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CBRNE

NEWSLETTER TERRORISM

E-Journal for CBRNE & CT First Responders



PART II



www.cbrne-terrorism-newsletter.com

It is 3 minutes to midnight – still

Source: <http://www.homelandsecuritynewswire.com/dr20160127-it-is-3-minutes-to-midnight-still>

Jan 27 – The *Bulletin of the Atomic Scientists* Science and Security Board yesterday announced that the minute hand of the *Bulletin's* closely watched Doomsday Clock will remain at three minutes to midnight, since recent progress in the Iran nuclear agreement and the Paris climate accord “constitute only small bright spots in a darker world situation full of potential for catastrophe.”

The statement accompanying the Doomsday Clock decision opens with the following words: **“Three minutes (to midnight) is too close. Far too close. We, the members of the Science and Security Board of the Bulletin of the Atomic Scientists, want to be clear about our decision not to move the hands of the Doomsday Clock in 2016: That decision is not good news, but an expression of dismay that world leaders continue to fail to focus their efforts and the world’s attention on reducing the extreme danger posed by nuclear weapons and climate change. When we call these dangers existential, that is exactly what we mean: They threaten the very existence of civilization and therefore should be the first order of business for leaders who care about their constituents and their countries.”**



The decision about the time reflected on the Domsday Clock is made by the *Bulletin of the Atomic Scientists* Science and Security Board in conjunction with the Board of Sponsors, which includes sixteen Nobel Laureates. The hands of the Domsday Clock were moved to three minutes before midnight on 22 January 2015, marking the direst setting of the Clock since 1983, at the height of the cold war.

While recognizing the important progress represented by the Iran nuclear deal and the Paris climate accord, the *Bulletin* cautions that these positive steps have been offset in large part by foreboding developments. “Even as the Iran agreement was hammered out, tensions

between the United States and Russia rose to levels reminiscent of the worst periods of the cold war. Conflict in Ukraine and Syria continued, accompanied by dangerous bluster and brinkmanship, with Turkey, a NATO member, shooting down a Russian warplane involved in Syria, the director of a state-run Russian news agency making statements about turning the United States to radioactive ash, and NATO and Russia repositioning military assets and conducting significant exercises with them. Washington and Moscow continue to adhere to most existing nuclear arms control agreements, but the United States, Russia, and other



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nuclear weapons countries are engaged in programs to modernize their nuclear arsenals, suggesting that they plan to keep and maintain the readiness of their nuclear weapons for decades, at least — despite their pledges, codified in the Nuclear Non-Proliferation Treaty, to pursue nuclear disarmament.”

On the climate front, the *Bulletin* statement points out: “Promising though it may be, the Paris climate agreement came toward the end of Earth’s warmest year on record, with the increase in global temperature over pre-industrial levels surpassing one degree Celsius.”

Other positive climate developments cited in the statement include the Papal encyclical related to climate change, the movement among investors toward divestment of fossil fuels, new advances in sustainable energy systems, and more climate-friendly governments in Canada and Australia. However, the statement cautions that even these developments must be seen “against the steady backtracking of the United Kingdom’s present government on climate policies and the continued intransigence of the Republican Party in the United States, which stands alone in the world in failing to acknowledge even that human-caused climate change is a problem.”

The statement also reflects concerns about “the nuclear power vacuum” around the globe: “The international community has not developed coordinated plans to meet cost, safety, radioactive waste management, and proliferation challenges that large-scale nuclear expansion poses ... Because of such problems, in the United States and in other countries, nuclear power’s attractiveness as an alternative to fossil fuels has decreased, despite the clear need for carbon-emissions-free energy in the age of climate change.”

Rachel Bronson, executive director and publisher, *Bulletin of the Atomic Scientists*, said: “Last year, the Bulletin’s Science and Security Board moved the Doomsday Clock forward to three minutes to midnight, noting: ‘The probability of global catastrophe is very high, and the actions needed to reduce the risks of disaster must be taken very soon.’ That probability has not been reduced. The Clock ticks. Global danger looms. Wise leaders should act — immediately.”

Lawrence Krauss, chair, *Bulletin* Board of Sponsors, foundation professor, School of Earth and Space Exploration and Physics

departments, and director, Origins Project, Arizona State University, said: “Developments have been mixed since we moved the clock forward a year ago. In spite of some positive news, the major challenges the Bulletin laid out for governments then have not been addressed, even as the overall global challenges we need to face become more urgent. The clock reflects our estimate that the world is as close to the brink as it was in 1983 when US-Russian tensions were at their iciest in decades.”

Thomas R. Pickering, member, *Bulletin* of the Atomic Scientists Science and Security Board, former senior U.S. Department of State official, said: “While the historic Iran nuclear agreement was an important step forward, we live in a world where nuclear tensions involving the United States, Russia, North Korea and other nations continue at a heightened level. If not for the Iran nuclear agreement, we would have to conclude that, on balance, tensions are even higher today than they were in 2015 when the Doomsday Clock was set to just three minutes to midnight.”

Sharon Squassoni, member, *Bulletin* Science and Security Board, senior fellow and director, Proliferation Prevention Program, Center for Strategic and International Studies, Washington, D.C., said: “North Korea’s recent nuclear test illustrates the very real danger of life in a proliferated world. Nuclear proliferation isn’t a potential threat — we still have few controls over the kinds of capabilities that Iran succeeded in acquiring. In addition, regional tensions and conflict increase the risk of theft or use of these weapons.”

Sivan Kartha, member, *Bulletin* Science and Security Board, senior scientist and climate change expert, Stockholm Environment Institute (SEI), and co-leader of the SEI research theme “Reducing Climate Risk,” said: “The voluntary pledges made in Paris to limit greenhouse gas emissions are insufficient to the task of averting drastic climate change. These incremental steps must somehow evolve into the fundamental change in world energy systems needed if climate change is to ultimately be arrested.”

The *Bulletin* statement accompanying the Doomsday Clock announcement identifies the following steps that must be taken most urgently:



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- Dramatically reduce proposed spending on nuclear weapons modernization programs
- Re-energize the disarmament process, with a focus on results
- Engage North Korea to reduce nuclear risks
- Follow up on the Paris accord with actions that sharply reduce greenhouse gas emissions and fulfill the Paris promise of keeping warming below 2 degrees Celsius
- Deal now with the commercial nuclear waste problem
- Create institutions specifically assigned to explore and address potentially catastrophic misuses of new technologies



Prophylaxis and management of acute radiation-induced skin reactions: a systematic review of the literature

By N. Salvo, E. Barnes, J. van Draanen, et al

Curr Oncol. 2010 Aug; 17(4): 94–112.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2913836/>

Radiation therapy is a common treatment for cancer patients. One of the most common side effects of radiation is acute skin reaction (radiation dermatitis) that ranges from a mild rash to severe ulceration. Approximately 85% of patients treated with radiation therapy will experience a moderate-to-severe skin reaction. Acute radiation-induced skin reactions often lead to itching and pain, delays in treatment, and diminished aesthetic appearance—and subsequently to a decrease in quality of life.

Surveys have demonstrated that a wide variety of topical, oral, and intravenous agents are used to prevent or to treat radiation-induced skin reactions. We conducted a literature review to identify trials that investigated products for the prophylaxis and management of acute radiation dermatitis. Thirty-nine studies met the pre-defined criteria, with thirty-three being categorized as prophylactic trials and six as management trials.

For objective evaluation of skin reactions, the Radiation Therapy Oncology Group criteria and the U.S. National Cancer Institute Common Toxicity Criteria were the most commonly used tools (65% of the studies). Topical corticosteroid agents were found to significantly reduce the severity of skin reactions; however, the trials of corticosteroids evaluated various agents, and no clear indication about a preferred corticosteroid has emerged. Amifostine and oral enzymes were somewhat effective in preventing radiation-induced skin reactions in phase ii and phase iii trials respectively; further large randomized controlled trials should be undertaken to better investigate those products. Biafine cream (Ortho-McNeil Pharmaceuticals, Titusville, NJ, U.S.A.) was found not to be superior to standard regimes in the prevention of radiation-induced skin reactions ($n = 6$).

