison, the overall cancer death rate in the developed world is about 27 percent (American Cancer Society, 2008). It is not surprising that detecting and distinguishing the Chernobyl-related cancers statistically is challenging.

A corresponding estimate of the cancer consequences of the Fukushima Daiichi accident has not yet been conducted, but it is possible to make a very preliminary order-of-magnitude guesstimate. Out of the two million people who live within a 50-mile (80-kilometer) radius of the Fukushima plant, about one million live in areas contaminated with cesium-137 to levels greater than 1 curie per square kilometer.[2] Scaling to the six million people in areas contaminated to similar levels by the Chernobyl accident, one might expect around 1,000 extra cancer deaths related to the Fukushima Daiichi accident, that is, a 0.1 percent incidence rate. This is much less than the direct toll—about 20,000—from the earthquake and tsunami that caused the accident (McCurry, 2011).

More accurate estimates will be possible if national collective-dose estimates are pulled together, as they were after the Chernobyl accident. For now, in order to frame the discussion, it is useful to consider the problems of long-term land contamination, evacuation decisions, and thyroid cancers. Finally, it is important to note that, if not dealt with properly, the psychological consequences associated with accidents such as Chernobyl and Fukushima could damage many more lives than the cancer consequences.

Land contamination

As the world tuned in to watch the unfolding of the catastrophic reactor

failures at the Fukushima Daiichi plant, perhaps the most dramatic events were the four hydrogen explosions signaling that a loss of coolant had occurred. Following this loss, radioactive heating drove the fuel temperature up past 1,000 degrees Celsius (about 1,800 degrees Fahrenheit), and the zirconium alloy cladding (the outer covering of the fuel rods) began to react with the hot steam in the reactor pressure vessel (Alvarez et al., 2003). The zirconium removed oxygen from the water molecules and created the hydrogen gas that then leaked into the outer reactor buildings, mixed with air, and exploded—destroying the superstructures of the buildings.

More important, however, the hydrogen explosions were indicators that the fuel cladding had failed and released cesium-137 and iodine-131, fission products that have relatively low boiling points.[3] Cesium-137 has a 30-year half-life—the amount of time it takes for half the atoms to disintegrate. Today, it and its shorter-lived cousin, cesium-134 (with a two-year half-life), are the major radioactive contaminants of the land in Fukushima and the surrounding prefectures. As the contaminants decay they emit gamma rays that raise the radiation levels, and the magnitude of the resulting danger will determine the decontamination efforts or long-term evacuation plans.[4]

Around the Chernobyl plant, cesium-137 contaminated over 1,000 square miles (about 3,000 square kilometers) to a level greater than 40 curies per square kilometer. In this area, the population was encouraged to leave permanently. Residents were allowed to stay in an additional 7,000 square kilometers contaminated to levels between 15 and 40 curies per square kilometer.[5] By "strict control"—that is, partial decontamination of the soil and building and road surfaces, along with ensuring that people did not eat heavily contaminated produce—radiation doses were limited to less than 0.5 rems per year.[6]

Figure 1 shows a map of the cesium-137 contamination levels around Fukushima (US Department of Energy, 2011). The circles and arcs show different distances (20, 30, 60, and 80 kilometers) from the Fukushima Daiichi Nuclear Power Station. It appears that the wind was blowing in a northwesterly direction when the largest on-shore releases occurred. These releases apparently occurred on March 15.[7]

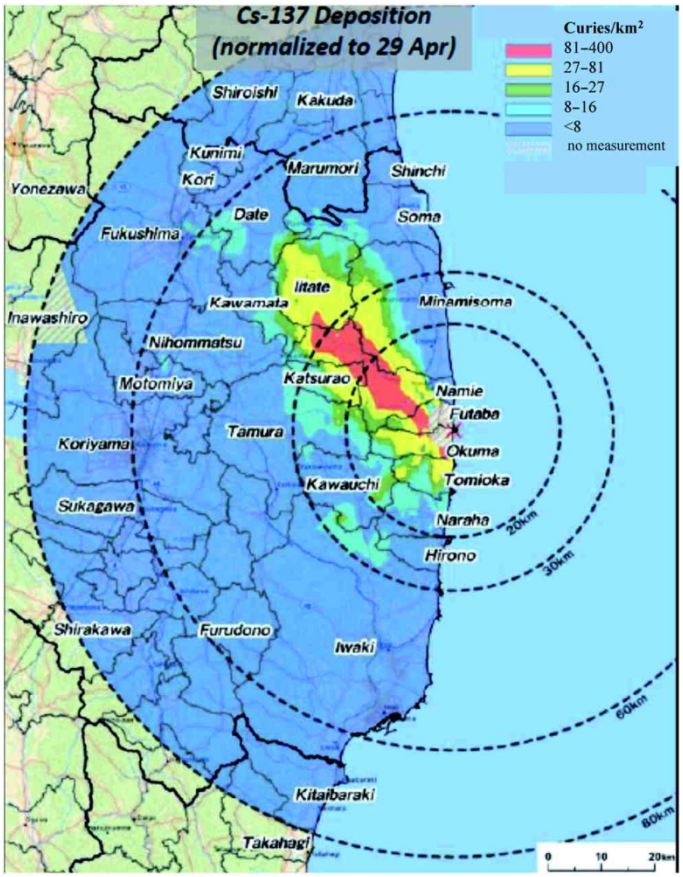

Figure 1

Contamination levels of cesium–137 based on gamma-ray measurements from 42 fixed–wing and helicopter survey flights at altitudes ranging from 150 to 700 meters.

The contamination measurements were obtained between April 6 and April 29, 2011 in a cooperative program between the Japanese and US governments. Fukushima, Koriyama, and Iwaki each

have some 300,000 residents and together account for about half of the total population living within 50 miles (80 kilometers) of the Fukushima Daiichi Nuclear Power Station.

The areas shown in red and adjoining parts of the yellow area (very roughly 175 square kilometers) are contaminated to the levels of regions that are still evacuated around Chernobyl. The green area and adjoining parts of the yellow area (very roughly 600 square kilometers) are contaminated to levels comparable to those in areas where the population stayed after the Chernobyl accident, but with strict control of their exposure to radiation. Thus, the heavily contaminated areas in Fukushima Prefecture are on the order of one-tenth as large as the corresponding contaminated areas around Chernobyl.

In Japan's report to the IAEA, it is estimated that, cumulatively from March to May 2011, the highest external doses outside the 20-kilometer evacuation area were 2 to 4 rem. Extrapolated to a year, it was estimated that the highest doses will rise to 5 to 10 rem (Japanese government, 2011: Attachment V-13). Assuming that the risk is proportional to dose (the linear no-threshold hypothesis), a 10-rem whole-body dose would bring with it a risk of cancer death later in life of about half of one percent.[8]

On April 10, Japan's government advised evacuation of the population in areas where expected first-year doses were greater than 2 rem (Japanese government, 2011: Attachment V-3, Table 1). On April 19, the government released the "Provisional Guideline for the Utilization of School Buildings, Grounds, and Related Facilities in Fukushima Prefecture," which allowed annual doses of up to 2 rem for students. This produced widespread outrage (see, for example, Japan Federation of Bar Associations, 2011). Radiation doses to 10-year-old children are estimated to bring with them about twice as great a risk as to the age-averaged population (National Research Council of the National Academies, 2006: Figure 12-1A). In one contaminated schoolyard in Fukushima, concerned parents and teachers reduced dose rates tenfold by removing the topsoil (Tabuchi, 2011).

The debate over evacuation

Within a day of the accident at Fukushima Daiichi, nearly 130,000 people living within 20 kilometers of the power plant were ordered to evacuate. And on March 15, four days after the accident, an additional 354,000 people living between 20 and 30 kilometers of the plant were advised to stay indoors to reduce exposure to radiation (Japanese government, 2011: Attachment V-3, Table 1).

The following day, immediately after the plume of radioactive contamination shown in Figure 1 was deposited, the US Nuclear Regulatory Commission (NRC), fearing the worst, advised US citizens living within 50 miles (80 kilometers) of the plant to evacuate (Nuclear Regulatory Commission, 2011a).[9] This naturally created a quandary for Japan's government: Although only about 300 Americans lived in Fukushima Prefecture,[10] two million Japanese lived within a 50-mile radius of the Fukushima Daiichi Nuclear Power Station (see Table 2).

Table 2.
Population living within 50 miles (80 kilometers) of the Fukushima Daiichi Nuclear Power Station

Distance from the Fukushima Daiichi Nuclear Power Station [miles (km)]	Cumulative population within that distance before the accident
10 (16)	62,000
20 (32)	132,000
30 (48)	486,000
40 (64)	1,465,000
50 (80)	2,036,000

Source: Cox et al., 2011a.

On April 7, during an NRC staff briefing to the Nuclear Regulatory Commission's Advisory Committee on Reactor Safeguards, a committee member challenged the NRC staff on this evacuation recommendation: [L]et me reverse this. Thirty-two years ago, if Japan would have done a what-if calculation about Three Mile Island, and said all the Japanese within 50 miles of Harrisburg should get out, what would be our response to that, from a policy standpoint? (NRC, 2011b: 91–92)

He could also have noted that 17 million people—including most of the population of New York City—live within 50 miles of the Indian Point Nuclear Power Station on the Hudson River (Donn, 2011).[11]

Thyroid cancers

The most visible and undeniable health consequence from Chernobyl has been an epidemic of thyroid cancer from high doses of radioactive iodine. Among the children and adolescents in Belarus who were exposed to the radioactivity from the Chernobyl accident in 1986, almost 7,000 cases of thyroid cancer had been diagnosed as of 2005. The majority of these cases were attributed to iodine-131 (UNSCEAR, 2008: 14–15).[12] Fortunately, most of these cancers are likely to be non-fatal.[13]

Iodine-131 has a half-life of eight days and concentrates in the thyroid if inhaled or ingested in contaminated food or water. For children under 18 years of age, there is approximately a 0.3 percent risk of incurring thyroid cancer from a 10-rem thyroid dose.[14]

Among other cancers caused by Chernobyl, the unique visibility of the thyroid cancers stems from the relative sensitivity of the thyroid to cancer induction by ionizing radiation[15] and the fact that thyroid doses to children in areas contaminated by the Chernobyl accident were about 100 times higher than whole-body doses.[16]

The very high thyroid doses from the Chernobyl disaster were due in large part to the failure of authorities to block the consumption of milk produced by cows grazing on contaminated grass.[17] By contrast, in Japan, shipments of raw milk and vegetables from Fukushima and three neighboring prefectures were blocked on March 21, six days after the large release that caused the high contamination. Screening of produce for radioactivity began the next day (Japanese government, 2011: Table 1). Between March 21 and 23, some 1,080 children evacuated from the 20-kilometer zone around the Fukushima Daiichi Nuclear Power Station were screened for iodine-131 exposure. Authorities concluded that none had received a thyroid dose greater than 5 rem.[18] It is not clear whether additional tests were done between the initial screenings in March and more than three months later—when the local government announced its plans to check the radioisotope levels in the

bodies of selected residents, including checking their thyroids for iodine-131 (Yomiuri Shimbun, 2011). Given that the iodine-131 had decayed for 14 half-lives by then, it would have been barely detectable, if at all.19

It is not clear how widely and how early the authorities in Japan attempted to prevent thyroid uptake of iodine-131 by providing the population with potassium-iodide tablets.20 If taken in appropriate doses before exposure to radioactive iodine, the tablets saturate the thyroid with non-radioactive iodine, thereby blocking the absorption of iodine-131. Very little potassium iodide was distributed in the Soviet Union after the Chernobyl accident. In Poland, however, more than 10 million children, 16 years of age and under, and approximately seven million adults received at least one dose of potassium iodide, reducing their thyroid doses to "negligible levels" (UNSCEAR, 2008: 7). According to the US Food and Drug Administration (FDA), "The side effects among adults and children were generally mild and not clinically significant" (FDA, 2001: 4–5.).

Psychological consequences

It is well known that there is a special dread associated with exposure to ionizing radiation (Weart, 1988; Slovic, 1996: 165). This may be due to the invisibility of the damage and the long latency of cancer and genetic defects.

A report by the Chernobyl Forum, a two-year effort by representatives from the IAEA, other UN organizations, and the governments of Belarus, Russia, and Ukraine, states that: Any traumatic accident or event can cause the incidence of stress symptoms, depression, anxiety (including post-traumatic stress symptoms), and medically unexplained physical symptoms. Such effects have also been reported in Chernobyl-exposed populations. Three studies found that exposed populations had anxiety levels that were twice as high as controls, and they were 3–4 times more likely to report multiple unexplained physical symptoms and subjective poor health than were unaffected control groups. … [I]ndividuals in the affected population were officially categorized as 'sufferers,' and came to be known colloquially as 'Chernobyl victims,' a term that was soon adopted by the mass media. This label, along with the extensive government benefits earmarked for evacuees and residents of the contaminated territories, had the effect of encouraging individuals to think of themselves fatalistically as invalids. It is known that people's perceptions—even if false—can affect the way they feel and act. Thus, rather than perceiving themselves as 'survivors,' many of those people have come to think of themselves as helpless, weak, and lacking control over their future. (Chernobyl Forum, 2006: 20–21)

Japan, given its similar experience with the survivors of Hiroshima and Nagasaki, should be especially sensitive to this issue. Putting the added cancer risks into perspective by showing how small an addition they represent to the risk of cancer from other causes may help to some degree, but psychological counseling and group therapy may be required as well.

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NOTE: Notes and references can be downloaded aloing with the whole paper from the Nresletter's website (CBRNE-T Papers section).

Life After An EMP Attack: No Power, No Food, No Transportation, No Banking And No Internet

Source:http://endoftheamericandream.com/archives/life-after-an-emp-attack-no-power-no-food-no-transport ation-no-banking-and-no-internet

Most Americans do not know this, but a single EMP attack could potentially wipe out most of the electronics in the United States and instantly send this nation back to the 1800s. If a nuclear bomb was exploded high enough in the atmosphere over the middle part of the country, the electromagnetic pulse would fry electronic devices from coast to coast. The damage would be millions of times worse than 9/11. Just imagine a world where nobody has power, most cars will not start, the Internet has been fried, the financial system is offline indefinitely, nobody can make any phone calls and virtually all commerce across the entire country is brought to a complete stop. A nation that does not know how to live without technology would be almost entirely stripped of it at that point. Yes, this could really happen.

