2 CBRNE DIARY

Dedicated to Global First Responders

CBRNE-Terrorism Newsletter

December 2018

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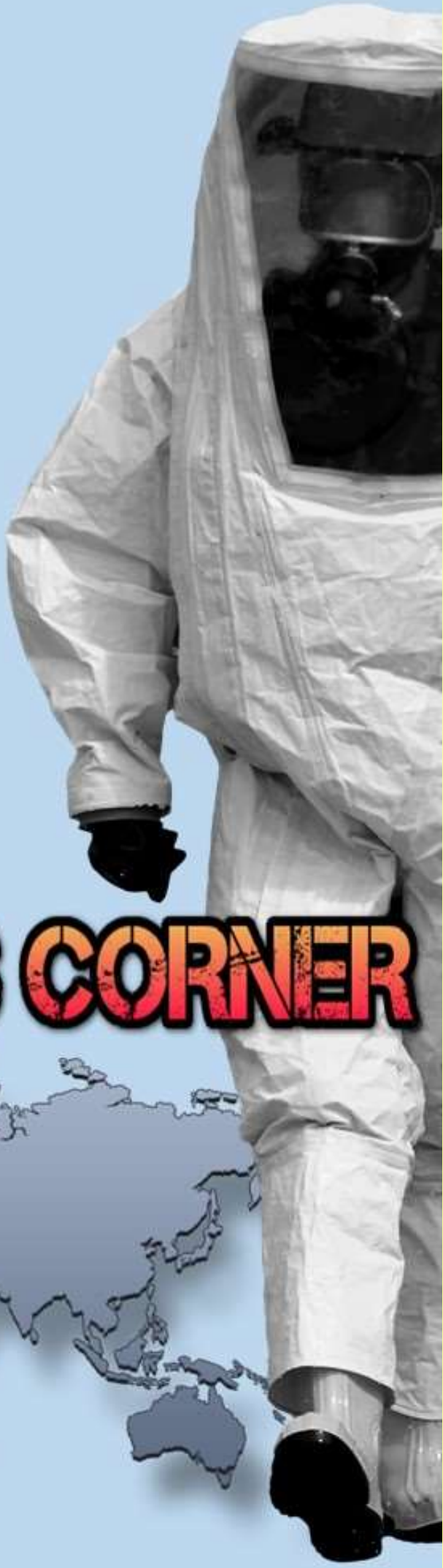


EDITOR'S CORNER

Editorial

Brig Gen (ret'd) Ioannis Galatas, MD, MA, MC

Editor-in-Chief
C²BRNE Diary

Dear Colleagues,

In general, 2018 was a rather "quite" year (at least for Europe) but since peace usually proceeds a storm, let us all stay on guard and be prepared for the unexpected! Some highlights of the departing year:

January 2018

Missile alert in Hawaii (Jan 2018) – a human error that caused multilevel troublesomeness.

February 2018

- Women only transportation in Spain – really?
- 3D printing as a CBRN enabler – the dark side of progress.

March 2018

A Russian ex-spy Sergei Skripal and his daughter Yulia, were exposed to the nerve agent "Novichok" in Salisbury, UK. Blaim the Russians – again.

May 2018

More Americans were killed or wounded by active shooters in 2017 than in any year since the Federal Bureau of Investigation began keeping track. Nearly 750 people were shot in 30 incidents (May 2018) – a war within that all prefer to ignore.

June 2018

▶ CBRNE-Terrorism Newsletter changed to ***C²BRNE Diary*** for reasons explained at the June's Editorial.

July 2018

- Special collection issue on "Hospitals' Threats" – the "ultimate target" that only very few cares about…
- Japan executed Shoko Asahara**,** the doomsday cult leader convicted for the 1995 sarin-gas attack on Tokyo's subway that killed 13 people and sickened thousands – justice after 23 years! Pride to be so civilized!
- Greenpeace France crashes remotely piloted drone at French Bugey nuclear plant near Lyon – perhaps a bitter taste from the future?
- Greece (East Attica Prefecture) wildfires killed 100 people (last burn victim died in December) and injured many more – Special report in August's issue. A case study of a "not to do" scenario…

August 2018

- Armed drone attack against the President of Venezuela – remember the drone with the radioactive liquid that landed on the roof of Japanese Prime Minister?
- German ricin plot proved that is was so easy to create and use toxins for harm – nothing new to comment on.
- New Ebola outbreak in Congo (ongoing) – waiting for WHO to wake up!

September 2018

Strawberries with sewing needls in Australia and New Zealand (imported) – Sky is the limit for dirty minds!

October 2018

- A new dual plague-anthrax spores vaccine will be added in the arsenal against biopathogens of Category "A".
- An innovative strategy for preventing the anthrax bacterium from absorbing iron, which is crucial for its survival opens up a new avenue of treatment for anthrax infections by effectively suppressing the spread of the bacterium in the patient's body.
- Quantum Internet is expected to make hacking a history. I think that quantum hackers are already preparing for this.
- Two packages containing ricin were intercepted in US Pentagon. Could happen anywhere – be alert!
- Japan is planning to releaze one million tons of radioactive waste into the Pacific Ocean mainly because there no more storage capabilities! Let us all boycot the Tokyo2020 Olympic Games. (joking – we never react universally to serious threats against the planet and its residents).

December 2018

- Terrorists are plotting a devastating chemical weapons attack in Britain and could launch a chlorine bomb on London Underground, security chiefs warn – OK! Londoners will stop breathing!
- Strasbourg Christmas market terrorist attack – terrorist was a "*surete de l' Etat*"! So what?
- Gatwick Airport (UK) held hostage from two drones for almost 3 days – keep this in mind for the near future… There are many related articles in this issue since after a surprise many new info and proposals come into surface proving that we still do not believe in the unexpected. A new chapter ("*Drone News*") will be added as of January 2019 issue.

Warm wishes to all CBRNE First Responders and their families and friends! You have been a wonderful reading audience and the Editorial Team would like to express its graditude for your kind words and appreciation! Have a great New Year 2019 full of health, joy, good moments and success in personal and professional life!

The Editor-in-Chief

The dusty desert air as a source of drinking water

Source: http://www.homelandsecuritynewswire.com/dr20181127-the-dusty-desert-air-as-a-source-of-drinking-water

Nov 28 – **A simple device that can capture its own weight in water from fresh air and then release that water when warmed by sunlight could provide a secure new source of drinking water in remote regions,** new research from KAUST suggests.

Globally, Earth's air contains almost 13 trillion tons of water, a vast renewable reservoir of clean drinking water. Trials of many materials and devices developed to tap this water source have shown each to be either too inefficient, expensive or complex for practical use. **A prototype device developed by Peng Wang from the King Abdullah University of Science & Technology's Water Desalination and Reuse Center and his team could finally change that.**

At the heart of the device is the cheap, stable, nontoxic salt, calcium chloride. This deliquescent salt has such a high affinity for water that it will absorb so much vapor from the surrounding air that eventually a pool of liquid forms, says Renyuan Li, a Ph.D. student in Wang's team. "The deliquescent salt can dissolve itself by absorbing moisture from air," he says.

Calcium chloride has great water-harvesting potential, but the fact it turns from a solid to a salty liquid after absorbing water has been a major hurdle for its use as a water capture device, says Li. "Systems that use liquid sorbents are very complicated," he says. To overcome the problem, the researchers incorporated the salt into a polymer called a **hydrogel**, which can hold a large volume of water while remaining a solid. They also added a small amount of carbon nanotubes, 0.42 percent by weight, to ensure the captured water vapor could be released. Carbon nanotubes very efficiently absorb sunlight and convert the captured energy into heat.

(KAUST) says that the team incorporated 35 grams of this material into a simple prototype device. Left outside overnight, it captured 37 grams of water on a night when the relative humidity was around 60 percent. The following day, after 2.5 hours of natural sunlight irradiation, most of the sorbed water was released and collected inside the device.

"The hydrogel's most notable aspects are its high performance and low cost," says Li. If the prototype were scaled up to produce 3 liters of water per day—the minimum water requirement for an adult—the material cost of the adsorbent hydrogel would be as low as half a cent per day.

The next step will be to fine tune the absorbent hydrogel so that it releases harvested water continuously rather than in batches, Wang says.

— Read more in Renyuan Li et al., "Hybrid Hydrogel with High Water Vapor Harvesting Capacity for Deployable Solar-Driven Atmospheric Water Generator," Environmental Science & Technology (7 September 2018).

Elta Systems' Radar will Secure International Events in Argentina

Source: https://i-hls.com/archives/87125

Nov 29 – Massive events pose an inherent risk for human lives due to malicious activities by hostile parties. The use of drones has increased dramatically concurrently with their growing capabilities and availability. In addition to public events, drones may be used to damage sensitive facilities or other aircraft or for collecting intelligence, smuggling and even for carrying munition. They are hard to detect due to their small size and slow, low-altitude flight.

ELTA Systems, a subsidiary of Israel Aerospace Industries (IAI), has won a major contract to provide the **Drone Guard system** for detection, identification and disruption of UAV and drone to Argentina. Drone Guard, which sold hundreds of units around the world to date, features an integrated sensor system: flying objects detection radar, dedicated COMINT system that identifies the drone by its transmission frequency and unique protocol (using the information

to verify the target and reduce false positive rates) and a camera identification confirmation of the detected object.

The Drone Guard sold to Argentina will be used for securing large-scale international events held in Buenos Aires this year, including the 2018 Youth Olympics, and the G20 Summit that will take place in the Argentinian capital in November. During the Youth Olympics, Drone Guard has successfully secured the opening ceremony, which took place in the heart of the city on Avenida 9 de Julio, followed by a guest reception at the famous Teatro Colon.

According to the company's announcement, in order to confront the threats against massive events, ELTA Systems has developed the Drone Guard System that addresses this threat more effectively post detection as well as blocks its communication capability without compromising the communication capabilities of nearby civilian infrastructures. In this way, the operation of the hostile UAV is disrupted and neutralized. Drone Guard is based on a combination of 3D radars that trace the air targets, electro-optical and COMINT means, and a dedicated UAV flight disruption system.

Drone Guard is used successfully against a range of UAV's and in other scenarios including forays or multiple-target, simultaneous offensives. Drone Guard can be mounted on a tripod, vehicle or existing building.

Yoav Turgeman, IAI VP and CEO of ELTA, said, "We are proud that Argentina has selected Drone Guard after evaluating local and global vendors. Drone Guard has proven its effectiveness in military and civilians' applications worldwide, protecting facilities, areas and events across the globe. We are glad to help secure the major upcoming events in Buenos Aires."

Reflecting on the past to counter future terrorism

Source: http://www.homelandsecuritynewswire.com/dr20181130-reflecting-on-the-past-to-counter-future-terrorism

Nov 30 – Warfare in the future will increasingly be about manipulating perceptions, whether by hostile states or non-state actors, according to terrorism expert **Brian Michael Jenkins.** The creation of fear and anxiety by terrorists, and foreign meddling in U.S. politics, are components of contemporary conflict. A major challenge facing the U.S. is how to get better at countering foes while strengthening national institutions, and U.S. democracy depends on it, Jenkins said.

3 Keys to Hardening Concerts, Event Venues Against Inevitable Attack Attempts

By K. Campbell

Source: https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-3-keys-to-hardening-concerts-event-venues-against-inevitable-attack-attempts/

Nov 25 – Plots against concerts and special events will continue to occur at the hands of the full spectrum of lone offenders/homegrown violent extremists and terrorist groups. Based on some of their past attacks, motivations, intentions, and capabilities, some might succeed. It is only a matter of how well security professionals mitigate against these attacks.

In late September at the Global Security Exchange 2018 (formerly the ASIS International Annual Seminar & Exhibits), I presented a lecture on "Hardening Concerts and Special Events in a New Era." My presentation included a map of Europe on which I highlighted five countries (in addition to Turkey) I assess to face the highest risk of attacks on concerts and special events.

Two of those five nations were the Netherlands and Spain. A few days after my presentation, Dutch police reportedly foiled a "major terrorist attack" in which the main suspect wanted to target "a large event in the Netherlands where there would be a lot of victims." And in early October, Spanish police busted a hirabi recruitment ring that operated in 17 prisons and included two men convicted over the deadly 2004 Madrid train bombings ("Hirabi" is a derisive Arabic term implying unlawful violence, and is far more appropriate than the term "jihadist," which grants honor).

Also days after my presentation and seemingly to commemorate the first anniversary of Stephen Paddock's shooting spree from the Mandalay Bay hotel into the Route 91 Harvest music festival in Las Vegas, the media arm of Daesh threatened knife attacks on concerts (Daesh is a similarly derisive term for Islamic State that its members do not look kindly upon). It featured a poster of a hirabist hiding a knife, superimposed on a stock image of a concert.

The bottom line is that concerts and special events are targets for various types of terrorists and lone offenders – hirabists, left-wingers, right-wingers, and separatists. They are symbols of Western lifestyle that some terrorists like to target, and they can also facilitate indiscriminate killings by terrorists

and lone offenders alike. Paddock's aforementioned shooting a year ago is an example of the latter; he killed 58 people and injured 850. The May 2017 suicide bombing at the end of the Ariana Grande concert in Manchester, England, is arguably an example of an attack against a symbol of Western lifestyle that also facilitated indiscriminate killings.

In my lecture I provided a brief overview of the roughly two dozen attacks on concerts and special events since January 2015. The data is interesting and supports my assessment that homegrown violent extremists and lone offenders pose the primary threat to concerts and special events in the United States and Europe. And in congressional testimony in March, Director of National Intelligence Dan Coates stated that homegrown violent extremists (HVEs) "will remain the most prevalent and difficult-to-detect Sunni terrorist threat at home, despite a drop in the number of attacks in 2017." Some details from the 27 attacks on concerts and special events since January 2015:

- Lone offenders/HVEs committed 70 percent (19) of the 27 attacks.
- Turkey was subject to the highest number — seven — of these type of attacks during this period. Five of the attacks were by lone offenders.
- Surprisingly, the U.S. followed Turkey for the second spot. Five such attacks occurred in the U.S., all of which were committed by lone offenders/HVEs.
- A majority (19) of the attacks occurred in 2015 and 2016, consistent with the significant, overall drop in terrorist attacks in 2017.
- Explosives and firearms were the most common means of attacks on these events (23 of the 27 attacks, or 85 percent), although vehicle and complex attacks produced the most fatalities (complex attacks include more than one type of weapon and/or more than one target location).

Based on this data, in addition to assessments by the U.S. Intelligence Community and EUROPOL (European Union Agency for Law Enforcement Cooperation), I assessed and presented that the most *likely* threat to concerts and special events into 2020 will be lone offenders/HVEs – not foreign terrorist organizations (however, FTOs are more likely to pose a threat to Europe and a couple other regions, partly due to geography). Lone offenders/HVEs will likely continue to conduct unsophisticated attacks using either vehicles, firearms, edged weapons (e.g., knives), or explosives. Stephen Paddock was a lone offender and he committed the worst mass shooting in modern U.S. history.

The most *dangerous* threat to concerts and special events will be complex, near-simultaneous or simultaneous attacks by a foreign terrorist organization (FTO) or domestic terrorists on multiple locations. In this scenario, the attackers will employ tactics reminiscent of the Daesh multi-site attacks in Paris on Nov. 13, 2015. On that night, nine Daesh operatives in groups of two or three used assault rifles and suicide belts to attack seven locations, resulting in the deadliest attack by non-state forces in France since World War II. Daesh killed 130 people and injured 352.

In addition to a drug cartel, only two FTOs are confirmed to have committed attacks on concerts and special events in the past three years: Daesh and Tehrik-e Taliban, a Pakistan-based group. However, I currently count at least a dozen FTOs that pose a threat to these events. As of early this month, there are 67 U.S.-designated FTOs, which overlap significantly with the European Union's list. Many groups on these lists lack the capability, motivation, or intent to attack concerts and special events. Some also do not have a history of attacking civilians directly but aim their mayhem at military and/or law enforcement targets. However, the targeting of these government personnel can collaterally harm civilians.

Regardless of the perpetrator, there are key steps security personnel should take to mitigate the risks of attacks on these type of events. First, the basics — what I call "Protect the P3":

- Protect the Patrons
- Protect the Pocketbook
- Protect the Performers

Protect the Patrons is largely self-explanatory, but in our current era it *sometimes* includes protecting patrons prior to their entrance into the venue. Protect the Pocketbook entails allowing only ticket holders to enter

the venue. Protect the Performers involves, among other actions, detailed advance work prior to the arrival of the performers, and identifying safe rooms/areas in the event of an emergency.

I have found that taking care of these three basics can significantly mitigate against the risk of attacks. The initial reaction to the "Protect the P3" objectives above might be "Of course! That's common sense!" During my lecture, though, I showed videos of four actual events at which security or venue personnel obviously did not protect at least one of these "Ps". Two of these events did not involve attacks, but staff inability to "Protect the P3" in "normal" situations does not bode well for mitigating the effects of an attack.

Beyond "Protect the P3," other risk mitigation I discussed includes heeding intelligence in the extremely rare times it provides tactical warning of an attack (rare partly because terrorist groups generally spend only one percent of their time planning attacks, which results in limited opportunities for intelligence collection against specific attacks). The Daesh attack in Istanbul on the Reina nightclub during its December 2016 New Year's Eve celebration is an example of the failure of both the venue and government to heed specific and general intelligence warnings. Reina was one of Istanbul's most well-known symbols of Westernism, and a place for the rich and famous to be seen. Even when controlling for hindsight bias, "atmospherics" and attack indicators began at least two and a half years prior to the attack in the early morning of Jan. 1 and should have prompted increased security at the nightclub for the New Year's party. One of these indicators included a disrupted Daesh suicide bomber plot against New Year's Eve celebrations in Ankara exactly one year prior. And according to the owner of Reina, American officials warned him of threats prior to the attack on his nightclub.

A good risk assessment prior to the event should include reviewing available intelligence and assessing other information on relevant threats and hazards, identify the event's assets, identify vulnerabilities related to Protecting the P3, and identify required mitigation. Unfortunately, pre-event risk assessments are rarely accomplished. Even a very rudimentary assessment focused on only the concentric layers of security – commonly categorized as the outer, middle, and inner layers – can pay dividends. In my lecture, I asserted that people might disagree on how to categorize each security layer at a given venue. It is more important that all stakeholders are aware of the layers and what they mean for protecting the P3. For example, sometimes the hardening of security layers is counterintuitive; they can be hardened *too much*.

The outer security layer of the Blue Parrot nightclub in Playa del Carmen, Mexico, did a great job of protecting the pocketbook on the closing night of the BPM electronic music festival on Jan. 16, 2017. But it was so good at keeping out threats that it prevented patrons from escaping out the back of the nightclub when gunmen entered and started a rampage (a drug cartel later claimed responsibility). Survivors recall having to catapult fellow concert-goers over the tall fence as they tried to run for safety toward the beach – a failure to Protect the Patrons. Five people died inside from the shooting, including an 18-year-old American woman who was trampled to death, and 17 were injured.

In some cases, the outer layer might offer little to no protection to the patrons due to the nature and location of the venue. The parking lots of many stadiums is one example. Cafes, bars, restaurants also fall into this category, and are especially vulnerable to attack. Eight of the 27 attacks on concerts and special events – nearly 30 percent – occurred at these types of venues. Almost all metropolitan cities are peppered with these smaller venues that host concerts and special events, including performances by world-famous talent. In the Washington, D.C., area alone, there are roughly a dozen such venues. Apparently the Metropolitan Police of D.C. is aware of these venues' inherent vulnerabilities, hosting a general briefing for the city's nightlife operators in April 2014.

Ensuring the right mix of hardware and security personnel to protect each security layer and the P3 is important, as is personnel training. In my presentation, I highlighted a few areas in which many security personnel at concerts and special events are usually not trained, including behavioral intelligence and counter-surveillance/surveillance

detection. At least a few security personnel should be trained in these techniques and placed at strategic locations. I even advocate devoting at least a couple personnel to conduct only counter-surveillance/surveillance detection. Attackers' surveillance of the venue is often the only opportunity for tactical warning of an attack. At the Blue Parrot nightclub in Playa del Carmen, at least a couple presumably untrained patrons noticed suspicious behavior by several men outside the venue prior to the attack. One patron even noticed that all of them wore the same color leather jacket — a surprisingly common mistake by many criminal organizations and even some government intelligence services. Risk management is important, even if it is a conscious decision to accept these risks.

Various levels of medical training for security personnel is also a necessary precaution. In some situations, emergency medical services were not immediately available and/or were insufficient in numbers. The Manchester Arena bombing is one example. Witnesses and attack survivors have recounted seeing or experiencing delays in excess of one hour or more before victims were treated by medics. Some victims reportedly died during this wait. In other cases, such as the Boston Marathon bombing in April 2013, heroic bystanders with basic medical training have assisted after attacks. Four off-duty Massachusetts National Guard members applied tourniquets to victims and helped first responders evacuate the wounded. And in the shooting earlier this month at the Borderline Bar and Grill in California in which 12 people were killed, a U.S. Marine Corps service member applied a tourniquet to a friend's arm.

Medical training options include first aid/CPR & AED (automated external defibrillator), tactical medicine/emergency casualty, and emergency medical responder (EMR). EMR fills the gap between first aid/CPR and emergency medical technician and requires 48-60 hours of instruction. According to the National Highway Traffic Safety Administration, which provides leadership and coordination to the emergency medical services community, "The primary focus of the Emergency Medical Responder is to initiate immediate lifesaving care" and "provide lifesaving interventions while awaiting additional EMS response and to assist higher level personnel."

The number of security and other personnel who ideally hold each certification decreases based on the extensiveness and cost of the training, the venue, and the work classification of security personnel (e.g., the ratio of permanent/full-time employees to temporary employees). There might be a venue where it makes sense that all or most permanent security employees are first aid/CPR certified, but a few select personnel have tactical medicine/tactical emergency casualty training, and emergency medical responder certification.

The right mix of training in emergency medical services, behavioral intelligence, and surveillance differs for every venue based on the national and local threat(s), facility characteristics and vulnerabilities, and several other factors. The same applies to other risk management measures, such as the appropriate hardening of security layers. An unbiased, thorough risk assessment can inform and influence these decisions on how best to Protect the P3.

The views expressed here are the writer's and are not necessarily endorsed by Homeland Security Today, which welcomes a broad range of viewpoints in support of securing our homeland.

K. Campbell, CPP, *is an intelligence and enterprise security risk management consultant with training and experience in intelligence; risk, threat, and vulnerability assessments; executive protection; counterterrorism; and business continuity. He is a Certified Protection Professional, board certified in security management by ASIS International. A former U.S. military intelligence officer, his responsibilities included protective intelligence, degrade and defeat recommendations against various entities and groups, and managing classified intelligence sharing with other governments. He has collaborated with and shared classified & unclassified information and intelligence with 15 countries on behalf of the U.S. Government. Mr. Campbell has also conducted and led risk assessments and business continuity planning for the U.S. government and private industry. His executive protection experience includes a foreign government dignitary, a corporate client at both 2016 presidential conventions, local and national television news*

personalities, and high-profile Hollywood celebrities. He also predicted the arrests and terrorist attacks in Belgium that occurred in 2015 and 2016. Mr. Campbell presented on "Hardening Concerts & Special Events in a New Era" at the Global Security Exchange 2018, the 20,000-attendee flagship conference for the international security industry in September 2018. He also presented a briefing on risk assessments at the 2018 Domestic Violence Safety and Security Conference in Washington, D.C. in October 2018. He is a member of ASIS, InfraGard (a partnership between the FBI and private sector), the Association of International Risk Intelligence Professionals, and the International CPTED (Crime Prevention Through Environmental Design) Association. Mr. Campbell obtained a Bachelor of Science degree in political science from Virginia Tech, a Master of Arts degree in military operational art and science from the Air Command & Staff College at the U.S. Air Force's Air University, and a Master of Arts degree in global risk from Johns Hopkins University's School of Advanced International Studies.

The Way You Walk Will Reveal Your Identity

Source: https://i-hls.com/archives/86826

Nov 18 – China's surveillance efforts have hit a new level with a technology that can apparently identify individuals based on their body shape and the way they walk. The "gait recognition" technology is already being used by police in Beijing and Shanghai where it can identify individuals even when their face is obscured or their back is turned.

The technology was developed by **Chinese AI startup Watrix.** The company claims that it can identify individuals at up to 50 meters (165 feet) which, in conjunction with existing facial recognition technology, can help police and surveillance systems operate more efficiently in busy areas.

Compared with other biometrics such as face, iris, palm print and finger print, gait features are still obtainable and recognizable at a distance with a low-resolution video. Therefore, with characteristics of non-contact, long distance (50 meters), cross-view (360°) recognition range and hard to disguise, gait recognition enables long-distance identification, using an ordinary 2K camera, according to Watrix website.

The average recognition rate can reach 94.1%, much better than the previous best result (less than 65%). The company also built the world's largest gait database, whose capacity is dozens of times larger than the second.

While the technology could help law enforcement find criminals, media reports have shown that China has deployed surveillance technology for more sinister purposes that include controlling its people, especially ethnic minorities.

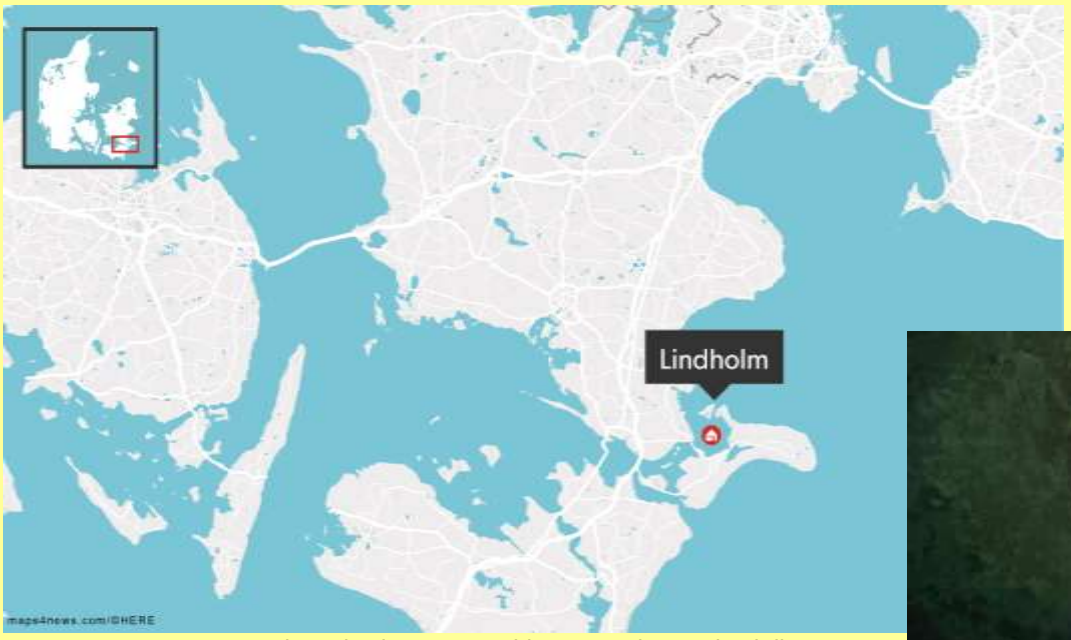
China is already home to the world's largest network of CCTV cameras — more than 170 million — and its police have adopted Google Glass-like "smart specs" to seek out suspects in crowds, as techcrunch.com reports, citing news agencies.

Denmark plans to send rejected asylum seekers to remote island

Source: https://globalnews.ca/news/4728230/denmark-immigration-lindholm-island/

Dec 04 – **A pro-government lawmaker acknowledged Tuesday that Denmark's plans to banish rejected asylum-seekers or those with a criminal record to a remote island may breach international law – but added that his party doesn't mind "challenging (international) conventions."**

Martin Henriksen of the anti-immigration Danish People's Party, which supports Denmark's centre-right government, told The Associated Press that the government's move "is a signal to the world that Denmark is not attractive" for migrants.



The isolated island of Lindholm was until this summer a laboratory facility for the state veterinary institute researching contagious animal diseases.

From 1926 until earlier this year, cattle and pigs suspected of having contagious diseases were brought to the island, some 80 kilometres (50 miles) south of Copenhagen, to be tested.

The plan, adopted Friday by the government and the Danish People's Party that between them hold a majority in parliament, is to decontaminate the uninhabited island by late 2019 and open facilities for some 100 people in 2021.

The facilities would house migrants who have been denied asylum but cannot be deported, and those with criminal records.

Human rights activists have denounced the decision, calling it degrading and inhumane.

"We demand that the government and the Danish People's Party stop their plans (for the island) and improve the conditions for all rejected asylum-seekers in Denmark," said Steen D. Hartmann of the online movement "Stop Diskrimination."

Denmark has two deportation centres – north of Copenhagen and in western Denmark – which Hartmann called "inhumane and terrible."

Henriksen, an immigration hardliner, said Denmark's decision was somewhat inspired by Australia, which is paying neighbouring Pacific island nations to hold asylum-Seekers who have attempted to reach Australian shores.

In recent years, Denmark has tightened its laws for immigrants, extending from one year to three the period that family members must wait before they can join a refugee in Denmark, reducing benefits for asylum-seekers, shortening temporary residence permits and stepping up efforts to deport those whose applications are rejected.
In 2016, a law allowed the country's authorities to seize valuables from migrants to help finance the costs of their stay. Danish citizens also must sell valuables worth more than 10,000 kroner ($1,520) before they can receive any government welfare benefits.

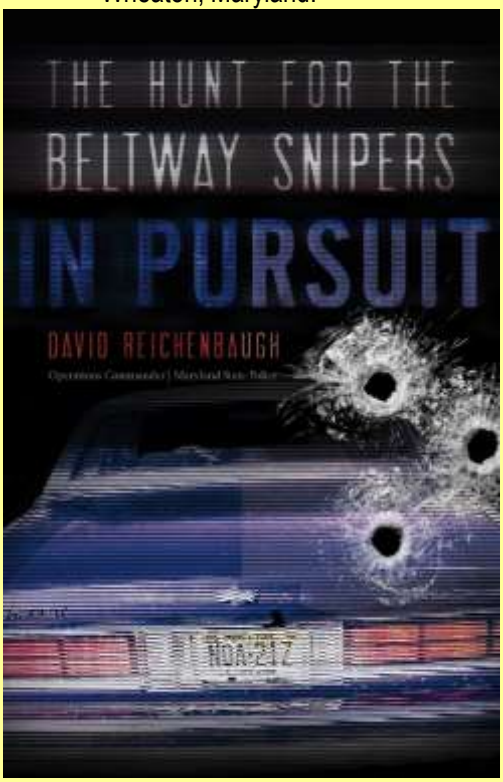
EDITOR'S COMMENT: Greece has 6.000 islands in total, scattered in the Aegean and Ionian Seas, of which only 227 are inhabited.

The Inside Story of Snagging the Beltway Snipers: Stopping 23 Days of Random Terror

By David Reichenbaugh
Source: https://www.hstoday.us/subject-matter-areas/law-enforcement-and-public-safety/the-beltway-snipers-random-slayings-that-gripped-the-capital-region-in-fear/

This is Part One of a four-part series on the 2002 Beltway Snipers killing spree in collaboration with the former criminal intelligence operations commander for the Maryland State Police and commanding officer at the scene during the snipers' capture in Myersville, Md.

Nov 29 – October 2, 2002, a Michaels craft store in suburban Montgomery County, Md., exploded from a high caliber bullet. Later that same day, 55-year-old James D. Martin, a program analyst for the National Oceanic and Atmospheric Administration, was shot in the parking lot of Shoppers Food Warehouse in Wheaton, Maryland.



And so, began a manhunt that shattered nerves across the D.C. area that would only begin to calm after an intensive monthlong, multijurisdictional cat-and-mouse hunt to stop the terror.
The shot into the craft store missed its target. But over the course of 23 days, 10 citizens in Maryland, Virginia, and the District of Columbia had been shot and killed with another four victims surviving their wounds. The shootings were completely random, without regard to race, sex, religion, or gang affiliation. All the victims were shot using a high-power .223 caliber Bushmaster rifle fired from a concealed location, without regard to the time of day — a string of shootings in rapid succession to kick off the spree in Montgomery County unfolded in broad daylight.
In October 2002, a little over a year since the terrorism attacks on the World Trade Center in New York, the Pentagon in Virginia across the river from the nation's capital, and the foiled attack on the U.S. Capitol or Camp David in the mountains of Maryland that ended in a field in Shanksville, Pa., the nation was holding its collective breath. We were also only a few months removed from the deadly anthrax attacks and the case was still very much open with a motive shrouded in mystery.
Purchase the book by clicking the photo. HSToday may receive a small advertising share for your purchase.
Since the worst domestic terrorist attack in U.S. history may have started in our own backyard, along with deaths associated with the anthrax case, the Maryland State Police was in the process of rapidly standing up a long-dormant Criminal Intelligence Division. The goal was to get boots on the ground infiltrating known

nefarious groups, identifying any newly identified potential threats, listening, and disrupting any potential terrorist threats that may still be lurking in Maryland. It was painfully obvious that we could not depend on the FBI on their own to do this type of work in our own backyard and it was our responsibility to do what we could to protect Maryland from the new terrorist threat that had landed in our laps. Cooperation across jurisdictional lines would be needed.

The division also had the responsibility of identifying the hundreds of potential targets for future attacks located within the state's borders, working with those companies and agencies in hardening the potential targets, and coordinating with our many allied federal, county, and city police agencies to work together in a united effort to prevent the next terrorist attack that all of us knew deep in our gut was coming. It was not a matter of if, but when – and could we disrupt it before it gets started.

As Operations Commander for the Criminal Intelligence Division, it was my job to help make some sense out of gathered intelligence, which resulted from our covert activities as well as intelligence gathered from open sources. Oct. 2 started like any other day for me, going over intelligence reports from the night before and making notes of which allied agencies I needed to reach out to that day to compare notes. Those relationships, forged out of necessity with our allied federal and surrounding state and local agencies since the tragedy of 9/11, would ultimately prove fruitful as the Beltway Snipers case unfolded.

Initially, it was suspected that the shootings had to be the work of an organized terrorist cell that had infiltrated the Washington, D.C., metropolitan area with the goal of instilling fear in the citizenry and showing the citizens that their police and government were helpless to protect them. Initially, nothing else made any sense. If that was the plan of the unidentified cold-blooded killers, it was certainly working. Citizens were in fear, squatting behind their cars as they filled the gas tanks. Gas stations and business erected tarps to help shield their customers from view or placed paper over the windows to prevent the killers from having a view of the inside of their businesses.

Schools in the D.C. area, known as the DMV, were locked down and in some instances closed. All extracurricular activities including the fall scholastic football season had been canceled. The few shoppers who were still out there ran from their cars to and from the stores. Employees ran in a zigzag manner to get inside their building as quickly as possible. The economic impact of the sniper's reign of terror to our nation's capital region was never calculated but had to be immense. Life as American citizens knew it came to a complete stop for those 23 days in October.

The sniper investigation from the onset quickly became one of the largest, most intense manhunts in American law enforcement history. At the height there were close to 1,000 agents, troopers, officers, and deputies working the case, from federal agencies to local police departments. The relationships formed as the result of Sept. 11 played a key component and helped keep the SNIPMUR Task Force focused, and the participants from all the agencies working together as a unified team. It was this team that ultimately led to the snipers' capture and brought to a close to their 23-day rampage.

As I indicated, initially all of us including federal agencies that went all the way to the attention of the president thought this was a well-planned terrorist event. As the shootings continued over the three-week period, the killers began to leave us notes. It became clear these were not terrorists. They were two people with a god complex who enjoyed killing, enjoyed their newfound publicity as this case was on the 24-hour news cycle, and were hoping to extort money out of the government.

The killers were certainly not sophisticated by any stretch of the imagination. In fact, their notes decorated in a child's star stickers demanding that we get them the money thru a stolen debit card showed their complete lack of sophistication. However, they were smart enough to carefully plan their attacks and fitted out a rather run-of-the-mill blue Caprice to use as a sniper platform. They listened very carefully to the round-the-clock news coverage and knew they were safe since the task force spent most of the 23 days of this investigation looking for two shooters in a white van or box truck.