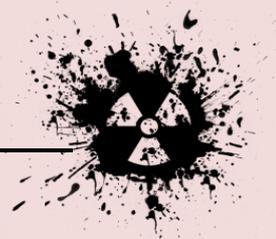
In conclusion, the evidence is insufficient to support the use of a particular agent for the prevention and management of acute radiation-induced skin reactions. Future trials should focus on comparing agents and approaches that, in phase i and ii trials, suggest efficacy. These future phase iii randomized controlled trials must clearly distinguish between preventive and management strategies for radiation-induced dermatitis. Only then can evidence-based guidelines be developed, with the hope of standardizing the approach across centres and of improving the prevention and management of radiation-induced dermatitis.

► **Read the full paper at source's URL.**

First uranium shipment from Canada to India.

Source: <http://www.world-nuclear-news.org/UF-India-receives-first-uranium-shipment-from-Canada-0412155.html>

According to government of the Canadian province of Saskatchewan, the first shipment of uranium under a nuclear cooperation agreement contract, which covers the period to 2020, has arrived in India. Currently, India has **21 power reactors in operation**, with another **six under construction** and scheduled to start up over the next four years.



What WOULD Britain do on the brink of a nuclear apocalypse?

Source: <http://www.dailymail.co.uk/news/article-3424694/What-Britain-brink-nuclear-apocalypse-Film-makers-given-access-secret-war-game-involving-imminent-Russian-attack-London-brass-decide-NOT-retaliate.html>

Jan 31 – As the world teeters on the edge of Armageddon, Britain's top brass are faced with

figures in a Whitehall bunker must choose whether to launch our Trident missiles in response, having already decided against a nuclear strike at an earlier stage in the crisis.

But the decision is no – and this outcome of an utterly realistic 'war game' throws up deeply troubling questions, not least with the current political row over Government plans to spend £100 billion replacing our fleet of Trident submarines.

The terrifying moment is the climax of a simulated emergency, in which retired senior military and diplomatic figures convene around a table in a war room, just as a Cabinet Office committee would give their advice to the Prime Minister.

With unprecedented access to the normally highly secret 'war game', BBC film-makers reveal how the decisions unfold minute by minute.

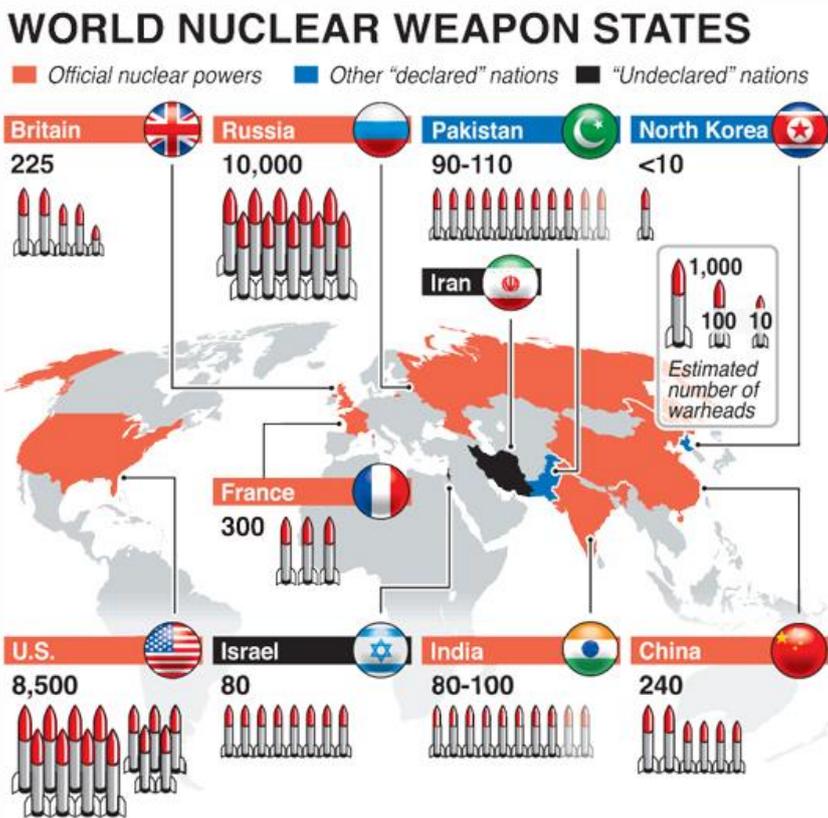
The exercise, designed by military strategists, envisages a Russian invasion of Latvia to support pro-Kremlin separatists who have taken over 20 towns near its border.

When NATO leaders become divided about how to respond, America and Britain go it alone to launch a ground offensive to force Putin's troops back, during which four British soldiers are taken hostage until they are rescued by Special Forces.

Then Russia hits back with a nuclear strike on Royal Navy warship HMS Ocean – instantly killing 1,200 Royal Marines and sailors. Remarkably, the committee votes against retaliating with a nuclear strike. But America, which also lost a warship, ignores the British

advice and unleashes its own nuclear attack on a Russian military target – pushing us into all-out atomic war.

The tension builds and the doomsday scenario reaches its climax as the war



World nuclear weapon status in 2012 (estimated)

Country	Operational (strategic)	Operational (non-strategic)	Reserved/undeployed	Military stockpile	Inventory total
Russia	2,430	–	3,000	5,500	10,000
U.S.	1,950	200	2,850	5,000	8,500
France	290	n.a.	Unknown	300	300
China	0	Unknown	180	240	240
Britain	160	n.a.	65	225	225
Israel	–	n.a.	80	80	80
Pakistan	–	n.a.	90-110	90-110	90-110
India	–	n.a.	80-100	80-100	80-100
N. Korea	–	n.a.	<10	<10	<10
TOTAL	4,830	200	6,400	11,500	19,500

Sources: Reuters, www.fas.org

REUTERS

the most chilling decision of all. After Russia has invaded a NATO state, the rapidly escalating crisis threatens the very existence of Britain.

Now, with a nuclear strike on London imminent, military commanders and senior Government



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room hears that Putin has ordered London to be nuked next.

The committee is faced with one final decision – does it launch a like-for-like retaliation?

General Sir Richard Shirreff, until recently NATO's Deputy Supreme Allied Commander in Europe, takes a long pause, and declares: 'I say do not fire.'

Sir Tony Brenton, a former ambassador to Russia, adds: 'Do we pointlessly kill millions of Russians or not? To me it's a no-brainer – we do not.'

In the end, the committee votes overwhelmingly against responding to a nuclear bomb being dropped on the UK.

Former Royal Navy supremo Admiral Lord West took part in the war game but by the time of the vote was detained elsewhere in the simulated crisis.

However, last night he said he was in favour of retaliation.

The Labour peer, in comments at odds with Jeremy Corbyn's disarmament stance, told the MoS: 'We should use our second strike capability with Trident to wipe them out as well.'

'The whole point of deterrence is the uncertainty of whether you would use it.

'If you don't intend to use it in such circumstances then there is no deterrent.'