An EMP attack is America's "Achilles heel", and everyone around the world knows it. It is only a matter of time before someone uses an EMP weapon against us, and at this point we are pretty much completely unprepared.

The sad thing is that we are spending hundreds of billions of dollars hunting down "terrorists" in caves on the other side of the globe and we have been told that because of "national security" it is necessary for our private areas to be touched before we are allowed to get on an airplane, but our government is doing essentially nothing to address what is perhaps our biggest security vulnerability.

What would you and your neighbors do if the power went out and it did not ever come back on?

What would you do if an EMP attack happened in the middle of the winter and you suddenly were not able to heat your home any longer?

What would you do if all the electronics in your car got fried and you simply could not drive anywhere?

What would you do if all the supermarkets in your area shut down because food could not be transported across the country anymore?

What would you do if you were suddenly unable to call your family and friends for help?

What would you do if you were suddenly unable to get the medicine that you needed?

What would you do if your debit cards and credit cards simply did not work any longer and you could not get any of your money out of the bank?

What would you do if all of these things happened all at once?

A single EMP attack would be the worst disaster that the United States has ever seen by far.

An electromagnetic pulse could potentially fry the vast majority of all the microchips in the United States. In an instant, nearly all of our electronic devices would be rendered useless.

Yes, the federal government knows all about this. The following excerpt is from an April 2008 report by the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) Attack....

“The consequences of lack of food, heat (or air conditioning), water, waste disposal, medical, police, fire fighting support, and effective civil authority would threaten society itself.”

Most of us have become completely and totally dependent on electricity and technology. Without it, most of us would be in huge trouble.

The following is how an article in the Wall Street Journal described the potential consequences of an EMP attack....

No American would necessarily die in the initial attack, but what comes next is potentially catastrophic. The pulse would wipe out most electronics and telecommunications, including the power grid. Millions could die for want of modern medical care or

even of starvation since farmers wouldn't be able to harvest crops and distributors wouldn't be able to get food to supermarkets. Commissioner Lowell Wood calls EMP attack a "giant continental time machine" that would move us back more than a century in technology to the late 1800s.

It wouldn't be so bad if we had the knowledge and the infrastructure to live the way that they did back in the 1800s, but today that is simply not the case.

Dr. William Graham was Ronald Reagan's science adviser and the chairman of the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) Attack. Dr. Graham believes that in the event of a large scale EMP attack, the vast majority of Americans would either freeze, starve or die from disease.

According to Graham, in the aftermath of an EMP attack life in America "would probably be something that you might imagine life to be like around the late 1800s but with several times the population we had in those days, and without the ability of the country to support and sustain all those people."

Would you be able to survive?

All of those big bank accounts may never be able to be recovered after an EMP attack. Your money might be instantly fried out of existence.

The following is what Graham believes would happen to the financial system in the event of an EMP attack....

"Most financial records are stored electronically. ATMs, which depend upon both power and telecommunications, would not be available; banks, which try to back up records but in general aren't strongly aware of the EMP problem, would face the problem of unprotected storage and computer systems"

This is the danger of having a financial system that is so dependent on technology. We may wake up one day and find that all the money is gone.

But if an EMP attack actually happened, the biggest concern for most of us would be trying to figure out how to survive.

The president of the Center for Security Policy, Frank Gaffney, is convinced that a single EMP attack could result in the deaths of the vast majority of the population of the United States....

"Within a year of that attack, nine out of 10 Americans would be dead, because we can't support a population of the present size in urban centers and the like without electricity"

Are you starting to get a feel for the scope of the problem?

The sad thing is that so much could be done to protect this country from an EMP attack.

Right now, most vital U.S. military infrastructure has at least some protection from an EMP attack.

But the general population has been left completely and totally vulnerable.

It has been estimated that the entire power grid could potentially be protected for about 20 billion dollars. Considering the fact that we have spent over 400 billion dollars in Afghanistan, I think that we could afford it.

We have spent our national security dollars very, very badly and someday it is going to come back to bite us in the rear end.

Right now, other nations around the world are working feverishly to develop EMP weapons.

The following is from a statement by Dr. Peter Vincent Pry to the United States Senate Subcommittee on Terrorism, Technology and Homeland Security on March 8th, 2005....

Russian and Chinese military scientists in open source writings describe the basic principles of nuclear weapons designed specifically to generate an enhanced-EMP effect, that they term "Super-EMP" weapons. "Super-EMP" weapons, according to these foreign open source writings, can destroy even the best protected U.S. military and civilian electronic systems.

But it is not just Russia and China that have been developing "Super-EMP" weapons. According to Newsmax, it is

believed that North Korea may have tested a "Super-EMP" weapon back in 2009....

North Korea's last round of tests, conducted in May 2009, appear to have included a "super-EMP" weapon, capable of emitting enough gamma rays to disable the electric power grid across most of the lower 48 states

Remember, all it would take is one strategically placed EMP attack to wipe out this nation.

But an EMP weapon is not the only danger that can produce this type of effect. The truth is that a really bad geomagnetic storm could also potentially produce almost as much damage.

This is something that everyone knows is one of our biggest vulnerabilities and it is something that we can make preparations for.

Yet the Bush administration and the Obama administration have just stood there and have done nothing.

Our idiocy is astounding.

General Eugene Habiger, the former head of U. S. Strategic Command, has said the following about the possibility of an EMP attack in the future....

"It is not a matter of if, it is a matter of when."

Remember, this is something that could cause millions times more damage than 9/11 did.

Instead of molesting old ladies at airports and chasing goat herders around the mountains of Afghanistan, perhaps we should be addressing our largest security vulnerabilities.

But that would require using some common sense. Sadly, common sense seems to be in very short supply in Washington D.C. these days.

So if the government is not going to do anything about it, that means that it is up to you to prepare yourself and your family. This world is becoming very unstable and disasters can strike at any time.

We all saw what happened after Hurricane Katrina. The government response was a nightmare. An EMP attack would be millions of times worse and the federal government probably would not even be able to get you and your family any assistance.

You would truly be on your own.

So are you ready?

This is yet another reason why the number of prepares in the United States is exploding. A lot of people can see how the world is changing and they understand that the federal government is not going to come through for them when the chips are down.

An EMP attack could end life as we know it at any time.

It is a glaring security vulnerability and the entire world knows that it is there.

I hope that you are getting ready, because the government certainly is not.

U.S. Agencies Have Limited Ability to Account for, Monitor, and Evaluate the Security of U.S. Nuclear Material Overseas

Source: http://www.gao.gov/products/GAO-11-920

The United States has exported special nuclear material, including enriched uranium, and source material such as natural uranium under nuclear cooperation agreements. The United States has 27 nuclear cooperation agreements for peaceful civilian cooperation. Under the U.S. Atomic Energy Act of 1954 (AEA), as amended, partners are required to guarantee the physical protection of U.S. nuclear material. GAO was asked to (1) assess U.S. agency efforts to account for U.S. nuclear material overseas, (2) assess the Department of Energy's (DOE) and U.S. agencies' efforts to evaluate the security of U.S. material overseas, and (3) describe DOE's activities to secure or remove potentially vulnerable U.S. nuclear material at partner facilities. GAO analyzed agency records and interviewed DOE, Nuclear Regulatory Commission (NRC), Department of State (State), and partner

country officials. This report summarizes GAO's classified report issued in June 2011.

DOE, NRC, and State are not able to fully account for U.S. nuclear material overseas that is subject to nuclear cooperation agreement terms because the agreements do not stipulate systematic reporting of such information, and there is no U.S. policy to pursue or obtain such information. U.S. nuclear cooperation agreements generally require that partners report inventory information upon request; however, DOE and NRC have not systematically sought such data. DOE and NRC do not have a comprehensive, detailed, current inventory of U.S. nuclear material--including weapon-usable material such as highly enriched uranium (HEU) and separated plutonium--overseas that includes the country, facility, and quantity of material. In addition, NRC and DOE could not fully account for the current location and disposition of U.S. HEU overseas in response to a 1992 congressional mandate. U.S. agencies, in a 1993 report produced in response to the mandate, were able to verify the location of 1,160 kilograms out of 17,500 kilograms of U.S. HEU estimated to have been exported. DOE, NRC, and State have established annual inventory reconciliations with five U.S. partners, but not the others it has transferred material to or trades with. Nuclear cooperation agreements do not contain specific access rights that enable DOE, NRC, or State to monitor and evaluate the physical security of U.S. nuclear material overseas, and the United States relies on its partners to maintain adequate security. In the absence of access rights, DOE's Office of Nonproliferation and International Security, NRC, and State have conducted physical protection visits to monitor and evaluate the physical security of U.S. nuclear material at facilities overseas when permitted. However, the agencies have not systematically visited countries believed to be holding the highest proliferation risk quantities of U.S. nuclear material, or systematically revisited facilities not meeting international physical security guidelines in a timely manner. Of the 55 visits made from 1994 through 2010, U.S. teams found that countries met international security guidelines approximately 50 percent of the time. DOE has taken steps to improve security at a number of facilities overseas that hold U.S. nuclear material but faces constraints. DOE's Global Threat Reduction Initiative (GTRI) removes U.S. nuclear material from vulnerable facilities overseas but can only bring back materials that have an approved disposition pathway and meet the program's eligibility criteria. GTRI officials told GAO that, of the approximately 17,500 kilograms of HEU exported from the United States, 12,400 kilograms are currently not eligible for return to the United States. Specifically, GTRI reported that over 10,000 kilograms of U.S. HEU are believed to be in fuels from reactors in Germany, France, and Japan that have no disposition pathways in the United States and are adequately protected. In addition, according to GTRI, 2,000 kilograms of transferred U.S. HEU are located primarily in European Atomic Energy Community countries and are currently in use or adequately protected. GAO suggests, among other things, that Congress consider directing DOE and NRC to compile an inventory of U.S. nuclear material overseas. DOE, NRC, and State generally disagreed with GAO's recommendations, including that they conduct annual inventory reconciliations with all partners, stating they were unnecessary. GAO continues to believe that its recommendations could help improve the accountability of U.S. nuclear material in foreign countries.

EMP: The Greatest Threat to America, and What We Can Do about It

By JanSuzanne Krasner

Source:http://www.americanthinker.com/2011/09/emp_the_greatest_threat_to_america_and_what_we_can_do_about_it.html

It's bewildering. Pathetic. Frightening. And it seems that the mainstream media avoids talking about it for fear that Americans will panic. Well, Americans ought to be panicking -- anything to get them to bang on Congress's door and force our representatives to immediately act on the pending legislature now in Congress called the SHIELD Act -- a bill based on the previous HR 5026 -- that unanimously passed in the House of Representatives on June 9, 2010.

The disaster I am referring to is an electromagnetic pulse (EMP), which can easily be caused either by Mother Nature as a geomagnetic solar storm or by an enemy with a low-cost, short range, ship-launched missile armed with a nuclear warhead. The national consequences of an EMP destroying our electrical grid are far-reaching, with long-lasting, continent-wide crippling effects to our electricity-dependant infrastructure.

At the press conference organized by EMPactAmerica on September 23, 2011, this dangerous threat to our national security was exposed for what it truly is -- the most likely event to happen to the U.S., naturally or man-made, that has the potential to bring the country to its knees.

The National Academy of Science points out that protecting the grid against this threat is critical, and getting a bill passed is necessary to do that. An EMP, if not deflected, will shut down and paralyze our country. Just think about the role electricity plays in water, food, heating and cooling, communications, transportation, distribution, the economy and banking. Congressman Roscoe Bartlett, who made a statement on the floor of the House in support of the HR 5026, told Congress that an EMP attack would create $1-$2 trillion in damages and take four to ten years to recover. The truth is that within one year we would no longer be a sovereign nation.

The HR 5026 that passed in the House was stalled in the Senate during the lame-duck session. More recently, Congressman Trent Franks introduced the SHIELD Act, which goes beyond HR 5026 -- i.e., requiring an automated protection plan and hardware-based solution to be developed within six months. EMPactAmerica points out that Americans need to get Congress to focus on this immediately.

The EMPactAmerica conference "Standing Up to Ahmadinehad: Military and National Security Policy Experts Call on President Obama to Confront the Iranian Threat" presented the undeniable fact that the Iranian regime is prepared to use its nuclear weapons in the form of an EMP detonation in the skies 70-100 miles above "the great Satan" and to do so without attribution. A panel of ten EMP and terrorist experts spoke to an audience of concerned reporters and involved activists with the hope of stimulating awareness, discussion, and action.

The panel was extremely impressive. Opening remarks came from EMPact's president, Dr. Peter Vincent Pry, Director of the U.S. Nuclear Strategy Forum. He pointed out that "we are so vulnerable with this threat because we are unprepared." Therefore, "it is not acceptable for Iran to be allowed to build nuclear weapons."

Lt. General Thomas McInerny, retired Air Force and member of the Iran Policy Committee, advised that we must have a strategy to hold nations accountable that sponsor or allow terrorists to live in their nation and deter them from doing so. He confirmed that Iran is at the heart of most attacks through proxies like Hezbollah, Hamas, al-Qaeda, and others. "The Iranian regime likes to keep their 'fingerprints off' while spreading propaganda, money and weapons to others ready to do the killing and dying for them." Brigadier General Kenneth Chrosniak, retired, U.S. Army War College, Bronze Star recipient, added to the discussion that "we must plan for the worst-case situation, and we are not being told about the worst threat in the forefront of America."

Sitting next to Kenneth Chrosniak was a masked man with several bodyguards. He announced his name: Reza Kahlili, the well-known ex-CIA spy from the Revolutionary Guards of Iran. Reza Kahlili is presently an instructor at the Joint Counterintelligence Training Academy of the Department of Defense, and he is the author of A Time to Betray. The audience cheered. Mr. Kahlili clearly stated that "Americans do not understand the ideology of the radicals in Iran who want to conquer the world[.] They are an existential threat to Israel, America, and the world ... they see the weakness of America as a symbol of Allah empowering them with nuclear capabilities[.] ... [W]e must support the Iranians people fighting for freedom through regime change ... this will halt the Iranian threat to Western civilization."

Ken Timmerman, CEO of Foundation for Democracy of Iran and author of Countdown to Crisis: The Coming Iranian Nuclear Showdown, spoke passionately about the total ineffectiveness of sanctions against Iran because they are not enforced. Lieutenant Col. Tony Shaffer, retired, U.S. Army, Bronze Star recipient, and Senior Intelligence Officer in the Defense Intelligence Agency, spoke out about "not being able to stop 9/11, but committed to stopping this threat." An EMP will be Iran's best way to "economically destroy our way of life by taking out large portions of our infrastructure."