They responded to the idle threat of the Maryland governor calling them cowards, and vowing that authorities would protect our children, by shooting a 13-year-old child the following day as he exited his mother's car to run into his middle school.

The Beltways Snipers case became an obsession for those of us working on the task force. Unidentified killers were killing our citizens randomly and it did not seem like there was a thing we could do to stop it. However, determination, guts, and the full resources of the

federal state, city, and county governments – and the bloodhound mentality of some of the best cops in the country – would ultimately lead to their capture at a mountainside rest area in Frederick County, Md.

In Pursuit: The Hunt for the Beltway Snipers **by David Reichenbaugh recounts the terrifying crimes through the eyes of one of the few people who know the complete details of the investigation. The book is currently available on Amazon.**

David Reichenbaugh's *passion for law enforcement started at a very early age which led him to seek a degree in criminal justice. He holds a Bachelor of Arts Degree from Indiana University of Pennsylvania and is a graduate of North Western University Traffic Institute School of Police Staff and Command. David retired after 23 years service with the Maryland State Police as a Lieutenant and Barrack Commander in Cumberland Maryland. David's career started as a road Trooper and continued on as a criminal investigator, undercover narcotics investigator, major violators supervisor, homicide and high profile case investigator, and assisted in the development of the intelligence unit of the MSP post 9/11. He is the author of "In Pursuit: The Hunt for the Beltway Snipers."*

Pro-ISIS How-to Guides Show Lone Wolves Beltway Snipers' Techniques

December 3, 2018 Middle East Media Research Institute - JTTM
Source: https://www.hstoday.us/subject-matter-areas/terrorism-study/pro-isis-how-to-guides-show-lone-wolves-beltway-snipers-techniques/

Meet Brand New Way to Operate Drones

Video: https://i-hls.com/archives/87117

Dec 01 – Drone operators often find it hard to fly the multi-propeller device and take pictures simultaneously, having to think about multiple controls for the drone and the camera. Traditional drone controls utilize dual joysticks for the drone navigation as well as an additional joystick and gimbal – a pivoted support that allows rotation on a single axis – to control the camera.
A simpler method to steering flight will be available soon. A touch-screen method to navigate and take pictures with drones has been developed by Bedrich Benes, a professor of computer graphics technology,

and doctoral student Hao Kang in collaboration with corporate researchers.
The new multitouch gesture-controlled drone gimbal photography, called FlyCam, works with the concept of combining the drone and the camera movements. The controller "can

think about the drone as a simple three-dimensional flying camera that is being controlled by simple gestures on a touch-screen device," Benes explains.
How does it work? According to purdue.edu, **FlyCam uses one- and two-finger drags across a smartphone or tablet to control the drone as it accelerates or turns and takes images. The drone moves forward or backward along the camera's axis with single or double taps to the screen.**
"We did a user study and most of the users performed with the FlyCam better" in comparison with the traditional method, Kang said. "It is easier to use just a single simple mobile device compared to a combination of cumbersome remote controls."
FlyCam was testing using an Android system. Fliers worked better when using a tablet, which allowed for larger movements and better control.

The Deadliest Terrorist Groups In The World Today

Source: https://www.forbes.com/sites/dominicdudley/2018/12/05/deadliest-terrorist-groups-in-the-world/

Machine learning masters the fingerprint to fool biometric systems

Source: http://www.homelandsecuritynewswire.com/dr20181205-machine-learning-masters-the-fingerprint-to-fool-biometric-systems

Dec 05 – Fingerprint authentication systems are a widely trusted, ubiquitous form of biometric authentication, deployed on billions of smartphones and other devices worldwide. Yet a new study from Michigan State University and New York University reveals a surprising level of vulnerability in these systems.

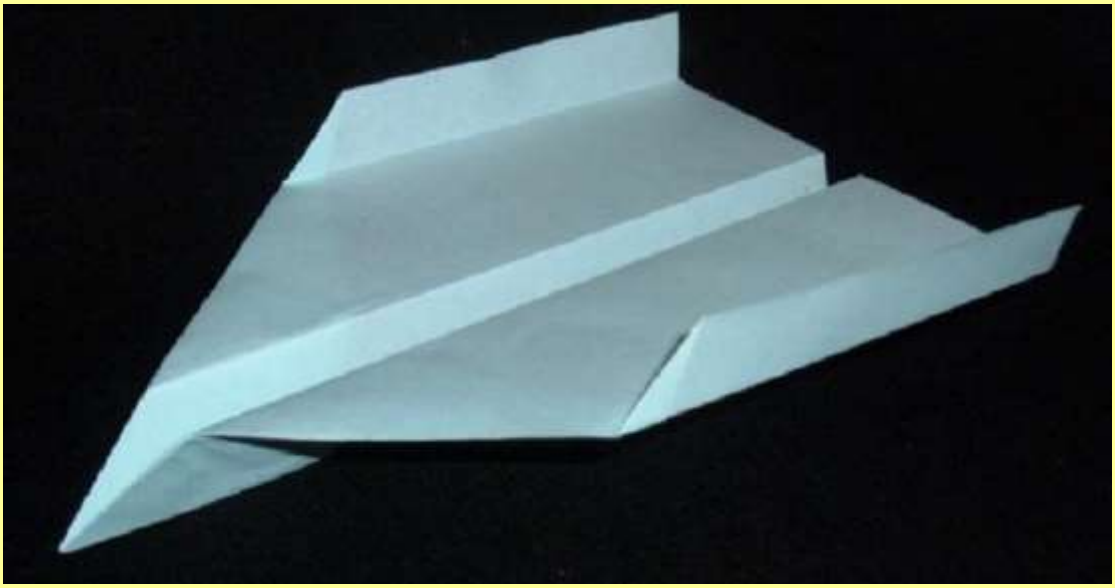
Using a neural network trained to synthesize human fingerprints, the research team evolved a fake fingerprint that could potentially fool a touch-based authentication system for up to one in five people.
Much the way that a master key can unlock every door in a building, these "DeepMasterPrints" use artificial intelligence to match many prints stored in fingerprint databases and could thus theoretically unlock a large number of devices.
MSU says that the work builds on earlier research led by Nasir Memon, NYU computer scientist, and Arun Ross, Michigan State University computer scientist and engineer. They coined the term "MasterPrint" to describe how partial fingerprint-based systems can be compromised by using strategically created fake prints.
"As fingerprint sensors become smaller in size, it is imperative for the resolution of the sensor to be significantly improved for it to capture additional fingerprint features," Ross said. "If resolution is not improved, the distinctiveness of a user's fingerprint will be inevitably compromised. The empirical analysis conducted in this research clearly substantiates this."
Devices typically allow users to enroll several different finger images, and a match with any enrolled partial print is enough to confirm identity. Partial fingerprints are less likely to be unique than full prints, and their earlier research demonstrated that enough similarities exist between partial prints to create MasterPrints capable of matching many stored partials in a database.
In the new study, doctoral student Philip Bontrager and computer scientist Julian Togelius from NYU along with their collaborators, including Memon and Ross, took this concept further, training a machine-learning algorithm to generate synthetic fingerprints as MasterPrints. The researchers created complete images of these synthetic fingerprints, a process that has twofold significance. First, it is yet another step toward assessing the viability of MasterPrints against real devices, which the researchers have yet to test; and second, because these images replicate the

quality of fingerprint images stored in fingerprint-accessible systems, they could potentially be used to launch a brute force attack against a secure cache of these images.
The new study was presented at the IEEE International Conference of Biometrics: Theory, Applications and Systems by Philip Bontrager, the first author of the paper.
"These experiments demonstrate the need for multi-factor authentication and should be a wake-up call for device manufacturers about the implications of artificial fingerprint attacks," Bontrager said.
This research has applications in fields beyond security. Togelius noted that their Latent Variable Evolution method used here to generate fingerprints can also be used to make designs in other industries – notably game development. The technique has already been used to generate new levels in popular video games.
MSU notes that the research team also includes postdoctoral fellow Aditi Roy, who was lead author for the original MasterPrint paper.

The Hidden Component of Disposable Drones

Source: https://i-hls.com/archives/87218

Dec 07 – Disposable drones are one of the most interesting projects that is attracting a significant research interest – made of inexpensive and degradable materials such as paper or cellulose-based materials. They could deliver supplies, fulfill military missions and more.
A critical factor in drones is the wireless communication system where coverage and capacity is crucial for the reliable operation of a drone. For large coverage capabilities, drones require omnidirectional antennas where signal levels are mostly equal in all directions.



Currently, antennas are selected, designed and developed in order to meet these specifications in both commercial and defense applications – and can be located either inside or outside of the drone structure.
A team of researchers has been investigating the potential antenna scenarios for disposable drones which may one day be fully fabricated using inkjet printing technology.
The researchers aim to integrate antennas into origami disposable drones where two antennas based on a similar design concept are assessed for two conditions.
"The first is when all electronic components and the ground plane are located on the wings. The second is a when the electronic components are at the bottom of the drone and the antenna needs to be fed from bottom up."
One of the simplest forms of disposable drone can be developed using origami techniques where a piece of paper can be folded to produce the drone. The paper is of standard A4

format – however thicker – in order to provide a stable gliding flight even when loaded with additional avionic control systems, according to dronebelow.com.
A vertically polarized antenna is also used at the base of the paper drone – mainly to assess the metallic ink layers deposited in the fabrication process. Small enough to be hidden inside the vertical section of the plane and isolated from the external environment, the antenna was realized using the same fabrication procedure as in the previous projects.
They believe that disposable origami drones may include other electronic components in the future – paving the way for fully integrated disposable drone solutions.

10 Best Security Innovations of 2018

Source: https://i-hls.com/archives/87226

Dec 07 – During the year, you may have seen before news articles about some of these ground-breaking technologies at iHLS website. The 10 best security innovations of 2018, as selected by popsci.com, include ground-breaking technologies that down malicious drones without risking collateral damage, help military vehicles transverse tough terrain, offer new ways for police to capture fleeing assailants, etc:

- Onyx exoskeleton by Lockheed Martin – When strapped to a trooper's hips, the Onyx powered exoskeleton can double their fortitude. Onboard processors crunch inputs from accelerometers throughout the frame to analyze a person's stride and direction of movement; the controller then activates motors for an assist.
- High Energy Laser Weapon System by Raytheon – The HELWS MRZR laser-shooting dune buggy operates against enemy drones. Once a human operator confirms a target, a fiber-optic electric laser emits a controlled beam that instantly fries the intruder.
- Reconfigurable wheel track by DARPA & Carnegie Mellon – This shape-shifting humvee wheel

converts from a conventional circle (for hard, flat surfaces) into a triangular tank tread (for sand, gravel, and other uneven terrain), and vice versa.

- Miniature Hit-to-Kill Interceptor by Lockheed Martin – Protecting bases and civilians in combat zones typically involves firing explosives at incoming rockets and mortars, which risks significant collateral damage from the airborne blasts. Rather than exploding near its target, the Miniature Hit-to-Kill missile physically whacks it out of the sky.
- Westpac Little Ripper Lifesaver Drone by The Ripper Group – This rescue drone is equipped with pods for land and snow, including thermal blankets, beacons, radios, and mobile defibrillators. Its HD camera uses artificial intelligence.
- Magnification Combination Padlock by Master Lock – A digit-masking lock that puts the numbers behind a clear, curved lens. Askance, the slope of the polycarbonate warps the dial so that non-authorized elements can't spy your digits.

- FirstNet by First Responder Network Authority & AT&T – First responders' phones can get jammed up. This new system puts messages and calls from registered responders on a dedicated (and uncrowded) band of the wireless spectrum. If someone's outside the range of the upgraded towers, their FirstNet SIM sends a message to the LTE network to prioritize its signal over other civilians.
- BolaWrap 100 by Wrap Technologies – A nonlethal and non-injuring tool to snare potential perps. The handheld device, based on the laso concept, shoots a Kevlar tether from a distance. The whip wraps around a suspect's legs two to three times and two barbed pellets anchor themselves to clothing.
- Sideline weapons detector – The Los Angeles metro is the first U.S. agency to adopt the TAC-TS4 screening system, which spots explosives or weapons tucked beneath clothing from as far as 13 feet away. The camera detects terahertz waves and IDs spots where recognizable shapes like guns block them.
- Amazon Key by Amazon – Lets couriers deposit goods away from unsecured porches and stoops. Homeowners start by installing an Amazon-approved smart lock and security camera. When a delivery person arrives, they confirm their location on their phone, which then signals the Key service to unlock the door.

A New UAV Lifts 90 kg Payload

Source: https://i-hls.com/archives/87191

Dec 05 – A new medium-sized unmanned aerial vehicle (UAV) can lift and transport a payload of over 90 kg. The **Dauntless UAV** is manufactured by Mobile Recon Systems, the same company that a few years back produced a quadcopter that could carry three GoPro cameras.

The Dauntless can either come as a quadcopter or an octocopter by adding an extra set of rotors to each of its arms. **As a quadcopter, it weighs 35 kg and can lift a payload of at least 45 kg. The 90 kg figure is for the octocopter version.**

The UAV's frame is made out of titanium and aircraft-aluminium frame, along with a carbon fiber body, canopy, battery box and rotors. The UAV can be broken down to five parts for transportation purposes.

Electrical power is supplied by two 2,400-watt generators, which are in turn linked to a gas engine. This setup reportedly allows for flight times of up to five hours. There are additionally two lithium-polymer batteries which can be used when a power boost is needed, or for performing emergency landings should the generators fail.

If users don't wish to dangle their cargo below the UAV, they can opt for an onboard container capable of carrying a maximum of 36 kg on the quadcopter, or 72 kg on the octocopter. This according to newsatlas.com.

The Dauntless isn't just for lifting or carrying payload, however. It can also be outfitted with optional extras such as gimbal-mounted cameras of various types, weather stations, radiation detectors, radar or LiDAR (light detection and ranging) modules.

The UAV can be remotely piloted by one person, or it can fly autonomously, following a preprogrammed set of GPS waypoints. Features such as automatic take-off and landing, along with automatic return-to-launch make non-autonomous flight easier. Buyers can also opt for a self-levelling monopod landing system, which keeps the aircraft sitting flat on uneven terrain.

Suggested applications for the Dauntless include border and perimeter security, natural disaster response, medical emergency first response, aerial analysis/mapping, and supplies transport. While the cost will vary greatly according to the configuration and options, we're told that "the price per unit could reach low six figures."

Abu Dhabi to cut benefit payments for Emiratis who won't work

Source: https://www.thenational.ae/uae/government/abu-dhabi-to-cut-benefit-payments-for-emiratis-who-won-t-work-1.800912

UAE nationals speak to recruiters at at Tawdheef, a job fair open to Emiratis, at Abu Dhabi National Exhibition Centre. Silvia Razgova / The National

Dec 10 – Financial support for unemployed Emiratis in Abu Dhabi will be axed unless they can prove they are not fit to work; a top government official has said.

Citizens will need to accept one of three offers of employment or see their benefits end under new plans to ensure everyone is contributing to society.

"We don't want a society that is dependent on social welfare," said Dr Mugheer Al Khaili, chairman of Abu Dhabi's new Department of Community Development.

Healthy Emiratis will be given three chances to accept a job arranged for them or will see their benefit payments discontinued.

The drive is not targeted at stay-at-home mothers or people who are out of work for medical reasons.

Financial support for out-of-work Emiratis varies, but Dr Al Khaili gave the example of someone on Dh8,000 per month.

"You will find an Emirati on welfare receiving Dh8,000 per month. So, we don't want the attitude of 'why should I work since the salary I receive is only a few thousand more'", he said.

He said there is a concern that some take advantage of the available benefits, which for UAE nationals is on-par with wealthy European nations' social-security net.

"We don't want a society that is dependent on social welfare," Dr Al Khaili said.

"In some countries, you have parents that are dependent on social welfare and then their children and then their children's children, so entire generations of families on welfare. That is not what we want for the UAE."

Dr Al Khaili said there is a genuine drive in government to ensure all Emiratis have job opportunities and that officials are working to find vacancies for those out of work.

"We need to find jobs for Emiratis and not leave them dependent on social support if they are able to work," he said.

"Those able to work will be given a first and second chance – and by the third, we will stop the aid.

"What we are trying to do through social benefits is to support the people who are in need so that they have a safety net. We will make sure that nobody goes under the line which will be drawn by our department."

He said the aim is to "bring people back" and for UAE nationals to be "active".

"We need to prepare our society for the post-oil era and give incentives to people to work hard," he said.

In April, the UAE Cabinet approved Dh11 billion in social assistance for low-income groups in the next three years.

Dr Al Khaili could not say how many UAE nationals are currently on welfare, but said that **a "soon to be revealed" report will detail how many families receive government aid.**

EDITOR'S COMMENT: Bravo UAE!!! Work is the a very important essense of life. When you work you fill fine! When you contribute to the society, you feel fine and proud! The benefit phenomenon should stop. People – especially young people – should realize that they cannot start their career as directors or head of office before going through all steps of evolution. Certain EU countries have also axed the benefits given to immigrants. In Greece thousands are givn benefits without providing even a single hour of community work. Sitting under the sun is not a profession and governents need to do something about this. We do not pay myriads of taxes for sitting professionals. Follow the UAE example!

UN members adopt global migration pact

Source: https://www.aljazeera.com/news/2018/12/members-adopt-global-migration-pact-181210092353957.html

Dec 10 - Leaders from **164 countries** have agreed to a global pact that sets in action a plan "to prevent suffering and chaos" for global migration despite opposition and several withdrawals, including from the United States.

The Global Compact for Safe, Orderly and Regular Migration (GCM) was agreed upon on Monday at an intergovernmental conference in Marrakech, Morocco.

A non-binding agreement, the GCM aims to better manage migration at local, national, regional and global levels, including reducing the risks and vulnerabilities the migrants or refugees face at different stages of their journey.

"Migration is a natural phenomenon," German Chancellor Angela Merkel said. "It happens all the time all over the world. If it happens legally, it's a good thing."

The pact had been approved in July by all 193-member nations except the US, which backed out last year.

In addition, Australia, Austria, Latvia, Czech Republic, Hungary, Chile, Dominican Republic, Poland and Slovakia refused to attend the summit and sign the accord.

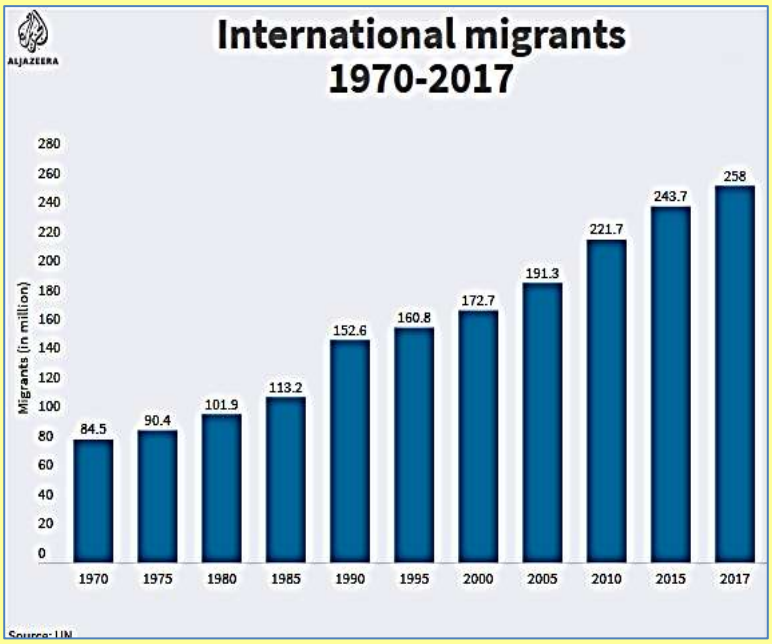
Meanwhile, Bulgaria, Estonia, Italy, Israel, Slovenia and Switzerland are still undecided on whether to agree to the new pact.

"This moment is the inspiring product of dedicated and painstaking efforts," said Antonio Guterres, the UN secretary-general, at the opening of the conference on Monday.
"Migration has always been with us. But in a world where it is ever more inevitable and necessary, it should be well managed and safe, not irregular and dangerous.
"National policies are far more likely to succeed with international cooperation."

Increasing migration numbers

There were 258 million international migrants in the world last year, increasing almost 50 percent since 2000, according to the UN.

The number of migrants, representing 3.4 percent of the world's population, is increasing faster than the global population, driven by economic prosperity, inequality, violence, conflict and climate change.
Around 80 percent of the world's migrants move between countries in a safe and orderly fashion. But more than 60,000 people have died on the move since the year 2000, according to the UN.
In 2018 alone, more than 3,300 people have "died or gone missing in the process of migration towards an international destination", says the International Organization for Migration (IOM).
Even in transit countries, or the country of destination, racism, discrimination and human-rights violations are continuously reported.



Anti-migration stance

From the US to Europe and beyond, right-wing leaders have taken increasingly draconian measures to shut out migrants in recent years.
US President Donald Trump has pledged to build a wall on the US-Mexico border and has focused his recent ire on a migrant caravan from Central America, while a populist coalition government in Italy has clamped down on boats rescuing migrants or refugees at sea.
"It is true that some states are not with us today," said Guterres. "I can only hope that they will see the GMC's value for their own societies and join us in this common venture."
On Friday, the US took a fresh swipe at the pact, labelling it "an effort by the United Nations to advance global governance at the expense of the sovereign right of states."
But a host of other nations led by German Chancellor Angela Merkel are in Morocco to endorse the deal and the UN, and rights organisations, remain upbeat that it can help the world better cope with the issue.
"Fortunately, not many countries were against the pact but there were some important countries in terms of economic influence," Francesco Rocca, International Federation of Red Cross and Red Crescent Societies (IFRC), told Al Jazeera.
"So, it's a concern they decided not to be present. This is political instrumentalisation. The GCM is very clear as it has no interference in internal policies or laws but only preserving [the] dignity of human beings. Anyone who has good faith should have agreed to this pact."
The UN General Assembly is set to adopt a resolution formally endorsing the deal on December 19 in New York.

EDITOR'S COMMENT: All three categories – illegal immigrants, legal immigrants and refugees – cannot be placed under the same roof (global migration pact). The key-word here is "orderly" – wait to see the implementation of this decision (if and when).

Greek court rejects early release request by terror convict

Source: https://in.news.yahoo.com/greek-court-rejects-early-release-request-terror-convict-121407044.html

Dec 10 — A Greek court on Monday rejected a request for early prison release by an extremist convicted of terrorism for killings by the defunct November 17 group.
A panel of appeals judges rejected the request of Savvas Xiros, who applied for early release under legislation designed to ease prison overcrowding by allowing some convicts out on health grounds.
Xiros is serving five life sentences plus 25 years for his participation in November 17, an elusive group that killed 23 foreign diplomats and Greeks between 1975 and 2000. Xiros was caught after a bomb he planted exploded prematurely in 2002, severely injuring him. The blast left him with permanent vision and general health problems.
His interrogation led to the quick unravelling of the group, which included two of Xiros' brothers.
Xiros' lawyer, Anny Paparoussou, described the decision as "unacceptable," and told The Associated Press that her client would appeal to the Supreme Court.

Strasbourg Attack Fits Previous Model of Criminal-Terror Nexus in Europe

December 12
By Seth Frantzman
Source: https://www.meforum.org/articles/2018/analysis-strasbourg-attack-fits-previous-model-of

Seth Frantzman *is The Jerusalem Post's op-ed editor, a Writing Fellow at the Middle East Forum, and a founder of the Middle East Center for Reporting and Analysis.*

Deaths from terrorism fell for the third consecutive year, after peaking in 2014

Source: http://www.homelandsecuritynewswire.com/dr20181211-deaths-from-terrorism-fell-for-the-third-consecutive-year-after-peaking-in-2014

Dec 11 – The Global Terrorism Index 2018, just released by the Institute for Economic & Peace (IEP), shows the total number of deaths decreased by 27 percent in 2017, with the largest falls occurring in Iraq and Syria. A drop in fatalities was also reflected in country scores with 94 countries improving, compared to 46 that deteriorated. Alongside the fall in terrorism, the global economic impact of terrorism has also dropped, decreasing by 42 percent to $52 billion in 2017.

Strasbourg attack suspect has criminal past in Germany

Source: http://www.homelandsecuritynewswire.com/dr20181212-strasbourg-attack-suspect-has-criminal-past-in-germany

Dec 12 – Cherif Chekatt, 29, the suspect in the Tuesday's Strasbourg terror attack, has a criminal record in France, Germany, and Switzerland, and spent time in German and French jails. French investigators say the suspect was radicalized in prison and was on a watch list.

Physical Threats to Critical National Infrastructure

By Tony Kingham (Editor)
World Security Report – Nov/Dec 2018
Source: http://www.torchmarketing.co.uk/wp-content/uploads/2018/11/WSRNovDec2018.pdf

When you look around at critical infrastructure with a certain eye and from a certain perspective, what you see is called in military terms "a target rich environment". Lots of high value sites, often very isolated, usually with long perimeters and in the main, thinly guarded if guarded at all. So, for the sake of simplicity, I'm going to look at each environment in turn, water, air and land.
Let's to start with waterside threats. Why? Because 90% of the world's cargo, 20% of trade, 25% of oil is transported by sea, making major ports the hubs of all global economic activity. Many other CNI sites are also on the coast, such as oil and gas terminals, desalination plants, and nuclear plants which require large amounts of water for the cooling process.

Tamil Tiger rebreathers and underwater scooters

Pick the right target, in the right place and the right time and you could cause enormous damage, not only to the target itself but to national and even international economies.
There are several possible attack scenarios but I'm going to start Under the Water, and the increasing threat posed by divers. There are two main methods of attack for divers. Either attaching a limpet mine to a craft or placing/tethering a mine on the sea or channel bed.
To have a significant impact on most large vessels, a relatively large quantity of explosives needs to be carried, which presents logistical problems for the diver, especially in strong currents.
Nevertheless, a strategically placed charge could cause significant damage and difficulties for cruise ships, naval vessels or even a single-hulled tanker.
Sri Lankan Tamil Tigers or Sea Tigers are probably the pioneers in maritime surface and sub-surface terrorism. Scuba divers of the Sea Tigers sank many small Sri Lankan naval vessels using crude limpet mines, several of which were reputed to be as large as 50 kilos.

▶▶ **Read the rest of this article at source's URL (pp.5-9)**

PIRACY – Expect the Unexpected

World Security Report – Nov/Dec 2018
Source: http://www.torchmarketing.co.uk/wp-content/uploads/2018/11/WSRNovDec2018.pdf

What image do you see when you think of Pirates?
Long John Silver, in Robert Louis Stevenson's 1882 Novel "Treasure Island"?

Or perhaps you hark back to the dashing Errol Flynn and beautiful Olivia de Havilland, in "Captain Blood", or perhaps you are more a Johnny Depp type of person?

Whatever you see, the dashing, swashbuckling pirate, with his "daring do" which has been romanticised by the movie industry, the same way I suppose as The Great Train Robbers and Hatton Garden Diamond Thieves.

The reality is of course in total and stark contrast to the image that Hollywood projects. The 2013 film "Captain Philips" is perhaps a little closer to reality. Based on the true story of the 2009 Maersk Alabama hijacking in the Indian Ocean by pirates, it shows the terrifying ordeal of the crew, and in this case, the Captain who was taken hostage.

The ICC International Maritime Bureau (IMB) is a specialized division of the International Chamber of Commerce which acts as a focal point in the fight against all types of maritime crime. One of their principal areas of expertise is in the suppression of piracy.

Since 1992 the IMB Piracy Reporting Centre (IMBPRC) have offered a free 24-hour service for shipmasters to report any piracy, armed robbery, attack or stowaway incidents. Once information is received it is reported to the local law enforcement, and probably more importantly that information is immediately broadcast to all vessels in that ocean region, providing vital intelligence and increasing awareness.

The IMB "Live Piracy & Armed Robbery Report" lists the most recent attacks, enabling shipping companies to view the location of any current attacks, and assess further information pertinent to their journey/schedule. Taken from todays "Live Report" the following is a just a tiny snapshot of what is happening on our seas and oceans around the world, in this instance – Africa.

▶▶ **Read the rest of this article at source's URL (pp.16-17)**

MIT Team invents method to shrink objects to the nanoscale

Source: http://news.mit.edu/2018/shrink-any-object-nanoscale-1213

Dec 13 – M \IT researchers have invented a way to fabricate nanoscale 3-D objects of nearly any shape. They can also pattern the objects with a variety of useful materials, including metals, quantum dots, and DNA.

"It's a way of putting nearly any kind of material into a 3-D pattern with nanoscale precision," says Edward Boyden, the Y. Eva Tan Professor in Neurotechnology and an associate professor of biological engineering and of brain and cognitive sciences at MIT.

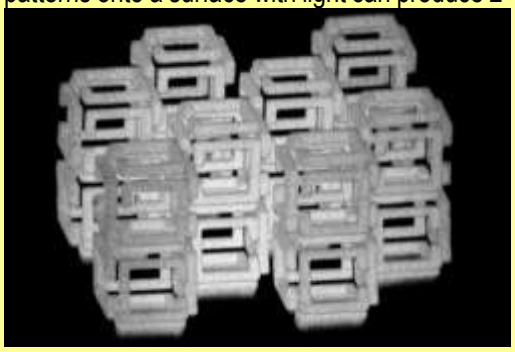
Using the new technique, the researchers can create any shape and structure they want by patterning a polymer scaffold with a laser. After attaching other useful materials to the scaffold, they shrink it, generating structures one thousandth the volume of the original.

These tiny structures could have applications in many fields, from optics to medicine to robotics, the researchers say. The technique uses equipment that many biology and

materials science labs already have, making it widely accessible for researchers who want to try it.
Boyden, who is also a member of MIT's Media Lab, McGovern Institute for Brain Research, and Koch Institute for Integrative Cancer Research, is one of the senior authors of the paper, which appears in the Dec. 13 issue of *Science*. The other senior author is Adam Marblestone, a Media Lab research affiliate, and the paper's lead authors are graduate students Daniel Oran and Samuel Rodriques.

Implosion fabrication

Existing techniques for creating nanostructures are limited in what they can accomplish. Etching patterns onto a surface with light can produce 2-



D nanostructures but doesn't work for 3-D structures. It is possible to make 3-D nanostructures by gradually adding layers on top of each other, but this process is slow and challenging. And, while methods exist that can directly 3-D print nanoscale objects, they are restricted to specialized materials like polymers and plastics, which lack the functional properties necessary for many applications. Furthermore, they can only generate self-supporting structures. (The technique can yield a solid pyramid, for example, but not a linked chain or a hollow sphere.)

To overcome these limitations, Boyden and his students decided to adapt a technique that his lab developed a few years ago for high-resolution imaging of brain tissue. This technique, known as expansion microscopy, involves embedding tissue into a hydrogel and then expanding it, allowing for high resolution imaging with a regular microscope. Hundreds of research groups in biology and medicine are now using expansion microscopy, since it enables 3-D visualization of cells and tissues with ordinary hardware.

By reversing this process, the researchers found that they could create large-scale objects embedded in expanded hydrogels and then shrink them to the nanoscale, an approach that they call "implosion fabrication."

As they did for expansion microscopy, the researchers used a very absorbent material made of polyacrylate, commonly found in diapers, as the scaffold for their nanofabrication process. The scaffold is bathed in a solution that contains molecules of fluorescein, which attach to the scaffold when they are activated by laser light.

Using two-photon microscopy, which allows for precise targeting of points deep within a structure, the researchers attach fluorescein molecules to specific locations within the gel. The fluorescein molecules act as anchors that can bind to other types of molecules that the researchers add.

"You attach the anchors where you want with light, and later you can attach whatever you want to the anchors," Boyden says. "It could be a quantum dot, it could be a piece of DNA, it could be a gold nanoparticle."

"It's a bit like film photography — a latent image is formed by exposing a sensitive material in a gel to light. Then, you can develop that latent image into a real image by attaching another material, silver, afterwards. In this way implosion fabrication can create all sorts of structures, including gradients, unconnected structures, and multimaterial patterns," Oran says.

Once the desired molecules are attached in the right locations, the researchers shrink the entire structure by adding an acid. The acid blocks the negative charges in the polyacrylate gel so that they no longer repel each other, causing the gel to contract. Using this technique, the researchers can shrink the objects 10-fold in each dimension (for an overall 1,000-fold reduction in volume). This ability to shrink not only allows for increased resolution, but also makes it possible to assemble materials in a low-density scaffold. This enables easy access for modification, and later the material becomes a dense solid when it is shrunk.

"People have been trying to invent better equipment to make smaller nanomaterials for years, but we realized that if you just use existing systems and embed your materials in this gel, you can shrink them

down to the nanoscale, without distorting the patterns," Rodriques says.
Currently, the researchers can create objects that are around 1 cubic millimeter, patterned with a resolution of 50 nanometers. There is a tradeoff between size and resolution: If the researchers want to make larger objects, about 1 cubic centimeter, they can achieve a resolution of about 500 nanometers. However, that resolution could be improved with further refinement of the process, the researchers say.

Better optics
The MIT team is now exploring potential applications for this technology, and they anticipate that some of the earliest applications might be in optics — for example, making specialized lenses that could be used to study the fundamental properties of light. This technique might also allow for the fabrication of smaller, better lenses for applications such as cell phone cameras, microscopes, or endoscopes, the researchers say. Farther in the future, the researchers say that this approach could be used to build nanoscale electronics or robots.
"There are all kinds of things you can do with this," Boyden says. "Democratizing nanofabrication could open up frontiers we can't yet imagine."
Many research labs are already stocked with the equipment required for this kind of fabrication. "With a laser you can already find in many biology labs, you can scan a pattern, then deposit metals, semiconductors, or DNA, and then shrink it down," Boyden says.
The research was funded by the Kavli Dream Team Program, the HHMI-Simons Faculty Scholars Program, the Open Philanthropy Project, John Doerr, the Office of Naval Research, the National Institutes of Health, the New York Stem Cell Foundation-Robertson Award, the U.S. Army Research Office, K. Lisa Yang and Y. Eva Tan, and the MIT Media Lab.

100 million euros worth of drugs found in ship held at Heraklio

Source: http://www.newgreektv.com/news-in-english-for-greeks/greece/item/27099-100-million-euros-worth-of-drugs-found-in-ship-held-at-heraklio

Dec 13 – Greek authorities on Friday reported the discovery of a massive haul of drugs with an estimated street value exceeding 100 million euros on board the Syrian-flagged freighter "Noka", which had been confiscated and was being held at the port of Heraklio, Crete.
According to the coast guard, the ship was carrying over six tonnes and 51.7 kilos of hashish, as well as **3,127,360 tablets of the hallucinatory drug Captagon** - also known as the 'jihadi drug' - that were hidden in containers on board the ship.

Coast guard officers said the drugs were stowed away in secret compartments formed by putting a fake double floor inside eight of the 18 containers on board the vessel, which had set sail from Syria and was

bound for Benghazi in Libya. They were further camouflaged by placing them among packets of coffee, spices and sawdust.

The 11-member crew of 10 Syrian nationals and one Indian national deny all knowledge of the illegal cargo.

The ship was seized in a coast guard operation south of Crete, with the assistance of divers. Due to poor weather conditions it was initially escorted to the port of Ierapetra and then to the port of Heraklio. According to the coast guard, while the ship was bound for Libya, at least a part of its illegal cargo would have ended up in Europe.
He said the bust, which was the largest quantity of captagon pills ever seized, was the result of dogged persistence by the coast guard officers taking part in the operation, who were convinced that the ship was engaged in suspect activity and spent days going through containers full of legitimate cargo to find the drugs.

World Youth Forum 2017

From 4-10 November 2017, Egypt held the World Youth Forum in Sharm El-Sheikh. A large group of young people from different nationalities and fields participated in the forum. They have come to the land of peace to discuss issues that occupy the world and to present their ideas freely and transparently. The World Youth Forum will be a global forum where peace-loving and pro-development peoples will join together to integrate civilizations and it will also serve as a platform for youth creativity.