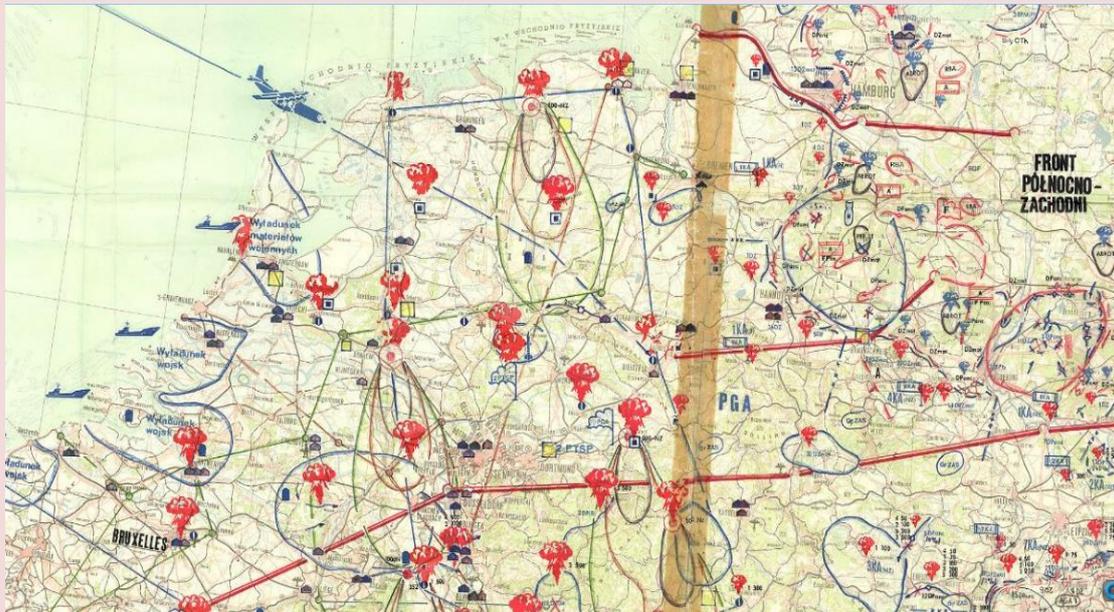
Sir Richard, meanwhile, told this newspaper: 'At that point it was clear deterrence had failed.

My feeling was it had become a moral issue – that the use of force can only be justified to prevent a greater evil... if the UK is going to be obliterated, what is going to be achieved if we obliterate half of Russia as well? It was going to create an even worse evil.'

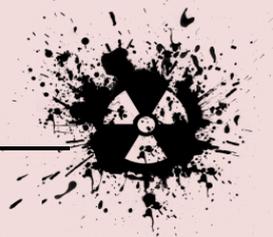
EDITOR'S COMMENT: On Saturday (Jan 06) former Florida governor Republican Jeb Bush stated: "If a preemptive strike [against N. Korea] is necessary to keep us safe, then we should do it!" Perhaps JB that has struggled throughout his campaign to defend his brother former President George W. Bush's decision to launch 2003 invasion of Iraq (that war, based in part on the faulty intelligence about weapons of mass destruction which never turned up, defined the Bush administration and came to represent the risks of preemptive war) was not aware of the recent British high officials decision regarding a pre-emptive nuclear strike (read more on Part III).

Soviet World War 3 Plans for Europe

Source: <http://brilliantmaps.com/ww3-europe/>



Jan 24 – The map shows how the Soviet Union thought World War 3 might play out in Europe. The red mushroom clouds represent planned nuclear strikes on cities and targets in central Europe and the blue mushroom clouds represent the anticipated NATO response.



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The map was smuggled out by the Polish and delivered to the Americans during the Cold War. It's based on the premise that NATO ground forces strike first and that the USSR would use its nuclear arsenal to halt, or at least slow their advance.

Thankfully this scenario never happened, but it's a reminder just how close Europe and the World were to total nuclear annihilation, just one generation ago.

Ending civilian use of highly enriched, weapon-grade uranium

Source: <http://www.homelandsecuritynewswire.com/dr20160209-ending-civilian-use-of-highly-enriched-weapongrade-uranium>

Jan 09 – **Efforts to convert civilian research reactors from weapon-grade highly enriched uranium (HEU) to low enriched uranium (LEU) fuels are taking significantly longer than anticipated, says a report from the National Academies of Sciences, Engineering, and Medicine.** The report calls for the federal government to take immediate steps to convert civilian research reactors currently using weapon-grade HEU fuel to a lower-enriched HEU fuel while awaiting the qualification of new LEU fuel. Additionally, the White House Office of Science and Technology Policy (OSTP) should develop a long-term strategy to evaluate future civilian needs for neutrons to meet U.S. science and technology objectives and how these could best be provided by research reactors and other sources, said the committee that conducted the study and authored the report.

The NAS reports that since 1978, U.S. policy and reactor conversion programs have worked to minimize, and phase out where possible, the use of HEU in fuel for civilian research reactors. These reactors use weapon-grade HEU — which is enriched to 90 percent or greater uranium-235 — to produce neutrons vital to research and other civilian applications. Eliminating HEU use in these reactors by converting them to fuel containing LEU — enriched to less than 20 percent uranium-235 — would reduce the risks that this material could be diverted for illicit use, for example in nuclear explosive devices. Worldwide, over 90 civilian research reactors have been converted to LEU fuel or shut down. However, 74 civilian research reactors, including eight in the United States, continue to use HEU fuel.

Obstacles for converting the remaining civilian research reactors from HEU to LEU fuel are both technical and nontechnical, the report notes. Some reactors using HEU fuel require the successful development of new, higher-density LEU fuel to maintain performance after

conversion; these reactors are referred to as high performance research reactors. For others, progress toward conversion is hindered by nontechnical obstacles such as economic and political motivations.

The United States is developing high-density LEU fuel that could be used to convert all of the currently operating U.S. high performance research reactors, but manufacturing this fuel will be challenging, the report notes. Somewhat lower density LEU fuels in development in Europe and South Korea might be suitable for the conversion of some, but not all, U.S. high performance research reactors. The Office of Conversion, which is part of the U.S. Department of Energy's (DOE) Material Management and Minimization Office, should monitor the development of European and South Korean LEU fuels for possible use as a backup option if there are unexpected delays in the U.S. fuel development effort.

DOE now estimates that it will take another 20 years to convert the remaining HEU-fueled civilian research reactors throughout the world and over fifteen years to convert those in the United States to LEU fuel. The report recommends an interim solution to accelerate the removal of weapon-grade HEU from civilian applications until new high-density LEU fuel is available: convert the high performance research reactors in the United States and Europe using an existing, qualified HEU fuel with uranium-235 enrichments of 45 percent or less. Nearly all of the high performance research reactors currently operating with HEU fuel could use this intermediate fuel without significant impact to their missions, the report estimates.

NAS notes that the current fleet of aging U.S. research reactors fueled by HEU is managed by a number of different universities and U.S. government agencies. DOE, for example, has authority over only



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half of these reactors. Therefore, the report recommends that OSTP take the lead in developing a 50-year cross-agency strategy to ensure the future availability of U.S. neutron sources, potentially including civilian research reactors.

Over 40 percent of the remaining HEU-fueled civilian research reactors in the world are located in Russia. However, conversion of its domestic reactors has both technical and nontechnical obstacles: Russia has several high performance research reactors and conversion is not a high priority for the Russian government. U.S. collaborations with Russia on research reactor conversion have all but ceased during the past year, and U.S. funding to support conversion of Russian civilian research reactors has decreased. The report recommends that the United States encourage and facilitate periodic workshops and meetings to bring Russian and U.S. scientists together to jointly study the risks and benefits of LEU conversion and identify opportunities for collaborations.

The report recognizes the challenges faced by the DOE's Office of Conversion, which is

responsible for managing the U.S. government's LEU fuel development and civilian research reactor conversion efforts. The conversion program is expected to operate for several more decades based on current time lines and has many technical risks. This program can be strengthened by utilizing qualified, independent, and diverse external experts to conduct technical reviews of all aspects of the program, including LEU fuel development and fabrication, material recycling, and spent-fuel management, the report says.

NAS says that the American Medical Isotopes Production Act of 2012 mandated that the Academies carry out an assessment of the progress being made by DOE and others to eliminate all worldwide use of HEU in research reactor fuel and medical isotope production facilities. It was later determined that two separate studies would be conducted to support this mandate. The current report examines the status of conversion of research reactors to LEU. Another report examining the status of medical isotope production without HEU targets will be issued later this year.