As if these spokespeople weren't enough to convince anyone of the importance of the SHIELD Act, there were four more panelists that added further convincing arguments. Claire Lopez, strategic policy and intelligence expert on national

defense, Islam, Iran, and counterterrorism issues, explained that Islamic ideology as written in the Koran drives the Iranian regime to create "proxy" terrorists in other countries, including bases in Venezuela, and weapons-smuggling in Mexico, along with supporting the Muslim Brotherhood in Egypt. "Iran prefers proxies, and they are united with the same sharia ideology." Chet Nagel, former CIA officer, author of Iran Covenant, suggested that "[t]he military solution is to use EMP against Iran, but with President Obama it will be unthinkable." Therefore, "make the 2012 election count in America's interest."

We also heard from Tim Brown, a retired, twenty-year decorated FDNY firefighter, 9/11 survivor, and first responder to the WTC attack in 1993 and to the 1995 attack on the Federal Building in Oklahoma City. He emphasized that there "is no excuse for us to be so vulnerable. The cost of transformers to protect the grid is inconsequential and would give us a fighting chance."

Peter Huessy, President of GeoStrategic Analysis of Potomac, Maryland, a defense and national security consulting firm, presented the cost for a "grid insurance' system that is being tested this month and will be ready to go shortly after. The numbers are relatively low in the face of the astronomical losses an EMP attack would deliver to the US." About $60 million to protect the three hundred largest transformers immediately, and $400-$600 million to additionally protect three thousand others. These are one-time costs for equipment that bolts down, plugs in, and immediately works to protect against all forms of electromagnetic storms and nuclear EMP effects as well."

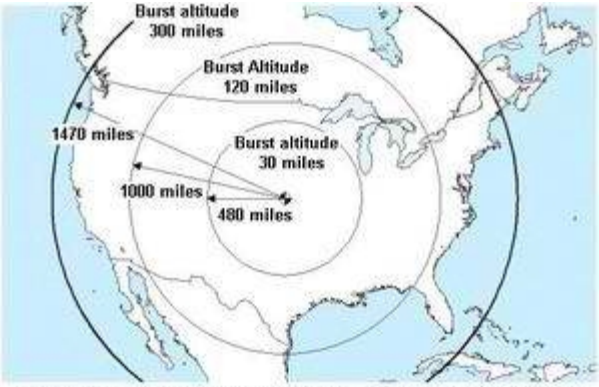
All I can say after listening to this panel is that the Obama administration would be much wiser to invest American taxpayer dollars in our national security than it is having issued loans to Solyndra for solar panels! With such a simple solution possible, it is unimaginable that the grave threat of an EMP in America is not being talked about in every news medium, not to mention how the public should be demanding that the SHIELD Act be passed immediately.

Dr. Pry summed up the conference with three concepts he feels are necessary for our national security strategy -- "Missile Defense, Iranian Regime Change, and Military Actions" -- and then ended with the slogan of EMPactAmerica: "Prepare. Protect. Recover." So, Americans, let's make our voices heard by demanding that our government protect us by insuring the grid!

Could an electromagnetic pulse send us back to the Dark Ages?

Source: http://io9.com/5847513/could-an-electromagnetic-pulse-send-us-back-to-the-dark-ages

The electromagnetic pulse. It's the big, bad boogeyman of the electronic age where we depend on a constant stream of communication and connection. Everything stops – instantly. EMPs are often used in pop culture (particularly any time Magneto wants to take over the planet) to caused widespread destruction and to control a population by plunging them into a new Dark Age. What's the likelihood of such an event happening? Would an EMP do any damage at all? Let's take a look.



EMP AREA BY BURSTS AT 30, 120 and 300 MILES
Gary Smith, "Electromagnetic Pulse Threats", testimony to House National Security Committee on July 16, 1997

What is an EMP and what causes them?

An EMP is a sudden burst of electromagnetic radiation that follows a nuclear detonation. EMPs are not exclusively caused by nuclear weapons, but ones large enough to cause wide-scale disruptive are most likely to occur by from nuclear rather than typical chemical-based explosions. EMPs come in three different forms, classified as E1, E2, and E3.

E1 pulses are by far the most devastating, and result from gamma radiation emitted from a nuclear detonation that removes electrons from the surrounding air. These electrons careen into the Earth's magnetic field and are forced down towards the planet. This process creates a very strong pulse aimed directly at the surface that carries enough strength to exceed the breakdown voltages of many electronic devices. It is very important to note that E1 pulses are only produced by a detonation that is significantly high enough in altitude in which electrons can interact with the Earth's magnetic field.

E2 pulses are also caused by gamma radiation and follow within in a fraction of a second of an E1 pulse, and are akin to those produced by lightning bolts (so they would be protected by typical surge protectors). The final pulse, an E3, is different in nature from the previous two in that it results from a shifting of the Earth's magnetic field, and would continue until the magnetic field re-settled, similar to what occurs with a solar flare.

It's all in the altitude

If a nuclear weapon is detonated at significant altitude (30 plus miles above the surface), an E1 would be followed in quick succession by an E2 and E3, with the results of the extremely devastating E1 pulse possibly removing the protection in place for the others. The altitude necessary would mean that an EMP was the desired detonation after-event. If the detonation happens at ground level or several kilometers above ground, no E1 pulse will occur, but the E2 and E3 pulses will still follow the detonation.

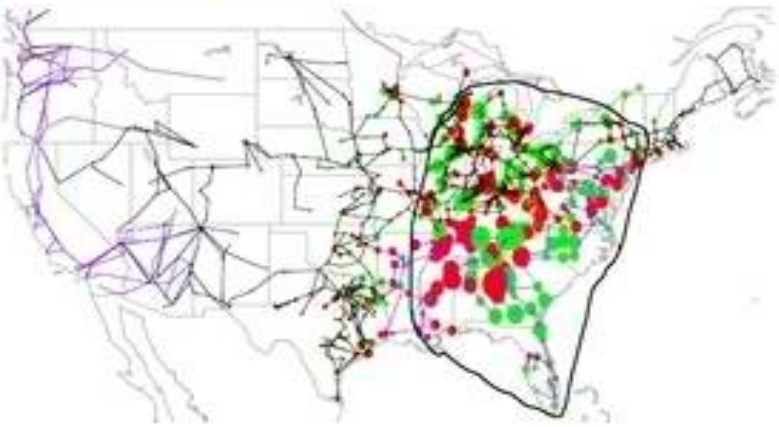
With the E1 portion of the pulse being the most significant contributor to an EMP attack, the payload of the nuclear weapon is less significant than the altitude of the detonation if a country or organization desired to conduct an EMP attack. In testimony to the House National Security Committee in 1997, Gary Smith, the director of Applied Physics Lab at Johns Hopkins University, spoke on the radius of devastation that would occur from a high altitude EMP. The testimony stated that a detonation at 300 miles above the surface of the Earth would result in an E1 pulse that would cover an area the size of the United States along with most of Canada and Mexico.

EMP testing during the Cold War

There have been at least two series of EMP tests, Operation Fishbowl carried out by the United States over Hawaii and the K Project carried by the USSR over the skies of Kazakhstan. Both tests used

high altitude nuclear detonations to create a limited E1 pulse and measured the subsequent damage, as this was a major fear in the early 1960s while both countries were in the shadow on the Cold War. Both tests resulted in the disruption in electrical systems, with hundreds of streetlights in Hawaii being blown, civilian

Portions of the U.S. Power Grid affected by a pulse centered above Huntsville, Alabama



telecommunications disrupted, and military monitoring equipment sent off scale in the process of detonating the Starfish Prime portion of Operation Fishbowl.

The U.S. Government seems to think we are currently unprepared

The United States EMP Commission was formed in 2006 to survey civilian reaction to an EMP disturbance. The commission found civilian infrastructure to be woefully lacking, including healthcare systems, along with a poor vision on the military's protection against an EMP attack in the years after the Cold War.

In 2010, the Oak Ridge National Laboratory commissioned a 168 page document that would anticipate the events of an E1 pulse, The Early-Time (E1) High-Altitude Electromagnetic Pulse (HEMP) and Its Impact on the U.S. Power Grid. In addition to pointing out weakness after weakness in infrastructure and connectivity of the U.S. power grid. These weakness included the purveyance of unmanned substations and poorly sheltered (if sheltered at all) control cables, which would serve to further carry the negative effects of an EMP. The document has the following ominous statement:

A major concern is simply that we have not really experienced such an event yet (an E1 HEMP attack), and there is not a good way to simulate such an attack on a widely distributed network.

Verdict: We'll be camping for a while

This is a tough one, as even our government admits they don't really know what would happen and they think we are woefully unprepared. I just don't find this to be a heartwarming notion. Civilization may not be sent to the Dark Ages, but there would almost certainly be significant, wide scale disruptions in power and communications until our power infrastructure could be restored. I would argue that we would certainly be living in a mid-1800s world for several days, if not weeks, with little knowledge of what was going on in the rest of the country and world. That's a scary thought – be prepared for an extended camping trip, with lots of hot dogs, pulp and ink books, and being unable to use your iPhone as a flashlight.

The header image is a picture of the Starfish Prime explosion taken by U.S. Military stationed in Honolulu. Other images courtesy of the Honolulu Advertiser, the House National Security Committee, and the 2010 ORNL report. Sources linked within the article.

U.K. nuclear plants are safe

Source: http://www.homelandsecuritynewswire.com/uk-nuclear-plants-are-safe-report

The United Kingdom has finalized a review of the implications of the Fukushima disaster for the U.K. nuclear power industry; Dr. Mike Weightman, the author of the review, said that the "U.K. nuclear facilities have no fundamental safety weaknesses"

Dr. Mike Weightman, chief inspector of U.K. nuclear installations and executive head of the U.K. Office for Nuclear Regulation, has

submitted his final report on the implications of the 11 March Fukushima disaster in Japan for the U.K. nuclear industry (Japanese earthquake and tsunami: Implications for the UK nuclear industry, Final Report).

In a statement Weightman said:

> *"I remain confident that our U.K. nuclear facilities have no fundamental safety weaknesses. The Office for Nuclear Regulation already requires protection of nuclear sites against the worst-case scenarios that are predictable for the UK. But we are not complacent. Our philosophy is one of continuous improvement."*

The Engineer reports that responding to Weightman's final review, Tom Foulkes, director general of the Institution of Civil Engineers, said:

> *Nuclear is a vital part of the UK's energy mix — at present there is no other viable, low-carbon alternative to replace baseload generation from gas and coal-fired plants set to come offline in the next decade.Weightman's review has rightly set the standards high for U.K. nuclear, putting the onus on industry to strive for continued improvements in safety and risk assessment.*

> *Ensuring these lessons are understood at every level of delivery is crucial to minimizing project risks.' This meticulous review should reassure the public that U.K. nuclear engineers work to the most stringent safety regulations and that we will proceed with an even safer regime when building our new generation of nuclear plants over the course of the current decade,' added Alistair Smith, chairman of the Power Industry Division at IMechE. I hope work can now progress to finalize the Generic Design Assessments in the U.K., as the fact remains that without new nuclear power we stand no chance of*

meeting out climate change obligations.

— Read more in Japanese earthquake and tsunami: Implications for the UK nuclear industry, Final Report (September 2011)

USGOV Funds New Drug to Treat Internal Radiation Contamination

Source: http://tjour.nl/radiation-drug

The juicy parts:

- "A drug that can be taken orally to treat internal contamination from radiation after a radiological attack will be developed under a new contract issued today by the U.S. Department of Health and Human Services' Biomedical Advanced Research and Development Authority (BARDA)."
- "Developer is Nanotherapeutics Inc. of Alachua, Fla."
- "Known as a 'chelating' agent, the drug, known as DTPA, can bind radioactive molecules to help the body remove them. It can be used to treat people who have inhaled or swallowed radioactive particles, or who have radioactive particles that entered the body through wounds."

- "The improved formulation, known as NanoDTPA, could be given orally and is being developed as a short-term treatment for people exposed to americium, curium, or plutonium. These radioactive elements could be used as components of a radiological dispersion device, also known as a dirty bomb. A dirty bomb combines a conventional explosive, such as dynamite, with radioactive material."

What you need to know:

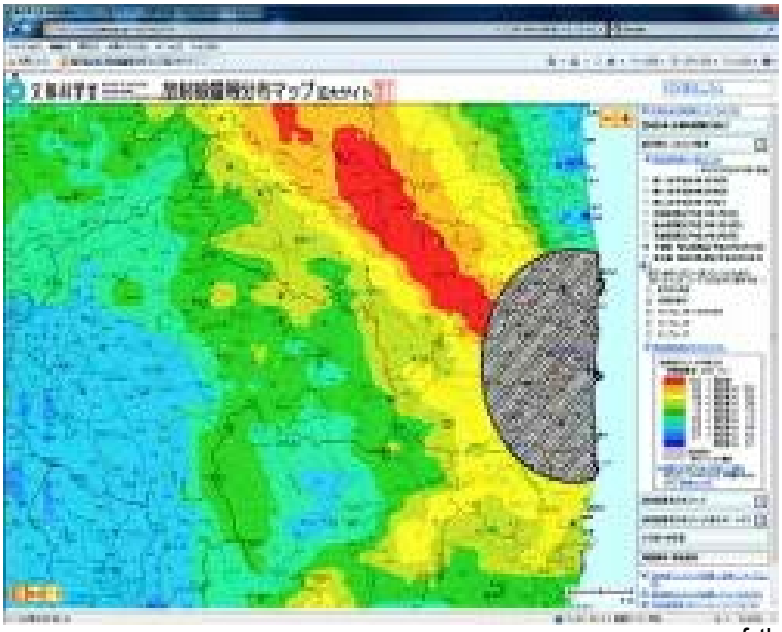
- As licensed by the U.S. FDA, current forms of DTPA must be administered intravenously or by nebulizer.
- The 18-month, $4.8 million contract is part of a federal effort to develop drugs to protect health and save lives in a radiological emergency.
- Recognizing that health care providers will need a variety of effective ways to identify and treat the wide range of illnesses and injuries that can be caused by radiological and nuclear incidents, BARDA maintains a portfolio of advanced development projects

focused on treating radiation-induced bone marrow, gastrointestinal, lung and skin injuries.