President Abdel Fattah El Sisi addressing youth on migration issues

When asked how he sees the fact that "several European countries are closing their borders for those who want to emigrate to Europe," his answer was extremely unexpected:

"Instead of asking why Europe closes the door, you have to ask why people in Afghanistan are not interested in making their country better.
"The same applies to Pakistan, Egypt, Syria, Libya, Iraq, Yemen and Somalia".
"It is considered unfair that both Orban and others are unwilling to accept migrants with your terms.
"It is because foreigners, who often want to have the privileges of a European society, are mistakenly trying to preserve their cultures that are different from the Western world.
"You seek immigration with your civilization, and you claim that this belongs to human rights; this is Wrong!
"When you migrate to another state, you do not seek to change it, but fully follow its laws, procedures, traditions and culture.
"If you are not prepared to do so, you do not have to migrate. Stay in your own countries and seek to bring changes there that will improve your life."

Airport security screening without queues

Source: http://www.homelandsecuritynewswire.com/dr20181218-airport-security-screening-without-queues

Dec 18 – A research team led by The Australian National University (ANU) has invented a device that could be developed into ultra-sensitive cameras for security screening which would not require people to queue at airports.

Other applications could include smaller and safer sensors for driverless vehicles.

Lead researcher Dr. Mingkai Liu said the research had already led to a proof-of-concept prototype device and provisional patent.

ANU notes that the device is made with metasurfaces, which are ultra-compact complex structures that can control the direction of electromagnetic waves to perform highly advanced sensing functions.

"This device can sense the entire environment surrounding it with unprecedented precision - previously, multiple fixed sensors pointing towards different directions would be required to achieve this," said Dr Liu from the Nonlinear Physics Centre at the ANU Research School of Physics and Engineering.

Dr. Liu said the concept could benefit the development of super-sensitive cameras for security systems at airports.

"These future cameras could identify hazardous devices or dangerous chemicals in people's carry-on baggage when they walk through an airport, without needing them to queue up and go through the various procedures that are necessary now," he said.

"Unlike conventional cameras used in CCTV, this type of camera cannot recognize people's faces."

Dr. Liu said the concept could provide a new foundation for next-generation electromagnetic devices, including more compact sensors for driverless cars and other vehicles that can help to overcome safety challenges encountered with today's technologies.

These safety challenges include sensing hazards in rough weathers or narrow spaces.

Co-author Dr. David Powell said the new device was the first of its kind to be arbitrarily tuneable so that it can direct electromagnetic waves towards any direction or control multiple beams to perform different functions at the same time.
"Our research provides the first theoretical and experimental demonstration that dynamic and arbitrary control of electromagnetic waves is possible," said Dr Powell from the Nonlinear Physics Centre at the ANU Research School of Physics and Engineering.
Professor Ilya Shadrivov, the leader of the microwave and terahertz group at the Nonlinear Physics Centre, said the research team would continue to develop the device so that it is ready to be commercialized and manufactured on a large scale.
"We are very interested in realizing the concept at other frequency bands, including terahertz and even optical frequencies. We also hope to collaborate with industrial partners to explore the full potential of this concept in practical applications," Professor Shadrivov said.

— Read more in Mingkai Liu et al., "Huygens' Metadevices for Parametric Waves," Physical Review X 8, no. 3 (20 September 2018).

Medical problems of U.S. Havana embassy personnel explained

Source: http://www.homelandsecuritynewswire.com/dr20181218-medical-problems-of-u-s-havana-embassy-personnel-explained

Dec 18 – A team of University of Miami Miller School of Medicine faculty, along with collaborators from the University of Pittsburgh, today presented the first report of acute symptoms and clinical findings in 25 diplomatic personnel living in the U.S. Embassy in Havana, Cuba, who experienced severe neurosensory symptoms after exposure to a unique sound and pressure phenomenon.
"Objective testing showed evidence of a balance disorder that affects the inner ear and a unique pattern of cognitive and behavioral dysfunction," said Dr. Michael E. Hoffer, professor of otolaryngology and neurological surgery. "This cluster of auditory and neurological symptoms, along with associated psychological issues, does not resemble more classic traumatic brain injury (TBI) based on our team's vast experience in this area."
Hoffer was lead author of the study, "Acute Findings in an Acquired Neurosensory Dysfunction," just published in the journal *Laryngoscope Investigative Otolaryngology*. Miami notes that the Miller School study included a review of 25 individuals at the U.S. Embassy who reported a localized sensation of noise/pressure and 10 individuals who were roommates of those affected and did not experience the phenomenon.
"This is the first and only report of the acute presentation (seen shortly after exposure) in this unique group of patients," said Hoffer. "Our findings are not biased or influenced by the effects of time, variable amounts of rehabilitation, workers compensation concerns, or media attention. It is an important contribution to this field, and these data will provide further insights into determining what happened."
Carey D. Balaban, professor of otolaryngology, University of Pittsburgh School of Medicine, was co-author of the study, along with the Miller School's Hillary Snapp, associate professor of otolaryngology and chief of Audiology; Bonnie E. Levin, professor of neurology and director of the Division of Neuropsychology; and doctoral student James Buskirk.
"Understanding the acute symptoms is important in order to better define the clinical presentation which we hope will lead to more accurate diagnosis in future cases," said Levin. "Furthermore, careful documentation of the initial injury pattern is needed to develop effective preventive and treatment strategies. We believe our findings bring to light the complexity of the acute clinical picture which is best addressed by a team of researchers."
The collaborative study shows the power of a large interdisciplinary team that spans specialties and universities," said Balaban, who has studied the circuits to the brain relating to balance disorders, anxiety, and migraines in patients at the University of Pittsburgh. "A holistic integrative approach is vital for understanding the scientific basis of this complex disorder."

"This is a perfect example of how academic medicine brings together expertise and collaboration in the name of discovery and science," said Dr. Henri R. Ford, dean and chief academic officer of the Miller School of Medicine.

The onset of symptoms

Beginning in late 2016 and continuing into 2017, a number of U.S. diplomats and family members stationed in Havana began to report complaints of sudden-onset dizziness, ear pain, and tinnitus. Most of the affected individuals reported hearing an unexplained noise before the symptoms began. They noted the sound was loud, localized, at a high frequency and could follow them throughout a room. Several individuals reported that if they went outside their front door, the noise immediately stopped. Others reported a sensation of pressure passing through their head and abdomen in certain parts of the room that could be relieved by moving a few feet away.

In February 2017, Hoffer, a former military officer with security clearance, was contacted by the U.S. State Department about an individual who reported hearing an odd noise followed by intense ear pain and tinnitus. By the next morning, the individual was dizzy and had mild cognitive issues, such as processing emails slowly and forgetfulness.

Evaluating the cases

Over the next few months, the Miller School team conducted evaluations of all individuals who suspected they were affected between 4 and 60 days after exposure, as well as a larger group of 105 embassy workers who denied any "exposure" to noise or a pressure sensation.

The evaluations were carefully coordinated and conducted by multidisciplinary medical teams from otolaryngology and neurology. "Our broadly scoped team of 15 audiology and neurotology specialistsdraws on our advanced vestibular testing technology for diagnosis and treatment and management, thanks to the Miller School's longstanding investment in our clinical program," said Snapp.

All of the 25 individuals with symptoms noticed unsteadiness and features of cognitive impairment, according to the study. Dizziness (92 percent) and cognitive complaints (56 percent) were the most common symptoms. Formal testing revealed that 100 percent of individuals had an otolithic (balance) abnormality and evidence of cognitive dysfunction, as documented by a battery of standardized measures.

After the evaluations, a number of the patients were treated for balance, cognitive and emotional disorders. "We reviewed options for therapeutic interventions to address their physical, mental, and emotional issues," said Levin.

Considering the cause

While the Miller School study did not attempt to determine the cause of the symptoms in the U.S. Embassy residents, the authors noted that intense ultrasonic radiation can produce "a syndrome involving manifestations of nausea, headache, tinnitus, pain, dizziness, and fatigue," based on occupational health literature. "The exposure responsible for these findings is unknown," said the co-authors. "It would be imprudent to exclude any potential directed or non-directed energy sources at this time."

PERSPECTIVES ON TERRORISM
a journal of the Terrorism Research Initiative

Volume XII, Issue 6; December 2018
ISSN: 2334-3745 (Online)
Source: https://www.universiteitleiden.nl/perspectives-on-terrorism/archives/2018#volume-xii-issue-6

This Special Issue on Terrorism from the Extreme Right has been guest-edited by Jacob Aasland Ravndal and Tore Bjørgo, both based at the Center for Research on Extremism (C-REX) at the University of Oslo. Last year, we invited a select group of scholars to submit original analyses of key developments in the field of right-wing extremism, violence and terrorism, with a special emphasis on contemporary actors, their modus operandi, and the conditions shaping them. All those who had submitted papers were also invited to a workshop at the University of Oslo on 15-16 February 2018 in order to discuss and revise their original manuscripts. A selection of these manuscripts was then submitted for external peer-review and eventually approved for publication in this Special Issue of *Perspectives on Terrorism*.

Following the 9-11 attacks in 2001, extreme-right terrorism has received far less scholarly and political attention than Islamist terrorism. However, as several of the contributors to this Special Issue make clear, violence committed by extreme right perpetrators represents a very real threat, although it differs considerably from Jihadi terrorism in a number of ways. With a few notable exceptions, political violence from the extreme right tends, in many Western countries, to be more frequent than that from Salafist jihadists. At the same time, right-wing attacks usually result in fewer victims per attack than the ones emanating from jihadi terrorists. However, cumulatively, incidents of extreme right-wing violence add up to large numbers, as in Russia, where 459 people were killed in 406 deadly events between 2000-2017 (Enstad, in this issue).

This Special Issue of *Perspectives on Terrorism* explores the modus operandi of extreme right terrorism and violence - investigating why but also how violent events occur. It is the first Special Issue of an academic journal on terrorism from the extreme right since a 300 pages strong Special Issue on this topic was published in Vol. 7, Issue 1 of Terrorism and Political Violence in the Spring of 1995, also guest-edited by Tore Bjørgo. In the meantime, much has happened in terms of conceptual development and improvements in data quality, as well as theory formation. These developments are analysed in more detail in the introductory article to the current Special Issue, where Jacob A. Ravndal and Tore Bjørgo compare the contents of both Special Issues, aiming to bring this research field one step further.

Table of Contents

EDITOR'S COMMENT: In the "Anders Behring Breivik" article and gven the fact that both writers are Norwegians, I was expecting to read a small paragraph about the asymmetric potential of the specific terrorist. In his "2083" Manifest it is worth reading pages 955 to 1065 in order to realize that

the hecatomb he caused was just a fraction of what he was intented to do. From personal experience, I think that only very few Norwegian CBRN first responsers have read these chapters.

Does terrorism work? We studied 90 groups to get the answer

By John A. Tures

Source: http://www.homelandsecuritynewswire.com/dr20181220-does-terrorism-work-we-studied-90-groups-to-get-the-answer

Dec 20 – The famous Christmas Market in Strasbourg, France, became the latest place to be struck by terrorists.

On 12 December 2018, a gunman on a terror watch list named Cherif Chekatt yelled "Allahu Akbar" and opened fire on shoppers, killing five people and wounding 11, according to media reports. The attack was labeled terrorism by a Paris prosecutor.
The shooting grabbed headlines around the world. But do such terror attacks actually work?
I am a scholar of international relations. My students and I conducted an analysis of political groups around the world to answer this question.

Comparing terror groups with peaceful ones
We examined 90 political groups to determine whether terrorism works to achieve a group's goals.
Half of the groups we studied used terrorism to achieve their ends, and the other half used peaceful means.
One example of a peaceful group was the Catalan movement in Spain that held a peaceful vote to support their declaration of independence.
We made sure the groups we designated as using terrorism fit the definition set out by expert Bruce Hoffman, who defines terrorism as "the deliberate creation and exploitation of fear through violence or the threat of violence in the pursuit of political change."
To choose the 90 groups, we identified 45 pairs of groups operating in the same country or region in relatively the same time period.
For example, in Chile during the rule of autocratic dictator Augusto Pinochet from 1973 to 1990, people organized to end his rule.
One group, Chile's Concertación, sought to bring Pinochet down using a referendum. Meanwhile, the Manuel Rodriguez Patriotic Front opposed Pinochet with shootings, bombings, kidnappings and assassinations.
We found that only six of the 45 terror groups – that's 13.3 percent – accomplished their broader goals; the others did not.
Meanwhile, among the 45 groups that chose not to use terrorism, 26 – or 57.8 percent – achieved their objectives, while 19 did not.

Short-term success, long-term failure
Many people see the few examples of when terrorism "works" as evidence that it is an effective long-term strategy.
For example, Hezbollah is a Lebanese terror group that, among other goals, opposed Israeli occupation of Southern Lebanon from 1982 to 2000 with kidnappings, bombings and assassinations. The group claimed success in 2000, when Israel decided to end their long and expensive occupation of Southern Lebanon. However, the "victory" deserves greater scrutiny.
There is evidence that Israel's withdrawal was more a result of domestic Israeli politics than anything Hezbollah did. Moreover, the region Hezbollah "controls" in Lebanon is the poorest, most economically backward and politically repressive place in the country, according to a report from The Atlantic magazine. It's ruled more by fear of the terrorists than any sort of competence such leaders demonstrate to justify their legitimacy. Many Lebanese see Hezbollah as needlessly provoking Israel into attacks on their border.
It's hard to call this a clear victory for terrorism. Terrorists may be adept at setting off a bomb or designing a suicide vest laden with explosives.
As political scientist Robert Pape points out in his book *Dying to Win: The Strategic Logic of Suicide Terrorism*, they might even occasionally achieve a limited goal, as Hamas was able to undermine the fragile Israeli governing coalition in the next election, with a campaign of suicide bombings.
But when it comes to accomplishing broader strategic goals, such as destroying the entire Israeli state or forcing a complete Jewish evacuation of the West Bank, terrorists usually fail.
Terrorists can threaten modern nation-states into offering minor concessions, such as giving up a small piece of territory, forcing the resignation of a leader or promising to return to the negotiating table, Pape writes.

But nation-states are too militarily and economically strong to be overthrown by terrorists, or to surrender their own aims that they see as vital to national security, according to Pape.
Additionally, terrorists – if they participate in the democratic process – may well be shunned by voters when the fighting stops. Or, instead of achieving those lofty aims, they may achieve a hollow political victory at best, ending up with power over a failed state that could dissolve into anarchy.
Those who claim terrorism works typically point to Israel and the election of terror leaders Menacham Begin and Yitzhak Shamir.
This example ignores that the fact that it took decades for these leaders to eventually come to power, as Israeli voters repeatedly rejected them at the ballot box, in favor of more moderate candidates. For example, Begin lost eight elections before he finally won his first. Only when these former terrorists moderated their positions did they become acceptable to the public.

***John A. Tures** is Professor of Political Science, Lagrange College.*

U.K.'s Gatwick Airport closed after drones fly over runways

Source: http://www.homelandsecuritynewswire.com/dr20181220-u-k-s-gatwick-airport-closed-after-drones-fly-over-runways

Dec 20 – Several sightings of unmanned aerial vehicles over the airport's runway grounded and rerouted flights overnight. Gatwick is Britain's second-busiest airport after Heathrow

Two drones flying over London's Gatwick Airport caused airport officials to suspend and divert flights on Wednesday and Thursday. The airport's runway remains closed until further notice, following multiple drone sightings that began Wednesday evening. Although the runway was reopened at 3 a.m. GMT on Thursday, another drone sighting 45 minutes later caused it to be closed again.
As a result, planes were unable to depart, while a number of flights scheduled to land were diverted to other airports.
In a statement, Gatwick Airport apologized to passengers for the disruption. "We advise anyone flying from Gatwick or collecting someone from the airport on Thursday 20th December, to check the status of their flight," the statement read. The message was posted on the airport's Twitter account.

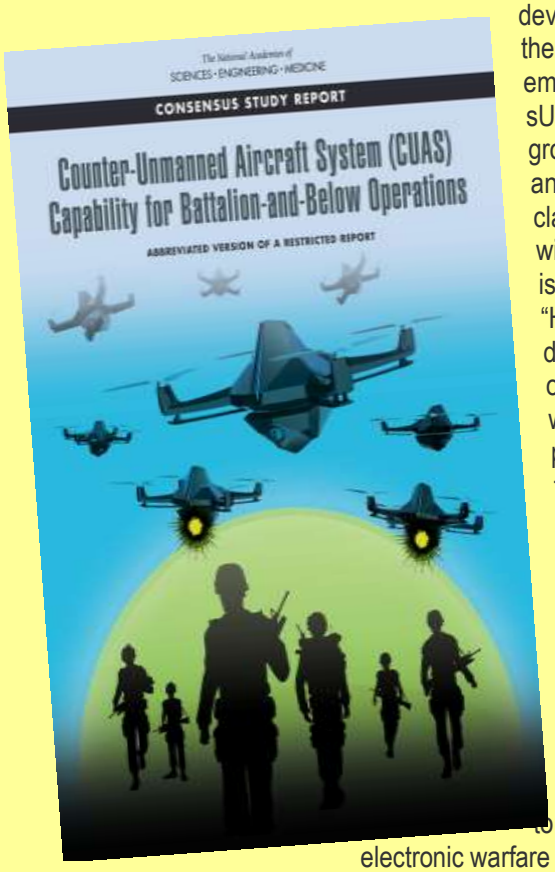
Gatwick Airport said the incident was being investigated by police and that an update would be issued once authorities had "suitable reassurance that it is appropriate to re-open the runway."
The *Telegraph* reports that the police said the drone flights were a "deliberate act to disrupt the airport," but that there were "absolutely no indications to suggest this is terror-related."
"We are continuing to search for the operators," Sussex police said. Authorities wrote on Twitter asking for the public's help in finding the operator of the drones, including a direct phone line.
Chris Woodroofe, Gatwick's chief operating officer, said the shutdown had affected roughly 10,000 people by Thursday morning, including 2,000 whose planes were not allowed to take off, 2,000 who were unable to leave their points of origin and 6,000 who were diverted to other airports in Britain and Europe. Gatwick Airport reports that some 760 flights were scheduled to arrive and depart Thursday, affecting another 110,000 people.
In July 2018, the United Kingdom made it illegal to fly a drone within one kilometer (0.6 miles) of an airport, in an effort to tackle the issue.
The number of near misses between private drones and aircraft more than tripled between 2015 and 2017. Some 92 incidents were recorded 2017, while 117 have taken place so far this year, according to the UK Airprox Board.
"Even two kilograms of metal and plastic, including the battery, hitting an aircraft windscreen, engine, or a helicopter tail rotor, could be catastrophic," Rob Hunter, head of flight safety at the British Airline Pilots Association (BALPA), said in a recent statement.

In October, an unmanned device "put 130 lives at risk" after nearly hitting an aircraft that was approaching the airport, BALPA said.
Thursday's closing comes ahead of the busy Christmas season. Gatwick, Britain's second-busiest airport after Heathrow - Europe's biggest airport - is expecting a "record-breaking" 2.9 million passengers during the holidays.

Unclassified Version of New Report Predicts Small Drone Threats to Infantry Units, Urges Development of Countermeasures

Source: http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=24747

The emergence of inexpensive small unmanned aircraft systems (sUASs) that operate without a human pilot, commonly known as drones, has led to adversarial groups threatening deployed U.S. forces, especially infantry units. Although the U.S. Army and the U.S. Department of Defense (DOD) are developing tactics and systems to counter single sUASs, a new report by the National Academies of Sciences, Engineering, and Medicine emphasizes the need for developing countermeasures against multiple sUASs — organized in coordinated groups, swarms, and collaborative groups — which could be used much sooner than the Army anticipates. The committee that conducted the study developed a classified report that details its findings and recommendations, along with an unclassified public version that discusses key background issues presented in this news release.



"Hobby drones are easy to buy, their performance is improving dramatically, and their cost has dropped significantly; now with millions of them around the world, they pose a growing threat to the U.S. warfighting forces if used for nefarious intents," said Albert Sciarretta, president of CNS Technologies and chair of the committee. "The threats could be consumer items like hobby drones, modified consumer items such as could be assembled with online components, and customized ones, like built-from-scratch aircraft."
The committee that authored the report was asked by the U.S. Army to assess the threat from sUASs, especially when massed and operating collaboratively, examine the current capabilities of military units to counter them, assess related human performance issues, and identify technologies appropriate for short- and long-term science and technology investments by the Army.
Readily available, high-performance, sUASs can be easily modified to carry lethal weapons, identify targets at long ranges, and conduct electronic warfare attacks. As the capabilities of hobby drones improve at a rapid pace, the added threat from coordinated groups, swarms, and collaborative groups of sUASs will pose a substantial challenge to U.S. armed forces, the report says.
"Modified hobby drones can be used to support conventional and unconventional attacks. For example, they can be fitted with external or embedded explosives designed to explode on contact," added Sciarretta. "In addition, they can be used by adversaries to jam our radio frequency signals and to support their information operations. When these sUASs are combined in groups or swarms, their threat is significantly enhanced."
Countering sUASs first requires detection and identification, which is very difficult because they are small, fly at low altitudes, can have highly irregular flight paths, and travel at a range of speeds, the report says. Moreover, a sUAS can also take advantage of the surrounding

environment, for example, by concealing itself among trees or blending in with a flock of birds.
Even after threats are identified, countering sUASs can be challenging, the report says. The Army and DOD have invested significantly in technologies in response to these threats, often focusing on detecting radio frequency transmissions of the sUASs or their operators. However, the report highlights that today's consumer and customized sUASs increasingly can operate without radio frequency command-and-control links by using automated target recognition and tracking, obstacle avoidance, and other capabilities enabled by software.
The study was sponsored by the U.S. Army. The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions that provide independent, objective analysis and advice to the nation to solve complex problems and inform public policy decisions related to science, technology, and medicine. They operate under an 1863 congressional charter to the National Academy of Sciences, signed by President Lincoln.

EDITOR'S COMMENT: A very good report; very informative for the non-specialist. But it gives you the crips of the future capabilities of UAV. Especially the malicious ones. Remember a previous article with the UAV entering a university building and start shooting students in the amphitheater? In that respect the Gatwick incident (3 days not two as decribed above), looks like an innocent joke compared what drones can do if decide to attacj a commercial get engine during landing or take off. Out of nowhere, targets the tourbine, end of story…

More drone sightings at London's Gatwick airport

Source: http://www.homelandsecuritynewswire.com/dr20181221-more-drone-sightings-at-londons-gatwick-airport

Dec 21 – New drone sightings Friday caused more chaos for holiday travelers at London's Gatwick Airport, which reopened in the morning after a 36-hour shutdown only to hastily suspend flights for more than an hour in the late afternoon on one of the busiest travel days of the year. The on-going chaos raised a host of questions for British officials, including how safe is it to fly with drones around and why can't the country's police, military and aviation experts catch those responsible since they have been investigating the drone invasions since Wednesday night.
New drone sightings Friday caused more chaos for holiday travelers at London's Gatwick Airport, which reopened in the morning after a 36-hour shutdown only to hastily suspend flights for more than an hour in the late afternoon on one of the busiest travel days of the year.
The reopening, closing and re-reopening of Britain's second-busiest airport due to repeated drone sightings raised a host of questions for British officials. Those included how safe is it really to fly with drones around and why can't the country's police, military and aviation experts catch those responsible since they have been investigating the drone invasions since Wednesday night.
The Friday night flight suspension at Gatwick caused still more delays and cancellations just as the holiday travel season peaked. Tens of thousands of travelers have been stranded or delayed due to the persistent drone crisis at Gatwick, located 30 miles (45 kilometers) south of London.
The latest drone sighting came after British police and transport officials said extra measures had been put in place to prevent drones from intruding on the airport, which serves 43 million passengers a year.
Military forces with special equipment have been brought in and police units are working around-the-clock, but the culprit or culprits have not been found. Police say a sophisticated drone operation is targeting the airport to cause maximum disruption during the holiday rush.
The motive for the drone invasion wasn't clear but British police said there are no indications it was "terror related."

'Unprecedented' disruption

Gatwick reopened at about 6 a.m. Friday after having been shut down Wednesday night and all-day Thursday after authorities said drones repeatedly violated the airport perimeter, threatening the safely of incoming and outgoing planes.

Transport Secretary Chris Grayling said Friday morning there had been about 40 sightings of "a small number of drones" while the airport was shut down. He told the BBC that the drone disruption at Gatwick was "unprecedented anywhere in the world."
Grayling said additional "military capabilities" and a range of security measures had been put in place overnight but would not elaborate. He said the airport was considered safe for flights Friday even though the drone operator or operators had not been apprehended.
The Thursday shutdown upended the travel plans of tens of thousands of passengers, since about 110,000 people had been scheduled to pass through Gatwick that day.
After flight operations restarted Friday, the airport struggled to resolve a massive backlog of passengers and canceled, delayed or diverted flights. The number of passengers expected Friday was even higher than the previous day, and about 145 of Friday's 837 scheduled flights at Gatwick were cancelled to handle the crush.

Second shutdown
Then, in a shock, Gatwick takeoffs and landings had to be suspended again as a "precaution" after reports that a drone was spotted about 5:10 p.m., the airport said.
Planes circled over London or sat at Gatwick gates, waiting to find out what would happen Friday night, before getting a new "all-clear" about 80 minutes later.
"The military measures we have in place at the airport have provided us with reassurance necessary to reopen our airfield," the airport tweeted moments after flights resumed.
The hundreds of travelers who were stuck overnight at Gatwick by Thursday's closure described freezing conditions as they slept on benches or the airport floor. Many complained they weren't being kept informed about re-routed flights.
British officials, meanwhile, were debating whether shooting down a drone was an available "tactical option" due to concerns that such an action could inadvertently hurt people on the ground.
"Shooting the drone out of the sky is probably one of the least effective options" available, said Assistant Chief Constable Steve Barry of Sussex Police.
He said police believe there was more than one drone operating around Gatwick in the last two days and that it was possible the drones were being operated from fairly far away.

Gatwick drone drama shows how even unarmed UAVs can cause economic chaos and risk to life

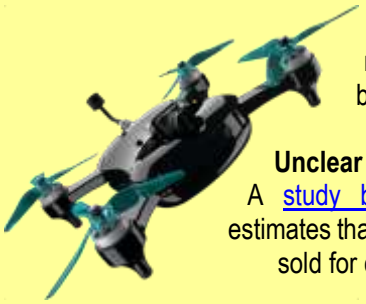
By Anna Jackman
Source: http://www.homelandsecuritynewswire.com/dr20181221-gatwick-drone-drama-shows-how-even-unarmed-uavs-can-cause-economic-chaos-and-risk-to-life

Dec 21 – One of the amazing things about the recent drone incident at London Gatwick is that the appearance of two unmanned aerial vehicles flying into operational runway space prompted the closure of Britain's second-busiest airport for more than a day. **This is by no means the first incident of drones causing problems at airports, but the event at Gatwick is unusual in both the length of its duration and the presence and repeated use of multiple drones.** The growing availability and affordability of consumer drones means that risks to airports, and other secure spaces will rise – and the counter-measures currently deployed against them leave room for improvement and need to be more widely adopted.
One of the amazing things about the recent drone incident at London Gatwick is that the appearance of two unmanned aerial vehicles flying into operational runway space prompted the closure of Britain's second-busiest airport for more than a day. With further sightings of drones, Gatwick only reopened to limited service after a 36-hour interruption, and those responsible for operating the drone remain at large.
With more than 110,000 passengers on 760 flights due to depart Gatwick on just one of the

affected days, these drone incursions have left a trail of disruption behind them.

This is by no means the first incident of drones causing problems at airports – there have been similar incidents in Canada, Dubai, Poland and China. But the event at Gatwick is unusual in both the length of its duration and the presence and repeated use of multiple drones.

The growing availability and affordability of consumer drones means that risks to airports, and other secure spaces will rise – and the counter-measures currently deployed against them leave room for improvement and need to be more widely adopted.



Unclear motives

A study by the Remote Control Project estimates that around 200,000 drones are being sold for civilian use around the world every month. Readily available from a range of online and high-street outlets, drones are becoming more commonplace and more affordable for the hobbyist.

As they move from a niche product to a more mainstream device, they have also caught the eye of growing number of hostile groups – and state militaries as well as terrorists and other non-state actors are increasingly deploying drones on the battlefield.

The Islamic State, for example, has used drones to drop explosives, to observe and direct fire for others, and to capture footage for propaganda.

Elsewhere drones have been used to cause disruption at home, such as the drone "assassination attempt" on the Venezuelan president, Nicolas Maduro, in August 2018.

The incident at Gatwick has not been labelled a "terrorist event", but whether "criminal, careless, or clueless" it demonstrates that even consumer drones can cause risk to life and economic activity, despite being unarmed.

Deliberate disruption

Sussex Police have referred to the at-large drone pilot's actions as "deliberate disruption". At a recent Countering Drones conference I spoke precisely about how both consumer and DIY drones may be flown and modified to do this. Delegates at the conference debated, lamented and reflected on the potential responses to such deliberate disruptions, considering their potential effects on crowds, sensitive infrastructure, or at political events.

The presence of an unknown drone can both unnerve and cause panic – and this could be further amplified, considering the potential for drones to be outfitted with weapons, or means to disperse hazardous materials.

In seeking to future proof how we think about drones and their risks, it is worth considering how drone technology and software is developing. There are now intelligent flight modes that allow drones to track and follow designated individuals, basic swarming functionalities that allow multiple drones to act in coordination, and the livestreaming of images to social media, meaning that drones can potentially be used for live propaganda.

Countermeasures

A question frequently asked is, for example at Gatwick, why don't the police shoot down the drone? While armed police were present and joined by specialists from the armed forces, apprehending operators remains difficult because of their distance from their drone. It is dangerous to shoot down a drone due to the risks of falling objects and stray bullets, but due to their small size drones are also difficult to detect before they are close enough to become a problem.

There has been however a boom in the development of a range of countermeasures designed to stop drones.

A recent report by Arthur Holland Michel of the Center for the Study of the Drone profiled more than 230 products produced by 155 manufacturers designed to counter drones.

Among them are those which seek to detect and alert users of approaching drones, to impede and stall drones through GPS and radio jamming or the embedding of electronic tagging and geo-fencing software, which prevent drones from being used near sensitive locations such as airports, prisons or power stations. There are also ways to to intercept and capture the drones using net-equipped drones and guns. Dutch national police have even trained eagles to intercept drones.

But counter-measures are inherently limited due to their implementation cost and cost-effectiveness - as well as by

legislation that governs the electromagnetic spectrum in which they function. Numerous reports have shown how preventative defences built into drones such as geo-fencing or altitude restrictions can be tampered with, overridden, or even simply switched off.
So there remains a serious difficulty in enforcing drone use and apprehending those that act illegally, despite recent convictions of those using consumer drones to transport contraband into UK prisons. It's not the first time Gatwick Airport has had to contend with an errant drone, but this occasion should be a wake-up call to the need for reliable and affordable counter-measures, and the need to think more creatively about the potential risks posed by (multiple) drones more widely.

Anna Jackman is Lecturer in Political Geography, Royal Holloway.

EDITOR'S COMMENT: So many technologies! So many excuses! So much ethical considerations and addiction to rules! Since helicopters can hover why don't they approach the drone and shoot it down with special ammunition that dissolves upon impact on the target? Until next drone incident coming soon in an airport near you!

Killer lasers, jammers and trackers: The cutting-edge technology police and the army are using in the hunt for Gatwick's drone of misery... so why haven't they found it yet?

Video (UAV sim attack): https://www.dailymail.co.uk/sciencetech/article-6517401/How-police-destroy-Gatwick-drone-misery.html

Dec 21 – The criminal who is illegally flying a drone at Gatwick Airport is being hunted by police and military personnel using cutting-edge technology. Gatwick has been brought to a standstill in the wake of the rogue drone terrorising the airport.
Several methods have been developed, including laser-laden drones, high-tech jammers and tracking the signal via triangulation, which may be used to end the fiasco. Human snipers have also been brought in to help with the pursuit of the drone.
The Army has been working on a 'Drone Dome' or 'kill-jammer' – which can 'soft kill' a drone by knocking out its communications or a 'hard kill' by shooting it down with a laser from up to two miles away - and may use this prototypical technology.
It remains unknown when the debacle will end and normal service will be resumed and how the drone fiasco will be drawn to a close.
Frequency jammers and early warning systems are common near US runways but are seldom employed in the UK.
Communication between the drone and the operator can also be used to pinpoint its location through triangulation, in a similar way to mobile phone tracking. Police are having difficulty locating the operator as the drone disappears when they close in with via triangulation. The process requires constant connection and if it is lost, so is the location of the perpetrator. As the drone disappears the signal vanishes and police are then unable to narrow down the location of the suspect. **Radio transmitters operate with a specific frequency range, one that has been set aside for RC car/aircraft use.**
If the drone is recovered, it should be a formality for the authorities to successfully identify the other component.
Physical methods of destroying the troublesome drone focus around two main ideas; a physical destruction of the device and a communications block which will see the drone lose contact with its controller and drop out the sky.
Earlier this year, Sussex announced it was one of the first counties to significantly invest in drone technology.

Assistant Chief Constable Steve Barry, head of Surrey and Sussex Police Operations, said at the time: 'We have invested significantly in training 38 operators to CAA (Civil Aviation Authority) accredited standard to give us every opportunity to use drones when appropriate to do so to critically assess the benefits. 'Our project, operating five drones, is by far the largest in the UK, and there are a number of forces around the country that are commencing drone trials and the information from their trials will be incorporated into our report.' 'Trained officers in Surrey and Sussex have used the existing drone for multiple operations over the past two years, including missing person searches, protester responses, airport security and crash scene investigations.'

When asked why the drones had not been deployed to pursue the rogue device the police force said: 'It

would be a case of luck really, if our drones happen to be in the air.

'They can only stay in the air for a limited time, I mean you can't have a drone continually flying, and there haven't been that many sightings. It's a case of pot luck really'

In May, London Southend Airport tested an anti-drone system which uses a combination of radio frequency and optical sensors to detect nearby drones.

The week-long trial using Metis Aerospace's Skyperion product saw test drones flown within a 2.5-mile (4km) radius of the airport in Essex - 40 miles away from London - for the two sensors to pick up, and it was said to have been a success.

In August, it was revealed that the British Army had bought an Israeli anti-drone system, which will be used to protect sensitive facilities in the UK.

The Multi-Mission Hemispheric Radars technology by Rada Electronic Industrials is said to provide 360-degree surveillance and be able to detect drones 3.5km (2.2 miles) away.

The Drone Dome, in which the technology is embedded, can disable an airborne drone in two seconds from its five kilowatt 'hard kill laser effector'.

Meanwhile a system developed by three British companies which is capable of jamming signals on unmanned aerial vehicle was trialled in its first public test by the US Federal Aviation Authority in June 2016.

The Anti-UAV Defense System (Auds) system - built by Enterprise, Chess Systems and Blighter - uses high powered radio waves to disable drones, effectively blocking their communication and switching them off in mid-air.

More recently in November 2017, a 'detective early warning system' and 'drone interference system' against unmanned aerial vehicles was trialled at Guangzhou Baiyun Airport in China, which has also faced issues with drones near airports.

The Cangqin system - which can work in all weather conditions - can monitor a low-altitude airspace five miles (8km) in diameter, and locate a drone three seconds after it becomes operative within the supervised range.

Earlier this year, China demonstrated the capability of its drone-killing lasers have successfully destroyed an unmanned aerial vehicle (UAV) from 1,000 feet (300 metres) away.

Back in Britain, research funded by the Department for Transport (DfT) found that a drone weighing 400g (14oz) could smash a helicopter windscreen, and one weighing 2kg (4lbs) could critically damage an airliner's windscreen

Is it possible to stop drones from flying in restricted areas?
Drones are a problem not only for airports - but also for prisons, where attempts have been made to send everything from phones to drugs.
The **law on drones** - or UAVs (unmanned aerial vehicles) - has been tightened in recent years but Jon Parker, managing director of UK drone training company Flyby Technology, says rules are irrelevant to bad actors. 'They will always get through. This isn't something that rules can help with because it doesn't matter what the rules were today, they've just broken those rules,' he explained.
Geofencing is used by most off-the-shelf commercial drones, which creates a software bubble around restricted areas that block aircraft from entering, but not all drone-makers include the feature and anyone building their own machine can exclude it.
Jamming is another option, which the US Federal Aviation Authority and China's Guangzhou Baiyun International Airport have already tested, but Mr Parker says the technique has its setbacks, notably because many drones use the same control link signal as WiFi networks.
Tokyo has resorted to a **police drone squad** to patrol important buildings and capture nuisance drones. Dubai, UAE has a similar project ongoing.
Aside from technological assistance, **eagles and falcons** have been explored as a possible solution for rogue drones, though the results were not as successful as hoped. In 2016, Dutch police began training eagles to hunt out drones, but a year later the programme was pulled as birds were apparently not always doing what they were trained to do and because of the cost.