— *Read more in [Reducing the Use of Highly Enriched Uranium in Civilian Research Reactors](#) (National Academies Press, 2016).*

Guarded from terrorists by Royal Navy sub and 50 commandos...the UK ghost ships with enough nuclear fuel for 80 missiles

Source: <http://www.dailymail.co.uk/news/article-3435476/Guarded-terrorists-Royal-Navy-sub-50-commandos-UK-ghost-ships-nuclear-fuel-80-missiles.html>



Jan 07 – Two top secret British 'ghost ships' carrying enough plutonium for a huge nuclear arsenal wend their way through the world's oceans – guarded against terrorists by 50 commandos.

Pacific Heron

It may sound like a tantalising target for a villain in a James Bond film, but what is potentially the most dangerous secret mission in history is deadly reality.

Two vast container ships – the Pacific Heron and the Pacific Egret – left Barrow-

in-Furness, Cumbria, last month on the first leg of their incredible journey.

Their mission is to sail to Japan to collect 331kg of plutonium – enough to make 80 nuclear warheads – which was leased by the UK to a Japanese research facility.



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The ships are almost certainly shadowed by a Royal Navy submarine and surface vessels and are heavily armed with 20mm cannon.

They are sailing across the Atlantic before passing through the Panama Canal and into the Pacific on their way to Japan.

Their ultimate destination is a US nuclear storage facility in South Carolina, and the return journey to the American eastern seaboard from East Asia would normally again be made via the Panama Canal.

But this would leave the vessels vulnerable to attack – and their terrifying radioactive cargo could in theory devastate much of Central America.

Pacific Egret

So instead, they are likely to take the long and dangerous journey around the storm-lashed Cape Horn at the tip of South America, one of the most hazardous shipping routes in the world.

The Heron and the Egret, which each weigh about 6,700 tons when fully loaded, belong to the UK's Nuclear Decommissioning Authority (NDA). It is expected that each ship will be guarded by as many as 25 commandos.

Nuclear expert John Large told The Mail on Sunday last night: 'The cargo is invaluable and part of a secret trade in fissile materials between the likes of the UK and US. The biggest risk is a fire or an external missile strike.

'This is bomb-grade nuclear material and a terror group or rogue state would want to intercept it.'

The ships are operated by International Nuclear Services, an NDA subsidiary. A spokesman said: 'I can confirm that the specialist nuclear cargo vessels are currently taking part in a voyage but, in accordance with normal procedures, I can't disclose any operational details for security reasons.

'The transportation of nuclear materials is a tried and tested practice that's been in place for decades without any major incidents. The UK is a world leader in this area.'



EDITOR'S COMMENTS: Always love the head titles of British tabloids and media: "Ghost ships" this time!!! If I can read the news so does many others – bad guys included. Some people in certain parts of the world need to keep their mouths shut! They provide the two destinations and the route – the rest are easy to find on the Internet. Let's hope that terrorists are busy elsewhere and their ambitions are limited to burn or cross or decapitate opponents!

Israel's sea-based nukes pose risks

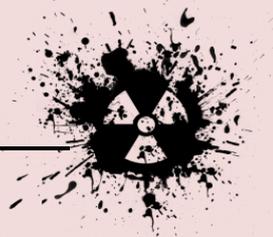
By Victor Gilinsky

Source: <http://thebulletin.org/israel%E2%80%99s-sea-based-nukes-pose-risks9151>

Feb 08 – **The story has been covered extensively in Germany and even in Israel, but it seems to have largely escaped notice in the United States: Israel has acquired a fleet of advanced German submarines that—Prime Minister Netanyahu has signaled—carry nuclear weapons pointed at Iran.** The Obama administration's pretense that it knows nothing about any nuclear weapons in Israel makes intelligent discussion about the dangers of nuclear weapons in the Middle East

all but impossible. It has also vastly diminished respect for America's broader worldwide effort to control the spread of nuclear weapons.

On January 12 of this year, the *Rahav*, the fifth of six German-built submarines scheduled for delivery, arrived at its base in Haifa. It's an advanced diesel-electric boat that is equipped with air-independent propulsion—that is, it has its own oxygen supply and can stay beneath the surface (350m) for weeks, and do so more quietly than a nuclear-



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powered submarine. Its four extra-large torpedo tubes are sized—by numerous accounts—to fire Israeli long-range nuclear-tipped cruise missiles.

Any shred of doubt about Israel's possession of nuclear weapons, and about the presence of long-range nuclear missiles on the German-supplied submarines, got erased at last



The strategic submarine procurement process started in the early 1990s, around the time of the first Gulf war. Germany's position vis-à-vis Israel became especially awkward when it came to light that German firms had helped Saddam with his poison gas and missiles, some of which landed in Israel. Germany quickly agreed to pay for the first two submarines, a contribution that was cast as continued reparation for the World War II murder of millions of Jews.

Once the submarines took up their stations, the Israelis did not hide their mission. A 2011 Israeli *Ynetnews* story described an interview with the submarine fleet's commander under the headline, "Doomsday weapon: Israel's submarines." A related *Ynetnews* story included the following:

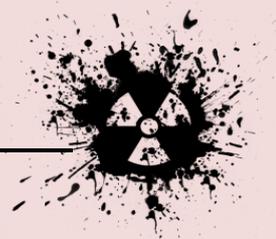
Foreign reports suggest that the German subs serve as Israel's "second strike" power and aim to retain its nuclear capabilities, even in cases of an attack on the country. This supposedly serves to deter Iran or any future enemy which has the ability to destroy Israel.

The subject has been aired in the German press. A 2012 series in *Der Spiegel* reported the cruise missiles could reach Iran with a 200-kilogram warhead, a weight that permits a formidable nuclear yield. The German government kept mum.

month's ceremony celebrating the *Rahav's* arrival. The official speeches demonstrated that Israel's nuclear weapons are no longer weapons of last resort, kept out of sight and only used *in extremis*; they are now integrated into its overall strategy. Prime Minister Netanyahu said the "submarine fleet is used first and foremost to deter our enemies who strive to extinguish us...They must know that Israel is capable of hitting back hard against anyone who seeks to hurt us." There is little doubt who "they" are. The Israeli leadership's fixation with the threat of nuclear weapons in Iran's hands has filled the news for years.

For the deterrent to work, Iran has to be aware of it, ergo the invulnerability of the undersea nuclear force has to be publicized, even flaunted. Leaving out the word "nuclear" doesn't detract from the usefulness of the warning, while—such is human psychology—allowing Israel's suppliers and supporters to maintain their pretense of ignorance. Had Netanyahu blurted out the truth, Germany would not have been able politically to continue to supply the submarines.

The US government, which has to be aware of the submarine's nuclear role, has remained silent. The United States has consistently shielded Israel's nuclear force from criticism in international



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arenas, squelching any effort to raise the subject; the taboo on discussing Israeli nuclear weapons apparently extends to the inner reaches of the US government. While the United States proclaims the Non-Proliferation Treaty (NPT) as the “cornerstone” of its nonproliferation policy and claims “unwavering” support for a Middle East nuclear weapon-free zone, America’s real policy is different: It aims to protect Israel’s monopoly on nuclear force in the area. That hypocrisy is not lost on the rest of the world, most of which takes a cynical view of US motives in pursuing nonproliferation.

This US policy carries a very real risk: As one of the four NPT holdouts (the others being India, North Korea, and Pakistan), Israel is also one of the countries most likely to use nuclear weapons against an adversary. All four of

these non-signatories are involved in bitter disputes. While they all speak of using their weapons for deterrence, they do not rule out use of the weapons in response to non-nuclear provocation. Israel describes its sea-based nuclear missiles (omitting “nuclear,” of course) as a secure second-strike force. But a “second-strike” force in a tiny country that can be effectively eliminated by one nuclear weapon is bound to be an especially forward-leaning one. It makes for a dangerous state of affairs.