- BARDA also is supporting development of a liquid formulation of Prussian blue, a non-chelating drug used to treat internal contamination with radiocesium.
- Project BioShield provides additional and more flexible authorities and funding to support and expedite the development and acquisition of medical countermeasures against chemical, biological, radiological, and nuclear threats.
- BARDA is seeking additional proposals for products that potentially could treat illness and injury from high levels of radiation, as well as improved diagnostic tools to measure the radiation dose a person has absorbed after a nuclear detonation or radiation accident.

Most detailed radioactive contamination maps yet published online

Source: http://mdn.mainichi.jp/mdnnews/news/20111020p2a00m0na007000c.html



The government's new radiation contamination map site is seen in this screen capture taken on Oct. 18. (Mainichi)

The most detailed government maps yet of cesium concentrations and radiation levels stemming from the crisis-stricken Fukushima No. 1 nuclear plant are now available online.

The Ministry of Education, Culture, Sports, Science and Technology site (link below) went live on Oct. 18 with both web-based and PDF versions of the maps, providing not only information by municipality as had been the case previously, but measurements by district.

The maps, intended to help residents who had called for better information on contamination levels between areas of the same municipalities, use soil and air sample data already released. Users are presented with a grid laid over a map of most of eastern Japan. Selecting a square in the grid zooms in on that area, at which point users can choose more detailed maps displaying airborne contamination levels, cesium 134 or 137 levels, or total cesium levels.

Decontaminating Japan to cost at least $13 billion

Source: http://www.reuters.com/article/2011/10/20/japan-nuclear-noda-idUSL3E7LK1CV20111020

Last week Japanese Prime Minister Yoshihiko Noda announced the government will spend at least 1 trillion yen, or $13 billion, to decontaminate areas affected by nuclear radiation from the Fukushima Daiichi atomic power plant.

"At least 1 trillion yen will be budgeted as we take on the responsibility for decontamination," the prime minster said in an interview.
"It is a prerequisite for people to return to their homelands."
Following the 11 March earthquake and tsunami that crippled the Fukushima Daiichi nuclear power plant, 80,000 residents living within a 12.5 mile radius of the plant were forced to evacuate as plumes of radioactive steam were released.
To make the area safe for residents to return, the government must remove and properly dispose of 29 million cubic meters of contaminated soil spread across 930 square miles, an area roughly the size of Luxembourg.
So far the government has raised 220 billion yen and plans to budget an additional 250 billion yen for cleanup efforts with more expected to be included in next fiscal year's budget.
The announcement comes following statements by a visiting team of UN nuclear experts who said Japan should be less conservative in its cleanup efforts.
"We are not saying the government's approach is over-conservative, what we want is for the government to avoid becoming over-conservative in the future," explained Tero Tapio Varjoranta, the team's deputy leader.
According to the International Atomic Agency (IAEA) team, removing the topsoil to decontaminate areas, as the Japanese government is considering, would be impractical. Storing roughly 29 million cubic meters of radioactive soil would likely prove to be a nightmare of a task. "Where applicable, there are methods that do not require storage. There are about sixty remediation technologies available. We are taking the advice from our experiences in Chernobyl, where a lot of mistakes were made," Varjoranta said. Other methods for decontamination include mixing the removed topsoil with clean material for use in the construction of roads and reinforcement of banks or storing the contaminated soil in various layers.
The IAEA team concluded its mission last week and will present its final report to the Japanese government next month.

Universal Detection developing radiation detector for smartphones

Source: http://www.homelandsecuritynewswire.com/srdetect20111024-universal-detection-developing-radiation-detector-for-smartphones

Last week Universal Detection Technology announced that it had begun development of a radiation detection device designed to work with smart phones. The company is focusing its research efforts on creating a radiation detector that can measure radiation levels and transmit it to smartphones via blue tooth. Research is currently aimed at designing an Apple iPhone compatible device, but Universal Detection said it will add other smartphone platforms in the near future. According to the company, research into the device stems from the need to capture radiological data and quickly upload it to a distribution channel to save and analyze it. The company hopes to launch the device in the second quarter of 2012, but was careful to note that several factors could hinder the timely completion of the project including software difficulties and lack of funding. Universal Detection is based in California and specializes in the development of chemical, biological, and radiological threats.

Scosche Launches Radiation Detector and App for iPhone and iPod touch

Source: http://appmodo.com/55475/scosche-launches-radiation-detector-and-app-for-iphone-and-ipod-touch/

Scosche Industries, award-winning innovator of consumer technology, is excited to announce the RDTX-PRO radiation detector and app for iPhone and iPod touch. The radiation detector requires no calibration and allows users to accurately detect gamma radiation above 60keV within +/- 5% accuracy. The device attaches to an iPhone or iPod touch via the dock connection and is extremely compact for ease of use. It can also be used as a radiation alarm independently from the iOS device. When being used as a standalone alarm the RDTX-PRO runs on one AA battery and provides up to 96 hour of radiation detection.

"I was extremely impressed with the accuracy and performance of the RDTX-PRO from Scosche," said Julius James, Radiation Specialist of Fluke Global Calibration Laboratories. "The detector is as accurate as units that cost significantly more and is much smaller in size."

After connecting the Scosche RDTX-PRO with an iPhone or iPod touch users are prompted to download the free accompanying radTEST app. The app offers a consumer friendly meter display that shows radiation levels as safe (green), elevated (yellow) or dangerous (red). For the advanced user the digital display mode can be used to determine exact radiation levels. Users can also share their results using Facebook, Twitter and Google Maps.

The Scosche RDTX-PRO retail for $329.99 and will be available in September from Synexx in Tokyo Japan. $10 of each unit sold will be donated to a group of charities with a goal of reaching 1 million dollars within two years. The charities include the Bikki Children's Fund, Samaritan's Purse, All Hands Volunteers, and others committed to aiding those that were affected by the Tohoku Earthquake and Tsunami.

A Syrian Centrifuge Plant? A New Proliferation Challenge

By Simon Henderson

Source:http://www.washingtoninstitute.org/templateC06.php?CID=1748

Earlier today, the Associated Press reported that Syria at one point was building a centrifuge plant likely intended to manufacture nuclear weapons, reawakening concerns about the extent of the regime's nuclear ambitions and the proliferation of crucial technology by Pakistan. Previously, Syria's nascent nuclear weapons program was believed to be confined to a plutonium-producing reactor that was under construction with North Korean help before an Israeli air raid destroyed it in 2007.

A centrifuge plant could have produced highly

enriched uranium, an entirely different route to an atomic bomb.

The suspect building, now a textile plant, is in the northeastern Syrian town of Hasaka, about 100 miles from the site of the destroyed plutonium reactor. The layout of some of the buildings on the site matches almost exactly Libya's onetime plans for a centrifuge plant. Technology for that plant was supplied by Pakistani scientist A. Q. Khan in what Islamabad says was a rogue operation -- although Khan says he had government approval. The Qadhafi regime gave up its nuclear ambitions in 2003 in return for U.S. and other international recognition. Khan, who retired in 2001 and has been under house arrest or restricted in his movements since 2004, has admitted to sharing centrifuge technology with China, Iran, Libya, and North Korea, all with official sanction. After initial reports that Khan might have transferred technology to Syria, he acknowledged -- in correspondence with the author in 2007 (writing in the third person) -- that he had visited the country twice: "The first time was in the late eighties, when he and his colleagues were changing flights in Damascus and unanimously decided to break their journey for two days to see Syria's historical mosques, tombs and sites. The second time was on an official visit with a delegation to attend a Science Conference. The Pakistani Ambassador, Dr. Afzal Akbar Khan [who was the envoy there in the late 1990s], accompanied the delegation during its four-day visit. They visited the Universities of Damascus and Homs and the Research Center in Damascus." But Khan denied any nuclear deals.

Pakistan has traditionally had friendly relations with Syria. During the aftermath of the 1973 October War, Pakistani air force pilots flew missions in Syrian jets against Israel aircraft. Murtaza Bhutto, the late brother of assassinated former prime minister Benazir Bhutto, lived in exile in Damascus while opposing the military regime that overthrew their father, Zulfiqar Ali Bhutto. And Benazir made official visits to Damascus in 1990 and 1996.

The new revelations should be used to break through Syrian obstructionism regarding full International Atomic Energy Agency inspection of its facilities. In particular, the thickness of the concrete floor in the Hasaka "textile factory" could be a crucial indicator of whether it was originally intended for centrifuge operation. Washington should also pressure Pakistan to make Khan available for interview, as well as other senior officials and former military officers who might have knowledge of the issue. Although the Syrian nuclear episode now seems over, information about the roles of Pakistan, Iran (which already has an operational centrifuge plant and is Syria's main strategic partner), and North Korea (another key centrifuge user) could be crucial for blunting nuclear ambitions in both Tehran and Pyongyang.

Simon Henderson is the Baker fellow and director of the Gulf and Energy Policy Program at The Washington Institute.

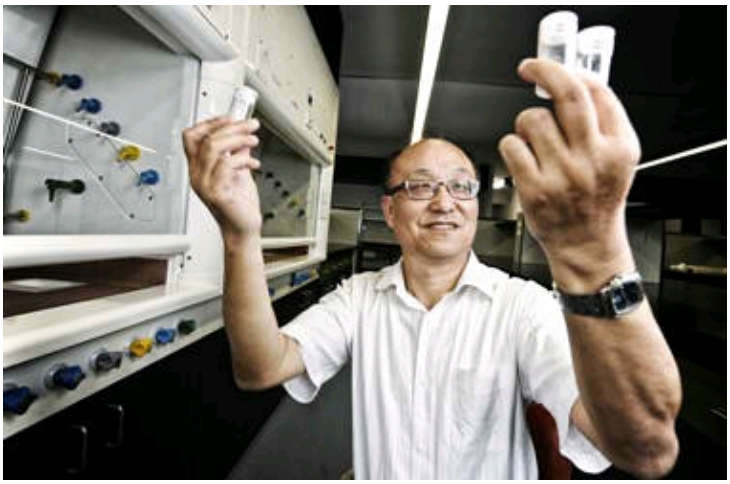
New technology for safe storage of radioactive waste

Source: http://www.qut.edu.au/about/news/news?news-id=37568

New Zealand's Queensland University of Technology (QUT) researchers have developed new technology capable of removing radioactive material from contaminated water and aiding clean-up efforts following nuclear disasters.

The innovation could also solve the problem of how to clean up millions of tons of water contaminated by dangerous radioactive material and safely store the concentrated waste.

Professor Huai-Yong Zhu (photo) from QUT Chemistry said the world-first intelligent absorbent, which uses titanate nanofiber and nanotube technology, differed from current clean-up methods, such as layered clays and zeolites, because it could efficiently lock in deadly radioactive material from contaminated water.



The used absorbents can then be safely disposed without the risk of leakage, even if the material became wet.

"One gram of the nanofibers can effectively purify at least one ton of polluted water," Professor Zhu said. "This saves large amounts of dangerous water needing to be stored somewhere and also prevents the risk of contaminated products leaking into the soil."

A Queensland University of Technology release reports that the technology, which was developed in collaboration with the Australian Nuclear Science and Technology Organization (ANSTO) and Pennsylvania State University in America, works by running the contaminated water through the fine nanotubes and fibers, which trap the radioactive Cesium (Cs+) ions through a structural change. "Every year we hear of at least one nuclear accident. Not only is there a risk of contamination where human error is concerned, but there is also a risk from natural disasters such as what we saw in Japan this year," he said.

Professor Zhu and his research team believed the technology would also benefit industries as diverse as mining and medicine.

By adding silver oxide nanocrystals to the outer surface, the nanostructures are able to capture and immobilize radioactive iodine (I-) ions used in treatments for thyroid cancer, in probes and markers for medical diagnosis, as well as found in leaks of nuclear accidents. "It is our view that just taking the radioactive material in the adsorbents isn't good enough. We should make it safe before disposing it," he said. "The same goes for Australian sites where we mine nuclear products. We need a solution before we have a problem, rather than looking for fixes when it could be too late."

With a growing need to find alternatives to meet global energy needs, Professor Zhu said now was the time to put safeguards in place. "In France, 75 per cent of electricity is produced by nuclear power and in Belgium, which has a population of 10 million people there are six nuclear power stations," he said. "Even if we decide that nuclear energy is not the way we want to go, we will still need to clean-up what's been produced so far and store it safely," he said. "Australia is one of the largest producers of titania that are the raw materials used for fabricating the absorbents of titanate nanofibers and nanotubes. Now with the knowledge to produce the adsorbents, we have the technology to do the cleaning up for the world."

Fukushima and the Limits of Risk Analysis

By Jonas Hagmann

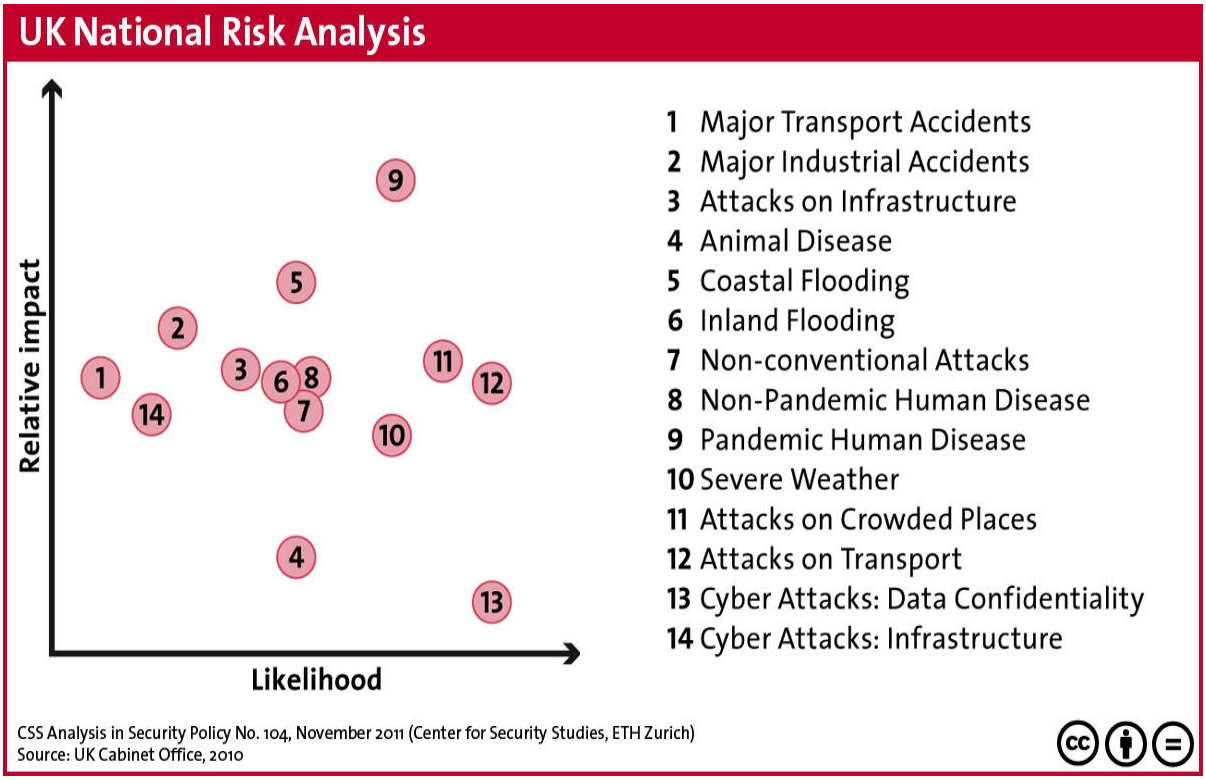
Source:http://www.sta.ethz.ch/CSS-Analysis-in-Security-Policy/No.-104-Fukushima-and-the-Limits-of-Risk-Analysis-November-2011

Risk analyses serve to identify future opportunities and risks systematically and thus make them calculable and manageable. Today, risk analysis is applied in an increasing number of policy fields, including in security policy. Catastrophes such as the Fukushima disaster raise questions about the limits of this approach, however. In view of difficulties regarding integration of the probability aspect, regarding risk compilation, and regarding its explanatory power, a differentiated application of the risk analysis methodology is advisable.