Israeli Drone Dome helps Gatwick airport to avoid shutdown

Source: http://www.homelandsecuritynewswire.com/dr20181224-israeli-drone-dome-helps-gatwick-airport-to-avoid-shutdown

Dec 24 – After mysterious unmanned aerial vehicles caused 36 hours of paralysis at London's Gatwick Airport last week, stranding more than 100,000 travelers, the British military saved the day with one of six Drone Domes it had purchased a few months ago from Israel's Rafael Advanced Defense Systems.

ISRAEL21c reports that Rafael's Drone Dome pinpoints the suspicious drone and jams the radio frequencies used by its operator to control it. The UAV then either flies out of control or crashes to the ground. The system incorporates cutting-edge technologies including electro-optics, radar and signal intelligence.

The Drone Dome system reportedly has been used to protect against hostile drones during battles against ISIS in Mosul and eastern Syria. Drone Dome can be operated from a stationary or mobile position. The U.K. Ministry of Defense was its first foreign customer.

Friday night, two people were arrested in connection with the UAV incident, and by Saturday Gatwick began functioning again following the cancellation of 1,400 flights due to the drone disruption.

Ways to stop a rogue drone

By Anna Jackman
Source: http://www.homelandsecuritynewswire.com/dr20181224-ways-to-stop-a-rogue-drone

Dec 24 – Reckless or criminal uses of drones are on the rise and police forces have reported "a spike" in the number of drone-related incidents in the UK, mirroring the growth in the technology's popularity. This ranges from hobbyist operators fined for "flying dangerously"

and a rise in close-calls with manned aircraft, to incidents of drones ferrying drugs into prison and even unspecified "sexual offences". Authorities around the world have also warned of the growing use of drones by hostile actors, including insurgents and terrorists.
The mounting threat of drone users not following aviation regulation or committing crimes means police need effective ways to stop and capture rogue devices. One novel and widely reported idea being explored by the Dutch National Police is the training of bald eagles to down drones. While this "low tech solution for a high tech problem" has some advantages, the dangers it poses to the animals themselves suggests we shouldn't write off alternative counter-measures.
One of the key challenges for any anti-drone counter-measure is that the typical small size of most drones makes them difficult to detect and target. Drones are mobile, nimble and can use technologies such as thermal cameras to operate day and night. At first glance, the bald eagle may seem well suited to the task of downing a drone because of its "natural" ability to spot a target and rapidly intercept it – as the video below shows. By seizing the drone out of the sky, the bird disables the device without raising fear of it falling onto people below and instinctively finds a safe area to land.
But critics have argued that the idea of using the bird's natural hunting instincts fails to understand that bald eagles are not falconry predators who typically grab other birds out of the sky but rather eat mostly fish and carrion. Other more practical issues include the cost of training and keeping eagles for the occasional use of intercepting rogue drones, and the time it could take for a bird to be deployed to the drone's location. It's also worth considering that evidence shows animals are physically affected by a drone's presence, and the technology is banned in all US National Parks due to its impact on wildlife, especially birds nesting birds of prey.
Guard From Above, the company that trains the eagles being used by the Dutch police, claim the birds are used to overpowering large and dangerous prey, and that the scales on their talons which protect them from victims' bites will also shield them against drones. But the carbon fibre blades of many drones are unlike a natural hazard, and have been known to cause serious injuries, including a child's eye being sliced in half.

Interception

Eagle interception may appear simple but there are numerous other ways to intercept rogue drones already under development. Alternative physical interception methods also provide a way to deliver the target safely to the ground so the police can confiscate and examine it, without raising animal welfare issues. Police in Tokyo, for example, recently announced plans to deploy drones that can drop nets on rogue platforms, an approach that has been described as "robotic falconry". But, as with eagles, these relatively new and untested systems require trained officers to deploy them.
Other potential approaches include using another drone to intercept the rogue unit and cause it to crash, or one that fires projectiles or "drone munition" at the target. However, this has the obvious downside of causing it to drop out of the sky, creating a considerable safety hazard and making the drone more difficult to retrieve.
Another idea for intercepting a drone is to manipulate its software or interfere with its electromagnetic operating range. A key advantage of these approaches is that they don't necessarily require a police officer to be present at the drone's location. One such method is known as geo-fencing because it involves erecting an invisible "electronic fence" that prevents drones from flying into certain areas or at certain times.
These areas are embedded into a drone's software by the manufacturer and can be added or altered with each software update. While this may be a particularly good way to protect sensitive sites such as airports, there are already concerns that some drone users may be able to bypass the software.
Other non-physical approaches to countering drones are more active and involve interfering with and manipulating the drone. Jamming involves sending out an electronic signal that blocks the GPS navigation system and attacks the command link to the operator, essentially confusing the drone. This can also affect other GPS users in the area, however, and unauthorised jammers are often illegal.

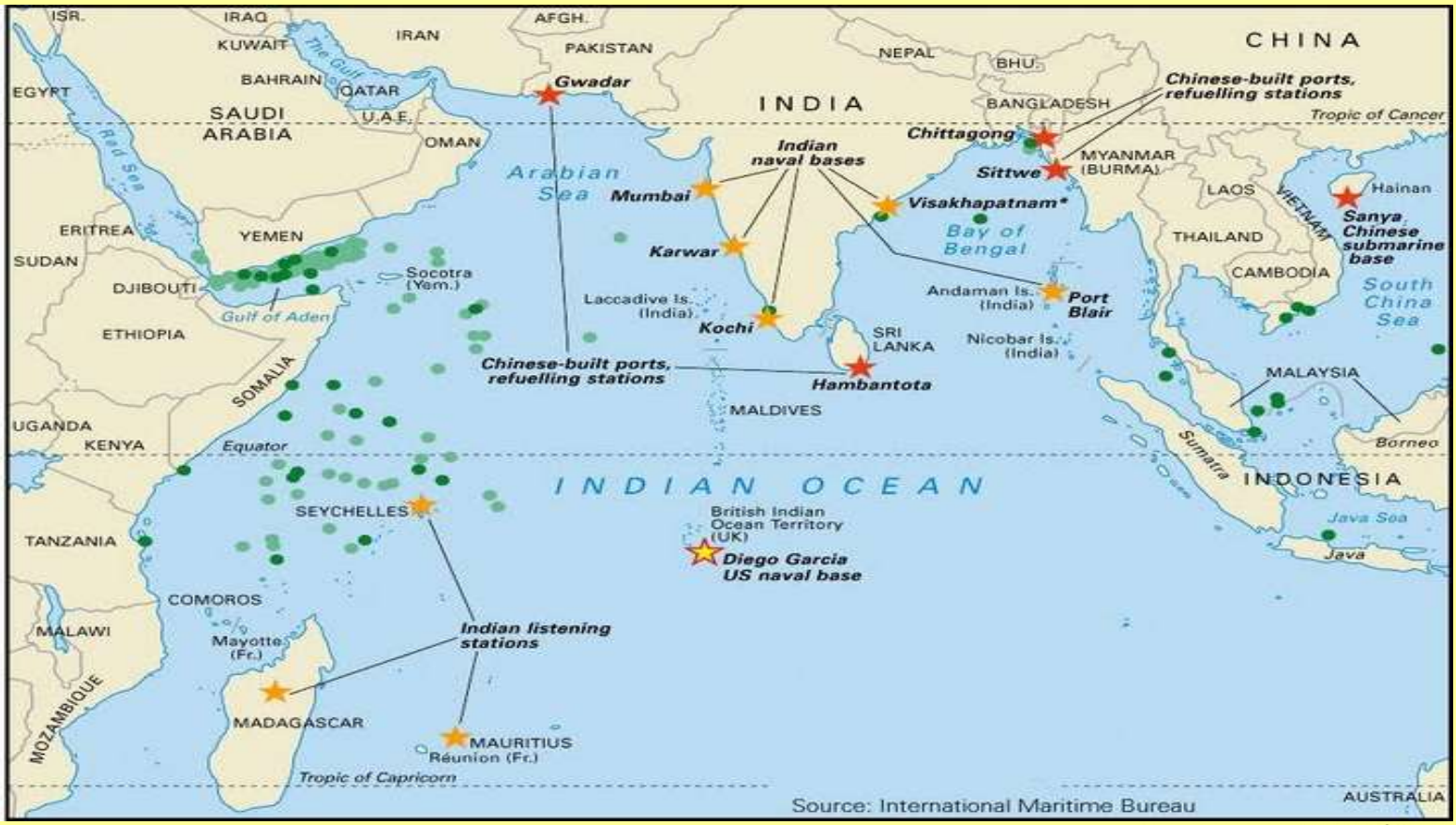
More active still are spoofing or hacking techniques that involve fooling the drone's GPS system and taking control of the device. While this approach can be effective against rogue drones, legitimate users are also vulnerable to spoofing technology that is relatively easy to construct.
A perfect solution has yet to be found, but interest and investment in drone countermeasures is increasing, giving authorities a growing number of options for tackling rogue drones. While reactions to the Dutch police's idea may at times be amusing, choosing a humane answer to the problem deserves a more thorough and thoughtful reflection, one that's less hasty than an eagle downing a drone.

Anna Jackman is Lecturer in Political Geography, Royal Holloway.

What is going on in the Indian Ocean?

String of pearls: Asset or liability?

It was over a decade ago that defense analysts began drawing attention to the naval bases being set up or being attempted to be set up by China in the Indian Ocean in general and around India in particular. The earliest news items referred to listening posts being set up by China in Myanmar islands to monitor the Andaman and Nicobar Islands. There followed talk of bases being established on the Myanmar coast in the Bay of Bengal with hints of a base being negotiated with Bangladesh in Cox's Bazaar. Alarm bells actually starting ringing with construction activities in Hambantota in Sri Lanka and Gwadar on the Makran Coast in Pakistan. The Chinese have since extended their reach to a base in the Red Sea. Djibouti, an arid Horn of Africa nation with less than 1



million inhabitants, also has become a military outpost for China, France, Italy and Japan, with that nation's first overseas base since World War II. Other powers including Saudi Arabia have expressed interest in the key location across the Bab el-Mandeb strait from the Arabian Peninsula and on one of the world's busiest shipping corridors.

Construction and related activities in Hambantota have been covered extensively in India and in the press of several countries around the world especially those with maritime or geopolitical interests in the Asia-Pacific, which is now being increasingly referred to by the Western powers and their allies as Indo-Pacific. It followed their concerns over the increasing Chinese militarization of some of the islands and rocks in the South China Sea as well their attempts to show the flag in the Indian Ocean. The fast pace of Chinese naval expansion is an additional factor. In the maritime domain it is the most important development since the end of the Cold War.

Hambantota port

The String of Pearls hypothesis got a fillip after China and Myanmar signed an agreement to build the deep-sea port project in Kyaukpyu after negotiations had dragged on for years over financing and related issues. A joint venture will be set up to build and operate the port. Once completed, the port will reportedly have a gross output of $ 3.2 Billion. According to several analysts the string of pearls can be deemed to be complete around India, straddling it so to say from the Bay of Bengal to Sri Lanka in the South and the Arabian Sea in the West. Myanmar and Sri Lanka have assured India that these bases are for commercial purposes only. However, the visit of a Chinese submarine to Hambantota led India to protest. Gwadar falls into an altogether different category. Its importance to China and Pakistan cannot be overstated, nor can it be taken in isolation from the China-Pakistan Economic Corridor (CPEC). The fluid situation in Maldives needs to be watched as indications are that the change in government is likely to be a setback to China. The earlier government had displayed marked hostility towards India.

Naturally India will be concerned with Chinese activities in its neighborhood that the former considers inimical to its interests, i.e., those that pose an immediate threat or could build up to a definite threat leading to engagement in the marine domain. A full-scale outbreak starting from the Sino-Indian border to the Indian Ocean is an altogether different situation that would go beyond limited hostilities. It would be war where the entire region would face perturbations if not more serious involvement beyond the two antagonists. This paper limits itself to the viability of Chinese bases from Bay of Bengal to the Arabian Sea were hostilities around them to take place.

The assertion being hinted at is that the string of pearl bases rather than conferring any meaningful benefit to China could become liabilities. In the East and South, Myanmar and Sri Lanka while taking advantage of Chinese investments would not be party to China using

their territory against India. It can practically be ruled out. Further the Chinese would know that India would be well positioned to take out these bases without causing any major collateral damage to host countries. All of them would be within range of shore-based Indian aircraft. Reinforcing these by the Chinese Navy would be an impractical proposition seeing the distance to them. Reinforcements even were they to be considered would have to pass through the Malacca Straits or the Straits further to the South, a longer route. It would not be too difficult for India to contest passage in the Malacca Straits. ASEAN countries through which reinforcements would pass are well–disposed towards India.

There appears to be unbelievable convergence or uniformity of views regarding an enhanced Indian presence in the region. Excluding China there are around fifteen countries in South and East Asia, including Australia, Taiwan, and North Korea. Although technically Australia and New Zealand do not form part of South East or East Asia; their economic and physical presence allows their integration in the region. If one were to take free soundings from the public in every country mentioned, it will be seen that none of them would be averse to an Indian presence in the region; *not one*, not even the few countries that are considered close to China or under China's tutelage. Going a step further, not one government from these countries would be uncomfortable with an Indian presence if left to itself, or if it were not obliged to look over its shoulder for China's lack of approbation. Coming to think of it, this could indeed be one of the most remarkable achievements of the soft power of any country in the world as far the region under discussion is concerned. (The paragraph is reproduced from a talk delivered at the Asian Centre of the University of Philippines in Manila under the title "Can India Provide Balanced Multipolarity in South and East Asia". It was published in *The Statesman*, New Delhi).

Gwadar in the West is an altogether different proposition. As opposed to Myanmar and Sri Lanka Pakistan is a full-fledged ally of China. It is debatable whether India would have the capability or even the desire to blockade the Gwadar base. As per the author it would not have to do so. The Chinese at this stage of its development would not want to use it against India in a maritime confrontation. It would be counterproductive regardless of the outcome. Gwadar is being set up as the terminus of the prestigious CPEC corridor. By current estimates the Chinese plan to set up a gated Chinese colony for about 500,000 in Gwadar. The corridor, inter alia, is being established to limit China's dependence on oil flow through the Malacca Straits, the same as the Myanmar port in the Bay of Bengal. Of the two Gwadar is the more viable. Gwadar is not only a geostrategic concern for India; its progress would be monitored as closely by the US, British and French maritime interests in the Indian Ocean. The US base in Diego Garcia and the French, British and US bases in the Gulf would play their part in any confrontation.

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New Delhi, December 6, 2018.

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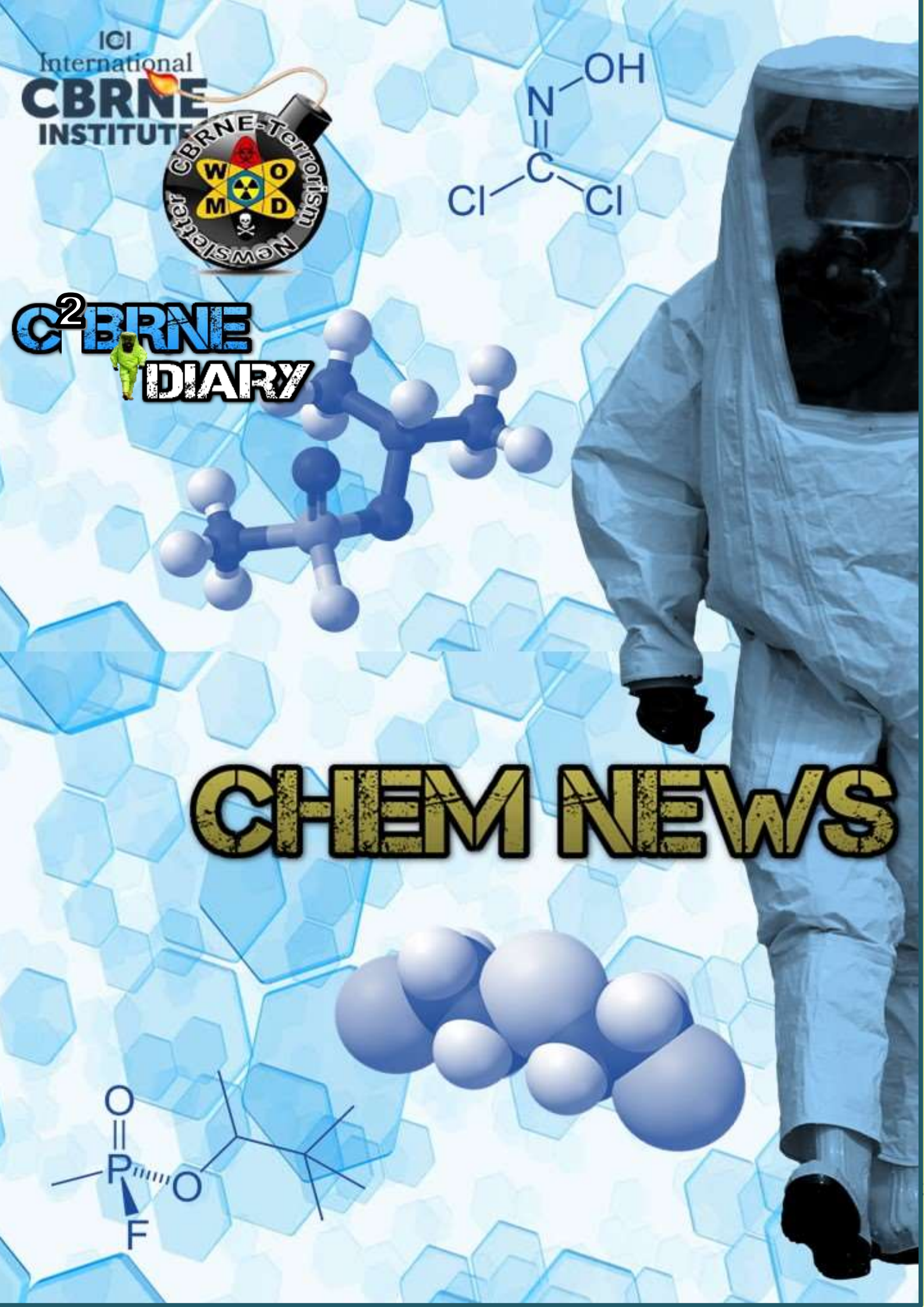

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Head-Up Display for First Responders

Source: http://www.prometech.eu/products/head-up-display-for-first-responders/

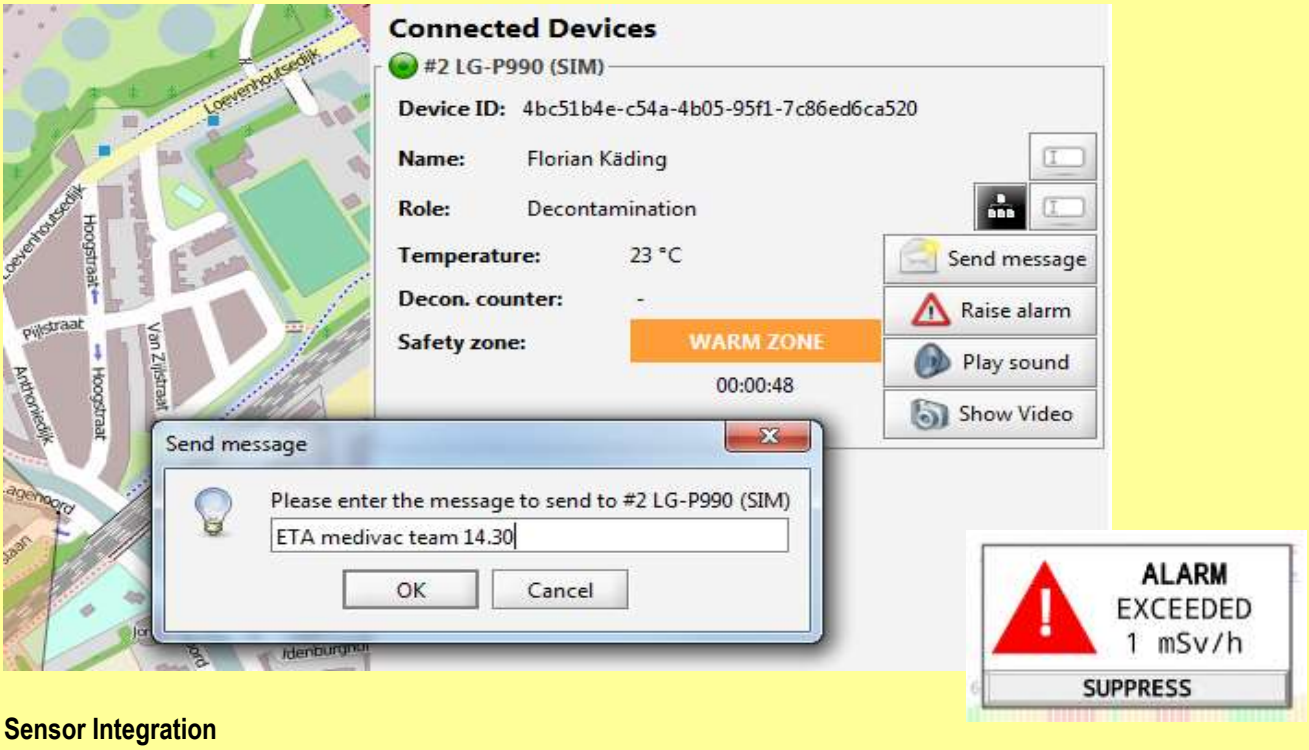
Prometech has experience with the integration and use of head-up display systems in the field of emergency response in two specific applications aimed at CBRN specialists operating in and around the hotzone.

Situational Awareness

For a first responder to act effectively during a CBRN incident, it is of paramount importance to be aware of their surroundings. Maximizing situational awareness entails optimizing the perception and understanding of a first responder of their own situation, their immediate surroundings and the incident at large. Increased situational awareness improves their ability to forecast events, execute tasks based on that perception and keep themselves safe.

In large CBRN-related responses situational awareness is often lacking. At the HQ there is generally a decent understanding of the incident at a strategic level, but no direct view on what is happening in the field. On the other hand, first responders in the field are wearing personal protective equipment (PPE) consisting of suits, gloves, and gas masks, which are likely to make them feel isolated. In addition, they have limited context, due to the nature of CBRN incidents, which often affect a larger area.

As a result, both of these groups do not always possess all information they need to properly carry out their tasks. This is partly due to the fact that many procedures and systems still overwhelmingly rely on voice communication to transmit information. Voice communication can be very valuable, but it is not particularly well suited for the transmission of geo-spatial information. Giving directions or explaining the size and shape of a certain hazard area is difficult using only voice. This may result in confusion, disorientation and an overall lack of situational awareness both in the field and in the command center.



Sensor Integration

Prometech has also integrated a radiological sensor with its COTS head-up display solution as a proof-

of-concept. Radiation readings and dosage are immediately accessible to first responders as they are projected on the head-up display in the lower-right corner of the eye.

Mapping Far-right Chemical, Biological, Radiological, and Nuclear (CBRN) Terrorism Efforts in the West: Characteristics of Plots and Perpetrators for Future Threat Assessment

By Daniel Koehler and Peter Popella

Source: https://www.tandfonline.com/doi/full/10.1080/09546553.2018.1500365

August 2018 – The threat of chemical, biological, radiological and nuclear (CBRN) terrorism is widely attributed to collective actors based on a religious ideology, e.g. globally operating Salafi-jihadist groups like al-Qaeda or ISIL. Only limited attention has been given to the CBRN threat of violent domestic extremists in general or far-right terrorists specifically. Nevertheless, a number of incidents involving far-right activists and CBRN agents in Western countries are known to the public, even though these have had comparatively little impact on public threat perception. This study systematically collected public information about far-right CBRN incidents to identify their main characteristics. The authors were able to identify 31 incidents in Western countries

since 1970, which display features contrary to generally assumed forms of CBRN terrorism. Far-right CBRN terrorism appears to be predominantly a lone-actor phenomenon oftentimes involving middle-aged and comparatively well-educated male perpetrators, mostly motivated by non-religious forms of far-right ideology (i.e. neo-Nazism, non-religious white supremacism) and indiscriminately targeting victims. Overall, far-right actors attempting to weaponize CBRN agents have been few and generally technically inept. However, the characteristics of the plots pose potential challenges for effective counter-measures and intervention, should the number of actors or the technical sophistication of plots increase in the future.

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Dr. Peter Popella *is a scholar of microbiology and specialist for infectious bacteria and antibiotic resistances. After completing his bachelor thesis, he explored the biosynthesis of antibacterial peptides in staphylococci at the department of Microbial Genetics at the Eberhard Karls University Tuebingen, Germany. During his doctoral thesis in the laboratory of Prof. Friedrich Götz, he worked in the field of novel antiinfective compounds and contributed to new findings in regards to pathogenicity mechanisms of human-pathogenic staphylococci. His studies were published in journals as Antimicrobial Agents and Chemotherapy, Infection and Immunity, Cell Reports, Scientific Reports and Angewandte Chemie.Combining his expertise in the life sciences with his interest for security studies and terrorism, Dr. Peter Popella contributes as an independent researcher to interdisciplinary research projects in the field of bacterial biological weapons and CBRN terrorism.*

Terrorists Deliver 60 Canisters with Highly-Toxic Agent to Idlib

Source: https://syria360.wordpress.com/2018/11/29/terrorists-deliver-60-canisters-with-highly-toxic-agent-to-idlib/

Nov 29 – Terrorists from the Hayat Tahrir Ash-Sham group (former Nusra Front) are planning a new provocation with the use of toxic agents in the Idlib de-escalation zone, the Russian Center for Syrian reconciliation reported on Thursday.

"According to information received by the Russian Center for Syrian Reconciliation from sources in the Idlib de-escalation zone, the terrorists of the Hayat Tahrir Ash-Sham group are planning to carry out another provocation using toxic agents," the center said in a statement.

According to the statement, the terrorists have delivered 60 canisters filled with unidentified highly-toxic chemicals. They are accompanied by Arab-speaking chemical specialists from one of the European countries.

"According to available information, the upcoming provocation with the use of toxic agents will target the Christian-majority town of Maharda in Hama province and the humanitarian corridor near the village of Abu al-Duhur in Idlib province," the statement said.

In September, Russian Foreign Minister Sergei Lavrov has addressed the 73rd session of the UN General Assembly in New York City, warning that Syrian terrorists and their patrons may attempt new provocations using chemical weapons, adding that Russia would consider such efforts this "unacceptable."

"We warn terrorists and their sponsors that new provocations involving chemical weapons are unacceptable," Lavrov declared.

The demilitarized zone in Idlib was established on September 17, when Russian President Vladimir Putin and his Turkish counterpart Recep Tayyip Erdogan agreed on the issue.

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Terrorists sometimes use chemical weapons, but the OPCW should focus on states

By Al Mauroni

Source: https://thebulletin.org/2018/11/terrorists-sometimes-use-chemical-weapons-but-the-opcw-should-focus-on-states/

Nov 30 – Following an alleged gas attack in Syria this month, the Organization for the Prohibition of Chemical Weapons (OPCW) announced plans to send a team to investigate. This time, the organization will be armed with new powers to assign blame for attacks. A lot of media attention has focused on the organization's widened mandate and the efforts by Russia to curtail it. But that's not the only example of the OPCW striving to broaden its focus. As the organization's members finish their every-five-year strategy meeting at The Hague this week, there is an opportunity to critically examine the OPCW's desire to expand its efforts to address incidents of chemical terrorism. Specifically, in a recent memo to member states, the OPCW's Technical Secretariat called for the organization's activities to be "intently reshaped" to consider the threat non-state actors pose to global chemical security. This is an overreach by the OPCW; While its efforts may be supportive of that noble goal, the very rare use of hazardous chemicals by non-state actors does not, in fact, "threaten the object and purpose" of the treaty.

Understandably, some are concerned by the Islamic State's recent use of chemical warfare agents as well as with Russia, Syria, and North Korea's. It is certainly prudent to revisit the international arms control regime to examine how countries might counter this resurgence of chemical weapons use with existing government programs. As a policy issue, however, the OPCW shouldn't divert its time and resources from its mission of implementing the Chemical Weapons Convention (CWC), which tasks it with prohibiting the development, production, and use of chemical weapons among the signers of the treaty. One has to ask the question, has the United Nations clearly defined this policy challenge, and is the OPCW, in fact, the right organization to attempt to address it?

Any policy effort should be in response to a defined challenge against which the organization's constituents agree requires a formal response. In this case, the OPCW membership believes that chemical terrorism is an international challenge and that it should assist in global anti-terrorism efforts. **This is a faulty assessment for the following reasons:**

- The terrorists who might use prohibited weapons are not parties to the treaty and their use of chemicals as improvised weapons cannot be contained.
- The actual incidence of terrorists using chemical weapons is so small as to be insignificant to the overall trend of terrorist activities.
- The overwhelming majority of chemical terrorism cases are single, small-scale events and not mass casualty incidents.
- The OPCW member countries are already equipped to address the relatively minor threats posed by non-state actors.

The OPCW Technical Secretariat does understand that trying to constrain illicit access to toxic chemicals is a significant challenge, involving commercial industry's use of massive quantities of thousands of chemicals. More to the point, the purpose of arms control is to limit the behavior of countries who voluntarily agree to particular constraints during times of war. War-making is a creation of state behavior and is distinct from banditry, insurrections, or terrorist activity. International humanitarian law recognizes armed conflict between government forces and non-governmental armed groups, but to be clear, arms control does not apply to the behavior of non-state actors. Given the considerable availability of industrial chemicals and lack of compliance by non-state actors, it is questionable as to how any actions that the OPCW undertakes will alleviate this challenge.

The actual incidents of chemical terrorism, focusing on those cases that affected more than 10 people, are so few every year as to be unremarkable. The US State Department lists about 70 foreign terrorist organizations, of which maybe two have been documented

as using industrial chemicals in acts of violence or conflict. In its annual report on terrorism for 2017, the State Department identified more than 8,500 terrorist attacks that resulted in more than 18,700 deaths and nearly 19,500 injuries. Of those, 93 assaults did not include explosives or firearms, that is, they involved melee weapons, chemical weapons, or the use of vehicles as weapons. If one rules out the Islamic State's use of improvised chemical weapons against Iraqi military forces, the number of chemical weapons cases is surely in the single digits. The intelligence community, in unclassified testimony to Congress, has often stated that the availability of chemical and biological materials, along with the scientific expertise of personnel who may be working with non-state actors, means that the threat is growing. The complete lack of any trend of successful terrorist chemical or biological attacks belies this assumption.

Managing the risk of a terrorist chemical incident means understanding the severity of the event as well as the probability. Aum Shinrikyo's attack on the Tokyo subway in 1995 stands out as perhaps the most significant case, causing 12 deaths and about a thousand temporary injuries as the result of nerve agent exposure. The Islamic State is believed to have used a crude form of mustard agent in limited attacks against US forces and Iraqi troops, often without causing any injuries. Terrorists have not caused mass casualties using chemical agents in more than 20 years. Instead, they are overwhelmingly using conventional firearms and explosives. And when a few organizations do use chemicals, they have limited to no impact. Given these facts, should the OPCW be spending significant time and resources against this challenge?

Last, let's be clear that the lead agencies for combating terrorism are hardly helpless in this area. If OPCW members think the organization needs to respond more aggressively to chemical terrorism, they already have a solution: prevent the terrorists from implementing their plans. In the United States, the State Department works diligently with other nations on global terrorism issues. The National Counterterrorism Center coordinates the intelligence community's collection of information on WMD proliferation issues. And the Federal Bureau of Investigation has a Counterproliferation Center to identify and disrupt proliferation networks that might move WMD program-related materials. The US Special Operations Command has a particular focus on combating terrorists who may have ambitions of obtaining these weapons. Meanwhile, the Department of Homeland Security coordinates with federal, state, and local agencies on how to prepare for and respond to such incidents. Every country has similar organizations. The solution already exists.

This is not to say that the OPCW's efforts do not contribute to decreasing the threat of chemical terrorism. Everyone benefits when countries talk to each other about improving chemical security standards, developing a legal framework to punish those who illicitly traffic in chemical materials, or sharing technologies and procedures for responding to chemical incidents. At best, these are small contributions to an already significant chemical security effort. But countries are responsible for preventing and responding to terrorist chemical incidents and attributing them to a non-state actor. The OPCW should focus its valuable time and resources on retaining its qualifications as unbiased, neutral arbiters of state behavior.

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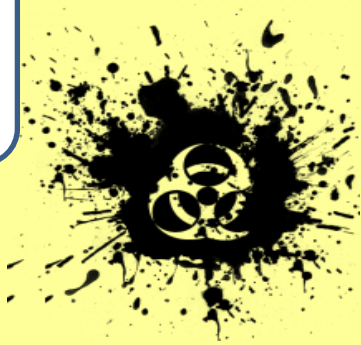
Πόσο πιθανή είναι η εκδήλωση περιστατικού HAZMAT ή CBRNe στη Ναυτιλία; (HAZMAT/CBRNe incident in Greek maritime industry)

Από Γιάννη Ρέτσιο (Editor: Fire.gr I CBRN specialist Draeger Hellas)
Πηγή: https://www.fire.gr/?p=49375



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CBRN: Little, Large, and All Deadly

By Andy Oppenheimer
Source: http://nct-magazine.com/december-2018/cbrn-little-large-and-deadly/

The range of CBRN threats posed and attacks perpetrated by nation-states and terrorists is varied and often unexpected. The technologies and other aspects of response have to be ready for anything from a small release of a CBRN agent to a full-scale mass-casualty event. Sometimes even a small release has the potential to become a mass-casualty event.
Leaving the N of nuclear Armageddon to one side for the purposes of examining more likely types of attack, and how we would be expected to respond - the technologies and modus operandi used in CBR attacks pose huge challenges. There are many variables than constants in the CBR equation. From nerve agents left on door handles to aerial bombardment on whole towns, the M.O. of CBR is limited only by the perpetrator's capabilities.
While such attacks are rare, the domestic chemical incidents in 2018 exposed understandable vulnerabilities at all levels, in intelligence and pre-emption and also identifying what chemical agents were used, and who deployed them. In the civilian-based events in Salisbury, England, as with the Litvinenko radiological poisoning case in London 12 years ago, special challenges were also faced in the subsequent clean-up which accompanies any CBR incident, in both cases, in urban areas.

▶▶ **Read the rest of this article at source's URL.**

FAST-ACT

Source 1: http://nct-magazine.com/december-2018/industry-profile-fast-act/
Source 2: https://fast-act.com/

Public events present a large platform for terrorist or planned attackers to target. Public venues host a significant number of attendees, therefore the potential risk of a planned attack taking place is extremely heightened. After the tragic events that have taken place at big venue locations like the 2017 Las Vegas Shooting, the November 2015 Paris Attacks on Stade de France, and the Manchester Bombing in 2017 the imminent risk of attacks occurring in an organized public venue has been amplified significantly.

In an effort to reduce or completely eliminate the risk of terror threats or attacks, the United States developed the Department of Homeland Security in 2001, classified to "develop and coordinate the implementation of a comprehensive national strategy to secure the United States from terrorist threats or attacks." A big goal of this United States department recently was to increase focus on building and venue protection – particularly following the evolution of gruesome attacks that have increased in these settings.
Large crowds of civilians in one area such as in a venue, arena, or anywhere that a gathering of people have amassed has become a major monitored area for officials – but the level of difficulty associated with monitoring a large area such as these presents a daunting task for

police forces and government officials. Extensive planning is required in preparation of a large organized event occurring – including communication with local first responders and safety services and selecting the best means to effectively detect and protect the venue from hazardous weapons such as bombs, guns, and even chemical attacks that can severely hurt a large group of people.
This guide is designed to provide an overview of how to prepare and defend an event, public gathering, or venue from potential attacks or accidents involving volatile organic compounds (VOCs), toxic chemicals, and even CWAs that could significantly affect a sizable gathering of civilians – as well as protecting those who protect us, like first responders.