The essential first step in dealing with this danger—discussing it—is for the US government to acknowledge Israel’s nuclear weapons. Ending the pretense would lance the hypocrisy that so gravely undermines US efforts to control the spread of nuclear weapons and their means of delivery.

A physicist, Victor Gilinsky is an independent consultant and formerly advised Nevada on matters related to the proposed nuclear waste repository at Yucca Mountain. His expertise spans a broad range of energy issues. From 1975 to 1984, he served on the Nuclear Regulatory Commission, having been nominated by President Gerald Ford and renominated by President Jimmy Carter. Earlier in his career he was head of the physical sciences department at the Rand Corporation; he was also an assistant director for policy and program review at the Atomic Energy Commission.

Time to stop pretending Saudi Arabia doesn't have nuclear weapons

By Jeff Smith

Source: <http://www.veteranstoday.com/2016/02/19/time-to-stop-pretending-saudi-arabia-doesnt-have-nuclear-weapons/>

Feb 19 – The question is not that they “Saudi, Turkey, Israel” are, have and will in the future use these small tactical nuclear devices but the real question is where did a non nuclear state such as Saudi get these things and how many more do they have.

Are they being covertly provided by the US

government, Israel or is this the proof of the stolen nuclear weapons covertly removed from US government stockpiles and sold off by Israel to other nations such as Saudi, Turkey, Germany, Japan, Taiwan, North / South Korea etc. (Maybe this is why that lawyer in Great Britain (Shrimpton) got locked up for talking about loose nukes too much.)



Mushroom cloud that followed the confirmed nuclear flash and ionizing radiation from a neutron bomb exploded in Yemen, May 2015

The cover story is that they “Saudi/Israeli special forces” will take them from a NATO base in Turkey.



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Unfortunately that story does not fly. That would then be considered to be a direct attack on NATO itself. This would justify a NATO / European invasion of Syria, Saudi and Turkey directly by the US and its NATO allies.

Tanks can't drive in mud and stealth bombers don't work when wet. It shorts out their so called "cloak of invisibility". Maybe a Klingon Bird of Prey would work better for them. Also the Saudis don't know how to use, maintain,



Defence and security intelligence provider IHS Jane's revealed the existence of Saudi Arabia's third and undisclosed intermediate-range ballistic missile site, approximately 200 km southwest of Riyadh

If so it will have to happen before the next presidential election and next fall's rainy season in the Middle East.

repair or program an American B-61 nuclear weapon by themselves. They would require assistance. But the Israelis sure doooo! VT tried to warn the world about the upcoming nuclear events such as this only to quote Gorbachev," We tried to spoon feed the world communism only to just have it spit back into our own face



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by the very same people that we were trying to help.”

You can't push a rope. We tried to warn the world about this danger and no one listened. The very same people that gave us nuclear 911 are at it again. This time it is WWII so they

The inventories we see evidence of that Saudi Arabia seems to have include tactical nuclear weapons and in particular, neutron bombs that only Israel is producing.]

From Fars News

Analyst: Saudi Arabia Has Nukes, Will Test



can use it as cover to write off there collapsing economic system of fractional backing and gambling.

[Editor's note by Gordon Duff: The story below from FARS New Services in Tehran promotes systematic disinformation on behalf of the Saudi Government in an attempt to derail accusations made by Veterans Today that stick, accusations made by VT's nuclear inspectors who don't speculate but have access to classified intelligence on the Saudi nuclear program.

We know that the Khobar Towers explosion was nuclear but we don't know if the device came from a Saudi stockpile. We do know that a nuclear attack on Yemen in May 2015 may have been Saudi although Israeli planes were still active over Yemen at that time.

Our sources tell us that Saudi Arabia bought its first nuclear weapons in the 1980s, large gun-type single stage weapons less than 20kt. We know that nuclear weapons from the 2nd South African program were available to Saudi Arabia, the "Johan Meyer" nukes produced there by Israel and Libya but blamed on AQ Khan of Pakistan, who was in no way involved as he told VT back in 2009.

Soon

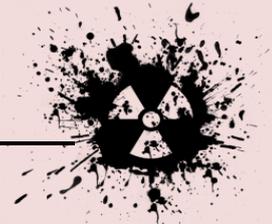
Daham al-Anzi, a prominent Saudi political analyst, told the Arabic-channel of Russia Today that Riyadh has acquired atomic bombs since two years ago and will likely carry out its first nuclear test within weeks.

Asked if he is confident about the revelation, he said, "Yes, Yes! As simple as that! We have atomic bombs. It is not a piece of urgent news. The world powers know that we have the bomb



and we wanted to test it if Iran (would develop nuclear weapons and) would carry out a nuclear test.”

US sources said last May that Saudi Arabia had reached out to its ally Pakistan to acquire "off-the-shelf" atomic weapons as a nuclear arms race begins to shape up with Shiite rival Iran.



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“For the Saudis the moment has come,” a former US defense official told the UK’s Sunday Times at the time. “There has been a longstanding agreement in place with the Pakistanis and the House of Saud has now made the strategic decision to move forward.”

The anonymous former official said the US did not believe that “any actual weaponry has been transferred yet,” but declared that “the Saudis mean what they say and they will do what they say”.

According to the Sunday Times report, Saudi Arabia and Pakistan have enjoyed a mutually beneficial relationship for decades. Saudi Arabia has given Pakistan billions of dollars in

subsidized oil, while the latter has unofficially agreed to supply the Persian Gulf state with nuclear warheads.

“Nuclear weapons programs are extremely expensive and there’s no question that a lot of the funding of Pakistan’s nuclear weapons program was provided by Saudi Arabia,” Lord David Owen, who served as England’s foreign secretary from 1977-1979, told the weekly publication.

“Given their close relations and close military links, it’s long been assumed that if the Saudis wanted, they would call in a commitment, moral or otherwise, for Pakistan to supply them immediately with nuclear warheads,” he added.

Jeff Smith is Science Editor, Veterans Today



ISIS may get its hands on “highly dangerous” nuclear material stolen in Iraq

Source: <http://www.homelandsecuritynewswire.com/dr20160218-isis-may-get-its-hands-on-highly-dangerous-nuclear-material-stolen-in-iraq>

Feb 18 – **Iraqi security agencies are searching for “highly dangerous” radioactive material stolen last year. Experts are worried that the material could fall into the hands of ISIS.**

The *Telegraph* reports that the material disappeared from a U.S.-owned storage facility in Basra last November.

An unnamed senior security official said: “We are afraid the radioactive element will fall into the hands of Daesh (ISIS).

“They could simply attach it to explosives to make a dirty bomb.”

The paper cites a leaked document dated 30 November — a letter addressed to the ministry’s Center for Prevention of Radiation, which describes “the theft of a highly dangerous radioactive source of Ir-192 with highly radioactive activity from a depot...in the Rafidhia area of Basra province.”

An anonymous senior environment ministry official told Reuters the device contained up to 10 grams (0.35 ounces) of Ir-192 “capsules,” a radioactive isotope of iridium also used to treat cancer.

The material is designated a Category 2 radioactive by the International Atomic Energy Agency (IAEA), meaning it can be fatal to anyone in close proximity to it in a matter of days or even hours.

ISIS has demonstrated its willingness to use nonconventional weapons. Last August, the jihadist group attacked Kurdish forces with mustard gas during a battle near Erbil, the capital of the Kurds’ autonomous region in Iraq, with thirty-five Kurdish soldiers taken ill.

The material which disappeared from storage could be used to build a “dirty bomb,” which combines nuclear material with conventional explosives to contaminate an area with radiation.

Iraqi security officials said that preliminary investigation indicated those who stole the material had knowledge how to find it and how to handle it. There were “no broken locks, no smashed doors and no evidence of forced entry,” he said.