The name "Fukushima" epitomizes the limitations of our ability to deal with natural and technical risks. The course of events is well known: On 11 March 2011, a marine earthquake shook the Japanese islands and unleashed a tsunami that killed more than 25,000 people. Nuclear power plants were also affected by the forces of nature. In 11 installations, the quake triggered an automatic shutdown. In the Fukushima Daiichi plant, emergency power generators were supposed to cool the nuclear fuel rods. When the generators were destroyed by the tidal wave, the cooling system failed, resulting in a partial core meltdown in three of the six reactors. Once the water conduits and structural claddings had been destroyed by fire and hydrogen explosions, radioactive material escaped and irradiated the environment.

Even today, the whole extent of the catastrophe is not yet known. In particular, the long-term effects of radioactive contamination have yet to be established. By contrast, the course of the catastrophic events was investigated in detail by the Japanese government and by the International Atomic Energy Agency, as well as by public authorities in Germany and Switzerland. Legal regulations, protective construction measures, and operative crisis management processes were subjected to in-depth reviews in order to diminish the risk of similar nuclear disasters in the future.

However, the Fukushima disaster not only raises questions about the safeguards in place in Japan. It also raises overarching questions about the methodology of risk-related behaviour. What do risk analyses such as those that had informed the Fukushima installation really tell us about future hazards? Since risk analysis is used in more and more policy fields today, the methodology must be subjected to critical analysis.



NOTE: Download the full paper from the website hosting the Newsletter – CBRN-CT Papers section.

➲ **Editors' Note:** CBR release is not included in this chart while No 14 should be around No11 and No12.

After IAEA report, Israel says military option can wait for sanctions

Source: http://www.debka.com/article/21459/

The UN nuclear watchdog (IAEA) began circulating its much-awaited Iran report Tuesday night, (8 Nov. 11) to Security Council and IAEA board members. According to the first leaks, the agency has no doubt that Iran is working on developing atomic weapons: Its clandestine computer-simulated and practical tests on nuclear detonators, uranium enrichment at a hidden underground site at Fordo and tests for adapting nuclear warheads to missiles have no explanation other than work on components for a nuclear weapon.

Israel's initial response was to give sanctions a last chance and hold its military option in abeyance for the weeks needed to put them in place, so long as they are tough enough to disrupt Iran's central bank and its oil industry. However, the Obama administration has already foresworn these penalties, as debkafile reported earlier Tuesday.

US President Barack Obama is backing away from crippling sanctions on Iran's central bank and an embargo on its oil trade. This was decided shortly before the International Atomic Energy Agency was due to confirm Tuesday or Wednesday, Nov. 8-9 that Iran's clandestine military nuclear program had reached the point of no-return, and after Israel intelligence experts found that Iran could build a weapon as soon as it so decided.

Four considerations persuaded the Obama administration to backtrack on

new sanctions, thereby letting Tehran prevail in this round of the nuclear controversy:

1. Because it is too late. Even the harshest sanctions would not alter the fact that Iran has arrived at a position whereby it is capable of building a bomb or warhead any time it chooses.

The **next meetings** of the IAEA Board of Governors will be from 14-18 November 2011. (Photo: D. Calma/IAEA)

2. Severe penalties against Iran's central bank and its fuel exports would exacerbate the turmoil on international financial markets. The Los Angeles Times reported Tuesday, Nov. 8, "Though US officials had declared they would hold 'Iran accountable' for a purported plot [to assassinate the Saudi ambassador to Washington], they now have decided that a proposed move against Iran's central bank could disrupt international oil markets and further damage the reeling American and world economies."

Instead, say those officials, Washington will seek to persuade some of Tehran's key trading partners, including the Persian Gulf states, South Korea and Japan, to join existing sanctions.

3. For the first time in American history, Washington has admitted its military capabilities are constrained by economic concerns. This constraint was also reflected in the Washington Post of Tuesday: "The possibility of a US strike is considered remote, however. That is partly because there is no certainty it would successfully stop Iran and partly because of the diplomatic and political repercussions for a cash-strapped nation emerging from two wars."

4. Israel's Defense Minister Ehud Barak said Tuesday in a radio interview that he was not optimistic about tough sanctions because there was no international consensus to support them.

debkafile's intelligence sources report that Russia and China would not only cast their votes against stiff penalties but disrupt them through marketing mechanisms they have already put in place for bypassing international restrictions on Iran's foreign banking and exports.

Those mechanisms have also been placed at the disposal of Syria.

Tehran has therefore been able to pre-empt the IAEA report, however damning it may turn out to be, and can continue to develop its nuclear objectives without fear of punishing sanctions.

The Israeli defense minister noted that while it would be preferable in matters as grave as a potential attack on Iran's nuclear sites to work closely with the United States, Israeli is a sovereign country and its government cannot shirk responsibility for defending its security.

Israel's existence was not at stake, Barak stressed - either from Iran's missiles or Hizballah's rockets. An attack would cause suffering on the home front, he said, but nowhere near the 100,000 mentioned in the speculation of the last two weeks – or even 5,000. He dismissed much of this speculation as wildly irresponsible and unfounded.

If sanctions against Iran fall by the wayside, all other options stay on the table, said the defense minister. Israeli is holding intelligence exchanges with some friends but in the last resort must make

its own decisions which he promised would be made responsibly.
Prime Minster Binyamin Netanyahu no doubt intended to go through the motions of demanding tougher sanctions against Iran after the publication of the IAEA report. But that option has vanished from the Washington landscape, leaving Israel with a choice between a military strike or bowing to the Obama administration's acceptance of a nuclear-armed Iran and learning to live with this ever-present menace. The same stark choice confronts Saudi Arabia and the rest of the Gulf.

NOTE: You can download the full IAEA report from the website hosting the Newsletter – CBRN-CT Papers section.

The Significance of the November 2011 IAEA Report on Iran

By Dore Gold
Source: http://www.jcpa.org/

Many analysts asked why Iran, which had huge oil and gas reserves, needs to invest in a program to produce electricity from nuclear reactors? Why did Iran need to build a huge infrastructure at Natanz to enrich uranium for nuclear reactors that it didn't even have? And why did it keep this industry secret if it only had civilian applications?
In February 2008, IAEA deputy director-general Ollie Heinonen gave a highly classified briefing in which he revealed Iranian documents that detailed how to design a warhead for the 1,300-kilometer-range Shahab-3 missile that had to be detonated at an altitude of 600 meters. A conventional explosion at that altitude would have no effect on the ground below, but 600 meters is the ideal altitude for a nuclear explosion over a city – as it was in Hiroshima in 1945.
The November 2011 report showed that the IAEA no longer had "suspicions" about the Iranian weaponization program – it had hard intelligence from "more than ten Member States." There was documentation in Farsi detailing the safety arrangements for conducting an actual nuclear test. The Iranians had also sought to obtain uranium for a secret enrichment program, that would not be under IAEA safeguards.
Iran already has enough uranium on hand for at least four or five nuclear bombs, should it decide to further enrich its stock of low-enriched uranium. The November 2011 IAEA report provides the details for what the agency has long suspected – that Iran is determined to obtain nuclear weapons and the means to deliver them to target.

Why Does Oil-Rich Iran Need Nuclear Fuel?

The dramatic November 2011 report of the International Atomic Energy Agency (IAEA) comes after years that the agency has come close to concluding that Iran is seeking nuclear weapons without saying so explicitly. Since the Iranian nuclear program was first disclosed to the public in 2002, there have been growing suspicions that it had a military purpose, but no one could offer any definitive proof.
Many analysts asked why Iran, which had huge oil and gas reserves, needs to invest in a program to produce electricity from nuclear reactors? Iran could have used its budgetary resources more effectively if it had invested them in its oil production infrastructure. Analysts also asked why Iran needed to build a huge infrastructure at Natanz to enrich uranium for nuclear reactors that it didn't even have. After all, Russia had promised to supply enriched uranium for the sole reactor at Bushehr that it constructed specifically for the purpose of producing electricity.

Moreover, many countries with nuclear reactors – such as Finland, South Korea, Spain, and Sweden – all imported enriched uranium. Why was Iran building an expensive uranium enrichment industry for itself? The limited size of the deposits in Iran's uranium mines was too small for producing nuclear fuel for all of Iran's electricity needs; Iran would have to import uranium in the future in any case. Finally, the question remained, why did it keep this industry secret if it only had civilian applications? Iran was forced to disclose its uranium enrichment facilities (as well as its heavy water reactor at Arak) because others made them public in the West in 2002 and again in 2009.

While France already in 2006 accused Iran of developing a nuclear weapons program, Iran continued to make the case that its nuclear work had only civilian applications. Russian Foreign Minister Sergei Lavrov would always demand that his colleagues in the UN Security Council provide him with the proof that Iran had a military program. In the meantime, Russia and China always defended Iran in the Security Council and sought to water down the six resolutions the council adopted against Tehran.

The Credibility of the IAEA

The U.S. apparently discovered the proof of the Iranian nuclear program back in 2004. Former U.S. ambassador to the UN John Bolton describes in his memoirs how Secretary of State Colin Powell decided to reveal that he had seen new American intelligence about Iranian efforts to fit a nuclear weapon into the warhead of a missile. But in the years that followed, the credibility of the U.S. to convince the world that Iran indeed wanted nuclear weapons was badly impaired when the Bush administration argued that Iraq had weapons of mass destruction and none were found by inspectors after the U.S. invasion and the toppling of Saddam Hussein.

The importance of the reports of the International Atomic Energy Agency (IAEA) grew partly because of how the assessments of the U.S. were perceived in international circles after the Iraq War. In the case of Iraq, the IAEA argued right up to 2003 that Saddam no longer had weapons of mass destruction. If the IAEA, which was "dovish" on Iraq, would give "hawkish" assessments on Iran, then the world might listen.

A Classified IAEA Briefing

A critical turning point in the IAEA's attitude to Iran occurred in February 2008 when its deputy director-general, Ollie Heinonen, gave a highly classified briefing to representatives of more than one hundred states. According to a description of the meeting reported by David Sanger of the New York Times, Heinonen displayed original Iranian documents that he stressed came from several member states of the IAEA – and not just from the U.S. Der Spiegel reported in June 2010 that the material came from a joint operation by German and American intelligence agencies that got hold of an Iranian engineer's laptop computer.

The IAEA had the international standing to authenticate U.S. intelligence reports for those who doubted their veracity. When the IAEA said they were true, many more states were willing to accept them. Sanger wrote that he believed that Heinonen hoped his classified briefing would leak – and it did.

The Iranian documents detailed how to design a warhead for the 1,300-kilometer-range Shahab-3 missile, which had been operational in the Iranian armed forces since 2003. While the Iranian documents made no reference to a nuclear warhead, they did show the arc of a missile's flight and that the warhead of the missile had to be detonated at an altitude of 600 meters. To the experts of the IAEA, a conventional explosion at that altitude would have no effect on the ground below. But 600 meters is the ideal altitude for a nuclear explosion over a city. Indeed, as Sanger notes in his book on this period, The Inheritance, 600 meters was the approximate altitude of detonation of the first atomic bomb that was used over Hiroshima in 1945. Heinonen did not yet say that the Iranians were making nuclear weapons, but he left his audience in Vienna with many questions they were not asking before.

By May 2011, the IAEA had become far more explicit in its report on Iran than Heinonen had been. It raised its concerns about the "possible existence" of seven areas of military research in the Iranian nuclear program, the last of which was the most alarming: "the removal of the conventional high-explosive payload from the warhead of the Shahab-3 missile and replacing it with a spherical nuclear payload." It should be remembered that the Shahab-3 missile has the range to strike Israel from Iranian territory. Back in May, the IAEA was not ready to say it had reached any conclusions. It only sought "clarifications" about its suspicions.

The Latest Report

The November 2011 IAEA report was important in a number of ways. First, it showed that the IAEA no longer had "suspicions" about the Iranian weaponization program – it had what it called "credible" information. The annex of the report, moreover, devotes a whole section to the "credibility of information." It was not relying on the Iranian laptop that was at the heart of Heinonen's 2008 presentation, but also on a much larger volume of documentation. The IAEA report states that the agency had over a thousand pages of material to substantiate its claims. In case there were suspicions that this material came from U.S. intelligence agencies alone, the annex makes sure to clarify that the sources for the IAEA involved "more than ten Member States."

Second, the material that the IAEA presented pointed clearly to the fact that Iran wanted to develop a deliverable nuclear weapon. There was documentation in Farsi detailing the safety arrangements that would have to be put in place for conducting an actual nuclear test.

The Iranians had also sought to obtain uranium for a secret enrichment program, that would not be under IAEA safeguards. The uranium that would come out of this clandestine program would be further processed to produce the uranium metal required for a nuclear warhead. The planned warhead design also underwent studies that investigated how it would operate if it was part of a missile re-entry vehicle and had to stand up to the stress of a missile launch and flying in a ballistic trajectory to its target. The IAEA concluded that "work on the development of an indigenous design of a nuclear weapon including the testing of components" had been executed by the Iranians. That "indigenous design," however, required external help. The IAEA report discloses that aspects of Iran's nuclear weapons "design concept" came from a foreign country, presumably from a nuclear-weapon state.