▶▶ Read the rest of this article at sources' URLs.

INTERVIEW: Colonel Alexandre Vasconselos

Commander, 1st CBRN Battalion, National Army, Brazil
Source: http://nct-magazine.com/december-2018/interview-col-vasconselos/

This month, the NCT Magazine Editorial Team sat down with Colonel Alexandre Marcos Carvalho de Vasconselos to learn more about the Brazilian Army's 1st CBRN Battalion. In preparation for this year's NCT South America 2019 event, which will be held in from the 5-7 February in Rio De Janeiro, the NCT Magazine team sought to gain an insider's perspective about CBRNe training in the Brazilian Army.

As a graduate of the Field Artillery Course at the Brazilian Army Academy, Brazilian Army CBRN Course, Command and Control of Operations in CBRN Defense and Command and General Staff Course at the Brazilian Army Command and Staff College, he provides insight to the training of top-tier CBRN defense teams. He participated in the improvement of the CBRN doctrine of the Brazilian Army that occurred during the High Visibility Events that took place in Brazil between 2012 and 2016!

Col. Vasconcelos was a member of the planning and coordination team of the Brazilian Army for CBRN Defense for RIO + 20, FIFA Confederations Cup, World Youth Journey and Olympic Games Rio 2016, and a member of the planning team for CBRN Defense for World Cup. He was part of the Brazilian Military Cooperation in Paraguay in 2014, where he cooperated with Paraguay's Ministry of Defense about CBRN subjects, and coordinated the Brazilian Army troops in CBRN Defense during the Pope's visit to Paraguay.
We are excited that Col. Vasconselos will be speaking during the Opening Plenary of NCT South America 2019. Learn more about the Brazilian Army's CBRN training and what they do to prepare for events, such as the Rio Olympic Games, by reading below!

▶▶ Read the rest of this article at source's URL.

EDITOR'S COMMENT: What is the purpose of playing with detectors (look like chem detectors) if personnel in not properly dressed?

Some OPCW news

- The OPCW will get a new laboratory in the town of Nootdorp to keep pace with new developments in science and technology and new chemical weapon threats.
- Over 96 percent of all chemical weapon stockpiles declared by possession states have been destroyed.

New mask to protect military aircrews against weapons of mass destruction

Source: https://newatlas.com/new-mask-helicopter-weapons-mass-destruction/57516/

Dec 05 – The US Air Force has completed testing of its new face mask for helicopter and other rotary aircraft crews. The Joint Service Aircrew Mask – Rotary Wing (JSAM-RW) mask is one of five variants that will replace a whole range of masks worn by military aircrews, and will not only provide oxygen at high altitudes, but also protect the wearer against nuclear, biological, radiological, and chemical (NBRC) threats.

Modern aircrews don't just have to face missiles and bullets. In our modern age of increasingly advanced weapons, terrorism, asymmetric warfare, and rogue states, those who operate helicopters and other rotorcraft also have to fly into the possibility of dangers like chemical or biological weapons, the after effects of nuclear attacks, or radioactive contamination due to a dirty bomb attack or nuclear disaster.

This means that aircrews both in the air and on the ground need long-term protection against these hazards that can work both aboard the aircraft or self contained off it for many hours at a time. In the case of face masks, they need to cover as much skin as possible, protect the eyes, nose, and mouth, yet allow for the maximum of comfort and visibility.

According the Air Force, the JSAM-RW is the latest such mask to achieve full operational capability. The JSAM-RW will replace the present Aircrew Eye and Respiratory Protection system on HH-60G and UH-1N aircraft and on all other rotary aircraft, except the Apache attack helicopter.

The JSAM-RW is notable because it has better visibility, better skin and respiratory protection, fits five times better and has six times the battery life of its predecessor. It can work with night-vision goggles and has a removable faceplate, and using it requires no modification of existing aircraft. It's also cooler to wear for extended periods, and can be worn by crews for both escaping a crippled aircraft and while evading hostile forces.

"Fielding the new masks is significant because they are replacing equipment that limits the capability of aircrew to perform their mission," says Lieutenant Colonel William Holl, Materiel Leader of AFLCMC's CBRN Defense Systems at Aberdeen Proving Ground, Maryland. "The feedback I'm getting from aircrew is that they love the system and are excited about getting this new capability."

Fateh al-Sham obtains 100 drones for chemical attacks in Syria: Report

Source: https://www.presstv.com/Detail/2018/12/03/581856/Fateh-alSham-terrorists-obtain-100-drones-to-use-in-chemical-attacks-Report

This file picture shows drones shot down by Russian forces over the Hmeimim air base in Latakia, western Syria. (Photo by the Russian Ministry of Defense)

Dec 03 – Terrorists from the Jabhat Fateh al-Sham Takfiri terrorist group, formerly known as al-Nusra Front, have reportedly gained access to 100 unmanned aerial vehicles through a Turkish merchant to use them in chemical attacks against Syrian government forces in the country's northwestern province of Idlib.

Local sources, speaking on condition of anonymity, told the Arabic service of Russia's Sputnik news agency that the drones have transported from the city of Harem, which lies close to the border with Turkey, to a militant position in the town of Ma'arrat Misrin.

The drones have been handed over to Moroccan and Libyan terrorists, the sources added.

"Terrorists are working under the supervision of a British expert to make modifications on the drones to become lighter, and to able to carry small shells loaded with toxic chemical substances," the sources pointed out.

On November 22, Sputnik news agency reported that French experts had arrived in Syria's northwestern city of Idlib in order to upgrade missiles, which are in the inventory of foreign-sponsored Takfiri militant groups, and load them with toxic chemical agents.

Local sources, requesting not to be named, said the professionals aim to use the munitions in a fake chemical attack carried out by terrorists as a pretext for the United States and its allies to launch possible airstrikes on Syrian government forces.

Jabhat Fateh al-Sham terrorists transported 200 drones from Sarmada town al-Muhandseen neighborhood in Idib city as Turkish and Chechen experts made technical and electronic modifications on them. The unmanned aerial vehicles had entered the Syrian territories earlier via Turkey.

Syria has been gripped by foreign-backed militancy since March 2011. The Syrian government says the Israeli regime and its Western and regional allies are aiding Takfiri terrorist groups wreaking havoc in the country.

Shocking Pink: An Inexpensive Test for Chemical Weapon Attacks

Source: https://www.scientificamerican.com/article/chemical-weapon-litmus-test/

March 2012 – It seems unlikely that the maker of hundred-million-dollar Hollywood blockbusters such as *Armageddon* and *The Transformers* could inspire scientists to develop an ultralow-cost tool for quickly sensing airborne chemical weapons. Yet one former University of Michigan at Ann Arbor (U.M.) researcher says his idea to use a nerve-gas antidote to create an inexpensive litmus paper–like nerve-gas sensor emerged shortly after watching *The Rock* on DVD a few years ago.

During the climax of that 1996 Michael Bay movie, chemical weapons specialist Stanley Goodspeed (played by Nicholas Cage) injects himself in the heart with atropine to prevent certain death from VX gas. After watching the movie with his wife, Jiseok Lee became intrigued by the **possibility of using the nerve-agent antidote pralidoxime (also known as 2-PAM) to detect the presence of organophosphate nerve gases such as VX and sarin**.

"I was inspired to use an antidote because an antidote always has a nice affinity to poison," says Lee, now a postdoctoral associate in the Massachusetts Institute of Technology's Department of Chemical Engineering. "That was the start of this research."

Lee and his U.M. colleagues were **able to detect the presence of a nerve agent related to sarin gas at a low concentration of 160 parts per billion using a litmus-like paper sensor designed to change color from blue to pink (Lee says although it looks pink, technically, it is red) within 30 seconds of exposure to trace amounts of the toxic gas.** The sensor combines a group of atoms from a nerve gas antidote with a molecule that changes color when it is under stress, the researchers reported recently in the online version of *Advanced Functional Materials*.


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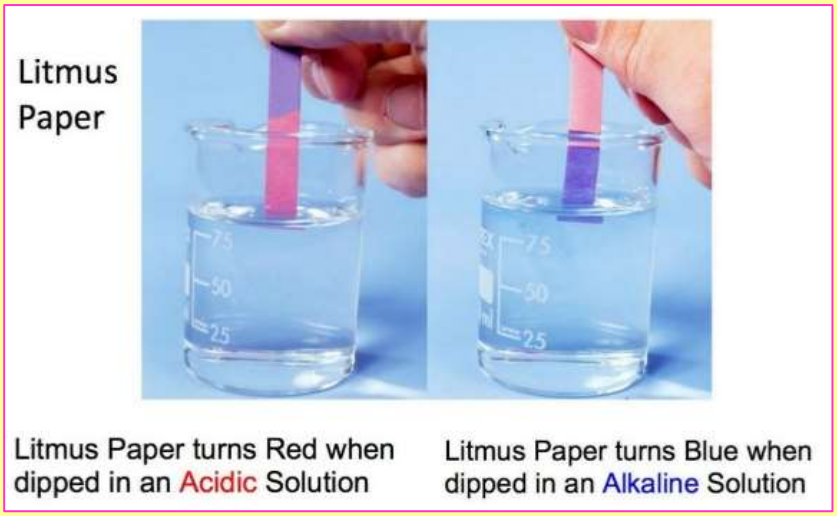
"The test can be done using a simple filter paper, and the sensory materials can be synthesized quite easily," says Jinsang Kim, an associate professor in U.M.'s Materials Science and Engineering; Chemical Engineering; and Biomedical Engineering departments. Kim, who advised Lee and his colleagues during their research, adds that it costs about $1 for the chemical reagents and solvents used to make each filter.

"This work is very novel in that we don't need complicated lab-scale analytical devices," Lee says. "[With some] technical modification we might be able to easily commercialize the sensor with extremely low cost."



A litmus-paper test is a low-tech alternative to some of the more sophisticated chemical and radiation detection tools developed in recent years. These include self-contained mobile land and airborne laboratories for monitoring air quality, which the U.S. Environmental Protection Agency (EPA) has poured millions of dollars (pdf) into over the past decade. The EPA's Trace Atmospheric Gas Analyzer (TAGA) bus performs real-time sampling and analysis to detect chemicals at very low levels; and the agency's Airborne Spectral Photometric Environmental Collection Technology (ASPECT) aircraft uses chemical and radiological detectors, high-resolution digital photography, video and GPS technology combined with sophisticated software to remotely detect chemicals and radiation. In addition, handheld Chemical Agent Monitor (CAM) devices used by the military and first responders weigh several kilograms and cost upward of $6,500. CAM devices, of course, are also more sophisticated than litmus paper, detecting and discriminating between, for example, vapors of nerve and blister agents and displaying their relative concentration.

Paper-based sensors would be a more practical alternative in equipping large numbers of soldiers and first responders. Litmus paper could warn them to don gas masks, even if specific details about a particular chemical attack aren't available.

The Michigan researchers are now developing a way for sensory chemicals to self-assemble into nanofibers that could be used to make a new type of sensor device that provides three different sensory signals—color change, fluorescence development and conductivity change—that can alert to the presence of a number of chemical and even biological weapons such as anthrax, Kim says.

Perhaps the biggest litmus test lies ahead—finding a way to commercialization these technologies and put them in the hands of those who need them the most.

Jihadis are plotting a devastating CHEMICAL WEAPONS attack in Britain and could launch a chlorine bomb on London Underground, security chiefs warn

By Mark Nicol (Defence Editor For The Mail On Sunday)

Source: https://www.dailymail.co.uk/news/article-6474997/Security-chiefs-believe-Jihadis-plotting-devastating-chemical-weapons-attack-Britain.html

Dec 09 – Terror chiefs believe a devastating chemical weapons attack in Britain is now 'more likely than not', The Mail on Sunday can reveal.

The chilling assessment follows the interception of 'chatter' between senior figures in Islamic State (IS). The terror group has been inspired by the poisoning of former KGB agent Sergei Skripal and his daughter, Yulia, by Russian agents in March.

Before the novichok attack in Salisbury, the Government's Joint Terrorism Analysis Centre (JTAC) put the risk of a chemical weapons strike by jihadis at 25 per cent.

Security sources say that has now surged to more than 50 per cent. There are particular fears over the potential for a chlorine bomb to be detonated on the London Underground. The threat is considered so severe that terror chiefs secretly met with emergency services bosses a fortnight ago to 'war game' their response to such an atrocity.

Teams, including officers from the Met Police's Emergency Preparedness Operational Command Unit (CO3) and officials from the London Mayor's office, were faced with a scenario **of simultaneous attacks at Oxford Street and Waterloo Underground stations by terrorists carrying chlorine bombs hidden in rucksacks.**

When such devices are triggered, the relatively harmless liquid chlorine becomes a deadly vapour that mixes with fluid in the lungs and eyes of victims to form corrosive hydrochloric acid. The gas would be particularly dangerous in confined and densely packed Underground stations, especially for children and the elderly.

The recent simulation involved commuters being killed as the chlorine gas swept through trains and along platforms. Many more 'died' as terrified passengers fought to escape. **It was concluded that up to 100 lives could be lost in such an attack, with hundreds more injured.**

A security source involved in the exercise said: 'The chlorine vapour would be very localised and would last a few minutes before it evaporated. While fatal, the stampede to get out of the Tube station would cost far more lives than the chemical. That's why it is important to educate people about the threat of these weapons. The more they know, the less inclined they'll be to panic.'

Last night, Hamish de Bretton-Gordon, an expert on chemical weapons, said IS bomb-makers in Syria had already developed the necessary skills to make such devices and could pass such expertise to extremists in Britain.

He said: 'These tactics have been morbidly successful for IS in the Syria war zone, while the nerve-agent attack in Salisbury has shown that just a tiny amount of a chemical can have a huge impact.'
Responding to The Mail on Sunday's exclusive report, Security Minister Ben Wallace said last night: 'I have consistently warned that a chemical attack in the UK is getting more likely. We have well-tested plans to respond to an attack and minimise the impact, should an incident occur.'

EDITOR'S COMMENT: Why making these scenarios public? This one is quite innovative and new in a long list of drill scenarios published. In that respect, concider another one equally applicable and perhaps easier to execute based on a recent incident that took place in Italy (Dec 08): Six people have died, most of them teenagers, in a stampede at overcrowded Blue Lantern nightclub in the town of Corinaldo on the Adriatic coast (near Ancona in central Italy) where the Italian rapper Sfera Ebbasta was performing. The cause of the stampede was not immediately clear but first reports on Italian media said the teenagers were trying to escape from the nightclub after someone had set off a can of pepper spray. About 120 people were injured, at least 10 of them seriously.

New Detection Device that "Tastes" Liquid Chemical Agents

Source: https://i-hls.com/archives/87286

Dec 09 – A new chemical agent detector is developed by the U.S Army as a response to the challenges of site exploitation – the collection of information from a specific location that can then be analyzed for various purposes. As the first people in a new site that needs to be examined for dangerous substances, those with the task of site exploitation need better tools to identify various substances.

For these purposes, the U.S Army developed the new chemical agent detector which is based on a technology that allows it to "taste" suspicious liquids and determine whether they are dangerous.
The product is called the VK3, and it utilizes a camera, a small computer and paper colorimetric tickets – a method of measurement based on color distinction – for the detection of chemical substances.
An earlier version known as the VOCKit identified chemicals based on vapors, a process similar to olfaction – the sense of smell. In the new VK3 a better analogy is drawn to the sense of taste instead of smell, says Aleksandr Miklos, Army research biologist.
"This started off as something that detected vapors coming off of the sample; it was very similar to how the olfactory system works," he said, noting that the device had spots that would activate in response to vapor from a sample. "By the pattern of activation, they could identify what was present. Now, we're using a ticket you add liquid to."
During the recent Chemical Biological Operational Analysis, or CBOA, the VK3 demonstrated its ability to identify chemical liquids in the field, including chemical warfare agents, as military.com reports.
"What we were able to get was informal, verbal feedback from the assessor and from end users in the Army and civilian law enforcement," Miklos said in the release. "Feedback was positive. They liked the size and that they could carry the entire kit around in a small container. They found it easy to use.".
The VK3 differs from other detectors, such as the Joint Chemical Agent Detector, or JCAD.

"The JCAD is a continuous monitor of vapor, while this would be for explicitly looking at a puddle or a container of something," Miklos explained in the release. "This is also smaller, cheaper, and requires less power than the JCAD."
While the VK3 can currently identify multiple liquid chemicals relevant to the military, "it must be trained on those chemicals to identify them successfully."
Because of this, Miklos said different variants of the VK3 could be trained on different chemicals, as law enforcement users might have disparate needs from military users.
"It identifies what we train it against," Miklos explained. "It's still a research prototype, so we've trained it against a somewhat small list of things, about 50. The list is a mixture of chemical warfare agents, as well as some common stuff like bleach, diesel and insecticides.
At the moment, more advanced research is on hold in wait for further funding.

28 countries reject chemical weapons

Source: https://www.manilatimes.net/28-countries-reject-chemical-weapons/482307/

Dec 14 – Twenty-eight countries strongly condemned the use of chemical weapons and commended the contribution made by the Organization for the Prohibition of Chemical Weapons (OPCW) to freeing the world from that type of weapons of mass destruction at the fourth review conference of the chemical weapons convention held at the Hague, Nov. 30, 2018.
In a joint statement released by the Russian Embassy, the attendees lamented "the disunity among the States Parties to [the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction] CWC due to the politicization of the problem of the use of chemical weapons significantly reduces the efficiency of our Organization's work, as it prevents us from focusing on common and genuinely pressing tasks that are set out in the Convention and have been successfully performed for many years. The joint statement "called for dialogue and consultations among States Parties to bridge their division and address their disagreements, so as to arrive at consensus on matters of substance as far as possible."

A separate statement was released by Deputy Foreign Minister of the Russian Federation
Sergey Ryabkov. "The United States has begun accusing Russia of violating the Intermediate-Range Nuclear Forces Treaty with even greater zeal as part of its propaganda campaign meant to justify its decision to denounce the treaty. Apart from engaging in unscrupulous attempts to create a false impression that Russia's alleged non-compliance with the INF Treaty is a firmly established fact, the US Department of State is seeking, no less brazenly, to downplay the importance and validity of Russia's years-long concerns about the implementation of the INF Treaty by the United States itself."
Ryabkov related that to update the treaty, "in October 2007, Russia put forward an initiative to make the INF obligations multilateral, and in February 2008, presented a framework for the relevant international legal agreement that would be open for wider accession. However, this initiative was not supported by states with significant missile capabilities. Washington, after first showing some enthusiasm about our idea, quickly lost interest."
"At the same time, the main problems and risks for the Treaty turned out to be connected with the long-term actions of the American side contrary to their commitments under the agreement. We consider this topic fundamentally important regardless of the future of the INF Treaty.
Furthermore, some provisions of the INF Treaty are insufficiently clear and may give cause for misinterpretation. The decisive factor here is the good faith and political will of the participating countries to keep the agreement viable. This approach should certainly be mutual," he added.
Ryabkov stressed that "Russia has consistently continued to ask the United States to provide the necessary specifics regarding its claims. In the end, the Americans did share the dates of the test launches that caused their suspicion. However, this was done

not only five years after the beginning of this debate, but also five days prior to President Trump announcing his intention to withdraw from the Treaty."
The fact that the destruction of the INF Treaty can provoke an accelerated erosion of the entire arms control and non-proliferation architecture also causes grave concern, he said. "For example, the concept of the New START Treaty is being undermined at a time when the treaty is undergoing a test of strength as it is in view of its lax implementation by the US, which in addition is intentionally creating vagueness with regard to extending this agreement."
Ryabkov concluded that "the international community is yet to assess the full extent of the negative impact that the scrapping of the INF Treaty will have on prospects for further nuclear arms reductions and the effort to ensure the stability of the Nuclear Non-Proliferation Treaty."

The New U.S. Strategy to Tackle WMD Terrorism is New Wine in Old Wineskins

By Al Mauroni
Source: https://warontherocks.com/2018/12/the-new-u-s-strategy-to-tackle-wmd-terrorism-is-new-wine-in-old-wineskins/

Dec 14 – Americans have long been obsessed with the notion that someday a terrorist will detonate a nuclear weapon within the United States. In no small part, our own top defense experts have encouraged this view to motivate the government to take actions to prevent such an eventuality. Despite spending hundreds of billions of dollars every year on countering terrorism, senior defense leaders and politicians still grapple with the paralyzing scenario of a terrorist using a nuclear, biological, or chemical weapon against the American public. Two decades ago, the Clinton administration issued a presidential decision directive to organize the U.S. government efforts against unconventional threats to the homeland. A lot has been done since then. Do we really need a new strategy today?
The White House released a new national strategy to articulate its approach to address the possibility that terrorists may attack the United States and its interests with weapons of mass destruction (WMD). The White House fact sheet identifies "new aggressive steps to counter the growing threat posed by WMD terrorism" as necessary due to the failure of past

approaches to sufficiently mitigate the threat. This document builds upon the 2017 National Security Strategy that noted the increasing danger from "hostile states and non-state actors who are trying to acquire nuclear, chemical, radiological, and biological weapons" and called for efforts to detect and disrupt efforts to use such weapons against the United States. The 2018 *National Strategy for Counterterrorism* also emphasized this threat. Although one can agree with the need for a deliberate policy approach to guide interagency efforts in this area, one cannot say that this strategy is new, in either its assumptions or its particular lines of effort.

There's an inherent challenge in using the term "WMD terrorism" in that it identifies very different chemical, biological, and radiological hazards equally as potential mass casualty threats. To the credit of the authors of this strategy, they caveat this point by noting that chemical and radiological weapons may not cause large-scale casualties, but the qualitatively distinct effects of their use are rationale for requiring a specific national strategy. The strategy calls biological agents "the only other class of WMD that has the potential to match nuclear weapons in the scale of casualties they produce." This is a talking point that dates back to the first term of the George W. Bush presidency, when his administration was developing its *Biodefense Strategy for the 21st Century*. It's still only applicable if one is comparing multiple tens of kilograms of weaponized anthrax to a single low-yield nuclear weapon. Finally, the strategy groups nuclear and radiological materials together, which can be explained by the focus on securing nuclear material — an Obama administration policy favorite — but certainly we treat securing fissile material such as uranium-235 and plutonium-239 much more seriously than other radioactive isotopes, considering the impact of an improvised nuclear device as compared to a radiological dispersal device.

The strategy's introduction attempts to justify why this effort is necessary, and in making that case, there are some questionable statements. It uses the past 40 years as the backstage to describe "multiple groups and individuals" using WMD agents to injure "hundreds of people in multiple countries" and to kill dozens. That's an awfully broad window to identify contemporary security trends. If the timeframe was only the past 15 years, a much more relevant scope, it would be a much less interesting story. Calling out al-Qaeda as having pursued an interest in nuclear weapons is debatable, and really was more of a pre-9/11 effort. One also has to question the assertion that "multiple countries operate clandestine chemical or biological weapons programs" and that those countries' technical personnel would assist terrorists in their WMD efforts. There is no evidence that any nation-state has ever considered transferring nuclear, biological, or chemical weapons to non-state actors.

National Strategy for Countering WMD Terrorism (2018)	National Strategy for Combatting Terrorism (2006)
• Deny terrorists access to dangerous materials, agents, and equipment • Detect and defeat terrorist WMD plots • Degrade terrorist WMD technical capabilities • Deter support for WMD terrorism • Globalize the counter-WMD terrorism fight • Strengthen America's national defense against WMD terrorism • Enhance state, local, tribal, and territorial preparedness against WMD terrorism • Avoid technical surprise	• Determine terrorists' intentions, capabilities, and plans to develop or acquire WMD • Deny terrorists access to the materials, expertise, and other enabling capabilities required to develop WMD • Deter terrorists from employing WMD • Detect and disrupt terrorists' attempted movement of WMD-related materials, weapons, and personnel • Prevent and respond to a WMD-related terrorist attack • Define the nature and source of a terrorist-employed WMD device

The strategy uses the same generic statement used by the past three presidential administrations, that "technical advances and other global developments" will allow terrorists to have easier access to WMD-program related material and technology. And yet, since 1995, the only significant terrorist "WMD" incidents have been Iraqi insurgents and the Islamic State's limited and ineffective use of industrial chemicals in the Middle East (of note, the Amerithrax attacks in 2001 were not caused by a terrorist group). Are these events really the precursor to future cases of terrorists bringing WMD into the United States? Following the 9/11 attack, it was popular to say that terrorists would not

hesitate to use WMD, should they acquire them. So we're back to using that tired phrase, despite the absolute lack of any factual cases to support that assumption.

We can argue about the assumptions used in WMD terrorism strategies and the probability of such events actually occurring and resulting in mass casualty events, but of more significance is the federal government's plan to deter, disrupt, and respond to such threats. The Trump administration's strategy identifies three core elements that will drive eight lines of effort to achieve five strategic objectives (see figure above).

This is not a new policy approach to countering "the growing threat posed by WMD terrorism." It is certainly not "the first-ever comprehensive, public description of the United States Government's approach to combating WMD terrorism." As shown in Figure 1, nearly the exact same words, if not the same intent, were used as key elements to combat WMD terrorism in the 2006 National Strategy for Combating Terrorism.

The State Department's 2006 Country Reports on Terrorism echoed this counter-WMD terrorism policy and included a chapter on the global challenge of WMD terrorism in its each of its subsequent annual Country Reports. The Obama administration dropped the objective-based strategy in favor of articulating nonproliferation activities and international forums that supported U.S. government efforts to counter chemical, biological, radiological, and nuclear (CBRN) terrorism, but it largely continued the many governmental programs initiated by the Bush administration. It's not a surprise to see this administration use a strategy developed by the Bush administration, but one cannot call this a new approach.

I've stated in past articles that state WMD programs require a greater national security focus than a generic terrorist group that can't do much more than use a few gallons of industrial chemicals or grams of a biological toxin. Terrorist groups don't have the infrastructure to develop or capability to deliver nuclear, biological, or chemical warfare agents on the scale to cause mass casualties. I don't endorse the "one percent doctrine," but I will acknowledge that the interagency has a responsibility to develop programs in response to the policy direction of the White House. All presidential administrations beginning with the Clinton administration have developed executive orders toward mitigating the risk of WMD terrorism, and the counterterrorism community responds accordingly.

The Trump administration's national strategy may be echoing old phrases and bad assumptions, but the lines of effort offer a consistent and executable agenda for the purpose toward which it is designed. The proof of the pudding, however, is in the eating. The introduction of this national strategy notes that "implementation guidance will be developed to establish clear roles and responsibilities, avoid duplication of effort, and ensure that activities are properly prioritized." Does this mean that the National Security Council's senior director for WMD and biodefense will be organizing and tasking the interagency on how they progress against these lines of effort? Traditionally, the "WMD Czar" has been limited to working arms control and nonproliferation activities and not corralling the executive agencies.

There are several executive agencies that already have roles and responsibilities, and more importantly, funded programs that align with this strategy's objectives. *Presidential Policy Directive 8 (National Preparedness)* still directs federal efforts to prepare for and respond to acts of terrorism. The State Department and Energy Department have nonproliferation programs designed to restrict or secure certain materials from being illicitly taken and used contrary to their intended purposes. The intelligence community, notably the National Counterproliferation Center and National Counterterrorism Center, track the possible intersection of terrorist groups and WMD materials. The Defense Department directs the U.S. Special Operations Command to focus on terrorists seeking WMD and U.S. Northern Command to support a federal response to WMD terrorist attacks. The Justice Department has its FBI WMD Directorate to investigate WMD threats and terrorist attacks. The Department of Homeland Security has a strategic goal to prevent terrorists from transporting WMD across U.S. borders, as well as guiding the development of state, local, tribal, and territorial WMD response efforts. There are many actors and many other national security priorities. If this strategy is to be more aggressive, does that translate into additional funding for existing and/or new programs? Or will the direction be to do more with less in counterterrorism efforts? We shall see.

Of all the objectives in this strategy, I am most skeptical as to the ability of individual Americans to be "resilient and steadfast in the face of a WMD attack." We have trouble

keeping military service members proficiently trained to survive and sustain combat operations in a WMD environment, and they have specialized defensive equipment and training. I do have faith in the public's ability to weather conventional terrorist incidents, considering their post-attack reaction to the 1995 Oklahoma City bombing and 9/11 incident, but not a true mass casualty event that features nuclear, biological, or chemical weapons. I'm just not sure what it would take to get the public prepared for such an event, or even if it's really necessary.

Terrorists have, for whatever reason, eschewed developing WMD and instead relied on conventional firearms and explosives for their attacks. With a very few exceptions, terrorist CBRN incidents have been single, small-scale events that have been manageable. It's unclear as to why the Trump administration decided that the U.S. government needed this national strategy today, given other significant national security threats and other funding priorities. It may not be a new strategy, but it's always a good idea to raise the profile of these discussions if not just to assess where we are and where we need to be.

__Al Mauroni__ is the Director of the U.S. Air Force Center for Strategic Deterrence Studies and author of the book, "Countering Weapons of Mass Destruction: Assessing the U.S. Government's Policy." The opinions, conclusions, and recommendations expressed or implied within are those of the author and do not necessarily reflect the views of the Air University, U.S. Air Force, or Department of Defense.

Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA)

Source: https://www.centerwatch.com/drug-information/fda-approved-drugs/drug/606/skin-exposure-reduction-paste-against-chemical-warfare-agents-serpacwa

The Skin Exposure Reduction Paste Against Chemical Warfare Agents (SERPACWA) is indicated for the use in conjunction with Mission Oriented Protective Posture (MOPP) gear to reduce or delay the absorption of chemical warfare agents through the skin when SERPACWA is applied prior to exposure.

Clinical Results

SERPACWA was not tested for protection against chemical warfare agents in humans.

One clinical study was conducted to evaluate SERPACWA's effectiveness in the reduction of the severity of dermatitis associated with continuous contact with urushiol (poison ivy resin) in 50 healthy volunteers with history of sensitivity to urushiol. Not all treated individuals were completely protected from the reaction, and the development of dermatitis varied among test subjects. However, results indicated that SERPACWA-treated skin sites exhibited fewer effects of dermatitis due to the urushiol than did the untreated sites.

Another study was performed to determine whether perspiration prevented the effectiveness of the product. SERPACWA was applied to certain sites of the skin of 37 normal volunteers. The participants were then exposed to conditions which promoted active perspiration. Finally, the participants were exposed to the dermal irritant/vasodilator methyl nicotinate for 2 minutes. Results showed that there was substantially less cutaneous vasodilation at the treated sites than at the non-treated sites. Again, the effects were variable among participants and not all individuals were completely protected from the irritant.

Side Effects

- SERPACWA is intended for external use only
- Fumes from the PTFE component of SERPACWA are harmful and can cause polymer fume fever, a flu-like syndrome whose long-term effects have not yet been determined. **Do not handle cigarettes or any other smoking products if you have been exposed to even a small amount of SERPACWA.**
- Wash your hands thoroughly after touching or applying SERPACWA
- Cease smoking and discard any potentially contaminated products

- Clothing or other products exposed to SERPACWA (including SERPACWA packaging materials) should not be destroyed by burning
- The presence of insect repellent containing DEET significantly reduces the effectiveness of SERPACWA. Remove any product containing DEET with a dry towel or cloth before applying SERPACWA.
- Some camouflage pants may also reduce the barrier effects of SERPACWA.

In clinical studies SERPACWA was only left in place for a maximum of five hours. In studies, no adverse effects were associated with SERPACWA use.

Information for Personnel:

- SERPACWA is to be applied in conjunction with and prior to the wearing of MOPP gear.
- SERPACWA's ability to delay or reduce absorption of CWA after 5 hours from its application is unknown.
- Very harmful fumes are generated from smoking/burning this product. Extreme caution should be exercised while handling smoking materials in the presence of SERPACWA.
- Any interaction between SERPACWA and the skin decontaminating kit is still unknown. However, in animal testing, it has been shown that SERPACWA-like products used in conjunction with a skin decontaminating kit, is more effective than using the skin decontaminating kit alone.

After the product is applied, if exposure to CWA is confirmed or suspected, follow the appropriate protocol for decontamination.

Mechanism of Action

SERPACWA serves as a physical barrier that may reduce or delay exposure of skin to chemical warfare agents (CWA). SERPACWA has no other known action.

Dosage and adminisration

Apply the SERPACWA by hand onto the skin until there is a barely noticeable white film layer. Apply the entire contents of the 84-gram package of SERPACWA evenly to the areas of the skin (as outlined in Instructions for Use for Military Personnel below) prior to donning MOPP gear.

▶▶ **Read also:** https://www.accessdata.fda.gov/drugsatfda_docs/label/2000/21084lbl.pdf

FIDO C1 Agentase CAD-Kit

Source: http://www.laurussystems.com/FLIR-FIDO-C1-Chemical-Agent-Point-Detection.htm

The FIDO C1 Agentase CAD-Kit provides first responders with the ability to **conduct surface, solid and liquid interrogation of nerve (G&V series), blood (AC) and blister (HD) agents, acids, bases, aldehydes and oxidizers.** This kit provides accurate results in field environments, improves detection limits to rival those of expensive handheld electronic testing devices and provides fast signals that are easy to interpret. The simplicity of this kit makes it user friendly for the entire first responder community. Unlike other field detection equipment, the Agentase CAD-Kit has extremely low rates of false positives and negatives.

The Agentase CAD-Kit accurately and rapidly characterizes unknown samples in the field. While sensors are used to directly look for low levels of agent contamination on surfaces, the Agentase CAD-Kit also includes a sampling device for unknown solids and liquids. The sampler is used to collect a field sample and dispense a portion of the collected sample to each of the sensors.

Cyranose® 320

Source: http://www.sensigent.com/products/cyranose.html

The Cyranose® 320 is a fully-integrated handheld chemical vapor sensing instrument designed specifically to detect and identify complex chemical mixtures that constitute aromas, odors, fragrances, formulations, spills and leaks. It is also used to identify simple mixtures and individual chemical compounds. **The Cyranose® 320 is used in diverse industries including petrochemical, chemical, food and beverage, packaging materials, plastics, pet food, pulp and paper, medical research, and many more.**

The Cyranose® 320 utilizes the NoseChip® array of nanocomposite sensors and advanced pattern recognition algorithms to detect and recognize the chemical vapor of interest via its smellprint. In combination, these technologies enable rapid detection and identification of substances based on their chemical profile as visualized by the smellprint.

The Cyranose® 320 also utilizes the versatile and intuitive PCnose software to "learn" the chemical profile of vapors of interest, enabling users to develop their own libraries of aromas, odors or the chemical characteristics of their own products. The PCnose software and NoseChip® array provide each customer with a unique capability – to learn and identify what is important about their own products – and thus utilize the same Cyranose® 320 instrument for many different sensing applications or instrument methods. For each method, the Cyranose® 320 provides simple, clear actionable results such as "Accept or Reject", "Mixture Identified" or "Contaminated". Each measurement is assessed a statistical quality rating of 1 to 5 stars.

The intellectual property incorporated in the Cyranose® 320 is protected by over 60 patents in the United States and worldwide for the sensor technology, detector products, and applications use of the eNose.

Antidotes transport by Unmanned Aerial Systems (UASs) in BVLOS mode in case of CBRN Event

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Presented at the "Workshop on Countering Radiological and Nuclear threats" – 8th November 2018, Rome, Italy

In case of CBRN Event most Regional Health Service' medical facilities could storage an insufficient quantity of antidotes, with obvious related problems in the treatment of the population and rescuers who have been exposed to CBRN agents. National Stockpile of Antidotes system with its Regional and State storages, provides the antidotes storage and supplies upon request of the Ministry of Health.