Two Basra provincial government officials told Reuters that on 25 November they were told to work with local hospitals to identify radiation victims.

One said: “We instructed hospitals in Basra to be alert to any burn cases caused by radioactivity and inform security forces immediately.”



CBRNE-TERRORISM NEWSLETTER – February 2016**UPDATE (Feb 22, 2016)**

The potentially deadly radioactive material was **found dumped near a gas station** in the southern town of Zubair after it had been stolen in November from a storage facility belonging to a U.S. oilfield services company near the southern city of Basra about nine miles away, NBC News reports.

Environment ministry spokesman Ameer Ali said Sunday that it had not been damaged. Jabbar al-Saidi, the chief of security panel in Basra provincial council, said a passerby spotted the device and alerted authorities. "After initial checking, I can confirm the **device is intact 100%** and there is absolutely no concern of radiation," the chief said.

EDITOR'S COMMENT: This incident highlights that the threat is real! An industrial radiography device is basically a tool that uses the radioactive isotope Iridium-192 to beam **gamma** radiation. Iridium-192, which is sometimes used for radiotherapy, was in this case being used to test oil pipelines for structural problems such as weakening welds. The incident also poses another important question: Is a locked door sufficient to guard radioactive materials kept in Nuclear Medicine departments in our hospitals? If you review the related bibliography you will see that it is not! Extra security measures should be taken to avoid the usual surprises!

**U.S. testing radiation therapy developed in Israel**

Source: <http://www.homelandsecuritynewswire.com/dr20160223-u-s-testing-radiation-therapy-developed-in-israel>

Feb 23 – The United States will likely begin to stock anti-radiation therapy from [Pluristem Therapeutics Inc.](#), an Israeli biotech company. **The company says that the therapy can also cure nearly all people exposed to the radiation effects of nuclear weapons, "dirty" bombs, or nuclear power plants.**

Haifa-based Pluristem Therapeutics has **developed a placenta-based cell therapy, which involves injecting people who were exposed to radiation.**

Yaky Yanay, president and chief operating officer of Pluristem, told the *Jerusalem Post* that clinical trials have so far yielded a near 100 percent recovery rate for animals exposed to radiation.

The *Post* reports that last week, the U.S. National Institute of Allergy and Infectious Diseases, part of the National Institutes of Health, initiated studies of large animals to evaluate dosing. The trials are part of the Department of Homeland Security program to protect people in cases of radiation exposure.

"The whole free world is dealing with unusual challenges," Yanay said.

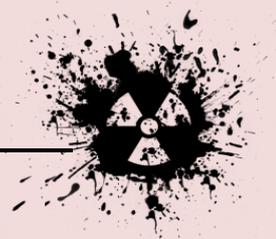
Yanay said that lethal radiation is defined as the amount of radiation which would kill at least 70 percent of the population exposed to it. Yanay said that within forty-eight hours of test animals receiving the company's placenta cell injections, that animals' bone marrow blood cell production levels returned to normal, and the animals fully recovered from the high radiation exposure.

"We saw that injecting the placenta cells enabled nearly 100 percent of the population to recover, compared to 30 percent of the [animal] group that did not receive the injections," Yanay said.

The U.S. Food and Drug Administration is now paying for, and carrying out, trials as the FDA seeks approval for the therapy. The approval is likely to be granted in 2017

"You don't need DNA matches for patients. It can be injected into the muscle very easily, in all humans or animals," Yanay said.

Yanay added: "As a proud Israeli citizen, I can say that Israel is at the top of our priorities, and we are talking to Israeli authorities. We very much want to provide the level of defense that our people deserve."



Australian police foil ISIS plot involving **suicide-bombing kangaroo**

Source: <http://theweek.com/speedreads/601872/australian-police-foil-isis-plot-involving-suicidebombing-kangaroo>



Jan 28 – An ISIS-supporting Australian teenager was arrested last April on terrorism charges for allegedly planning to pack a kangaroo full of bombs and let it loose on police, *The New York Daily News* reports. Sevdet Besim, 19, had pledged his allegiance to ISIS online, although its not yet clear if he was in touch with the terrorist organization.

According to reports, Besim planned to strap bombs onto a kangaroo, paint it with the ISIS logo, and set it on police. "I'd love to take out some cops. I was gonna meet with them then take some heads ahaha," Besim reportedly wrote to an overseas friend. Besim had also planned to run over a police officer and then behead him on April 25, an Australian holiday. Besim has pleaded not guilty to the terror crimes.

Animal-borne bomb attacks

From Wikipedia, the free encyclopedia

Animal-borne bomb attacks are the use of animals as delivery systems for explosives. The explosives are strapped to a pack animal such as a horse, mule or donkey. The pack animal may be set off in a crowd. Projects of bat bombs and pigeon bomb have also been studied.



Afghanistan

In 2009, the Taliban strapped an improvised explosive device to a **donkey**. The gate guard noticed something suspicious when a group of men let the donkey go a short way from the camp and then hurried off. The donkey was stopped with a rifle shot. One soldier set fire to the hay with a flare provoking a "considerable explosion".

In April of 2013, in Kabul, a bomb attached to a donkey blew up in front of a police security post, killing a policeman and wounding three civilians. A government spokesman claimed insurgents were challenging the competence of the Afghan government prior to the 2014 withdrawal of the U.S. military.

Iraq

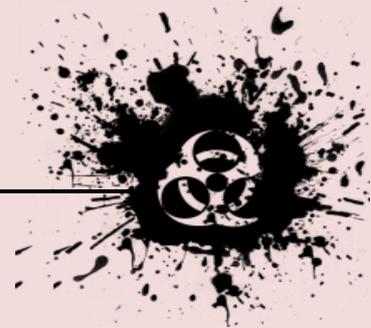
On 21 November 2003, eight rockets were fired from **donkey** carts at the Iraqi oil ministry and two hotels in downtown Baghdad, injuring one man and causing some damage. In 2004 a donkey in Ramadi was loaded with explosives and set off towards a US-run checkpoint. It exploded before it was able to injure or kill anyone. The incident, along with a number of similar incidents involving dogs, fueled fears of terrorist practices of using living animals as weapons, a change from an older practice of using the bodies of dead animals to hold explosives. The use of improvised explosive devices concealed in animal's carcasses was also a common practice among the Iraqi Insurgency.

Lebanon

Malia Sufangi, a young Lebanese woman, was caught in the Security Zone in November 1985 with an explosive device mounted on a **donkey** with which she had failed to carry out an attack. She claimed that she had been recruited and dispatched by Syrian Brigadier-General Ghazi Kanaan who supplied the explosives and instructions on how the attack was to be carried out from his headquarters in the town of Anjer in the Bekaa Valley.

United States

In 1862, during the New Mexico Campaign of the American Civil War a Confederate force approached the ford at Valverde, six miles north of Fort Craig, hoping to cut Union



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communications between the fort and their headquarters in Santa Fe. About midnight, Union Captain James Craydon tried to blow up a few rebel picket posts by sending **mules** loaded with barrels of fused gunpowder into the Confederate lines, but the faithful old army mules insisted on wandering back toward the Union camp before blowing to bits. Although the only casualties were two mules, the explosions stampeded a herd of Confederate beef cattle and horses into the Union's lines, so depriving the Confederate troops of some much-needed provisions and horses.

In the Wall Street bombing of 1920, an incident thought to be related to the 1919 United States anarchist bombings, anarchists used a bomb carried by horse-drawn cart.