Third, the IAEA report provided further proof that Iran's inventory of enriched uranium, which the agency monitored, was continuing to grow despite the reported damage caused to Iran's centrifuges. Lately, it has been suggested that Iran's centrifuges are operating less efficiently. If Iran had 839 kg. of low-enriched uranium, according to the June 2009 IAEA report, it had 2,427 kg. according to the May 2010 IAEA report. In September 2011 the IAEA report stated that Iran had enriched a total of 4,543 kg. of low-enriched uranium.

The November report put that number at 4,922 kg. If all Iran requires is a little over 900 kg. of low-enriched uranium to produce sufficient weapons-grade uranium for a single bomb, then Iran already has enough uranium on hand for at least four or five nuclear bombs, should it decide to further enrich its stock of low-enriched uranium. Iran's smaller stock of 20 percent enriched uranium also continued to grow, albeit in smaller quantities.

Finally, it is important to recall when reviewing this information that at the end of 2007, the U.S. published the "key judgments" of its National Intelligence Estimate (NIE) on Iran. That document asserted with "high confidence" that Iran had halted the weaponization component of its nuclear program back in 2003. The release of that declassified summary caused enormous diplomatic damage at the time, undercutting the effort to pressure Iran.

The November 2011 IAEA report shows how wrong the 2007 NIE document was. The later report specifically says, "some activities relevant to the development of a nuclear explosive device continued after 2003, and that some may be ongoing." The IAEA also reports on "modeling studies" that were undertaken by the Iranians in 2008 and 2009 that investigated how a high-enriched uranium nuclear device would respond to "shock compression." They also looked at the "nuclear explosive yield" of these devices during this period.

The November 2011 IAEA report provides the details for what the agency has long suspected – that Iran is determined to obtain nuclear weapons and the means to deliver them to target. As the report's summary states: "The information indicates that Iran has carried out activities relevant to the development of a nuclear explosive device."

Roughly five years have passed since the UN Security Council took up the Iranian nuclear issue and adopted its first resolution demanding that Tehran halt its uranium enrichment program. The new IAEA report should be used to ratchet up the sanctions on Iran. But it is doubtful that even with this new information, there will be a sufficient consensus at the Security Council for decisive measures that might cause Iran to change the course it has decided upon.

Dr. Dore Gold is President of the Jerusalem Center for Public Affairs. He is the author of The Rise of Nuclear Iran: How Tehran Defies the West (Regnery, 2009)

Hybrid detector monitors alpha, beta, and gamma radiation simultaneously

Source: http://www.eurekalert.org/pub_releases/2011-11/aiop-4hd110811.php

By combining three layers of detection into one new device, a team of researchers from Japan has proposed a new way to monitor radiation levels at power plant accident sites. The device would be more economical than using different devices to measure different types of radiation, and could limit the exposure times of clean-up workers by taking three measurements simultaneously. Radioactive decay produces three flavors of emissions: alpha, beta, and gamma.

An American Institute of Physics release reports that alpha particles comprise 2 neutrons and 2 protons. Because of their large mass and relatively slow speed, alpha particles are the least penetrating of the three types of radiation, and can be stopped by a sheet of paper. Beta particles are electrons that can travel farther than alpha particles, but not as far as high-energy gamma photons, the third type of radiation. The researchers took advantage of the different penetrating properties of the three types of radiation to design their device. Their new radiation detector has three scintillators, which are sheets of material that light up when hit by radiation. Alpha particles strike only the first scintillator, beta particles travel on to the second scintillator, and gamma photons make it all the way through to the third scintillator.

The scintillators were then coupled to a photomultiplier tube, a device that converts the light pulses into electrical current. Because the shape of a light pulse differs depending on which type of radiation produced it (alpha particles produce sharp peaks, gamma particles more broad pulses), the device could distinguish between the different radiation types and produce counts for all three simultaneously. The new device could be used for a range of applications in which scientists might need to determine the types of radioactive material present, the researchers write.

Google releases satellite images of Iranian facilities which UN says may be used to develop nuclear weapons

Source:http://www.dailymail.co.uk/news/article-2060213/Google-releases-satellite-images-Iranian-cities-UN-says-used-nuclear-weaponisation.html#ixzz1dZFFphSF

These are the satellite images being used by the UN to claim that facilities at two Iranian cities may be used to develop nuclear weapons.

Satellite images of Arak and Natanz show changes to the facilities in the areas when compared with images taken in October 2010.

The overhead pictures were released by Google following a report by the International Atomic Energy Agency (IAEA) which expressed 'serious concerns regarding possible military dimensions to Iran's nuclear programme'.

2010: A satellite image shows the facility in Natanz, Iran, described as the country's 'biggest nuclear facility'

A year on: Sections of road appear to have been developed or removed and other landscape changes are noticeable in the satellite image taken last month

The IAEA report released earlier this week states that while some activities in Iran have civilian as well as military applications, others are 'specific to nuclear weapons'.

KEY FINDINGS IN UN REPORT ON IRANIAN NUCLEAR PROGRAM

- ☑ In its latest report on Iran, the UN International Atomic Energy Agency outlines the sum of its knowledge on the Islamic republic's alleged secret nuclear weapons work, including:
- ☑ Clandestine procurement of equipment and design information needed to make such arms;
- ☑ High explosives testing and detonator development to set off a nuclear charge;
- ☑ Computer modeling of a core of a nuclear warhead;
- ☑ Preparatory work for a nuclear weapons test, and
- ☑ Developing and mounting a nuclear payload onto its Shahab-3 intermediate range missile - a weapon that can reach Israel, Iran's arch foe.

There were indications in the dossier that the country had conducted detonator development, as well as high explosives testing and electronic modelling of a nuclear warhead core.

The IAEA report, which 'completely discredits' the Islamic nation's protestations of innocence, according to Foreign Secretary William Hague, cites preparatory work for a nuclear weapons test.

Development of an intermediate-range nuclear payload capable of reaching Israel is also in progress, according to the report.

Natanz, which features a Fuel Enrichment Plant and Pilot Fuel Enrichment Plant at its site, has been described as 'the facility at the heart of Iran's dispute with the UN'.

2010: Satellite images of the facility in Arak, home to a heavy water production plant, taken a year ago

A year on: Buildings and plant at the top left and bottom left appear to have been removed in this year's image of Arak, while there has been new building in the centre of the plant

It is also thought to be the largest nuclear facility in Iran, and has anti-aircraft weapons to defend itself from potential airstrikes.

Iran is also pursuing its nuclear weapons programme at the Parchin military base about 30 kilometres from Tehran, diplomatic sources in Vienna say

The town of Arak is home to a heavy-water production plant, which can be used to generate nuclear power.

The IAEA report stated that the agency requested further access to the plant in August, but did not receive a response from Iran.

Instead it has chosen to monitor the facilities from the air via satellite imagery.

It was revealed earlier this week that Israel could launch military action against Iran before Christmas, in a bid to prevent the country from developing a nuclear weapon.

Sources say the understanding at the top of the British Government is that Israel will attempt to strike against the nuclear sites 'sooner rather than later' – with logistical support from the U.S.

A senior Foreign Office figure has revealed that ministers have been told to expect Israeli military action, adding: 'We're expecting something as early as Christmas, or very early in the new year.'

Officials believe President Barack Obama would have to support the Israelis or risk losing vital Jewish-American support in the next presidential election.

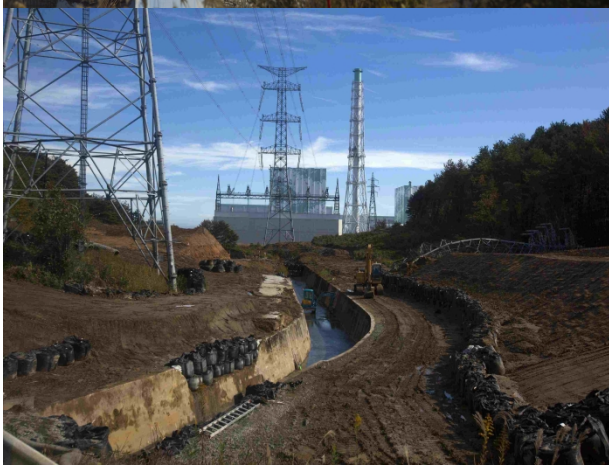
In recent weeks, Ministry of Defence sources confirmed that contingency plans have been drawn up in the event that the UK decided to support military action.

Inside the Fukushima nuclear plant

Source: http://www.newsbeast.gr/world/arthro/258927/sta-aduta-tou-ergostasiou-tis-foukousima-/

Thirty journalists – mostly Japanese – wearing PPE visited (Nov 11th) by bus the Fukushima compound for the first time after the mega earthquake of March 11th, 2011.



Iran loses its top missile expert in explosions sparked by failed bid to fit nuclear warhead on Shahab-3

Source: http://www.debka.com/article/21474/

Brig. Hassan Moghadam, head of Revolutionary Guards (IRGC) missile development and sections of its nuclear program, was killed in one of the two consecutive explosions that hit two IRGC bases 46 kilometers west of Tehran Saturday, Nov. 12. The official fatality figure is 32.

Fourteen hours after explosions blasts could still be heard and fires raged. debkafile's exclusive sources report the bases are located in Malard, a town in the Shahryar district. The Moadarres facility was the first to be hit, while the second and bigger blast occurred at Amir-al-Mo'menin.

Their force was such that the Iranian Red Crescent rushed 45 ambulances to the two facilities plus 23 buses converted to first-aid vehicles and a helicopter to evacuate the critically injured.

However, only six rescue workers were given access to the Moadarres base and none were permitted to enter to enter Amir-al-Mo'menin because of the facility's sensitivity.

Fourteen hours after the explosions, the blasts continued and fires raged. Surrounding streets were closed and reporters kept away from the scene.

Our sources report increasing evidence that the first explosion was caused by a failed effort to mount a nuclear warhead on a Shahab-3 intermediate-range missile.

It was powerful enough to shatter windows and damage shops in Tehran. People gathering on street corners wondered if Israel had attacked Iran's nuclear sites or destroyed Revolutionary Guards missile bases. They recalled Supreme Ruler Ayatollah Ali Khamenei's threat Thursday, Nov. 10 to take the war to the streets of Tel Aviv if Tehran was attacked.

IRGC spokesman, Brig. Ramedan Sharif, sharply denied what he said was speculation that the military base was linked to Iran's nuclear program. "This blast is not related to any nuclear tests," he said in response to widespread rumors. He insisted the explosion had occurred at an ammo store which was part of the Guards' "self-sufficiency" system, a term they apply to their munitions plants and the factories manufacturing missile components.

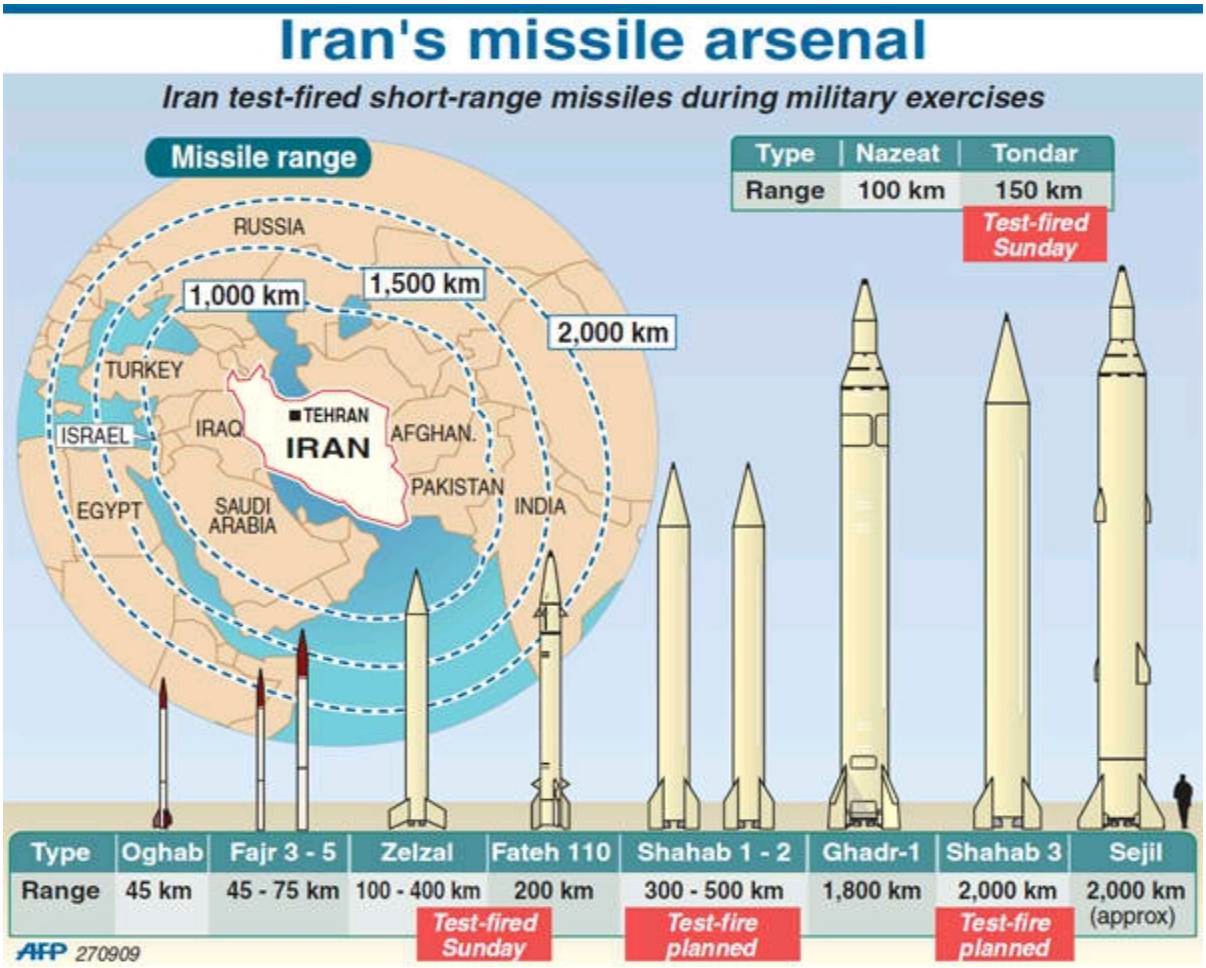
The Iranian authorities, after raising the fatality figure to 32, withheld information on the injured, most of which where transferred to IRGC rather than civilian hospitals. Some may have been foreign engineers or scientists whose presence Tehran is anxious to conceal.