In the CBRN operational response phase, antidotes are delivered to health care providers who shall ensure the proper use, in a potential contaminated environment. For this reason, physical, functional and operational strength of the CBRN Operators with the durability of

personal protective equipment are critical for the antidotes' distribution process. Through the analysis of technical solutions, Safety & Security aspects and existing legal frameworks, this poster aims to explore strenghts and weaknesses related to antidotes transport by Unmanned Aerial Systems (UASs) in Beyond-Visual-Lineof- Sight (BVLOS) mode from the Regional/State storages and the end point of delivery. As a consequence, an UAS capable of transferring a heavy load, could deliver health aid and antidotes throughout CBRN Environment, as well as hostile borders and amidst chaos and traffic congestion, that may timely block assistance.

Resistance of DNA forensic evidence after CBRN attack scenario

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After a CBRN attack one of the key issues for the first responder is to take a forensic evidence for legal prosecution of those that performance the malicious act. This work is focused on the influence of radiation field on DNA evidences and their resistance as a function of the nature cells and the dose rate absorbed. For this study sample of epithelial cells, blood and deposited on metal and plastic were irradiated in a gamma radiation field up to 1 MGy. After irradiation, the samples were analyzed by standard forensic DNA procedure and evaluated their capacity for recognizing the human profile. Results obtaining demonstrate as a function of DNA origin (types of cells) the resistance to absorbed dose change and their usefulness as forensic evidence has been compromised. Furthermore, a study of the microsatellite markets (Short Tandem Repeat – STR) with the dose adsorbed will be presented. These results will be a useful tool for first responder, because will help to assess the guidelines and procedure for taking forensics evidences that will be profit taking in consideration ALARA requirements related to this personal.

Working dogs in a contaminated environment, problems and possible work solutions in safety

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Presented at the "Workshop on Countering Radiological and Nuclear threats" – 8th November 2018, Rome, Italy

Purpose: Identification of vulnerabilities in the use of search and rescue dogs and complications; the analysis starts from events endemic to Italy like asbestos in the rubble, especially if the threat is discovered belatedly, until analyzing scenarios of terrorism and CBRNe.
Background: Each event requires a coordinated response of the entire rescue system, standardized inter-force protocols, highly qualified and periodically trained personnel. The current Italian rescue system is very fragmented and it can easily put the operators involved in a scenario at risk.
Method and materials: Study and analysis of "case studies" of rescue operations in Italy. Analysis of procedures and protocols of bodies, institutions, and auxiliary and voluntary organizations on events involving hazardous materials (HazMat).

Finding: The cases analyzed, and the absence of inter-force procedures, make it clear that working dogs a nd / or search dogs and their operators are highly exposed to the risks from hazmat, CBRNe and terrorism. Furthermore, **there are no effective decontamination procedures for animals,** and it is necessary to provide suitable health surveillance for dogs and their operators.
Conclusions: Delays in response adjustment can now be a significant cause of loss among rescuers and their dogs.

CBRN Innovation Lab: a platform for improving risk knowledge and warning of CBRN hazards in Abu Dhabi

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Presented at the "Workshop on Countering Radiological and Nuclear threats" – 8th November 2018, Rome, Italy

The impacts and costs of hazards on people, properties and environment are often severe when they occur especially with no warning system in place. The lack of early warning system (EWS), and limited knowledge of potential impact of hazard in some communities in the UAE have emphasized the need for more effective early warning systems. This work paper examines the use of innovation lab to improve understanding of potential impacts of hazards, and as EWS tool in the UAE.
Identifying elements of EWS from literature helped to develop the framework for structuring and implementing activities in the innovation lab using a comprehensive hazard approach that focuses on Chemical, Biological, Nuclear and Radiation (CBRN) risks; knowledge of which is very low in the UAE. Abu Dhabi population was surveyed to determine knowledge of hazards of CBRN, while 8 managers in Abu Dhabi Police (ADP) were inter-viewed to further understand the role of innovation lab in improving current knowledge level. The research outcome revealed **that knowledge and warning of CBRN hazards in the UAE is low,** and may be improved through the use of innovation lab.

MELODY – A harmonised CBRN training curriculum for first responders and medical staff

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Presented at the "Workshop on Countering Radiological and Nuclear threats" – 8th November 2018, Rome, Italy

MELODY will define, develop and deploy a harmonized CBRN training curriculum for first responders and medical staff, by medical staff it is meant ambulance drivers, paramedics and emergency room (ER) personnel. Existing training programmes, and training needs are assessed through consultation with existing training facilities in the consortium, and consultation with end-users/practitioners to assess the current gaps and needs. This will lead to the proposal of an improved CBRN training curriculum assessed and evaluated through a number of dedicated exercises and training activities which will lead to a new set of improvements. A WP has been devoted to demonstration and dissemination activities. The former will deal with showcasing the final product through a set of full-scale exercises, whereas the latter will be a continuous effort in raising awareness on the project and its activities at all levels: from practitioner to policy makers. It is expected that, a fully fit-for-purpose CBRN training curriculum for EU first responders and medical staff, properly quality assured and controlled will be delivered three years after the initiation of the project.

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Source: www.nbc-sys.com

The MEERKAT® is a rapid response vehicle (Polaris 6x6) with rear mounted decontamination equipment.

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Source: www.intelegard.com

Designed for use on Utility Terrain Vehicles, this unique system can also be easily installed on any type of vehicle or trailer. This multipurpose, compact and durable skid system provides a dependable solution for fire, decon and hazmat. Powered by a robust combination of a 30 CFM compressor and gasoline air-cooled engine (diesel configuration available), the SwiftRunner SR II is easy to operate and maintain. Optional high pressure air power increases this system's adaptability.

PHE publishes revised CBRN manual

Source: https://app.croneri.co.uk/whats-new/phe-publishes-revised-cbrn-manual

July 2018 – Public Health England (PHE) has published a revised manual for *Chemical, Biological, Radiological and Nuclear Incidents: Clinical Management and Health Protection*.

The manual is intended for first responders and front-line healthcare professionals in emergency departments but also for those in other specialties, including primary care and public health, emergency planners, trainers and emergency service personnel. The revised manual replaces the 2006 version, which was published by the (then) Health Protection Agency.

The manual covers generic incident management principles, chemical, biological and radiation threats, respectively, and a new, final section covering health protection considerations applicable to mass casualty situations, such as following bomb blasts.

The manual can be downloaded from the PHE website.

Palestinian arrested in Italy for plotting to poison town's water supply

Source: https://www.timesofisrael.com/palestinian-in-italy-reportedly-arrested-over-water-supply-poison-plot/

Nov 28 – A Palestinian man with links to the Islamic State group was arrested in Italy Wednesday on suspicion that he was planning a terror attack on the island of Sardinia, according to a state prosecutor.

State anti-terror prosecutor Federico Cafiero de Raho said the suspect planned to **poison the water** supply in the central **island town of Macomer** as well as a nearby military base, with **ricin and anthrax**.

The suspect was identified by the Il Fatto Quotidiano daily as Alaji Aminun, a Palestinian refugee from Lebanon, who moved to Macomer.

The arrest came two months after Lebanese authorities arrested another Palestinian refugee on suspicion of plotting to poison the water supply of a military barracks there. At the time, officials said the suspect had been linked to the Islamic State and had worked with another man, apparently Aminun, to "carry out a mass poisoning in a foreign country" through "poisoning food during a public holiday," without specifying the location.

De Raho told reporters at a press conference in Rome Wednesday that the 38-year-old suspect planned the chemical attack with his cousin, who resides in Lebanon. He said Italian authorities were tipped off to the plot by Interpol, who learned of it from Lebanese authorities in September when Aminun's cousin, 27, was arrested.

It was not clear when Aminun planned to carry out the attack, but De Raho said police believed he wanted the poisoning to coincide with a holiday.

Italy's anti-terror unit arrested Aminun in downtown Macomer earlier on Wednesday after tracking him for an unspecified amount of time.

Authorities confirmed that Aminun held an Italian residency visa, and had moved to Sardinia from Lebanon several years ago. He resided in Macomer with his partner, a Moroccan woman, and her four children.
According to local media reports, Aminun's partner told police she had no knowledge of the poisoning plot.

Just another photo intel

Source: hhtp://www.militaryreview_20161031_art012.pdf

Medics assigned to 2nd Battalion, 502nd Infantry Regiment, Task Force Strike, along with other coalition partners, evaluate a simulated casualty during chemical, biological, radiological, and nuclear exposure training in Erbil, Iraq, 23 May 2016. This was among the first training exercises the regiment's soldiers conducted with their coalition partners during Operation Inherent Resolve. This training is an integral part of multinational efforts to train Iraqi Security Force personnel to defeat the Islamic State. (Photo by 1st Lt. Daniel Johnson, U.S. Army) #1

EDITOR'S COMMENT: #1 Properly dressed in PPEs; #2 NOT properly dressed; touching victim with bare hands – most probably are the instructors; #3 not protected at all – obviously a bystander involved in other activities; #4 donned but not properly lacking his pair to assist (buddy system). Always kept in mind the saying of CBRNe World Editor commenting on a CBRN drill in East London befre the 2012 London Olympics:"If you cannot do it during drills and do it right then most probably you cannot do it right on the day". Just another photo supporting the sorry reality (worldwide). And it is getting worst since the author of the paper was a chemical officer deployed among other posts in Afghanistan during *Operation Enduring Freedom* (2012-2013).

Developing concepts for escape respirator

Source: http://www.homelandsecuritynewswire.com/dr20181220-developing-concepts-for-escape-respirator

Dec 20 – The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) announced the Escape Respirator Challenge, a $250,000 prize competition that seeks new concepts for an escape respirator solution. This challenge invites the innovation community to submit relevant, useable, effective, and feasible concepts that protects the user against aerosolized chemical, biological, and radiological (CBR) hazards and provides oxygen.

"Through this challenge, we are reaching out to the scientific community for innovative compact design solutions that will eventually help people evacuate from toxic or smoke-filled environments," said William N. Bryan, Senior Official Performing the Duties of the DHS Under Secretary for Science and Technology. "This Challenge will allow S&T the opportunity to equip first responders and others with essential protective gear."

This call for concepts is the first of a two-phase competition with a total cash prize pool of $250,000. At the conclusion of Phase I, up to three finalists will each receive $50,000 from the cash prize pool to build a functioning prototype according to their submitted proposals. Phase I finalists will then participate in a presentation event during Phase II where they will demonstrate their prototypes to compete for a cash grand prize purse of $100,000.

The overall goal of this challenge is to develop a working prototype for a compact, discreetly carried escape respirator that is capable of being donned rapidly while providing oxygen for safe egress from smoke-filled, oxygen-deficient, and CBR environments. Although commercial solutions exist, they do not have the small form factor, packaging, or weight reduction sought through this challenge.

S&T notes that currently available escape hoods or respirators have several shortcomings for all-hazards protection. One shortcoming is an inability of current designs to be packaged compactly such that it can be carried discreetly, such as fitting (conveniently within the inner pocket of a suit coat). A second shortcoming for many current designs is lack of an oxygen delivery mechanism for respiratory protection when worn in an oxygen-deficient environment, such as a smoke-filled room. The third shortcoming is that currently available escape hoods are not as lightweight as desired in the required form factor. "While some current designs have incorporated solutions for one of these shortcomings, none have been found to meet all requirements," said Dr. Donald Bansleben, S&T Program Manager.

Those interested in participating in the Escape Respirator Challenge should register no later than Thursday, 1 April 2019, and submit an application no later than Thursday, 30 May 2019.

Did you know?

When procured in sufficiently large quantities, solvents used in ballpoint pen ink can be converted into mustard gas.

The Federation of American Scientists, 1997. The Chemical Weapons Convention [online]. http://fas.org/nuke/control/cwc/news/cwcfs.htm

Demolishing the Kremlin's absurd theories about Novichok and Porton Down

By Dan Kaszeta

Source: https://www.integrityinitiative.net/articles/demolishing-kremlins-absurd-theories-about-novichok-and-porton-down

July 2018 – Ever since a Russian defector and his daughter turned up ill in Salisbury in March of this year, the UK's chemical defence laboratory at nearby Porton Down has figured in various conspiracy theories and "alternative narratives". The story immediately became more complex when the poison involved was identified as the "Novichok" type. So-called Novichoks are a family of nerve agents designed by the former Soviet Union for chemical warfare. The later incident involving two persons in Amesbury, one of whom subsequently died, also near Porton Down, increased the frequency of Porton Down theories. All of these stories and conspiracy theories have served to cause confusion and divert attention away from the primary hypothesis – that the Russian state made the nerve agent and used it to kill and injure people in England. Both Porton Down's existence and its proximity to the events have been used to imply that this government establishment is involved in nefarious activities.

First, let's examine what really does happen at Porton Down. It is the headquarters of Defence Science and Technology Laboratories (DSTL), a key defence research component of the UK Ministry of Defence. DSTL has activities in other places, but its facilities at Porton

Down are the UK's research labs for defence against chemical and biological weapons. Public Health England also has facilities there, including the Rare and Imported Pathogens Laboratory. A number of spin-off businesses are at Porton Down as well, including Ploughshare Innovations and Porton BioPharma. Porton Down is an important node in the UK's biomedical sector. Thousands of people work in and around the area. Which is an important fact. Nefarious activities in this day and age generate whistleblowers.

Porton Down is allowed to make and store small quantities of chemical warfare agents for defensive research purposes such as testing of detection methods, testing of decontamination techniques, and development of medical treatments. All of this is specified in the Chemical Weapons Convention (CWC) and heavily regulated both in UK law and regulation and by rigorous audit and inspection by the Organisation for Prohibition of Chemical Weapons (OPCW). The fact that Porton Down may have, at any particular time, a vial of some particular chemical agent is often distorted or oversimplified into "Porton Down stores chemical agents" – implying some sort of stockpile which simply is not the case.

It is important to note that Porton Down has played a very important role in the response to the Novichok assassination attempt. It has analysed many thousands of environmental and biomedical samples as part of the investigation and has provided essential technical advice and assistance needed to treat the victims. It is the UK's declared facility under the CWC and the one place where serious analysis of nerve agents can legally be undertaken. The OPCW uses Porton Down as part of its international network of accredited labs, and samples of potential interest in chemical warfare attacks elsewhere in the world can be tested there on behalf of the OPCW. Theories that attack the credibility of Porton Down with innuendo and rumour could serve to undermine such investigations. Russia seems to have a clear motive for undermining such investigations.

Does the UK have a Chemical Warfare Programme?

Second, let's examine an underlying assumption. The idea that Porton Down is part of the problem and not part of the solution relies somewhat on the unspoken assumption that the UK somehow still has an offensive chemical warfare programme and that stockpiles of chemical weapons are kept at Porton Down. Does the UK have an offensive chemical warfare programmes? It is no secret that the UK developed and stockpiled such weapons at one time, but for decades now the answer has been, and is, no. The UK has acceded to the Chemical Weapons Convention and enacted its provisions into domestic law. The UK joined the Organisation for Prohibition of Chemical Weapons and provided detailed certifications about their chemical weapons. The OPCW frequently inspects the UK to ensure that its declarations are accurate. It is an illegal act to possess or develop chemical weapons in the UK, except in the very narrowly defined circumstances defined in the CWC treaty and subject to audit and inspection by the OPCW.

The UK was one of the first countries to have an offensive chemical warfare programme, which lasted from 1918 to the mid 1950s, with some residual mothball capabilities lingering into the 1970s. The UK had production facilities for chemical warfare agents at Sutton Oak (Merseyside) and Nancekuke (Cornwall), but these ceased active production in the 1950s. The UK halted production of chemical agents by decision of the cabinet in 1956, after effectively agreeing a division of labour with the USA and offering to focus on defensive technologies such as medical treatments and detection.

Debunking the theories

Finally, let's examine two of the threads of the actual conspiracy theories that have been implied by Russian media outlets and social media accounts. Few have laid out an actual hypothesis in detail, but the themes and memes basically distil down to "leak" stories and "proximity" innuendo, both of which I shall dissect.

A recurring idea is that, somehow, a leak occurred at Porton Down. The leak narratives seem to rely on an idea that a toxic substance leaked out of some kind of storage and spread, as if like a gas leaking from a cylinder or some such. Like the Bhopal disaster. The Novichok in question, however, is a thick liquid, not a gas. If it leaks from a jar, it will end up on the table, and then maybe on the floor. For the leak narrative to be true, a liquid breached a container and likely a second container, for what OPCW-certified reference laboratory is going to keep such a

substance sitting in a single container on a table somewhere? This liquid then escapes a room. It escapes a building, in a secure compound. It then travels miles across country to land exactly on a door handle. Without being seen or affecting anyone at all along the way, least of all the various people whose job it is to keep things in the laboratory safe. They didn't notice liquid flying through the air and nobody else did either. And it lands on not just a random door handle. One that happens to be on the front door of a house. A house that just, by random dumb luck happens to be the residence of a defector from the Russian intelligence services. Another bit of this liquid somehow flies out of the container and out of the lab and works its way into a perfume bottle, only to be found by two unfortunate people in nearby Amesbury. Yet nobody saw this liquid flying through the air. Perhaps an explosion big enough to send globules of liquid flying through the air was somehow not noticed by anyone and did not hurt anyone? The "leak" stories are rendered so highly improbable by statistical probability and basic physics as to make them patently absurd.

The "proximity" narrative implies that the fact that Porton Down is near to Salisbury somehow means that Porton Down was responsible. The Amesbury poisonings added to this narrative. The proximity stories either are an amplification of the "leak" narrative already described above, or hint that whoever did the attack must have brought the chemical agent from Porton Down, as it is conveniently nearby. This theory, however, is based on a number of improbable assumptions. It requires the UK to have spent millions on illegal development of a nerve agent, likely requiring much trial and error. (No historical nerve agent development pathway was without serious trial and error.) Nobody leaked the existence of this illegal act. The proximity argument would have you believe that a number of people in Porton made a quantity of this Novichok, to an exacting degree of purity, without putting contaminants in it to deliberately lead investigators astray. All of this effort was undertaken, but nobody could travel farther than a few miles out the front gate. Even though the substance is eminently stable for years in storage and weeks or months in the open environment. All of this effort could be expended only for some act literally within bicycle radius of the front gate of Porton Down? This seems an unlikely circumstance. Or, some other UK government agency independent of Porton would execute an attack literally on the doorstep of the one facility that could do the forensic work? That seems an unlikely combination of competence and incompetence.

And how far would one take a proximity argument? How about a 100-mile radius? Perhaps American and Russian commentators are unfamiliar with the compact geography of the United Kingdom. If one were to draw a 100-mile radius around Porton Down, it would include a wide swathe of the country. Such a radius would include Bath, Bristol, Cardiff, Oxford, Gloucester, the entire south coast from Torquay to Hastings, and... all of greater London. The proximity argument is absurd.

The simple fact is that a nation like the UK needs a place like Porton Down to do valuable work to protect not just the nation's armed forces but also to protect all of us who live here. Alleging leaks and plots does not do any good for anyone. In the absence of any evidence, these stories and theories are absurd.

Information Security Best Practices for CBRN Facilities

UNICRI Project 19

Source:

Information assets, including data and information systems, need to be protected from security threats. To protect their information assets, chemical, biological, radiological, and nuclear (CBRN) facilities need to design, implement, and maintain an information security program. The general principles of information security are the same for CBRN facilities as they are for any other critical infrastructure or industry. The type of threats, attack tools and technologies, vulnerabilities, and types and capabilities of security controls are roughly similar for all types of facilities. What differs for CBRN facilities are the source of threats (i.e., who might want to attack a CBRN facility) and the consequence of the loss of information security. The sensitive nature of CBRN materials, the safety and health threats involved in the potential theft or sabotage at CBRN facilities, and the high public visibility of CBRN facilities often generate higher risks for the loss of information security than at other facilities.

This document provides management and workers at CBRN facilities, parent organization managers responsible for those facilities, and regulatory agencies (governmental and nongovernmental) with guidance on the best practices for protecting information security. The security mitigation approaches presented in this document were chosen because they present generally accepted guidance in an easy-tounderstand manner, making it easier for facility personnel to grasp key concepts and envision how security controls could be implemented by the facility.

This guidance is presented from a risk management perspective. Not all facilities can afford to purchase, install, operate, and maintain expensive security systems; therefore, decisions on information security have to balance considerations of security risk and resource constraints. When resources are limited, information security investments should focus on what provides the greatest risk reduction for the available resources.

This document is the first in a series of three documents produced by Project 19 of the European Union Chemical Biological Radiological and Nuclear Risk Mitigation Centres of Excellence Initiative. The second document in the series, *Information Security Management System Planning for CBRN Facilities* focuses on information security planning. It describes a risk-based approach for planning information security programs based on the sensitivity of the data developed, processed, communicated, and stored on facility information systems. The third document in the series, *How to Implement Security Controls for an Information Security Program at CBRN Facilities*, provides risk-based guidance on selecting security controls to implement the ISMS.


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BIO NEWS

First-of-its-kind Ebola treatment trial underway in Congo

Source: https://www.news4jax.com/health/firstofitskind-ebola-treatment-trial-underway-in-congo

Nov 26 – The Democratic Republic of Congo has kicked off the world's first multidrug randomized control trial to evaluate the effectiveness and safety of experimental drugs used to treat Ebola patients, the World Health Organization announced Monday.

There have been 412 Ebola cases, including 236 deaths, in this outbreak in Congo as of Saturday, according to WHO. Concerns remain that the outbreak could spread into neighboring nations.

"While our focus remains on bringing this outbreak to an end, the launch of the randomized control trial in DRC is an important step towards finally finding an Ebola treatment that will save lives," WHO Director-General Dr. Tedros Adhanom Ghebreyesus said in a statement Monday.

"Until now, patients have been treated under a compassionate use protocol, with drugs that showed promise and had a good safety profile in laboratory conditions," he said. "The giant step DRC is taking now will bring clarity about what works best, and save many lives in years to come. We hope to one day say that the death and suffering from Ebola is behind us."

In August, Congo's Ministry of Health reported an outbreak of Ebola virus disease in North Kivu province. The outbreak emerged about a week after the government declared that a previous outbreak had ended. The new outbreak -- the second this year -- began in North Kivu and spread to Ituri province in the east of the country. The two provinces, which are among the most populated in the nation, border Uganda, Rwanda and South Sudan.

The outbreak marks the 10th time since 1976 that Ebola has struck Congo.

An accumulation of evidence

More than 160 patients have been treated with investigational therapeutics under a protocol called the Monitored Emergency Use of Unregistered and Investigational Interventions, which was designed not to test the drugs but rather to provide them as something similar to a compassionate use, for instance.

With the new trial, patients can be offered treatments under that framework of the study, according to WHO.

The trial is coordinated by WHO and led and sponsored by Congo's National Institute for Biomedical Research, in partnership with the Ministry of Health, the US National Institute of Allergy and Infectious Diseases and the Alliance for International Medical Action, among other groups.

Last month, WHO convened a meeting of international organizations, United Nations partners, countries at risk of Ebola, drug manufacturers and others to agree on a framework to continue trials in the next possible Ebola outbreak.

Over time, the trials could lead to an accumulation of evidence and research that will help better the world's understanding of the effectiveness of currently available Ebola drugs and new drugs that may be developed.

'The security situation is a significant impediment'

Congo is experiencing not only an Ebola outbreak but a long-term humanitarian crisis that includes intermittent armed conflict and violence, which has hampered efforts to stamp out the deadly outbreak in the northeast.

The minister of public health, Oly Ilunga Kalenga, said this month that violence against health officials and civilians by militant groups battling for control in the affected region has thwarted efforts to contain the outbreak.

"No other epidemic in the world has been as complex as the one we are currently experiencing," Kalenga said in a video statement posted on Twitter.

In October, two health workers died in one attack, he said, and 11 civilians were killed in Beni, a city of 800,000 people and the epicenter of the outbreak.

At the time, United Nations Secretary-General António Guterres condemned the killings, noting that he was also "deeply troubled" by the deaths of the two Congolese health workers.

The United States has decided that it is no longer safe to have government personnel on the ground in Beni, said Tim Morrison, special assistant to the president and senior director for weapons of mass destruction and biodefense at the National Security Council.
Personnel have been pulled back from the worst affected areas due to those safety concerns.
"The security situation remains tenuous and it is the position of the US government, there is no disagreement, that the security of our staff, the safety of our staff, the security of our personnel is our highest priority," Morrison said.
"We are looking at every option available to us to provide assistance, technical expertise to the region, but the security situation is a significant impediment," he said. "This is a specific challenge from a security perspective but it is not in any way impeding our ability to provide financial and technical assistance."

Introducing "the Poor Man's Atomic Bomb": Biological Weapons

By Tyler Headley
Source: https://nationalinterest.org/blog/buzz/introducing-poor-mans-atomic-bomb-biological-weapons-37437

Dec 02 – In 2014, a laptop belonging to a member of the Islamic State (ISIS) was shown to reporters. The device contained information on creating biological weapons including the bubonic plague. While ISIS was never definitively shown to have actively pursued the development of bioweapons, instead using chemical weapons in Syria and Iraq, other rogue non-state actors like Al Qaeda have made concerted efforts to develop, obtain and use bioweapons.
Two recent phenomena are reasons to reexamine the threat of bioterrorism. First, renewed tensions with Iran, which previously conducted bioweapons research and development, could potentially recommence the development of bioagents which in turn could fall into the hands of rogue non-state actors. Second, government budget cuts mean that national programs are under increased public scrutiny. The United States reportedly spent $14 billion dollars on biodefense in the three years following the 9/11 attacks. "A substantial amount of money has been invested in biodefense," wrote Ari Schuler, author of a notable report on biosecurity, "but the…money is no indication of success or failure." For these two reasons, this is an opportune moment to reevaluate the threats posed by bioterrorism.
Bioweapons were astutely called by Hashemi Rafsanjani, speaker of Iran's parliament in 1988, "the poor man's atomic bomb." Biological weapons don't necessarily require the technical sophistication of a nuclear bomb, yet still have the potential to wreak catastrophic havoc. According to a report at the 1996 North Atlantic Assembly, *Several hundred thousand deaths could be caused in a crowded urban area by four tonnes of VX or only 50 kilograms of anthrax spores and a single ounce of anthrax introduced into the air-conditioning system of a domed stadium could infect 70-80,000 spectators within one hour* . These frightening statistics, however, belie the relative lack of historical precedent for biological attacks; the Monterey Database indicates that "incidents involving biological agents have been quite rare, with 66 criminal events and 55 terrorist events over the 40-year period from 1960 to 1999."
One of the reasons biological attacks are infrequent is the preparation complexity required to create an actionable weapon. The Japanese cult Aum Shinrikyo, for instance, attempted to create a working bioweapon for years—and tried and failed on at least ten occasions to release biological agents in an aerosolized form—before instead reverting to sarin nerve gas, which in 1995 still killed twelve people in the Tokyo subway. Analysis by Jonathan Tucker in 1999 reported that of the dozen cases the FBI investigated per year in the 1990s involving chemical, biological, radiological or nuclear materials, 80 percent were hoaxes.
Still, despite the somewhat stochastic historical distribution of bioterrorism incidents, individual cases of attempted bioterrorism make for frightening reading. There was the R.I.S.E attack of 1972, where college students influenced by ecoterrorist ideology planned aerosol attacks and the contamination of urban water supplies. The students were stopped when cultures were discovered. The Minnesota Patriots Council in 1991 targeted government officials with ricin delivered through the skin, but were stopped and arrested by the FBI through the use of informants. And Larry Wayne Harris in 1998, seeking to create a separate homeland for whites in the United States,

obtained plague and anthrax and planned to disseminate them via crop duster. He was arrested after openly discussing bioterrorism in public. None of these cases, however, involved organizations as broad, ideologically predisposed towards mass terror, and complex as ISIS or Al Qaeda.

There are generally three impediments to the deployment of a biological weapon by a rogue non-state actor: technical development, resource procurement and weapon deployment. First, the largest impediment to developing a bioweapon is the technical knowhow required. A report from researchers at the Sandia National Laboratory noted that "even a low-consequence event requires a considerable level of expertise to execute." From cultivating strains to potentially aerosolizing biological agents, the high-bar of knowledge serves as the most important barrier to completion. Second, non-state actors often struggle to obtain the resources and facilities necessary to create bioweapons. Similarly, procuring strains, storing cultures and scaling up production are not just difficult, but are likely to set off warning bells in various federal agencies. Third, understanding how to properly disperse the weapon requires careful preparation and planning, serving as a final impediment to non-state bioterrorists.

Kofi Annan, former secretary general of the United Nations, once stated that "the most important under-addressed threat relating to terrorism…is that of terrorists using a biological weapon." The 2001 anthrax attacks, which began a week after 9/11, fomented fears about the possibility of bioterrorism. The difficulty today is distinguishing between threats that are inflated and threats that are credible. The United States' intelligence and security agencies still actively monitor bioweapons threats, both domestic and overseas. While most reports have found that fears of bioweapons have been inflated and are often overstated, renewed tensions with Iran call for at least a reexamination of current threats.

While Iran's nuclear program has received the lion's share of news and analysis, U.S. government reports from the 1990s and 2000s indicate that Iran was, at least at that time, developing offensive bioweapons. A 2005 State Department report noted that "Iran has an offensive biological weapons program in violation of the BWC [Biological Weapons Convention]." More recent reports, however, including a 2011 report from the U.S. director of national intelligence were vaguer regarding whether Iran is still actively developing bioweapons. Furthermore, there have been few, if any, indications that Iran would consider aiding rogue groups with biological weapons that could backfire on Iran.

Ultimately, historical trends demonstrate that there have been highly infrequent uses of bioweapons in actual attacks. And while state actors like Iran, Syria and North Korea resuming bioweapons research and development programs, potentially under the guise of dual use research, would increase the total threat to the United States, it might be more likely that future attacks will be small-scale and homegrown. Finally, keeping the threat of bioterrorism in context is also important; the consequences of even a medium sized influenza outbreak rival those of a man-made biological attack. Even so, U.S. vigilance amongst increased tensions with states that have a history of pursuing biological weapons programs will be important to maintaining America's national security.

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End of BioWatch looms near, Blue Ribbon Study Panel members learn

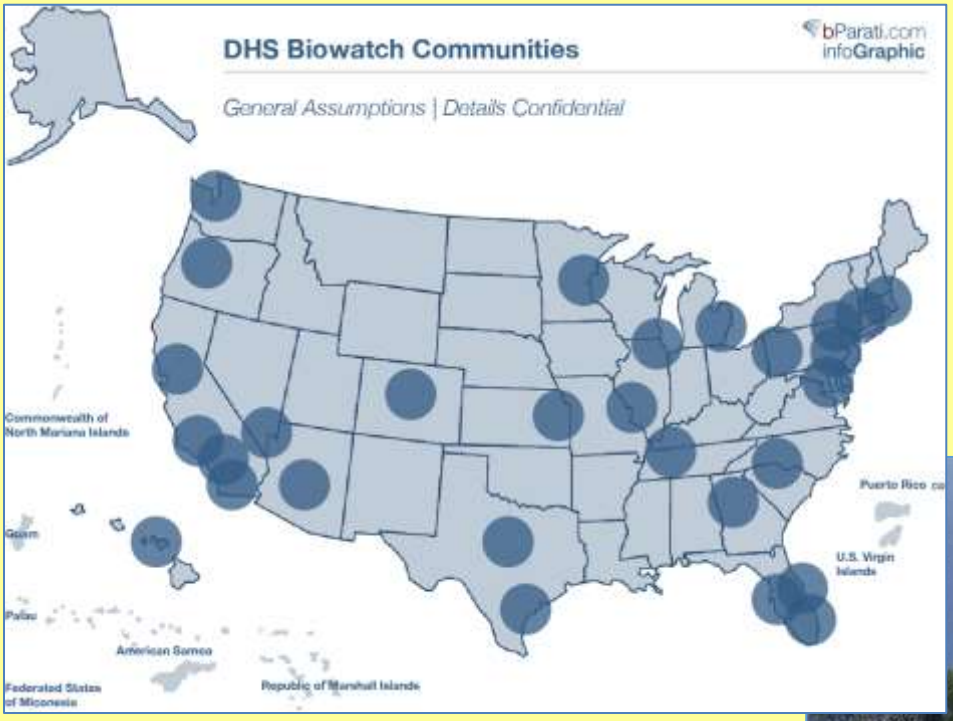
Source: https://homelandprepnews.com/stories/31415-end-of-biowatch-looms-near-blue-ribbon-study-panel-members-learn/

Nov 20 – The U.S. Department of Homeland Security's (DHS) outdated BioWatch Program, launched in 2003 as an early warning system for potential bioterrorist attacks in the United States, is being replaced, a federal expert told members of the Blue Ribbon Study Panel on Biodefense on Nov. 14 during a report on biosurveillance and biodetection.

"I don't mean to repeat what's in your report's critique of BioWatch. I'll just state that everything you've said is accurate," said panelist James F. McDonnell, assistant secretary for the DHS Countering Weapons of Mass Destruction (CWMD) Office, referring to A

National Blueprint for Biodefense published in 2015 by the Blue Ribbon Study Panel on Biodefense, which recommended replacing BioWatch as part of the nation's development of a "21st Century-worthy environmental detection system."

"I'm happy to tell you … that we intend to replace BioWatch — actually we've already started that process," said McDonnell, previously the director of the federal Domestic Nuclear Detection Office. McDonnell's position was established last December and made permanent by the U.S. House of Representatives this year. Appointed to head the office in May, he has rapidly moved to make requested changes.



The goal to end BioWatch, he said, is part of a bigger administration revamp for how the federal government collects, uses, monitors and distributes information for fighting biological threats, and to do it with more speed so that a pathogen doesn't have time to morph into a full-blown pandemic. "Our plan," McDonnell said, "is to replace BioWatch within the next couple years."

Currently, BioWatch provides air-monitoring, analysis, notification procedures, and risk assessment to more than 30 metropolitan jurisdictions in America toward substantially minimizing the catastrophic impact of a biological attack, according to DHS.

A massive network of stakeholders is involved in BioWatch from across public health, emergency management, law enforcement, laboratory, scientific, and environmental health organizations who collaborate to detect and prepare a coordinated response to a bioterrorism attack, according to DHS.

In April, the department said technology upgrades for BioWatch would better address a wider range of bioterrorism threats, provide real-time data across DHS, and enhance information-sharing between operators at the federal, state and local levels.

But as McDonnell pointed out last week, a new plan focused on big data and distributed sensors is needed to replace a slow, outmoded program that he called unacceptable.

"CWMD, including biodefense, is a top priority of this administration. The president's national security strategy includes weapons of mass destruction and specifically calls out biodefense," McDonnell told the panel members.

"But the strategy doesn't just say biodefense; it also says pandemics," he pointed out, adding that the national security strategy "is a partnership that I can assure you we are working on very closely with our partners. Big data is a big part of what we're going to do."
One of those DHS partners, for instance, is the U.S. Army Rapid Capabilities Office, which has been realigned to focus on top modernization priorities such as building stronger tactical cyber teams.
The office experiments with technologies in real time to address both urgent and emerging threats and reports to a board of directors led by the U.S. Secretary of the Army, including the Chief of Staff of the Army and the Army Acquisition Executive, as well as McDonnell's office and the U.S. Health and Human Services Office of the Assistant Secretary for Preparedness and Response (ASPR), he said.
One of the first projects the Army Rapid Capabilities Office and DHS are partnering on, for instance, is Biodetection 21, or BD21, named, McDonnell said, "based on what was in the panel's recommendation to have a 21st Century system."
"I believe the first equipment for the system will be in the field next month," he added, noting that contracts for BD21 are being handled by the CWMD Consortium at Aberdeen Proving Grounds with the Army.
Over the next six to eight months, McDonnell said the partnership will have five different technologies deployed in 12 different locations across the United States to begin collecting data into the DHS U.S. Customs and Border Protection's National Targeting Center, which works 24-7-365 to monitor and detect global threats to the U.S. via human travelers or cargo.
"We will leverage this DHS big data center that's been built up over the years and literally tracks every container, commodity and person moving and coming into the United States," said McDonnell, noting that the U.S. Centers for Disease Control and Prevention, the U.S. Department of Transportation and the U.S. Department of Agriculture also will be involved.
"We want to know what's moving, where it's moving, where it's emerging," he said.
What's new in this mission, he said, is the way the federal government will look at biosurveillance and better integration of big data.
"I'll be assigning 150 people to be on the information analysis side of the WMD mission," he said. "They will be full-time, dispersed around different agencies, and embedded in the intelligence community … so that we can see things as they're emerging and as they're developing regardless of where they are."
For example, BD21 will continuously scan the environment for anomalies, or indicators, that he said may or may not point to the presence of a biological agent. The system will rely on big-data analytics to determine whether further inspection is warranted.
If so, an incident management center would be set up in the first 20-30 minutes so someone in range could take a sample and make a presumptive analysis so that people could start making high-risk decisions like shutting down air handling systems or turning off trains, McDonnell explained.
"What we've done is put operators between the detector and the laboratory just like we do for bomb squads or hazmat units," said McDonnell. "So incident managers can say, 'I've got a problem, I'm gonna manage it, let's send samples over to the CDC lab to determine exactly what's there;' then decisions can be made on the right pharmaceutical deployments and other types of public health responses to be made."
Blue Ribbon Study Panel on Biodefense Co-Chairman Joseph Lieberman called McDonnell's summary "an encouraging report" and said the panel "really appreciates hearing you say that you intend to replace BioWatch and are taking steps right now to do that."