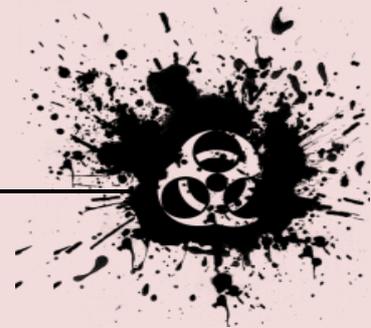
West Bank and Gaza Strip

- June 25, 1995 – At approximately 11 a.m., a Palestinian rode a booby-trapped **donkey** cart to an Israeli army base west of Khan Yunis in the Gaza Strip and detonated it. The Palestinian and the donkey were killed, but no soldiers were wounded. Hamas claimed responsibility for the attack. Three soldiers were treated for minor shock.
- June 17, 2001 – A Palestinian man rode a bomb-laden **donkey** cart up to an Israeli position in the southern Gaza Strip and set off a small explosion. Israeli soldiers destroyed the cart, and no soldiers were wounded. The Palestinian man was captured by the soldiers.
- January 26, 2003 – Palestinian fighters strapped a bomb to a **donkey** and then exploded it remotely on the road between Jerusalem and Gush Etzion. No humans were injured in the attack. PETA director Ingrid Newkirk wrote to PLO Chairman Yasser Arafat asking him to keep animals out of the conflict. PETA was criticized for not objecting to killing of humans in the context.
- June 8, 2009 – Palestinian gunmen approached the Karni crossing between the Gaza Strip and Israel with several trucks and at least five **horses** loaded with explosive devices and mines. The gunmen fired on IDF troops who observed them, and at least four gunmen were killed in the ensuing battle. A previously unknown organization called "the army of Allah's supporters" claimed responsibility for the foiled attack. The IDF estimated that the gunmen had planned to kidnap an Israeli soldier.
- May 25, 2010 – A small Syrian-backed militant group in the Gaza Strip blew up a **donkey** cart laden with explosives close to the border with Israel. According to a spokesman for the group, more than 200 kilograms of dynamite were heaped on the animal-drawn cart. The explosives were detonated several dozen meters from the border fence with Israel. The animal was killed in the blast but no human injuries or damage were reported.
- July 19, 2014 - Hamas militants attempted to attack Israeli troops in Gaza with a bomb-laden **donkey**. IDF forces operating in the Rafah area near the Gaza-Egypt border located the donkey suspiciously approaching their position and were forced to open fire at it, causing the explosives to detonate.

**Military**

During World War II the U.S. investigated the use of "bat bombs", or **bats** carrying small incendiary bombs. During the same war, Project **Pigeon** (later Project Orcon, for "organic control") was American behaviorist B. F. Skinner's attempt to develop a pigeon-guided missile. At the same time the Soviet Union developed the "**anti-tank dog**" for use against German tanks. Iran purchased several dolphins, some of which were former Soviet military **dolphins**, along with other sea mammals and birds, in what some have alleged to be an attempt by Iran to develop *kamikaze dolphins*, intended to seek out and destroy submarines and enemy warships. However, the animals are today on display at the

Kish Dolphin Park, on Iran's resort island of Kish in the Persian Gulf.



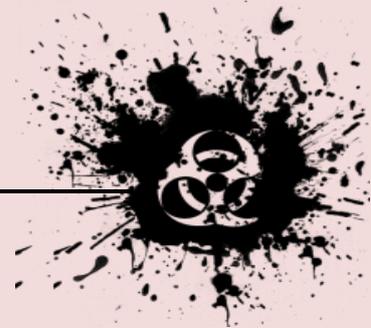


A Man Sucked Out of a Plane Midair Was Likely a Suicide Bomber

Source: <http://www.terrorismwatch.org/2016/02/a-man-sucked-out-of-plane-midair-was.html>

Jan 05 – **Authorities are saying that a man who died after being sucked out of a plane during an explosion on a Somali commercial flight, was likely a suicide bomber responsible for the blast**, an unnamed Western diplomat told the *Wall Street Journal*.

There were no other fatalities, but two passengers were injured.



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Investigators believe the man was able to smuggle explosive material on the plane by boarding the flight on a wheelchair, enabling a less rigorous security screening.



"An individual got onto the plane in a wheelchair and is suspected of being the suicide bomber," the diplomat told the *Journal*.



At this point, no group has claimed responsibility for the attack, but U.S. officials have pointed to al-Shabaab as a likely source, the *Independent* reports.

The plane was approximately 20 miles from Mogadishu and en route to Djibouti when the explosive went off.

The suspect's body was found near Bal'ad district, northeast of the capital.

Pilot Vladimir Vodopivec, told Serbian publication *Blic*, he believed the blast was indeed caused by a bomb, according to

the *Associated Press*. "Luckily, the flight controls were not damaged so I could return and land at the airport," he said. "Something like this has never happened in my flight career. We lost pressure in the cabin. Thank God it ended well."

Dagestan: Isis claims car bomb attack that killed two policemen

Source: <http://www.ibtimes.co.uk/dagestan-isis-claims-car-bomb-attack-that-killed-two-policemen-1543924>

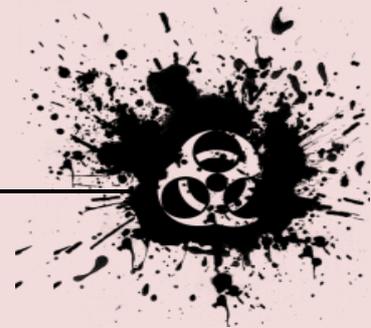


Feb 15 – The Islamic State (Isis) has claimed responsibility for a car bomb that killed two police officers in Russia's restive republic of Dagestan.

A suicide attacker reportedly drove an explosive-laden vehicle to a checkpoint near the southeastern town of Derbent and set it off.

"As a result, two police officers were killed and two others were hospitalised with wounds," the Dagestani interior ministry confirmed, Tass news agency reported. Footage from the scene uploaded online showed several

cars engulfed by flames with debris scattered all around.



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Isis (Daesh) local ally **Wilayat Al-Qawqaz** claimed responsibility for the attack in a statement circulated on social media. Located in the volatile northern Caucasus, like its neighbour, Chechnya, Dagestan has been facing a decade-long Islamic insurgency.

Wilayat Al-Qawqaz was formed last year by a group of jihadists that broke away from the Caucasus Emirate faction, an al-Qaeda ally, to pledge allegiance to Isis. The group has stepped up its attacks against Russia, also claiming responsibility for the downing of a passenger jet, after Moscow's military intervention in Syria.

Deadly Turkey 'terror attack' targets military in Ankara

Source: <http://edition.cnn.com/2016/02/17/asia/turkey-ankara-explosion/>



Feb 17 – An explosion hit military vehicles at an intersection in the Turkish capital of Ankara on Wednesday evening, officials said, in what the military called a terror attack.



Twenty-eight people were killed and 61 others were injured, according to Deputy Prime Minister Numan Kurtulmus.

The explosion hit three military vehicles and a private vehicle in central Ankara, near Turkish Parliament buildings, Turkey's semiofficial Anadolu news agency reported, citing Ankara Gov. Mehmet Kiliclar. The vehicles were stopped at a traffic light, the military said.



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Authorities believe a bomb-laden vehicle caused the explosion, Kiliclar said, according to Anadolu. Video aired on CNN Turk showed large flames reaching toward the night sky from an area on the ground. Lights from numerous emergency vehicles flashed nearby. No group has claimed responsibility.

EDITOR'S COMMENT: According to various reports the terrorist attack (PKK) was well planned succeeded to kill 22 pilots (out of 28 victims) of Turkish Air Force. Given the extended retirement of Turkish pilots, loosing almost a squadrom was a big hit.

A New Home for the Terrorist Explosive Device Analytical Center

Source: https://www.fbi.gov/news/news_blog/a-new-home-for-the-terrorist-explosive-device-analytical-center



FBI Director James Comey (right), Sen. Richard Shelby (center), and Lt. Gen. Larry Wyche cut a ribbon that officially opens the new TEDAC facilities at Redstone Arsenal in Huntsville, Alabama on February 16, 2015. TEDAC Director Greg Carl observes in the background.