The Emergency Council which deals with extraordinary happenings liable to affect the regime's stability met in emergency session Saturday night.

Earlier Saturday, debkafile reported on the two huge explosions at two separate military bases west of Tehran killing dozens of Iranian Revolutionary Guards (IRGC), wounding many more and trapping an unknown number under rubble. In Tehran, 40 kilometers away, windows were shattered and damage caused vehicles and shops. The blasts were heard in Tehran's center. debkafile's military and Iranian sources report that the explosions may have been part of a series carried out by Iranian dissident groups last month.

The suspicion of sabotage was strengthened by the occurrence Friday of a big fire at a Tehran warehouse used according to our sources by the IRGC for crowd dispersal gear. The ammo base blown up Saturday in the town of Malard in Shahryar district contained large quantities of rubber bullets, tear gas and other ordnance. A short time later, the second explosion hit a light arms depot at a military camp of Bidganeh several kilometers away. That both were accidents is hardly credible. The two blasts were confirmed by the Iranian lawmaker Hossein Garussi without further details.

Tehran recently broke up an armed dissident group called Oghab. Three members were executed and the others were allowed to flee the country. An



organization of that name operates in the United States, but its leader denied involvement in any sabotage operations inside Iran.

Iran will have five nukes by April 2012

Source: http://www.debka.com/article/21481/

According to the briefing given to a closed meeting of Jewish leaders in New York Sunday, Nov. 13, the window of opportunity for stopping Iran attaining a nuclear weapon is closing fast, debkafile's sources report. It will shut down altogether after late March 2012. The intelligence reaching US President Barak Obama is that by April, Iran will already have five nuclear bombs or warheads and military action then would generate a dangerous level of radioactive contamination across the Gulf region, the main source of the world's energy.

Iran's late missile chief Brig. Hassan Moghadam

Sunday, too, President Barack Obama said the sanctions against Iran had taken an "enormous bite" out of its economy. He also said that the "US is united with Russian and Chinese leaders in ensuring Iran does not develop an atomic weapon and unleash an arms race across the Middle East." He spoke after talking to Russian President Dmitry Medvedev and Chinese President Hu Jintao at the Asian Pacific Economic Cooperation summit in Hawaii about the new evidence submitted by the International Atomic Energy Agency that Iran was engaged in clandestine efforts to build a bomb.

He said both shared the goal of keeping a bomb out of Iran's hands. As to sanctions, Russian Foreign Minister Sergey Lavrov told a news conference that sanctions against Iran had been exhausted and "now the problem should be solved though diplomatic channels." debkafile's analysts note that tough sanctions are pretty much off the table now. In any case, it is obvious that they failed to slow down Iran's work on a bomb as confirmed by the latest IAEA report.

The road of diplomacy, favored by Moscow, has proved worse than ineffectual. Its only result was to buy time for Tehran to carry on with its military atomic project free of

international pressure.

Obama went on to say Sunday that, while his strong preference was to resolve the Iran issue diplomatically, "We are not taking any options off the table. Iran with nuclear weapons would pose a threat not only to the region but also to the United States."

This was the first time the US president had called a nuclear-armed Iran a threat to the United States. Until now, official statements limited the threat to "America's regional interests and influence."

The Jewish leaders meeting Sunday were informed that the Obama administration had intelligence data that the US and Israel have no more than a couple of months left for striking down Iran's military weapons development by force. This will not longer be viable after Iran is armed with five nuclear bombs or warheads. debkafile's military and intelligence sources refute the wild rumors alleging that the American CIA or Israeli Mossad was responsible for the massive explosion

Saturday at a Revolutionary Guards base west of Tehran in which Iran's missile chief Brig. Hassan Moghadam was killed. While both organizations have formidable capabilities which Iran has experienced in the past, there is no way - even with a UAV - they could have hit a single missile warhead in the middle of a Guards base at the very moment that IRGC chiefs were gathered around considering how best to improve its precision.

All the evidence garnered in the two days since the attack indicates that a single warhead blew up by accident while it was being handled, rather than by sabotage.

Calculating Iran's Next Move

Stratfor Global Intelligence

Source: https://dancingczars.wordpress.com/2011/11/15/calculating-irans-next-move-stratfor-global-intelligence/

Three days after explosions at an Islamic Revolutionary Guard Corps (IRGC) base near Tehran killed 17 people, including senior commander Brig. Gen. Hassan Moghaddam, a key figure in Iran's ballistic missile program, Iranian officials have publicly held to the official line that the blast was accidental. Privately, however, they appear to be contemplating whether the blast was an act of sabotage worthy of response. In a eulogy posted on Fardanews on Tuesday, Tehran Mayor Mohammad Bagher Ghalibaf said "Moghaddam was unknown in the Revolutionary Guard. Our enemies knew him better than our friends. He is irreplaceable."

In an equally cryptic statement following the explosions, Israeli Defense Minister Ehud Barak told Israeli military radio, "I don't know the extent of the explosion, but it would be desirable if they multiply." Regardless of whether it was involved in the incident, Israel has an interest in spreading the perception that the mountainous barriers of the Islamic Republic are not impervious to Israeli covert operations. Though the circumstances of the blast leave open the possibility that it was accidental, there remains a strong chance that this was in fact a case of Israel pulling off a significant sabotage attack against the IRGC.

Psychological impact

If so, we would expect to see Iran clamp down internally for a while to understand how such a significant failure in munitions handling could have occurred in the first place. At minimum this was a serious accident caused by the IRGC's negligence; at most it was a breach of operational security by foreign infiltrators. The psychological impact of such a sabotage effort is just as critical as the physical elimination of the intended target. The worries caused over where along the line the breach occurred — and the time and resources spent trying to track that leak down while reinforcing security at other potential targets that may have been compromised — is a major drain on the victim and a major boon for the saboteur. This same type of impact could potentially be accomplished by a successful Israeli disinformation campaign to falsely claim credit for an accident and label it as an attack.

During Tehran's period of introspection, Iran will also likely contemplate the much broader question of what barriers Iran could face as it pursues its strategic aims in the region. Iran's strong position in Iraq is beyond doubt, as the United States is withdrawing its forces and leaving a power vacuum that Iran will fill. At the same time, Iran has maintained an effective deterrence strategy against a military strike — the most potent component of that strategy being Iran's feared ability to disrupt 40 percent of the world's seaborne crude through the Strait of Hormuz by unconventional military means. Simply put, there is little hiding the fact that the United States,

Israel and the Gulf Cooperation Council (GCC) states are struggling to develop an effective containment strategy against Iran.

Though the geopolitical climate is working in Iran's favor, Tehran has to be aware of possible pitfalls — especially in its covert battles against its adversaries. The assassinations, kidnappings and defections of Iranian nuclear scientists in recent years help sketch the outlines of a U.S.-Israeli campaign designed to slow down Iran's nuclear program. As part of that campaign, the United States and Israel appear to have focused much of their resources on developing cyberweapons like the Stuxnet worm. The political crisis in Syria further complicates matters for Iran by threatening Tehran's strategic foothold in the Levant. As Turkey and the Arab League states watch Iran's moves warily, they are more likely to view the crisis in Syria as an opportunity to break Iran's arc of influence in the region — and will increasingly focus their efforts toward this end.

As Iran becomes more confident in the region and asserts its influence more boldly, more clandestine efforts against the country are likely to intensify. Iran's leadership will likely consider this dynamic when contemplating a potential response to the Nov. 12 explosions. STRATFOR has already been receiving indications from Hezbollah that the Shiite militant organization is readying its artillery rocket arsenal under orders from Tehran. Though Hezbollah and its Iranian proxies have a strategic interest in spreading such information to create the perception that Iran has a potent retaliatory option to ward off further attacks, Hezbollah's actions in and beyond the region should be watched in the coming weeks. Iran could also deploy its covert capabilities in places like Bahrain, Iraq, the Palestinian Territories and northern Yemen, but Tehran faces limitations in all these arenas — particularly in Iraq, where Iran does not want to give the United States any reason to push back its timetable for withdrawal.

Iran is not likely to respond quickly or rashly to this situation — it may not even respond at all. Following the February 2008 assassination of Imad Mughniyah, one of Hezbollah's top commanders, Iran's adversaries braced for a response that never came. Iran likely calculated that such a response was not worth the campaign of mutual retaliation that would have ensued. It remains unclear just how shell-shocked Iran's leaders are from the Nov. 12 explosion, but if the blast was indicative of Israel's covert reach into Iran, we would expect Iran to be expending a lot of energy in the coming weeks trying to recover from and repair what could have been a significant breach in its internal security apparatus.

If the West Attacks Iran, It Could Lead to World War III

By Devon DB

Source: http://www.globalresearch.ca/index.php?context=va&aid=27669

It was reported a week ago that the UN International Atomic Energy Agency (IAEA) released a report that argued that Iran may have been attempting to build nuclear weapons based on the fact that it had computer models of a nuclear warhead, in addition with other information. On the matter, the report itself states Iran conducted computer model studies and the like, but gives no conclusive damning evidence. [1]

This has led many to argue that Iran is in fact attempting to build a nuclear weapon. What many fail to realize is that not only does the UN report not state the Iran is attempting to build a nuclear weapon, but also the fact that the UN report may very well be biased due to the head of the IAEA's ties to the US and also that this report could be used as part of a

media war for the US-NATO-Israeli alliance to wage war on Iran.

The UN may seem like a neutral organization, but in reality, it can be influenced by outside forces. An example of this is with the head of the IAEA. It was reported last month by The Guardian that a cable released by Wikileaks stated that the new head of the IAEA, Yukiya Amano, "was solidly in the U.S. court on every key strategic decision, from high-level personnel appointments to the handling of Iran's alleged nuclear weapons program." [2] In addition to this, when Amano had his first post-election meeting with the US, the Americans came away with the notion that the meeting "illustrate[d] the very high degree of convergence between his priorities and [America's] agenda at the IAEA" and that the coming transition period would "[provide] a further window for [the US] to shape Amano's thinking before his agenda collide[d] with the IAEA Secretariat bureaucracy." The fact that the US had plans to shape Amano's thinking should make one wonder how much influence the US had over him.

The US and Israel could be using this report to argue that their countries should go to war with Iran. However, the information could potentially be false as it was noted by Russia Today that the UN "has found no smoking gun, but has succeeded nonetheless in hyping up fears that Iran is continuing its research on nuclear weapons" [3] (emphasis added) and that the information could be false as

> some, like former CIA officer Philip Giraldi, have grave doubts about the value of the IAEA report.
>
> *"I would be very skeptical about this report that is coming out from the International Atomic Energy Agency, because the IAEA doesn't really have any intelligence capabilities of its own. It is relying on reports that are coming from other people. I would rather suspect these reports are coming from the US and Israel," says Giraldi.*

The precedent of US intelligence presenting false evidence to build a case for the war in Iraq raises alarm bells as to the accuracy of the atomic agency's latest report on Iran.

> *"You may have a piece of evidence of some kind, but that piece of evidence is subject to your interpretation," Giraldi says. "When they saw aerial photographs in Iraq showing certain things, they interpreted those photographs to mean something which was not correct." [4] (emphasis added)*

The possibility that the IAEA report could be using false information is quite possible as the US-NATO-Israeli alliance has been looking to invade Iran for quite some time and has been waging a media war in support of this objective. One major example being the myth that Iranian President Mahmoud Ahmadinejad stated that Iran wanted to wipe Israel off the map. This proved to be completely false as
The Iranian president was quoting an ancient statement by Iran's first Islamist leader, the late Ayatollah Khomeini that "this regime occupying Jerusalem must vanish from the page of time" just as the Shah's regime in Iran had vanished.
He was not making a military threat. He was calling for an end to the occupation of Jerusalem at some point in the future. [5] (emphasis added)
While this was proven to be false, war hawks in America and Israel still used as an argument of Iranian aggression. However, the current situation is quite dangerous as Israel may be making moves to bomb Iran, with Prime Minister Benjamin Netanyahu arguing with his Cabinet for Israel to take such an action. [6] In addition to this, the

British military is currently "stepping up their contingency planning for potential military action against Iran amid mounting concern about Tehran's nuclear enrichment programme" [7] as the British Ministry of Defense thinks that the US may go ahead and strike key Iranian facilities via missile strikes and that Britain will unconditionally support the US.

Despite their plans, however, the war mongerers may find it difficult to achieve their goals as Russia recently stated that it would "do everything possible to prevent a military strike on Iran and push forward political dialogue on Iran's nuclear issue." [8]

The threat of a Western attack against Iran is extremely dangerous as it could potentially lead to a World War 3 scenario as "Were Iran to be the object of a 'pre-emptive' aerial attack by allied forces, the entire region, from the Eastern Mediterranean to China's Western frontier with Afghanistan and Pakistan, would flare up." [9] We need to be knowledgeable of the fact that an attack on Iran would consist "not only in reclaiming Anglo-American control over Iran's oil and gas economy, including pipeline routes, [but would] also [challenge] the presence and influence of China and Russia in the region." [10]

Russia has major interests in Iran as Russia has made a large amount of money off aiding Iran in building its nuclear facilities. In addition to this, Russia wants to back Iran as a counterweight to US influence in Central Asia. China also has an interest in Iran as China can get oil and natural gas from them. Both countries have been heavily involved in Iran economically and have a strategic interest in making sure that Iran is not attacked.

If the West attacks Iran, it could lead to World War III.

Notes:

1: http://isis-online.org/uploads/isis-reports/documents/IAEA_Iran_8Nov2011.pdf
2: http://www.guardian.co.uk/world/julian-borger-global-security-blog/2010/nov/30/iaea-wikileaks
3: http://rt.com/news/iran-nuclear-iaea-us-871/
4: Ibid
5: http://www.guardian.co.uk/commentisfree/2006/jun/02/comment.usa
6: http://www.haaretz.com/print-edition/news/netanyahu-trying-to-persuade-cabinet-to-support-attack-on-iran-1.393214
7: http://www.guardian.co.uk/world/2011/nov/02/uk-military-iran-attack-nuclear
8: http://news.xinhuanet.com/english2010/world/2011-11/10/c_122263799.htm
9: http://globalresearch.ca/index.php?context=va&aid=20403
10: Ibid

*Devon DB **is 19 years old** and studies political science at Fairleigh Dickinson University. In addition to contributing to Global Research, he has recently become a staff member at The Progresssive Playbook.*

Mysterious blast in Iran's Isfahan damaged key nuclear site

Source: http://www.haaretz.com/news/diplomacy-defense/report-mysterious-blast-in-iran-s-isfahan-damaged-key-nuclear-site-1.398671
By Yossi Melman

A mysterious blast which reportedly rocked Isfahan in western Iran on Monday damaged a key nuclear facility in the city, the Times of London reported on Wednesday.