The Russian disinformation attack that poses a biological danger

By Filippa Lentzos
Source: https://thebulletin.org/2018/11/the-russian-disinformation-attack-that-poses-a-biological-danger/

Nov 19 – In a series of increasingly confrontational statements, Russia has suggested that the Pentagon is establishing a chain of bio-weapons labs on its borders. At the heart of the accusations is the Richard Lugar Center for Public Health Research in the Republic of Georgia. Named after US Senator Richard Lugar, who initiated the renovation of lab

networks in former Soviet states, the Lugar Center became operational in 2013. It has the first high-containment laboratory in the region that meets Biosafety Level 3 standards, meaning it is equipped to study serious or lethal human diseases, and it serves Georgia and the wider region with detection and diagnostic capacity for disease outbreaks.

The Russian charges that the Lugar Center and other biological labs in the Caucasus and Central Asia are making banned bioweapons are unfounded. Last week a group of international experts, including this author, visited the Lugar Center by invitation of the Georgian government. We were given access to all areas of the site, examined relevant documentation, and interviewed staff, and concluded that the Center demonstrates significant transparency. Our group observed nothing out of the ordinary, or that we wouldn't expect to see in a legitimate facility of this sort.

The Russian allegations appear to be part of a disinformation campaign that has grown in response to scrutiny of Moscow for using and enabling the use of chemical weapons. It is also likely that part of Russia's goal is to discredit Western influence in former Soviet states by spreading fear and dividing public opinion. The charges are probably aimed at a domestic audience as well, as a biological weapons threat on Russia's doorstep could motivate military investments to counter it.

To be sure, Russia and before it the Soviet Union have perpetrated many disinformation campaigns with the deliberate goal of sowing confusion and mistrust, including interference in the US 2016 presidential election. The current claims about the Georgia lab are not even Moscow's first disinformation campaign about supposed US biological agents. In the 1980s, KGB agents disseminated the nonsense claim that the US government had invented the AIDS virus in a lab, as a new documentary from the *New York Times* reports.

Disinformation attacks bring with them many dangers. Beyond sowing distrust and political dissent, they can prime a population for physical conflict, and in the case of Georgia, Russia may even be trying to justify future military interference with its neighbor. False claims about biological weapons in particular, though, create an additional grave danger: They erode the international norm against using them, making countries more likely to do so. While it is easy to dismiss the Russian messaging as nonsense, as the US Embassy in Georgia has done, it is important to actively counter the effect it will likely have on the norm against using biological weapons.

An intensifying, multi-channel attack

Stories about supposed US bioweapon labs in neighboring countries, and in particular about the Lugar Center, have circulated for a number of years in the Russian media. Indeed, Russia's official national security strategy identifies the network of public health laboratories in the Caucasus and Central Asia funded by the US Defense Department as a strategic threat. That said, messaging about the Lugar Center significantly ramped up after Britain identified Russia as the perpetrator of a botched March 2018 murder attempt in Salisbury, England using the nerve agent novichok. (Russian agents tried to kill former Russian spy Sergei Skripal and his daughter Yulia, without success, but ended up inadvertently killing an English civilian.) In early April, embattled Syrian dictator Bashar al-Assad, who Russia supports militarily, attacked civilians in Douma with chlorine gas.

In April, within weeks of Britain pinpointing the Russian state as culpable for the Salisbury attack, and a day after Trump threatened Russia with US missile strikes on Syria in response to the Douma attack, Russian foreign ministry spokeswoman Maria Zakharova questioned the "real goals" of the American "chain of microbiological laboratories" in former Soviet states and of "the Pentagon's large-scale medical-biological activities near Russian borders." After British counter-terrorism police presented findings from six months of evidence-gathering on the Skripal case, and issued domestic and European arrest warrants for two

Russian suspects on September 4, the accusations drastically intensified.

Within a week, Igor Giorgadze, a former Georgian state security minister who now resides in Russia, launched a heavily publicized campaign in the Russian media against the Lugar Center. In a news briefing from Moscow on September 11, he claimed he had thousands of pages of secret documents indicating that US Defense Department biologists and private contractors at the Lugar Center may be engaged in illegal medical experiments on the Georgian people, and that the facility could be a cover for a biological weapons lab. "These documents need to be reviewed and evaluated by experts," Giorgadze said in an open letter, and called on the US president and Congress to investigate the laboratory's activities. Giorgadze created a website containing an initial batch of documents to support his allegations; he claims more documents are forthcoming. (Links in Russian.)

The Russian Ministry of Defense said it was analyzing Giorgadze's documents, and according to Sputnik News, claimed on September 14 that they point to serious violations of the Biological Weapons Convention (BWC). Commenting on Giorgadze's statement, Vladimir Yermakov, director of the Department for Non-Proliferation and Arms Control at the Russian Foreign Ministry, told media that Russia will not allow biological experiments to be carried out "on its borders" by the Americans. (Link in Russian.)

A day after Giorgadze's news briefing, Bulgarian investigative journalist Dilyana Gaytandzhieva, who has previously accused the Pentagon of setting up bioweapons labs in the Caucuses and Central Asia, published an article on her website that seemed to corroborate Giorgadze's claims about secret and illegal medical experiments at the Lugar lab. The story was picked up in the Russian media. It was also broadcast on Al Mayadeen, a satellite television channel viewed as pro-Assad and pro-Hezbollah, and on Zvezda, a television network run by the Russian Ministry of Defense, as the debunking project Myth Detector reports. A systematic study of social media posts with the words "biological weapon" and "in Georgia" over the past year indicates a significant peak in October 2018, underscoring how the messaging was intensifying.

Georgia responded to Russia's claims in a September 27 memo circulated to the Geneva missions of states party to the BWC. It highlighted that the Lugar Center is an open civilian institution under the auspices of the National Center for Disease Control and Public Health of Georgia. The memo maintained that Georgia complies with the Convention, and that, as a further voluntary transparency measure, it had invited international experts and observers from treaty states to visit the facility on November 14 and 15 to see for themselves.

Meanwhile the BBC was investigating Giorgadze's claims about "secret" documents, and on November 12 broadcast the results. Giorgadze said the documents he released showed the lab had experimented on Georgian citizens with non-clinically approved drugs. In fact, the BBC found, while the documents were real, they only showed evidence of an above-board program to treat Hepatitis C with drugs that are used and approved worldwide, including by the United States and World Health Organization.

Nevertheless, Russia's messaging has only become more aggressive over the course of the fall. In early October, the head of Russian special forces for nuclear, biological, and chemical protection, Major-General Igor Kirillov, claimed that the Lugar lab is part of a larger US effort to build up its military-biological potential and gain control of national collections of dangerous pathogens. Russia views this as a direct security threat. Going a step further, the chair of the Russian parliament's committee on defense, Colonel-General Vladimir Shamanov, threatened that "Russia will take diplomatic and military measures in response to the deployment of the large-scale US military-biological program in states bordering the Russian Federation, in particular Georgia." (Links in Russian.)

In Geneva, Russia circulated a reply memo on October 10 to BWC states party missions, claiming the Georgian side was attempting to create "a distorted image" of the Lugar Center. It noted that the lab was built by the Pentagon, that the United States covers the laboratory's operating costs

including its security, and that Americans finance dual-use research conducted there. Somewhat ironically, considering the vast, ostensibly civilian, network of public health laboratories that concealed the Soviet offensive biological weapons program, the memo goes on to claim that, "in order to conceal the true character and mission of this facility it has been formally incorporated into Georgia's public health system." Georgia's goal in inviting BWC states to visit, the Russian memo claims, is "to create an illusion of legitimacy and transparency," and Russia does "not see any value in participating in such a politically biased event."

When the UN General Assembly committee on disarmament and international security met this fall for its annual four-week deliberations in New York, the diplomatic exchanges between Georgian and Russian representatives turned hostile. Before that happened, the Syrian representative, likely with Russian encouragement, on several ocasions insinuated or outright accused Georgia of hosting secret US biological laboratories in violation of the BWC. In a prepared statement on October 30, Elene Agladze, the deputy permanent representative of Georgia to the United Nations, said:

"Our empirical experience has shown that although absurd, Russian allegations have been not just a propaganda tool, but lately even part of hybrid warfare in terms of laying a political groundwork for future aggressive actions. Therefore, statements that Russia will not tolerate bio experiments along its border should be considered as a direct threat to Georgian security … These observations reflect the trend not only in Georgia, but in nearby areas. I recall the wide-scale military build-up in the temporarily occupied Crimea and the city of Sevastopol, as well as the Sea of Azov, which has grave regional security implications and clearly manifest that we are not talking about isolated cases here, but of the wider pattern of Russian aggressive policy towards its neighbors."

In an impromptu reply, the deputy head of the Russian delegation, Andrey Belousov, again threw doubt on Georgia's transparency initiatives, and questioned the research carried out at the Lugar lab, saying: "Georgia has already admitted that yes, indeed, these labs are carrying out experiments, including on people. The statistics are such that in one experiment, on a very dangerous disease, more than 9,000 volunteers were involved, and as a result of this experiment around 10 percent of these volunteers died." The Georgian representative's response to these allegations focused on the timing of the propaganda. She said internationally recognized Russian experts had visited the Lugar Center on a number of occasions over the last few years to check the facility for themselves, but hadn't found anything suspicious. "So why this issue is being raised right now is very questionable," she said.

Open lines of communication

Russia's repeated and coordinated insinuations and unsupported allegations about American-sponsored secret labs are alarming—even beyond the fact that they could have very real consequences for stability in the Caucasus and Central Asia. Until now, the international norm against biological weapons has been very strong. It is enshrined in the BWC, which completely prohibits biological weapons. Agreed in 1972, the BWC is still gaining membership—in the last two years, seven new states have joined, bringing total membership to 182. The international community most recently reaffirmed the norm by consensus at the United Nations General Assembly on November 5. Such regular reaffirmations are important, particularly against the background of hostile diplomatic exchanges. Global support for the BWC suggests that the vast majority of nations see biological weapons as taboo. By claiming that biological weapon labs exist where they do not, Russia is hastening the death of that taboo—creating the appearance that reliance on these weapons is greater than it actually is, possibly encouraging other nations to pursue them.

Georgia's diplomatic pushback and active transparency efforts are important steps in the right direction too. But other governments and members of the global academic and science communities should also take steps to counteract the damage being caused by Moscow's false claims. Specifically, they should work to maintain current lines of

communication with counterparts in Russia, as well as open up new ones. Creating opportunities for informal dialogue between Russian and Western government representatives, biosecurity experts, and the next generation is essential. Links between Russian and Western scientific and technical institutions, as well as personal relationships fostered through joint projects and scientist exchanges, build confidence that prohibited activities are not taking place.

While such cooperation is difficult, it is not impossible. In the early post-Cold War days, American and Russian scientists cooperated to keep nuclear weapons safe and secure. In the bio-weapons realm, trail blazer virologist Jens Kuhn negotiated access in 2001 to work in the heart of the former Soviet bioweapons establishment, the first Western scientist to do so. From 1991 to 2015, the American Defense Threat Reduction Agency ran a cooperative biological engagement program with Russia. While that may have run its course, there could now be opportunities for other actors to step in. An increasing number of BWC states are, like Georgia, inviting experts from other countries to visit their high containment facilities with the aim of strengthening transparency and building confidence between peers. These visits could be designed to politically enable Russia to participate. At a stretch, perhaps Russia could be persuaded to host one itself, as a means to start technical discussions on agreed standards for the sort of transparency visits it has regularly criticized. There is contemporary precedent for this sort of thing: The World Health Organization carries out safety inspections at Russia's maximum-security smallpox repository in Novosibirsk every two years.

Over the years, international efforts to devalue biological weapons as a military option have been substantial and in many ways successful. Russia, as one of the BWC's three depositary states along with the United States and Britain, should take special care of the treaty and the taboo against bioweapons. If it is genuinely concerned about a bioweapons threat from Georgia, it should use existing BWC mechanisms to raise the issue, rather than circulate insinuations and unfounded allegations that only damage the treaty. With Moscow actively undermining the established norm through its disinformation campaign, it is up to the international community to actively push back.

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DRC Ebola total climbs to 444 with cases in several areas

Source: http://www.homelandsecuritynewswire.com/dr20181204-drc-ebola-total-climbs-to-444-with-cases-in-several-areas

Nov 04 – Over the weekend and through today, the Democratic Republic of the Congo (DRC) reported 16 new Ebola cases in several locations in and around the main hot spots.

In other developments, health officials are starting to worry about the Ebola vaccine supply, especially if it's needed to curb widespread disease in one of the DRC's urban locations.

Latest cases in 8 cities

The 16 cases reflected in the health ministry's daily updates for Dec 1, 2, and 3 and were from eight different locations: Beni (5 cases), Katwa (3), Vuhovi (2), Kalunguta (2), Mutwanga (1), Komanda (1), Butembo (1), and Masereka (1).

Komanda is north of Beni and is in Ituri province, while the other locations are located south of the city. Katwa is located just east of Butembo, the largest urban setting for cases reported so far.

Twelve more deaths were reported, which involved 6 patients in Beni, 4 in Butembo, 1 in Butembo, and 1 in Komanda.

The latest developments lift the overall outbreak total to 444 cases, including 396 confirmed and 48 probable cases. The fatality count has reached 260 deaths.
CIDRAP reports that health officials are still investigating 72 suspected Ebola cases, with the number of people vaccinated reaching 39,277, roughly half of them from Beni, the outbreak's main hot spot.

Recruiting women for response
The health ministry said in its Dec 2 report that health officials have decided to take more steps to involve women in the outbreak response to strengthen community engagement, given that they are pillars of their household and play an important role in commercial activities.
The agency said workshops for women's groups recently took place in Beni and Butembo, and for the next month, the new communicators will be paired with response teams in the field to help ease some of the community resistance that is still present in some neighborhoods.
In the DRC's latest outbreak, females have made up a large number of cases—61 percent of confirmed and probable cases, according to totals at the end of November.

Concerns about vaccine supply
In other developments, as Ebola continues to spread in the DRC with no end of the outbreak in sight, health officials are starting to worry if the Ebola vaccine supply would run short if the virus spreads more widely in urban locations like Butembo, where several cases have already been reported, or in Goma, North Kivu province's capital, Stat reported today.
The concerns about the vaccine supply were aired by Peter Salama, the World Health Organization (WHO) deputy director-general for emergency preparedness and response. He told Stat that officials are regularly in touch with Merck, the vaccine's developer which has committed to maintain a 300,000-dose stockpile. As of yesterday, 42,000 doses have been used between the DRC's two Ebola outbreaks this year, an earlier event in Equateur province in the west and the current outbreak centered in North Kivu province in the east.
Salama told Stat that Beni's population is 400,000 and Butembo's numbers about 1 million, which would quickly exhaust vaccine supplies if the immunization strategy shifts from the current ring vaccination to a broader geographic approach, as some have suggested.
Merck told Stat that it takes about a year to produce a batch of vaccine, and while some of the stockpiled vaccine is already in vials, much is kept in bulk, which can take 4 to 5 months to put into vials.

EDITOR'S COMMENT: Shhhhhh! The WHO is sleeping!

A Biological Potpourri: An Overview of Some Evolving Biohazardous Threat Agents and Global Health

By Frank Rando (CBRNE - Protective & Biomedical Countermeasures, University of Arizona)
Source: http://nct-magazine.com/december-2018/a-biological-potpourri/

Collectively, infectious diseases have proven to be global scourges and the single most important contributor to human suffering, morbidity and mortality throughout various periods of history. From ancient B.C, throughout the Middle Ages to Victorian times to the present day, the lethality of various microorganisms has touched the most primitive tribes to the most sophisticated urban dwellers. Low- and middle-income countries (LMICs), ie. "developing nations" continue to suffer the brunt and burden of both common and exotic pathogens usually exacerbated by malnutrition, lack of access to healthcare, inadequate public health infrastructure and extremely poor sanitary conditions.
Geopolitical factors, armed conflicts and civil strife have further exacerbated the health threats to these societies by generating complex humanitarian emergencies throughout several areas of the world. Many of the world's LMICs suffer with severe conditions of impoverishment and stark health disparities when compared to wealthy, industrialized nation-states. Sociocultural factors, such as ritualistic behaviors and practices, exotic food

habits, religious beliefs and folklore often are contributory factors to the evolution of infectious disease outbreaks, such as HIV/AIDS and Ebola viral hemorrhagic fever in Africa.

▶▶ Read the rest of this article at source's URL.

Combating Pandemic Threats – Global Health Security Agenda

By Gary A. Flory

Source: https://www.domesticpreparedness.com/healthcare/combating-pandemic-threats-global-health-security-agenda/

Dec 08 – On 6-8 November 2018, global health leaders from around the globe met in Bali, Indonesia, for the 5th Global Health Security Agenda (GHSA) Ministerial Meeting. At the meeting, the GHSA launched a five-year plan to address health security issues called GHSA 2024 and U.S. Health and Human Services Deputy Secretary Eric Hargan reaffirmed U.S. support for the GHSA with a pledge of $150 million. These global efforts and this commitment of resources to strengthen the capacity to prevent, detect, and respond to infectious diseases are clearly needed.

The 1918 Spanish Flu sickened 500 million people and killed nearly 50 million. More recently, the 2014-2016 Ebola crisis killed more than 11,000 people and some reports suggest that the swine-flu pandemic of 2009 may have killed as many as 203,000 people. With global travel and trade increasing and population growth resulting in more interactions between humans, wildlife, and livestock, infectious disease threats are increasing rapidly. Whether naturally occurring or intentionally introduced, communities must prepare for the next infectious disease outbreak.

Fighting Back With the Global Health Security Agenda

To combat these ever-increasing threats, the Global Health Security Agenda (GHSA) was launched in February 2014 to strengthen both global capacity and each nation's capacity to prevent, detect, and respond to infectious diseases threats. Since then, the GHSA has expanded to include over 60 countries as depicted in Table 1. The initiative brings together nations, international organizations, and nongovernmental stakeholders to make measurable strides to address public health emergencies. It supports collaboration not just among countries but also between public health, agriculture, security, and environmental sectors. The GHSA is one way to operationalize the One Health concept – the idea that the health of humans, animals, and the environment is inextricably connected.

Table1: Global Health Security Agenda Member Countries*			
Afghanistan	France	Mali	South Africa
Argentina	Georgia	Mexico	Spain
Australia	Germany	Mongolia	Sweden
Azervaijan	Ghana	Netherlands	Switzerland
Bangladesh	Guinea	Nigeria	Tanzania
Burkina Faso	Guinea-Bissau	Norway	Thailand
Cameroon	India	Pakistan	Togo
Canada	Indonesia	Peru	Turkey
Chile	Israel	Philippines	Uganda
China	Italy	Portugal	Ukraine

Table1: Global Health Security Agenda Member Countries*			
Colombia	Japan	Republic of the Congo	United Arab Emirates
Côte d'Ivoire	Jordan	Republic of Korea	United Kingdom
Democratic Repulic of Congo	Kenya	Saudi Arabia	United States
Denmark	Laos	Senegal	Vietnam
Ethiopia	Liberia	Sierra Leone	Yemen
Finland	Malaysia	Singapore	Zimbabwe
* as of February 2018			

As described on the GHSA website, the vision of the initiative is a world safe and secure from global health threats posed by infectious diseases whether naturally occurring, deliberate, or accidental. The pathway to this vision is organized around three main objectives: to prevent, detect, and respond to disease threats. Within these three broad objectives are 11 specific targets critical to the goals of the GHSA. These targets are identified as action packages and were developed by participating countries during two commitment development meetings in 2014. Each action package includes a five-year target, an indicator to measure progress, desired outcomes, country commitments, and long-term actions.

Prevent Avoidable Catastrophes

The worst catastrophes are those that could have been prevented. This is true in business and engineering and many other fields, but is often overlooked in efforts to prevent disease outbreaks. Action packages focusing on preventing avoidable disease threats include efforts to address antimicrobial resistance, zoonotic diseases, biosafety and biosecurity, and immunization.

Of the 1,415 pathogens known to infect humans, 61% of those disease organisms are considered zoonotic. Zoonotic diseases are those that can be transmitted from animals to humans. Common examples of zoonotic disease include avian influenza, rabies, Ebola, and anthrax. To reduce the emergence and spread of infections of zoonotic diseases, the first step is to identify the diseases not only in humans but also in wildlife and livestock. With enhanced animal disease surveillance, it may be possible to identify and respond to disease outbreaks before they pose a significant risk to human populations.

Thousands of turkeys killed by highly pathogenic avian influenza. ©2016 Gary Flory

Once identified in an animal population, responders can implement a series of measures to prevent the spread of the disease within the animal population and minimize human exposure. A comprehensive animal disease response plan may include a variety of

strategies including quarantine in infected animals, vaccination, movement control, enhanced surveillance, stamping out, carcass disposal, and facility disinfection.
The biosafety and biosecurity action package focuses on the storage and handling of dangerous pathogens. This is important to avoid not only the theft and intentional misuse of pathogens, but also the accidental release and spread of diseases. Implementing effective biosecurity programs requires extensive training wherever these organisms exist.
In addition to robust biosecurity programs and zoonotic disease response strategies, there are preventative action packages designed to address microbial resistance and to prevent death and illness through the implementation of a robust vaccination program.

Decontamination procedures following a zoonotic animal disease. ©2016 Gary Flory

EDITOR'S COMMENT: Doffing stations need to have some distance between otherwise there is no point to wear PPE. The plastic sheet on the ground should be much bigger to avoid ground contamination. The black cover in the back what is it for if not used? The person performing decon should always wear a mask. Some standing support equipment would make life easier during the whole process.

Detecting Threats Early

The second broad objective of the GHSA is to detect disease threats early. This objective includes four action packages: national laboratory systems, real-time surveillance, reporting, and workforce development. Together these action packages save lives by improving the ability to quickly identify disease outbreaks, share disease detection information with public health officials, and train staff to detect and investigate disease outbreaks.
Responding to Disease Threats
The third and final objective is to enhance response to confirmed disease threats. During any disaster, the difference between success and failure often lies in the effectiveness of the communication. Emergency operations centers with well-trained staff are able to efficiently monitor and respond to disasters by deploying resources where they can do the most good. The last two action packages – linking public health with law and multisectoral rapid response and medical countermeasures and personnel deployment – support the deployment of trained, cross-sector responders from the emergency operations center.

Measuring Capabilities

At the heart of the GHSA is the country assessment conducted by a standardized joint external evaluation (JEE) process. The JEE process measures a country's current capabilities and progress toward building capacity to prevent, detect, and respond to infectious disease threats. The assessment also highlights gaps in capabilities to inform the development of implementation plans.

The JEE is a two-stage process that includes a self-evaluation conducted by in-country representatives from many sectors including ministries of health, agriculture, wildlife, environment, and defense. Together these stakeholders collect the necessary information to evaluate the country's capabilities to prevent, detect, and respond to infectious diseases.

An external evaluation follows the self-evaluation phase. This evaluation is conducted by a JEE team made up of experts from member countries, the World Health Organization, the World Organization for Animal Health, the Food and Agricultural Organization, and a variety of other international organizations. Together the JEE team and experts from the host country assign scores to the country's capabilities in the 19 areas covered in the JEE tool. In addition to the scoring each area, the team identifies strengths, best practices, areas of improvement, challenges, and priority actions. The information collected in the process is published in a Joint External Evaluation Mission Report containing approximately 60 priority actions identified in the external evaluation process.

Filling the Gaps

With the gaps and priority actions identified through the JEE process, countries are able to develop a five-year action plan to address gaps in capabilities. These plans, or roadmaps, include annual milestones and provide a way to prioritize and match action items to available resources. They also provide potential funders a way to identify projects that match the mission of their organizations.

Since it was launched in 2014, membership in the Global Health Security Agenda has risen steadily from 40 participating countries to over 60. Each year, more joint external evaluations are conducted, roadmaps are developed, and priority action items are addressed to increase the global capacity to prevent, detect, and respond to infectious diseases threats.

There is no doubt that funding for the Global Health Security Agenda will be cyclical and that significant funding cuts by donor partners will negatively impact the ability to implement priority projects and improve global response capacity. Regardless of funding, a global, focused, and strategic approach will be more effective than the independent efforts of individual countries to prevent, detect, and respond to infectious diseases threats.

This article was modified from one first published in CBNW (Chemical, Biological & Nuclear Warfare) journal, May 2018.

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Ancient, Unknown Strain of Plague Found in 5,000-Year-Old Tomb in Sweden

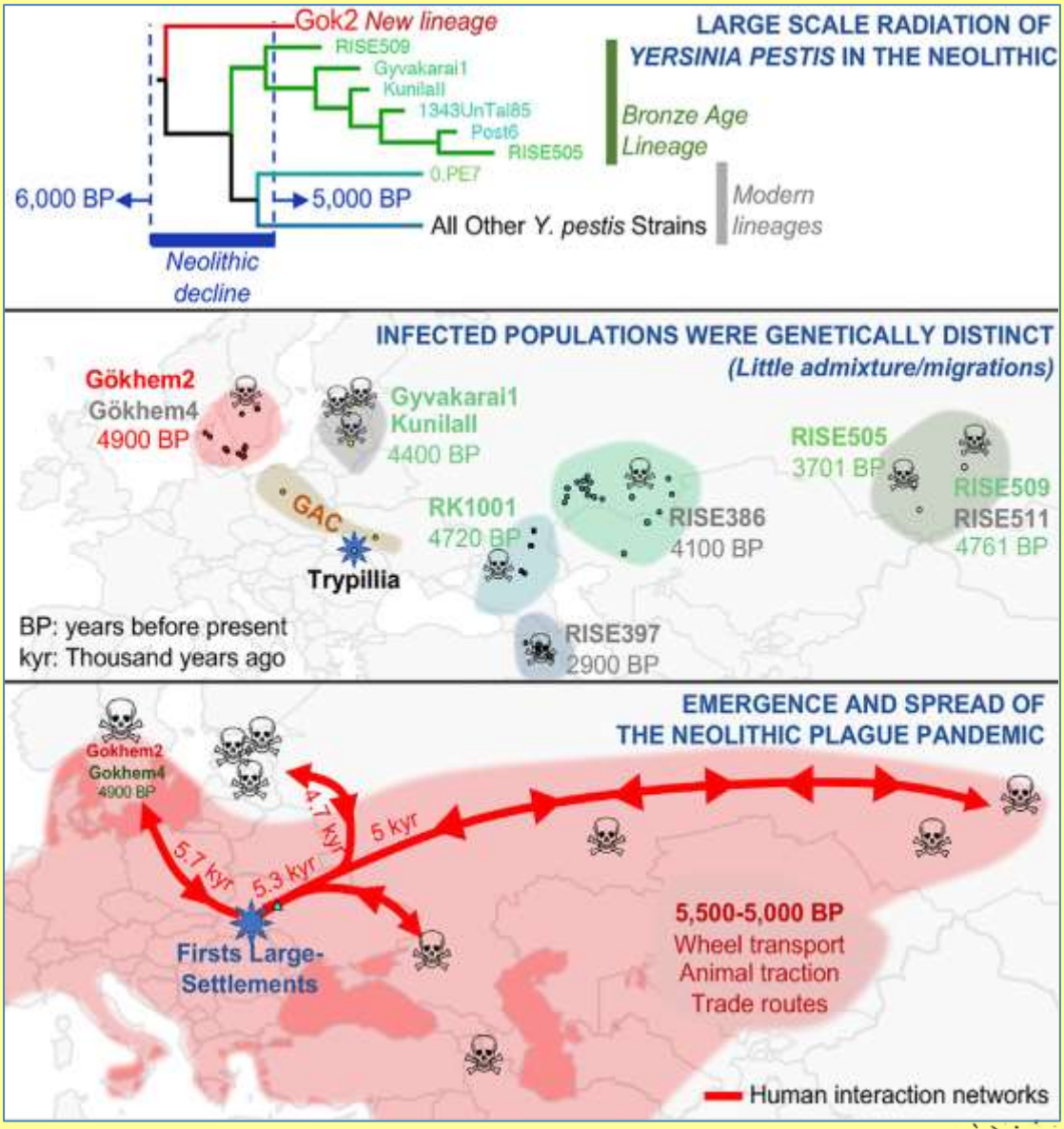
Source: https://www.livescience.com/64246-ancient-plague-swedish-tomb.html

Dec 06 – In a nearly 5,000-year-old tomb in Sweden, researchers have discovered the oldest-known strain of the notorious bacterium *Yersinia pestis* — the microbe responsible for humanity's perhaps most-feared contagion: the plague.

The finding suggests that the germ may have devastated settlements across Europe at the end of the Stone Age in what may have been the first major pandemic of human history. It could also rewrite some of what we know of ancient European history.

Researchers found the plague sample on the remains of a 20-year-old woman, shown above. *Credit: Karl-Göran Sjögren / University of Gothenburg*

The finding came about as the researchers were analyzing publicly available databases of ancient DNA for cases in which infections might have claimed prehistoric victims. They focused on the previously excavated site of Frälsegården in Sweden. Previous analysis of a limestone tomb at the site found that an estimated 78 people were buried there, and they all had died within a 200-year period. The fact that many people died in a relatively short time in one place suggested they might have perished together in an epidemic, lead study author Nicolás Rascovan, a biologist at Aix-Marseille University in Marseille, France, told Live Science.



The limestone tomb was dated to the Neolithic, or New Stone Age, the period when farming began.

The researchers discovered the previously unknown strain of plague in the remains of a woman at the Frälsegården site. Carbon dating suggested she died about 4,900 years ago during a period known as the Neolithic Decline, when Neolithic cultures throughout Europe mysteriously dwindled. [Photos: Stone Age Skulls Found on Wooden Stakes]

Based on her hip bones and other skeletal features, they estimated the woman was about 20 years old when she died. The plague strain found with her had a genetic mutation that can trigger pneumonic plague — the deadliest form of historic and modern plague — suggesting the woman likely died of the disease. (The most common form of plague is bubonic plague, which occurs when plague bacteria spread to the lymph nodes and cause inflammation, according to the World Health Organization. The inflamed lymph nodes are called "buboes." If the bacteria spread to the lungs, they can trigger the deadlier pneumonic plague.)

Archaeological sites and carbon dating (in years before present) of the individuals infected with Gok2/Gok4 and Bronze Age Y. pestis strains.

By comparing the newfound strain with known plague DNA, the scientists determined that the ancient sample was the closest known relative of the plague bacterium's most recent ancestor. The study researchers theorized that the ancient sample diverged from other plague strains about 5,700 years ago.

How plague spread

The new findings contradict an older theory about how plague spread, according to the researchers. About 5,000 years ago, humans migrated from the Eurasian steppe down into Europe in major waves, replacing the Neolithic farmers who lived in Europe at that time. Previous research had suggested the steppe folk brought the plague with them, wiping out pre-existing settlements upon their arrival. However, if the plague specimen from the Swedish grave diverged from other strains 5,700 years ago, it likely evolved before the steppe migrations began — suggesting it was already there.

Rather, the researchers suggested that the plague emerged in so-called mega settlements of 10,000 to 20,000 inhabitants that existed in Europe between 6,100 and 5,400 years ago. These mega settlements — up to 10 times larger than previous European settlements — "had people, animals, and stored food close together, and, likely, very poor sanitation. That's the textbook example of what you need to evolve new pathogens," senior study author Simon Rasmussen, a computational biologist at the University of Copenhagen, said in a statement.

If plague evolved in these mega settlements, "then when people started dying from it, the settlements would have been abandoned and destroyed. This is exactly what was observed in these settlements after 5,500 years ago," Rasmussen said. Plague then could have spread across trade networks made possible by wheeled transport, which had expanded rapidly throughout Europe by that time, Rascovan said. Eventually, it would have made its way even to relatively distant sites like Frälsegården in Sweden, where the woman the researchers analyzed died.

That woman's DNA revealed she was not genetically related to steppe folk, supporting the idea that this ancient strain of plague arrived before the migrants came from the steppe.

The perils of innovation?

Study co-author Karl-Göran Sjögren, an archaeologist at the University of Gothenburg in Sweden, told Live Science that the discovery of plague "in a relatively marginal area of the Neolithic world … suggests well-established and far-reaching contact networks" at that time that allowed the disease to spread. [5 Most Likely Real-Life Contagions]

Indeed, it's possible that "the revolutionary innovations of that time — bigger settlements with more complex organization, wheeled transport, metallurgy, trading networks over large distances, and so on" — may have set the stage for "the emergence and spread of infectious diseases, and this eventually led to, what we think, was the first massive pandemic of human history," Rascovan said.

The researchers noted that the findings don't mean that plague single-handedly wiped out Neolithic settlements, but rather that it may have been one factor among others, Rascovan said.For instance, the Neolithic settlements may have overexploited their environment, potentially driving forests they depended on into extinction, the researchers said.

The researchers also cautioned they have not yet detected the smoking gun for their new theory — that is, plague in any remains from the mega settlements in which it may have evolved. "If we could find plague in those settlements, that would be strong support for this theory," Rasmussen said in the statement.

The findings were published online Dec. 6 in the journal Cell.

EU warns of bioterror and disease risk as vaccination rates fall

Source: https://www.ft.com/content/0b8879dc-f97d-11e8-af46-2022a0b02a6c

Dec 06 – The EU will face threats from disease epidemics to bioterrorism if it fails to halt anti-vaccination trends driven in part by anti-establishment political movements, the bloc's health commissioner has warned. Vytenis Andriukaitis said there was a risk of social crises if countries fell victim to anti-inoculation "fake news" and lost the herd immunity of populations to common conditions such as measles. "It's a very dangerous situation," he said. "If we continue in such a spirit. . . in two or three years it will be very difficult to guarantee the security of our society." EU health ministers are scheduled on Friday to debate European Commission proposals aimed at countering the trend, including electronic vaccination cards, counter-disinformation efforts and databases of emergency vaccine stockpiles. The initiative comes as the EU is experiencing rising disease outbreaks, notably in Italy, where the populist government has reversed a compulsory vaccination programme introduced by the previous administration in response to a growing measles problem. Mr Andriukaitis, a Lithuanian cardiovascular surgeon, said some radical right and leftwing movements in the EU had embraced conspiratorial anti-vaccination propaganda. That risked triggering "tragedy on the ground" because it would leave countries vulnerable to pandemics and even attacks by terrorists armed with pathogens.

"It's also a security issue — it's not only a public health threat," he said in an interview. "We have a really, really worrying situation in some countries." Italy accounted for almost 30 per cent of measles cases in the EU and European Economic Area last year as outbreaks in the EU as a whole reached a seven-year high. A report published by the commission in October and compiled by outside experts linked the problems to falling inoculation rates, with confidence in vaccines declining in a number of countries.

According to World Health Organisation estimates, inoculation rates for first doses of measles-containing vaccines such as MMR fell in 12 EU member states between 2010 and last year: Bulgaria, Croatia, Czech Republic, Estonia, Finland, Greece, Lithuania, Netherlands, Poland, Romania, Slovakia and Slovenia. Mr Andriukaitis urged Italy to return to the mandatory vaccination law, which the previous government introduced in an effort to tackle the problem. The Italian Senate overturned it in August after an election pledge by the Five Star Movement and League coalition that took power this year. The country was now in a "very difficult situation" that had left many parents "very confused" regarding vaccination, the commissioner said. "Now it's up to Italian society to

understand," he said. "Are they really safer when they are in the hands of those who do not rely on evidence and on science?"
Marine Le Pen, leader of France's far-right National Rally, has also raised concerns about vaccine safety.
Mr Andriukaitis said the proposed EU electronic vaccination card would allow authorities in different countries to see which immunisations people had received and to map potential disease vulnerabilities more effectively. He acknowledged that the plans had faced criticism from privacy and anti-vaccination campaigners. Officials hope ministers will sign off on the package since the measures are only recommendations, with health policy under the control of individual member states. However, this could limit its effectiveness if some countries choose not to join.

Fake US vaccine scheme to catch Bin Laden was 'huge mistake'

Source: https://www.thenational.ae/uae/health/fake-us-vaccine-scheme-to-catch-bin-laden-was-huge-mistake-1.800926

Dec 10 – The United States made a "huge mistake" by launching a fake immunisation programme in its quest to find Osama bin Laden, an expert seeking to eradicate polio has claimed.
Chris Elias, president of the Global Development Division at the Bill and Melinda Gates Foundation, said the CIA plot had fuelled conspiracy theories about vaccines in Pakistan, one of only two countries which continues to report polio cases.
The Microsoft founder's Seattle-based charity has been helping fund efforts to eradicate the disease entirely, with Dr Elias saying the drive had been "99.9 per cent" successful. However, polio has persisted in a few stubborn areas in Pakistan and Afghanistan. There have been 28 cases so far this year, Dr Elias said, compared to 22 in the whole of last year.
Issues around inaccessibility and security had contributed to the situation, he said. However, unfounded rumours about vaccinations, leading to people refusing to have them, had also played a part and these had been "fuelled" by the emergence of the Bin Laden scheme.
In an attempt to confirm their suspicions that Al Qaeda's leader was living in a compound in Pakistan, the US launched an immunisation scheme with the objective of obtaining DNA from a resident in the property that would confirm any family link.
Asked whether he thought it had been legitimate to use a vaccination programme in that way, Dr Elias said: "No. I think there's a generally accepted principal that humanitarian operations will not be used as cover for intelligence operations. The United States made a huge mistake in violating that principle in its search for Osama bin Laden – there's no question.

An Afghan health worker administers the polio vaccine to a child during a vaccination campaign in Kandahar in January. AFP

"But at the same time, there's some things to clarify. That **immunisation campaign was not a polio immunisation campaign [it was hepatitis].** It was a ruse to collect DNA, [but] the DNA was never collected and never used, actually, in identifying the links. In the media, and in some movies, it's been confused as a polio campaign and hence has fuelled some of these rumours.
"It wasn't a polio campaign, but it was an immunisation campaign, which was unfortunate. Many groups in the public-health community have spoken out about what has for a long time been the accepted principal of not using humanitarian operations as cover. It's unfortunate it happened and it's unfortunate the rumours persist. The reality is children suffer when they don't get the vaccines."

Dr Elias said he did not believe the scheme to identify Bin Laden, who was killed by US special forces in a raid on the compound in 2011 despite the failure to obtain DNA, was the "main" reason polio had persisted in a small number of cases.
It was hoped that polio would be eradicated completely this year, although he said the increase in cases should not be seen as statistically significant, given the low numbers. **In 1988, there were more than 300,000 cases, meaning humanity is on course to eliminate only the second ever fatal disease, after smallpox.** Other myths about polio vaccinations in Pakistan are that it contains pork fat, forbidden for Muslims, or causes infertility.
The Bill and Melinda Gates Foundation has invested about US$4 billion (Dh14.7bn) in Gavi, the vaccines alliance that is holding its midterm review in Abu Dhabi this week, in the past two decades. Polio is one of the diseases that Gavi works to combat. Dr Elias described it as "by far our biggest investment and in many ways our best investment", which shows "Bill and Melinda's understanding of immunisation as one of the 'best buys' in global health".
"For every dollar that we invest in immunisation, we see about $44 return," he said. "That's a pretty good return on investment."
The Gates Foundation – which employs more than 1,500 people, holds more than $50bn in assets and has given out $46bn of grants since it was set up by the Microsoft founder in 2000 – will continue to use its cash to save "the most lives possible at the lowest possible price", Dr Elias said.
As well as immunisation, it is working to improve maternal and child health, to help combat malaria, tuberculosis and HIV, as well as childhood diseases such as pneumonia.
In partnership with the UAE, it is also working to eradicate neglected tropical diseases, which generally only occur in poor countries.
Expanding access to contraception in the developing world is another priority, he said. Asked about religious organisations such as the Catholic Church that have traditionally opposed contraception, Dr Elias said the most important thing is to "listen to women".
"There are 320 million women today in poor countries who are using contraception," he said. "There is another 210 million women who want to use contraception, but currently don't have access to the services.
"Many of those women are being advised in different ways by their traditional and religious leaders, and they're making personal choices to want to time and space their pregnancies.
"Something as simple as spacing pregnancies by three years would cut maternal mortality probably in half and cut child mortality by a third. Most religions do have teachings about commitments to the health of children and families. Providing women and couples the opportunity to space and time their pregnancies is actually part of having a healthy community and a healthy family."

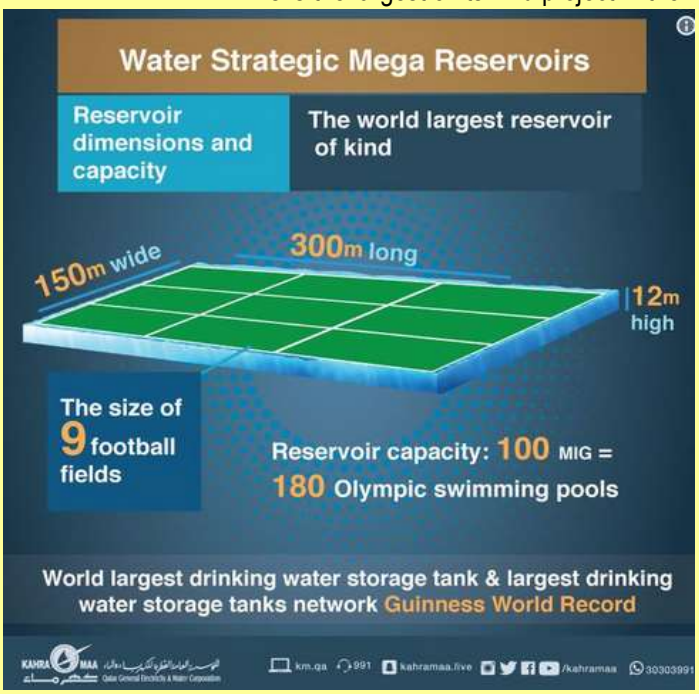
HH The Amir launched mammoth water security reservoirs project in Umm Salal

Source: https://www.qatarliving.com/forum/news/posts/hh-amir-launched-mammoth-water-security-reservoirs-project-umm-salal

Dec 12 – Ever since the start of the siege more than a year ago, Qatar has been steadily marching towards making itself self sufficient. After achieving self sufficiency in agricultural and milk production, the country is moving swiftly towards making itself water-sufficient.
As part of the grand plan, HH The Amir Sheikh Tamim bin Hamad Al Thani inaugurated the Water Security Mega Reservoirs Project yesterday, reported *Gulf Times*.
The inauguration ceremony was held at the Qatar General Electricity and Water Corporation (Kahramaa) building in Umm Salal Ali area.
The Water Security Mega Reservoirs Project is expected to allow Qatar to overcome challenges of freshwater shortages in the future, Ashghal President Dr Saad bin Ahmad Al Mohannadi was quoted as saying by *Gulf Times*.
A short film, highlighting the project;'s strategic importance, was displayed during the opening ceremony.

The project, which is the largest of its kind in the world, has a total capacity of about 1,500m gallons of water, reported *The Peninsula*.

"This is the largest of its kind project in the world and contains a huge strategic reservoir that raises the country's water storage to about 1,500m gallons, which is roughly an increase of 150%," said Qatar's Minister of State for Energy Affairs HE Saad bin Sherida Al Kaabi.



The total capacity of the reservoirs is expected to cover Qatar's water storage requirements up to 2026. The future stages will help meet Qatar's water demands even after 2036.

The project marks the largest-ever expansion of Qatar's water storage capacity. The project is located in five strategic sites — Umm Birka, Umm Salal, Rawdat Rashed, Abu Nakhla, and Al Thumama. Each site covers roughly one square kilometre each, reported *Qatar Tribune*.

The project consists of 15 of the world's largest concrete reservoirs. Each of them is 300M long, 150M wide, and 12M high.

Kahraama has also installed over 650km of large diameter pipelines connecting the desalination plants in the north and the south of the country, together with the five sites to ensure water flow in both directions with operational flexibility to meet any emergency. **The total cost of the project is estimated to be around QR14.5bn.**

The sites of the reservoirs were selected based on a thorough study. The sites at Rawdat Rashed is located at the highest point of project route to allow the water to flow using gravitational energy at times of emergency without using electric power.

The five sites are designed to allow future expansion and the construction of additional reservoirs without the need to install more pipelines.

To avoid water stagnation, the interior design of the reservoir allows water movement from entry to exit without electric power. **Moreover, water quality is monitored around the clock using state-of-the-art technologies.**

EDITOR'S COMMENT: Just a reminder for the last sentence of this article: anthrax spores survive for decades in the soil (case of Gruinard Island, Scotland that remained contaminated during the period 1942-1990). In addition, anthrax spores survived in water with a concentration of 1 milligram of chlorine per liter (typical tap water has a concentration of 1 to 2 milligrams per liter). After 60 minutes in the water, there si no significant decrease in the number of viable spores[1]. Higher concentrations of chlorine are much more effective. At 5mg/L (a concentration that might be used by treatment systems during periods when drinking water is turbid) 97 percent of spores are killed after one hour. At 10mg/L

[1] American Society for Microbiology. "Anthrax Spores May Survive Water Treatment." ScienceDaily. ScienceDaily, 26 February 2006. (www.sciencedaily.com/releases/2006/02/060226115234.htm)

(similar to a highly chlorinated swimming pool) 99.99 percent are killed, but the chlorine concentration would be too high for the water to be drinkable. Spores also have the ability to attach to the inside of pipes. After 6 hours from spores' release in the pipe system, 20 to 40 percent of spores had attach themselves to the surface of the copper and CPVC pipes, 95 percent attach to the iron pipes[1]. When biofilms were present on the interior of copper pipes attachment increases to 80 percent.

SteraMist Surface Unit

Source: http://tomimist.com/products/stera-surface-unit/

The SteraMist Surface Unit is a fully portable, hand-held, point and spray misting disinfection unit.

- Simply spray surfaces for 5 seconds per square foot for disinfection
- Multiple Surface Units can reduce terminal clean rooms to 10 minutes
- Can be used on hard, non-porous, high touch surfaces
- Reaches surfaces and areas that regular disinfectants cannot reach

The SteraMist Surface Unit is a fully portable, fast-acting, hand-held, point and spray misting disinfection system. This system is the ultimate tool in disinfecting any space, whether used for specific service needs or acquired for daily use. The SteraMist Surface Unit is one of the best choices to make certain that a facility is using the best technology currently available. The single applicator surface unit enables disinfection of all surfaces – including high touch, sensitive equipment, and electronics. The room is safe to enter within minutes after the **Ionized Hydrogen Peroxide** (iHP) mist has been applied.

Additional Claims

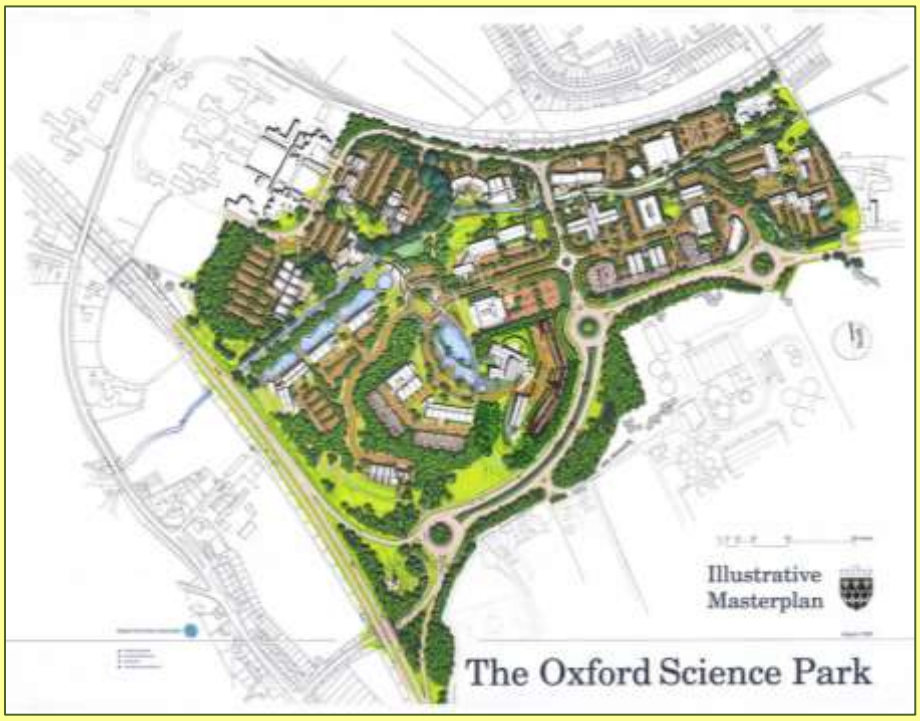
- Single person application.
- Handheld application method gives users the freedom to easily manipulate and treat all sides of desired objects.
- Kills bacteria and inactivates viruses that may reduce risk of exposure from pathogens on treated surfaces (*See EPA label*).
- Helps prevent the build-up of odors by killing odor-causing bacteria.
- Fully validated to comply with GMP (Good Manufacturing Practice) Standards.
- Aerosolized microns spread like a gas.
- Goes above, beyond, under and around disinfecting sprays and wipes.

New vaccines center to protect U.K. from pandemic threats

Source: http://www.homelandsecuritynewswire.com/dr20181212-new-vaccines-center-to-protect-u-k-from-pandemic-threats

Dec 12 – The U.K.'s first dedicated **Vaccines Manufacturing Innovation Centre (VMIC),** announced by Business Secretary Greg Clark MP, represents a major commercial opportunity and also a new front line in the nation's defense against global pandemic threats.

To be **up and running by 2022**, the VMIC addresses the U.K.'s structural gap in late-stage vaccine manufacturing process development. It will allow development and manufacture of vaccines for clinical trials and at moderate scale for emergency preparedness for epidemic threats to the U.K. population.



Led by the University of Oxford's Jenner Institute, the new center has been awarded funding by U.K. Research and Innovation of £66 million through the U.K. Government's Industrial Strategy Challenge Fund (ISCF) Medicines Manufacturing challenge.

Jenner Institute Director, Professor Adrian Hill, said: "This is an exceptional opportunity for the U.K. to lead in the provision of vaccines against a wide range of outbreak pathogens which threaten to cause major epidemics. The lack of commercial incentive to develop these has now led to this exceptional partnership of major academic and industrial players in the vaccine field, to accelerate a range of vaccines towards large-scale manufacture and stockpile provision for vulnerable populations. In parallel, the Centre will develop innovative manufacturing technologies with U.K. companies and Universities to support the next generation of life-saving preventive and therapeutic vaccines."

Located on a new site at The Oxford Science Park, the VMIC will have the potential for additional commercial capability, such as for emergency preparedness, for larger scale manufacturing of vaccines to be funded by industry and the Department of Health and Social Care.

U.K. Research and Innovation Chief Executive Professor Sir Mark Walport said: 'Improving the development, production and application of new vaccines against infectious diseases requires expertise and collaboration across academia and industry.

"The Vaccines Manufacturing Centre will play an important role in bringing expertise from industry and academia together to ensure we are prepared to respond to the threats of serious infections, including viruses with the potential to cause major national or global epidemics."
It will provide the infrastructure to develop vaccine manufacturing processes (TRL5-9+) at scale, building on the existing MRC and BBSRC funded work at TRL 2-4.
Oxford says that the £66 million center will be a purpose-built, state-of-the-art facility, allowing for academic and industry collaboration on the development, design and manufacture of vaccines. In that regard it fulfils a similar role to the Cell and Gene Therapy Catapult and the National Biologics Manufacturing Centre.
Piers Scrimshaw-Wright, Managing Director of The Oxford Science Park, said: "The Vaccines Manufacturing Innovation Centre will be a major part of the U.K. life sciences research and manufacturing infrastructure, and it is a real honor for us that it will be located here. It complements our long-term commitment to science, innovation and entrepreneurship in Oxford, and we look forward to working with the VMIC team as the facility takes shape."
The Centre's main grant funding comes through U.K. Research and Innovation, as part of the U.K. government's Industrial Strategy Challenge Fund (ISCF). Additional funding of £10 million will come from commercial and other partners, including Janssen Vaccines & Prevention B.V. and Merck Sharp and Dohme (MSD). The Centre will be further supported by bioprocessing expertise and training from GE Healthcare.
Three academic institutions joined forces in the new company – VMIC U.K.– which will run the center: the University of Oxford, Imperial College and the London School of Hygiene & Tropical Medicine.
VMIC-U.K. will be supported by two industrial partners with extensive experience in vaccine manufacturing and development (Janssen, part of Johnson and Johnson, and MSD); expertise and training in state-of-the-art manufacturing equipment will be provided by GE Healthcare.
The U.K. government will be able to use the VMIC to manufacture vaccines rapidly in the event of a pandemic affecting the U.K., for example influenza, and it will also enable rapid global response to emerging highly infectious epidemic pathogens such as Ebola and Zika.
The center will innovate new technologies including manufacture of personalized cancer vaccines and vectors for gene therapy.
The VMIC is part of the ISCF's Leading Edge Healthcare challenge theme, (including Medicines Manufacturing) aiming to speed up patient access to new medicines and treatments, build on the U.K.'s leadership position in this area, increase U.K. productivity, and stimulate further investment in this sector within the U.K.
The Leading-Edge Healthcare challenge overall is investing over £180 million over the 2018-21 period in the areas of advanced therapies, medicines and vaccines development and manufacturing, alongside an estimated £250 million of private funding from industry.
The U.K. has over 1,300 companies involved in medicines manufacturing, the direct gross value added (GVA) per U.K. employee is greater that £150,000, and the sector produced £26 billion in exports in 2015.
The challenge should return a value of £1 billion to the U.K. economy, support high-value, highly-skilled manufacturing, and increase productivity.

PLAGUE AND PESTILENCE: Potential Terrorist Use of NBC Weapons

By Brian Johnson-Thomas
World Security Report – Nov/Dec 2018
Source: http://www.torchmarketing.co.uk/wp-content/uploads/2018/11/WSRNovDec2018.pdf

BIOLOGICAL WEAPONS
Perhaps surprisingly the use of biological weapons in modern times could be said to date back to September 1984 when the Bhadwan Shree Rajnee cult poisoned 751 people with salmonella in what was allegedly a preparation for a larger attack planned to coincide with

forthcoming elections in the U.S. State of Oregon. This was followed by an attack by Islamic terrorists on the water supply of a police station in Zamboanga city in the Philippines in September 1987 – it's unclear what 'poison' was used but it killed 19 policemen and injured 140 others.
It's also possible that biological weapons were used in the Bosnian war – I came across a document after the siege of Bihac and which appears to suggest at least the intention of the Yugoslav Army to use BW against the Bosnians.
This is also of interest because the incident was here in Europe, not terribly far away from us, and it indicates also that there are indeed people, presumably still in the Balkans, with the necessary skills to manufacture biological weapons and who – having been on the losing side - are not necessarily enamoured of our Western way of life.
Shortly after 9/11 anthrax laced letters were mailed to federal officials and others in Washington DC, resulting in 5 deaths and 17 more reported injured.
On 8 October 2006 at Numaniyah in Iraq, 7 policemen were killed and 700 injured after Islamic terrorists poisoned the main meal of the day in the police base there, and between March 2012 and April 2013 nine attacks involving the poisoning of food with rat poison were made on police stations in Afghanistan, resulting in 53 deaths and 40 injuries. Not biological I know but I've included it in the section because it seems to fit better….
Also, between April 2012 and June 2013, a total of 23 'poison' attacks were recorded on girls' schools, in Afghanistan the substance used is not recorded but it causes a total of 1,952 injuries. There are, I regret, lots of other examples one could cite, but the point is……there doesn't appear to be any reluctance on the part of terrorists to use BW if such should chance to be available for use. This brings into sharp focus the sad history of biological weapons under the former regime in Iraq because, whilst it's clear that the majority of such weapons systems developed under Saddam Hussein have been destroyed, there are still some tantalising gaps in the record…
One such example concerns the fact that Iraq concealed between 128 and 157 B-400 bombs containing BW agents at Airfield 37 in western Iraq and Al Aziziyah to the south east of Baghdad. The official Iraqi records showed that 157 of these bombs were filled with either botulinism toxin or chlostridium parthiogensesis, whereas the records of UNMOVIC show that only 128 have definitely been destroyed.
Indeed, a later CIA report concluded that it could not "arrive at an agent notional balance because it still does not know with authority the amount of each agent produced, the amount of each agent used in weapon filling, the number of weapons filled with each agent, the amount of bulk agent of each type destroyed".
Given the current situation on the ground in both Iraq and Syria, with Islamic terrorists apparently losing ground, it might be argued that such people would have few – if any – inhibitions about using any weapons which happen to lie to hand.

▶▶ **Read the full paper at source's URL (pp.11-14).**

Brian Johnson-Thomas *has undertaken research for the OSCE in former Yugoslavia (2007) was team leader of an EC Mission to Africa and Latin America (late 2007), was a member of the UN Security Council's Expert Panel on the Democratic Republic of the Congo (2008), advised the Kofi Annan International Peacekeeping Training Centre in Accra, Ghana (2009) and was the Arms Expert on the UN Security Council's Expert Panel on the Sudan from 2010 to 2013.*

Entomological warfare

By Serale M.[1], Zelinotti L.[2], Boschetti G.[3]
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Presented at the "Workshop on Countering Radiological and Nuclear threats" – 8th November 2018, Rome, Italy

Purpose: Analyze the threat of the use of insects as weapons and the response capacities of the Italian
State Background: insects are already naturally an excellent vehicle for diseases, raising them and infecting them or feeding them with infected material is extremely simple. Once released into the environment they can infest an area for years. Insects can be effectively used for biological warfare. Interesting could be the use of insects like as dispersal of radioisotopes, an occult dirty bomb to generate panic.
Method and materials: Study and analysis of p possible uses, zoonosis and "case studies".
Finding: There are e no prevention protocols in the routine for operators and rescuers. There is poor training for the zoonosis problem. The response of public bodies in the event of a possible attack is slow and has no standard or inter-force protocols. The Italian public health and relief system is fragmented and there are already several bodies/agencies (there is no effective exchange of information)
Conclusions: In case of an epidemic or entomological war, if prevention protocols, early warning and inter-force response is not developed, it could cause huge losses both in the population and among the operators.

Health Canada has approved Emergent BioSolutions Inc. new drug submission (NDS)

Source: http://globenewswire.com/news-release/2018/12/17/1668306/0/en/Emergent-BioSolutions-Receives-Health-Canada-Approval-of-BioThrax-Anthrax-Vaccine-Adsorbed.html

Emergent BioSolutions Inc. (NYSE: EBS) today [Mon 17 Dec 2018] announced that Health Canada has approved the company's new drug submission (NDS) for its anthrax vaccine, BioThrax (anthrax vaccine adsorbed). BioThrax is indicated for active immunization for the prevention of disease caused *by Bacillus anthracis* in individuals 18 through 65 years of age whose occupation or other activities place them at risk of exposure, regardless of the route of exposure. BioThrax is administered in a 3-dose primary schedule (at 0, 1, and 6 months) with boosters at 3-year intervals recommended thereafter. BioThrax was approved under the Extraordinary Use New Drug Regulations, which provide a regulatory pathway for products for which collecting clinical information for its intended use in humans is logistically or ethically not possible.

"With the growing awareness of biological and chemical threats around the globe, Emergent is committed to partnering with allied governments and providing preparedness solutions to meet their national security
needs," said Abbey Jenkins, senior vice president and vaccines and anti-infectives business unit head at Emergent BioSolutions. "We are pleased to receive Health Canada licensure of BioThrax, fulfilling our commitment to the Canadian government and enabling future procurement of this critical medical countermeasure. We look forward to continuing our decades-long partnership in our quest to fulfill our mission: to protect and enhance life."

BioThrax is designated by Health Canada as an innovative drug, giving it market exclusivity for 8 years. Earlier this year [2018], Emergent completed the mutual recognition procedure for BioThrax, expanding licensure of BioThrax in 5 European countries, namely, the UK, Poland, France (marketed as BaciThrax), Italy, and the Netherlands, in addition to Germany, where BioThrax received market authorization in 2013. BioThrax is also licensed by the United States Food and Drug Administration for the active immunization for the prevention of disease caused by *Bacillus anthracis* in persons 18 through 65 years of age for both pre-exposure and post-exposure prophylactic use. Please follow link for full US prescribing information (http://www.biothrax.com/prescribinginformation_biothrax_us.pdf) and
for full Canadian prescribing information in English
(https://emergentbiosolutions.com/sites/default/files/inline-files/Product%20Monograph%20BioThrax%20%28EN%29.pdf).

BioThrax has also received market authorization from the Health Sciences Authority in Singapore

and the Paul-Ehrlich Institut in Germany.
Where approved in Europe, BioThrax is indicated for prevention of disease caused by *Bacillus anthracis* in adults at risk of exposure.
Please follow link for full details of EU prescribing information (<https://emergentbiosolutions.com/sites/default/files/inline-files/SmPC_EN%20v.11.5%2003Apr2018_5.pdf>).
The safety and efficacy of BioThrax have not been established in pediatric or geriatric populations. Individuals are not considered protected until they have completed the 3-dose primary immunization series. Vaccination with BioThrax may not protect all individuals.
BioThrax is manufactured from a culture filtrate made from a non-virulent strain of *Bacillus anthracis*. Over 14 million doses of BioThrax have been administered to more than 3 million individuals.
Emergent BioSolutions Inc. is a global life sciences company seeking to protect and enhance life by focusing on providing specialty products for civilian and military populations that address accidental, intentional, and naturally occurring public health threats. Additional information about the company may be found at www.emergentbiosolutions.com .

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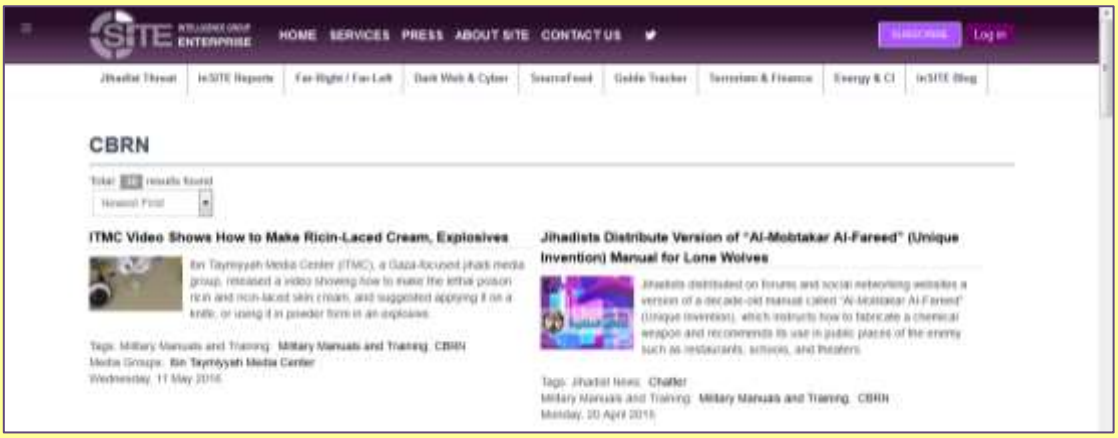

Source:https://ent.siteintelgroup.com/index.php?option=com_customproperties&view=search&tagId=535&Itemid=822&lang=en

Ebola's other unsung heroes: the planners who keep the response running

By Helen Branswell
Source: https://www.statnews.com/2018/12/20/ebola-unsung-heroes-logisticians-response/

Dec 20 – Paul Molinaro is not looking forward to Christmas. He's no Scrooge. But when you're trying to keep an Ebola outbreak response up and running, the season of celebration and good cheer is a major inconvenience.
Rather than anticipating family gatherings, festive feasts, and brightly wrapped gifts, Molinaro, chief of operation support logistics for the World Health Organization's emergencies program, dreads the likelihood of shops being closed, customs operations being understaffed, and pretty much everything he and his staff need to get done being that much more taxing over the Yuletide.
"Suppliers will tend to start shutting down for the holiday season. It becomes harder to get the windows of delivery because you may anticipate Kinshasa airport being a lot slower. It just becomes a pain for me," said Molinaro, who is overseeing a team of several dozen

logistical workers on the ground in the Democratic Republic of the Congo, and at WHO headquarters in Geneva.
When we think of Ebola outbreak responses, chances are what comes to mind are courageous doctors and nurses caring for people afflicted by one of the cruelest and most deadly diseases known to man. What we tend to overlook is the mountain of work needed to ensure there is a treatment unit in which to care for the sick, and that there are boots and gloves and aprons and face shields to protect the medical staff.

An MSF Ebola treatment center in Mangina, in the DRC. *Nyka Alexander/WHO*

Outbreak logisticians are the people who supply the response teams, who find them beds to fall into at the end of exhausting days, and food to sustain them and vehicles to transport them. It's their job to create the conditions in which the people who know how to stop Ebola can get that essential task done.
When the right equipment is in the right place and in the right amounts, it "seems like magic," Molinaro said. But in reality, it's a lot of hard work.
Molinaro's crew is supporting the upward of 300 people working for the WHO in northeastern Congo to extinguish this latest Ebola outbreak, which is now the second largest in history. As of Wednesday there have been 549 cases and 326 deaths since the outbreak began, likely in late April.
In addition to the WHO, there are several dozen international agencies and non-governmental organizations assisting the Congolese government in the battle to end this outbreak. They all need accommodations, meals, medical equipment, power generators, structures in which to care for the sick, vehicles in which to move from town to town, satellite phones or cellphone SIM cards, and more — much more.
The effort involved in sourcing all these necessities of work and life so that the Ebola responders can work on issues of life and death are divvied up among different partners in the response, Molinaro told STAT.

"Some of the partners, they have their own setup. It's better like that; they know what they want in terms of their setup, the way they do their clinical management or care," he said, noting this is especially true for the main medical NGOs that operate the Ebola treatment centers, Alima and Doctors Without Borders, which is known by the acronym for the French version of the name, MSF. "It's definitely a team effort."

Kim Comer, emergency logistics coordinator for MSF, was in DRC this week overseeing construction of a new treatment center in Katwa, a neighborhood in the large city of Butembo. Transmission of Ebola is picking up there, and a new treatment center is needed. The work involves everything from bulldozing the field to erecting fencing and hospital structures of wood and plastic sheeting, putting in latrines, installing generators to provide electricity, and myriad other things.

"If I could just work 20 more hours today, I could get my to-do list done," said Comer, who is on her third Ebola outbreak. "But there's just no way to get the list done."

Alima, which is operating a 61-bed Ebola treatment center in Beni, where the outbreak response is headquartered, goes through about 100 sets of personal protective equipment — PPE in infection control parlance — daily, ordered from Europe or North America, André Jincq, the organization's emergency response logistics coordinator, said in an email. Ensuring that the critical supplies are always available requires careful advanced planning. Without this protective gear, treatment centers could not safely function.

Comer said MSF tracks the global stocks of coveralls to ensure the supplier is able to produce what aid workers need. The group has already stockpiled PPE supplies in Goma, a large city south the outbreak zone. There haven't yet been cases in Goma, but there is concern the virus will make its way there, and the logisticians don't want to be caught flatfooted.

"Your teams are telling you: XY is probably going to happen. We should increase A, B, C, and D to anticipate. We then go ahead and do that," Molinaro explained. "And then when A, B, C, and D is needed, it seems like magic to the users that these things are just there. But these things arrived there after a process of discussion, really assessing the risk and then taking a call on whether we should forward something or not."

This is Molinaro's first Ebola outbreak. He joined WHO in mid-July and quickly "got thrown into it," he said. (The outbreak was declared Aug. 1.) Prior to joining the WHO, he worked for the United Nations International Children's Emergency Fund — UNICEF — in the Middle East. So he's done this type of work before. But little else has the urgency of an Ebola outbreak, he said.

"Here we're dealing with a situation if we're not able to get a vaccination team in, equipped, and around the case and the contacts within a very short period of time — measured in hours — there's potentially the chance … the virus moves on, infects, and kills people," he said.

These days, most of the spread of Ebola is occurring in the cities of northeastern Congo, which is both a curse and a blessing. A curse because urban outbreaks are harder to extinguish. A blessing because it's easier to meet some of the logistical needs than it would be in rural, difficult-to-access areas, suggested Yves Willemot, head of communications for UNICEF's DRC country office.

Staff can be housed and fed in the hotels and restaurants of Beni, Butembo, and Goma, said Willemot — though he did acknowledge there is fierce competition for hotel beds.

"If you have 300 people from WHO and 50 from UNICEF, there's a constant rotation of people coming in and people going out and rooms becoming available and new rooms being requested, etc. It's a constant 'fight' to get rooms," he said, supplying the air quotes. "And so the circumstances in which people are working and living are not necessarily always very easy."

All those people need to get around. That means hiring vehicles, which can require some creativity, noted Molinaro, who said the WHO has a fleet of about 350 vehicles at its disposal now.

"Right at the beginning … it's seeing a car come by and then asking, 'Would you like to hire this [out]?' And then word getting out and vehicle owners starting to present themselves and then you start going into a bit more of a process," he said. "Inspecting the vehicle. Testing the driver. Coming up with a standard contract."

The outbreak response has also been able to draw on the resources of a United Nations peacekeeping force, MONUSCO, which has been operating in the region for nearly two decades. About 40 of the vehicles at WHO's disposal are MONUSCO vehicles on loan. They

come equipped with radio communications — a "stroke of luck," said Molinaro, given that it's safer if a convoy of cars includes one with a radio.
The safety of outbreak response workers is an enormous concern in the region, where rebel forces have been known to kidnap and kill. On Monday, a World Food Program worker was killed in an ambush north of Goma.
Molinaro said the response teams are using a smartphone app developed by the International Organization for Migration that allows them to keep tabs on staff in the field. "It has a panic button. It has an 'I'm OK' button."
Because of the security concerns, there are actually two types of personnel protective equipment needed by outbreak staff. Molinaro calls them PPE-H (for health) and PPE-S (for security). The latter refers to Kevlar vests and helmets — not exactly standard attire in an Ebola outbreak.
One service that had been on Molinaro's to-do list turned out to be too difficult to execute, even for a crew of people who get the impossible done. He's not 100 percent sure how people working for the WHO are getting clean clothes.
"It's something that we were trying to put into place. But it's actually a lot of work. Because you have to identify whose laundry it is. You have to make sure when it's done it's all going back to that owner," he said. "That in itself would be a logistics operation of remarkable precision…. Laundry really goes into micro-planning of 'I don't have two socks.'"
He's curious about how the laundry dilemma has sorted itself out, but he suspects staff have found a local fix. "I think it ended up just kind of evolving through capitalism," he said.

Helen Branswell *covers issues broadly related to infectious diseases, including outbreaks, preparedness, research, and vaccine development.*

Bioterrorism attacks always probable: Iranian general

Source: https://www.tehrantimes.com/news/430977/Bioterrorism-attacks-always-probable-Iranian-general

Dec 22 – Many countries conduct bioterrorism attacks to advance their economic goals, so such attacks are always probable, head of the Civil Defense Organization said on Saturday.
In an interview with IRNA, Brigadier General Gholam Reza Jalali said bioterrorism is used to weaken the infrastructures of a government, warning that such threats have also targeted commanders, authorities and leaders of different countries.
"**Yasser Arafat**, former president of the Palestinian National Authority, and Hugo Chavez, former president of Venezuela, were supposedly killed through bioterrorism," Jalali added.