An aerial photograph showing Iran's uranium conversion facility just outside the city of Isfahan, March 30, 2005.

Photo by: AP

On Monday, Haaretz cited Iranian media as reporting that an explosion was heard near Isfahan, home to a uranium conversion plant operational since 2004.

According to reports by the semi-official Fars news agency, frightened residents called the fire department after the blast, forcing the city authorities to admit there had been an explosion. Residents reported that their windows shook from the explosion's force.

In a photo from 2009, Iranian technicians work at a facility producing uranium fuel for a planned heavy-water nuclear reactor, just outside the city of Isfahan.

Photo by: AP

At first, Iranian officials denied the reports, with the governor of Isfahan later alleging that the blast was caused by an accident that had occurred during a nearby military drill.

However, a report in the Times on Wednesday alleged that the blast had not been a military accident, and that the city's nuclear facility was damaged.

The report quotes Israeli intelligence officials who based their conclusion on updated satellite images showing smoke billowing from the direction of the conversion plant.

Original report of blast in Iranian city of Isfahan as appeared on Fars website, Nov. 28, 2011.

According to the Israeli sources, there was "no doubt" that the blast had damaged the nuclear facility, and that the explosion was not an "accident."

"This caused damage to the facilities in Isfahan, particularly to the elements we believe were involved in storage of raw materials," one source told the Sunday Times.

It must be noted that the Times report was not confirmed by any other source.

The Isfahan plant went into operation in 2004, taking uranium from mines and producing uranium fluoride gas, which then feeds the centrifuges that enrich the uranium.

Since 2004, thousands of kilograms of uranium flouride gas were stockpiled at Isfahan and subsequently sent to the enrichment plant in Natanz.

Commenting on the report of an explosion in Isfahan, U.S. State Department Spokesman Mark Toner said Monday, "We don't have any information at this time other than what we've seen in the press as well. But certainly we're looking into it."
"As you know, we're somewhat limited in our ability to glean information on the ground there, but we're certainly looking into it," Toner added.
Former Mossad chief Meir Dagan said in a television interview on Tuesday that if Israel attacks Iran, it will be dragged into a regional war.
According to Dagan, Iran, Hezbollah and Hamas will respond with massive rocket attacks on Israel. In that scenario, Syria may join in the fray, Dagan said on the television program “Uvda”.

Big bang in Iran

Source: http://www.thedaily.com/page/2011/11/30/113011-news-iran-blast-before-after/

A newly released satellite image of an Iranian missile base near a nuclear site suggests that the base was virtually destroyed by a recent explosion.

These photographs of the site before and after the Nov. 12 blast were released by the Institute for Science and International Security.
Iranian officials say the explosion, which left 17 people dead, was an accident. But the institute said it believes the blast occurred as Iranian scientists were close to building a new ballistic missile.

Saudi Shaykh A'id al-Qarni urges Arabs to manufacture nuclear weapons

Source: http://www.jamestown.org

Dr. A'id al-Qarni, a popular Saudi religious scholar known for his provocative observations on Islamic society and a series of best-selling books that present Islamic solutions to life's problems in the "self-help" format common in the West, has now turned his attention in an article published by a pan-Arab daily to the global balance of power, which he sees as dominated by Western nations that recognize "power is the source of all stature and grandeur… The world respects no one but the strong" (*al-Sharq al-Awsat*, November 15).

For anyone who doubts these realities, al-Qarni points to the five major nuclear states and how they (and the United States in particular) have wielded their nuclear arsenals to achieve political power while calling on others to refrain from joining the nuclear club: "They possess the right to veto decisions and the world bows to them, fearing their reach and power. They preach to other states and advise all nations to be peaceful, transparent and hospitable, urging them not to manufacture nuclear weapons because this constitutes a global threat. In fact, the five major nuclear states do not want other nations to manufacture nuclear weapons so that they can maintain their hegemony, authority and tyranny."

Al-Qarni mocks the Arab world for appealing to Iran to abandon its military nuclear program "to have mercy on the Arabs and gain heavenly merit for doing so," saying Iran's pursuit of nuclear weapons will ultimately prevent attack from the West once a bomb has been developed. These are the hard lessons of political reality in a world where Shari'a does not govern international relations: **"**In this life, there is no room for integrity, for integrity and sacredness belong to the heavens, whilst the world's laws and politics are established on deceit and cunning. As long as people accept to be ruled by current laws without divine legislation, then it is a matter of interests, manoeuvers, usurpation, arrogance, oppression and proving oneself."

According to al-Qarni, the Arab world has misdirected its energies in cultural pursuits at the expense of its sovereignty and military preparedness: "Preoccupying the Middle East with arts, folklore, and cultural ceremonies at the expense of military factories is an open joke. To produce one tank would be better than a thousand poems, a rocket more useful than a hundred cultural shows, and a bomb more effective than a hundred epic tales to remind us of the glory of our forefathers, and what it used to be like in the old days."

Unlike traditional Islamist statements that are built on a foundation of hadiths and quoted from the Quran, al-Qarni ventures to quote an observation from the modern Syrian poet and advocate of reform in gender relations in the Arab world, Nizar Qabbani (1923 – 1998). Noting that the West has turned to inter-continental ballistic missiles and atomic bombs to "rule the world and monopolize its wealth," al-Qarni observes: "We in the Middle East are supposed to be content with reading history and reveling in the glories of the past, but this is only good for students in literacy classes. The poet Nizar Qabbani once said about the Arabs: 'They have long written history books and they became convinced [of their past glories]. But since when did guns live inside books?'"

Al-Qarni urges the Arabs "to manufacture the nuclear bomb and nuclear weapons in a passage that resembles a Dadaist "anti-art" manifesto: "I urge the Arabs to manufacture the nuclear bomb and nuclear weapons. There are buildings currently being occupied by minor daily newspapers that no one reads, and 'cultural heritage' museums housing scrap metal, worn-out rope, blunt axes, and other artifacts. These should all be turned into factories to manufacture tanks, rocket-launchers, missiles, satellites and submarines, so that the world comes to respect us, hear our voice, and appreciate our status." The Saudi scholar concludes his commentary with an ominous warning to the Arab world: "Do not let us be fooled by Iran's honeyed words suggesting that Tehran seeks nuclear weapons only to burn Israel, for this is purely an illusion."

Shaykh A'id has a doctorate in *hadith* studies and is a highly active preacher, appearing on TV regularly as well as issuing a series of audio lectures on Islamic topics. His "self-help" approach to written works has proved highly successful, resulting in bestsellers such as *Don't Be Sad* and *You Can Be the Happiest Woman in the World.* Al-Qarni is not new to publishing provocative views on life in the Islamic world. In 2008 he issued a controversial open letter in which he strongly criticized male dominance in Saudi Arabia and the abuse and subjugation of the Kingdom's women (*al-Sharq al-Awsat*, February 26, 2008)

Unsurprisingly, al-Qarni's views on the social role of Islam and his methodology have attracted the critical eye of Saudi Arabia's more conservative religious scholars. Earlier this year, Shaykh Abdul Aziz bin Rayis al-Rayis issued a lengthy review of his work entitled "The Statements of A'id al-Qarni: A Presentation and Critique" [1]

A'id al-Qarni experienced some damage to his reputation last year when he was repeatedly mixed-up with his cousin Awad al-Qarni in Egyptian court documents relating to a Muslim Brotherhood money laundering case. The mix-up led to the cancellation of a major lecture at Cairo's al-Azhar University in what al-Qarni feared was a conspiracy to interfere with his preaching activities in Egypt (*al-Hayat*, April 26).

Shaykh Awad is a very different character than Shaykh A'id, and is known for his fiery denunciations of the United States and a reputed close association with the Muslim Brotherhood, an association he nevertheless downplays in a somewhat condescending manner that reveals something of the attitude of Saudi religious scholars to Islam as it practiced outside of the Kingdom: "I [previously] declared that I challenge the Egyptian regime to prove that I have any organizational relation with the Brothers. This is not disregard or contempt toward the Brothers or any of the virtuous sons of the nation. But we in the Kingdom of Saudi Arabia have a specific feature based on the implementation of the Islamic Shari`a in all aspects of life; therefore, we do not need the organizational work needed by the other Arab peoples to reestablish Islam in their lives" (*al-Sharq al-Awsat,* April 26). Awad recently made headlines by offering a bounty of $100,000 to any Palestinian who kidnaps an Israeli soldier. After Awad reported receiving death threats, Saudi Prince Khalid bin Talal raised the bounty to an even $1 million in solidarity (Reuters, October 29).

Note:

1. http://islamfuture.wordpress.com/2011/05/28/a-critique-of-the-statements-of-dr-a%E2%80%99id-al-qarni/

Iodine-131 as yet another example of a CBRN threat to the EU

Source: http://www.ibconsultancy.eu/publications/current-events-report-6/

Early in November 2011, the International Atomic Energy Agency (IAEA) announced that very low levels of Iodine-131 (I-131) were detected in the atmosphere above at least six EU Member States. Later that same month, the IAEA notified that it had "most probably" identified the Institute of Isotopes in Hungary as the source of the radiation. In a reaction towards this allegation the director admitted a leak was found at the Budapest-based Institute. However, according to him it is "extremely unlikely" that the Institute of Isotopes was the source of relatively high levels of I-131 traced in the EU countries. The exact cause of the release is still under investigation by the IAEA.

I-131 is a radioactive form of Iodine and is produced by the fission of uranium atoms during operation of nuclear reactors and by plutonium (or uranium) in the detonation of nuclear weapons. It has a half-life of about eight days and is also used in medicine to diagnose and treat disorders of the thyroid gland, as this gland easily absorbs iodine. Exposure to large amounts of I-131 is dangerous to human health. In the weeks after the Fukushima disaster in March 2011 I-131 was measured on the US West Coast. In Europe, I-131 was detected after the Chernobyl disaster took place in 1986. It is important to mention that the levels traced in November 2011 are extremely low compared to rates observed after the Chernobyl tragedy.

NOTE: Read the full report in the Newsletter's website CBRN-CT Papers section.

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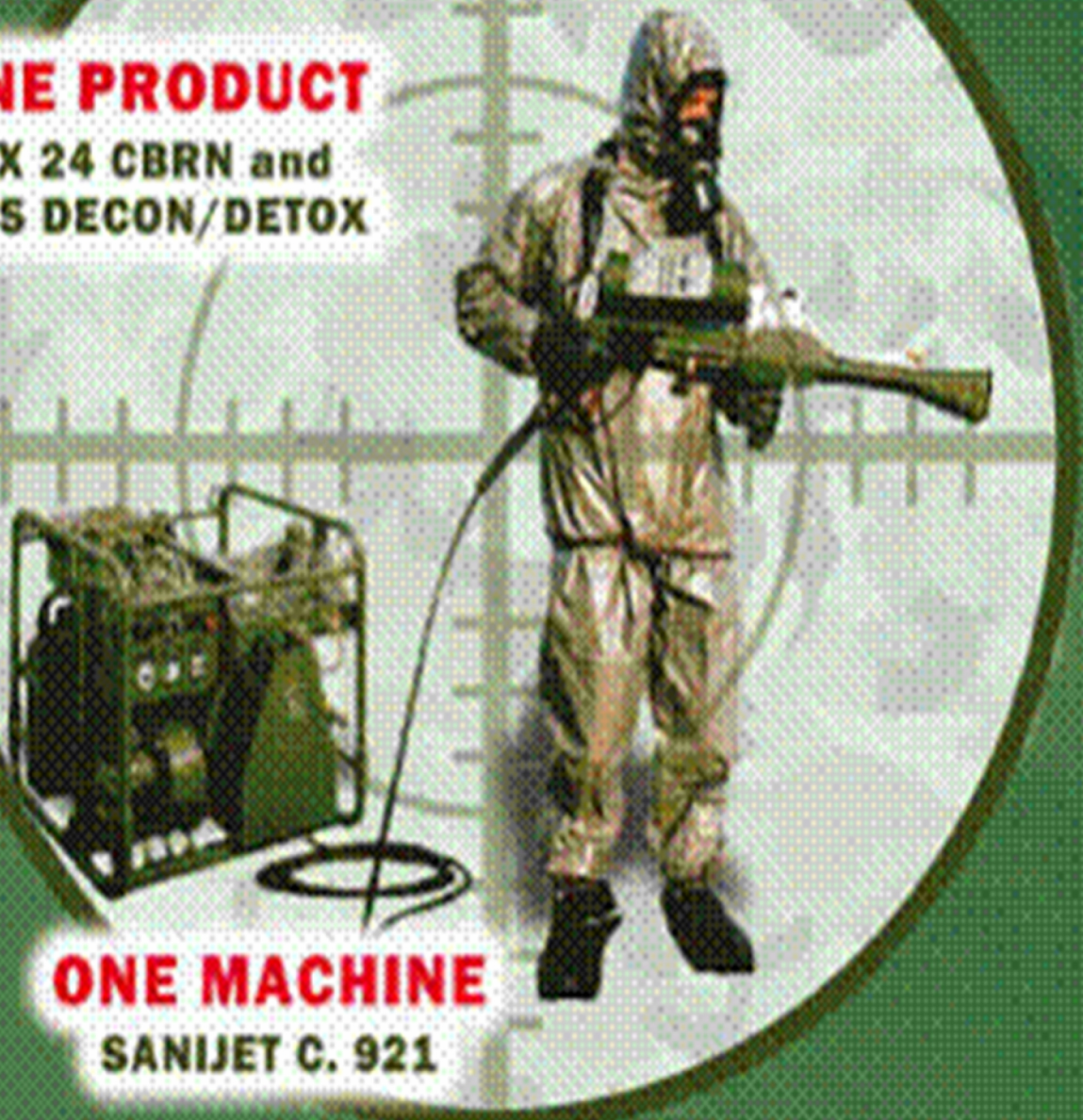

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