Feb 16 – The Terrorist Explosive Device Analytical Center (TEDAC), a multi-agency organization that performs a critical function in the fight against terrorism, was officially welcomed to its new home today at Redstone Arsenal in Huntsville, Alabama, as FBI Director James Comey and other officials took part in a ribbon-cutting ceremony to mark the occasion.



Before TEDAC's creation in 2003, no single government entity was responsible for analyzing and exploiting intelligence gleaned from improvised explosive devices (IEDs). Since then, TEDAC has examined more than 105,000 IEDs from around the world, providing intelligence to the military, law enforcement, and the intelligence community at home and abroad.

“TEDAC links IEDs to



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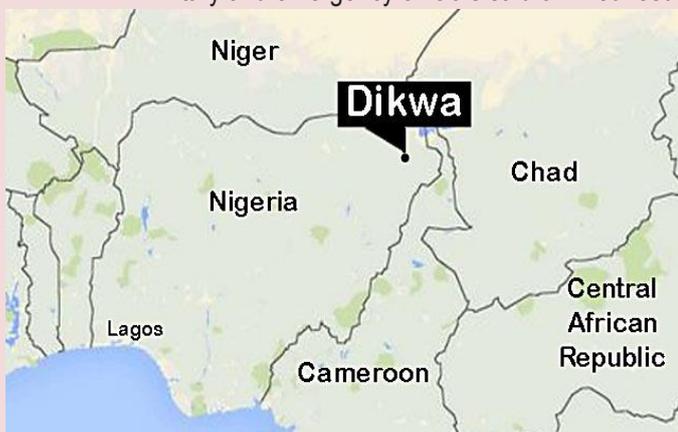
the bomb makers, recognizes trends in how those bombs are being constructed and with what materials,” Comey said during ceremonies attended by officials including Alabama Senator Richard Shelby.

Composed of 30 partner agencies including the FBI, the Department of Defense, and the Department of Homeland Security, TEDAC was formerly located at the FBI Laboratory in Quantico, Virginia. The move to Alabama centralizes the government’s efforts regarding IEDs and terrorism. Redstone Arsenal is also home to the FBI’s Hazardous Devices School, the ATF’s National Center for Explosives Training and Research, and other operations.

Female suicide bombers kill over 60 people in northeast Nigeria

Source: <http://aaj.tv/2016/02/female-suicide-bombers-kill-over-60-people-in-northeast-nigeria/>

Feb 16 – **Two female suicide bombers killed more than 60 people at a camp for people displaced by an insurgency of the jihadist Boko Haram group in the northeast Nigerian town of Dikwa,** military and emergency officials said on Wednesday.



The attack occurred 85 km (50 miles) outside the capital of Borno state, centre of the seven-year insurgency, they said. It took place on Tuesday, but a breakdown in the telephone system prevented the incident being made public earlier.

The two female suicide bombers sneaked into an internally displaced person (IDP) camp and



detonated themselves in the middle of it, emergency officials and the military source said.

The chairman of the State Emergency Management Agency, Satomi Ahmad, added that 78 people were injured.

No group claimed responsibility but the attack bore the hallmarks of Boko Haram, which has frequently used female bombers and even children to hit targets.

The militant group has recently increased the frequency and deadliness of attacks with three at the end of January. At least 65 people were killed outside Borno state capital Maiduguri on Jan. 31.

Since it lost territory to a government counter-offensive last year, Boko Haram has reverted to hit-and-run attacks on villages and suicide bombings at places of worship or markets.

Boko Haram has only rarely targeted camps housing people displaced by the conflict and Tuesday’s attack was the first one to kill victims in Borno state.

The military said militants made one abortive attempt on a camp on the outskirts of Maiduguri on Jan. 31. Boko Haram hit a Nigerian IDP camp for the first time last September, in the Adamawa state capital of Yola.



ISIS Offering \$10,000 to Indian Hackers to Steal Sensitive Data from Government

Source <http://m.indiatimes.com/news/india/isis-offering-10-000-to-indian-hackers-to-steal-sensitive-data-from-government-249853.html>

Jan 27 - "There are various underground communities online where hackers interact regularly. Our investigation reveals that for the past six months, lucrative offers for stealing government data came pouring in and hackers were offered a huge sum. Such amount has never been offered to any Indian hacker before. We found that the offers were being made to spread ISIS reach in the country," said Kislay Choudhary, a cyber crime expert working with several security agencies. Kislay also added that stealing a government secured data is a part of ISIS's intelligence gathering exercise.

Refugee or Terrorist? IBM Thinks Its Software Has the Answer

By Patrick Tucker

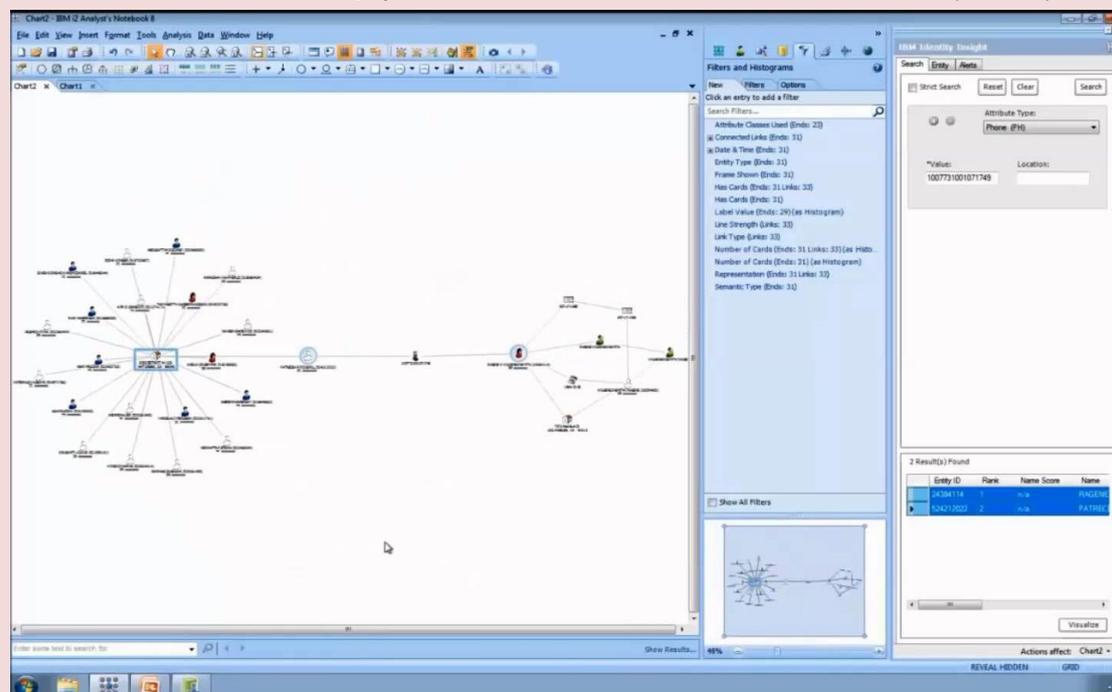
Source: <http://www.defenseone.com/technology/2016/01/refugee-or-terrorist-ibm-thinks-its-software-has-answer/125484/>

Jan 27 – Tools for turning unstructured data into actionable intelligence are getting better, and that could alter the risk-reward calculation at the heart of the data-collection debate.

Take **IBM's i2 Enterprise Insight Analysis, or i2 EIA**. IBM purchased i2 EIA back in 2011 and added in some of the company's patented cognitive computing capabilities, the most famous of which is Watson, the AI that beat Jeopardy champion Ken Jennings. IBM believes the tool could help governments

Last October, as many European countries were straining to make room for Syrian refugees, other nations were shutting doors, saying that ISIS attackers might try to blend into the throngs.

"Our worldwide team, some of the folks in Europe, were getting feedback that there were some concerns that within these asylum-seeking populations that had been starved and dejected, there were fighting-age males coming off of boats that looked awfully healthy. Was



separate real refugees from imposters, untangle terrorist cells, or even predict bomb attacks.

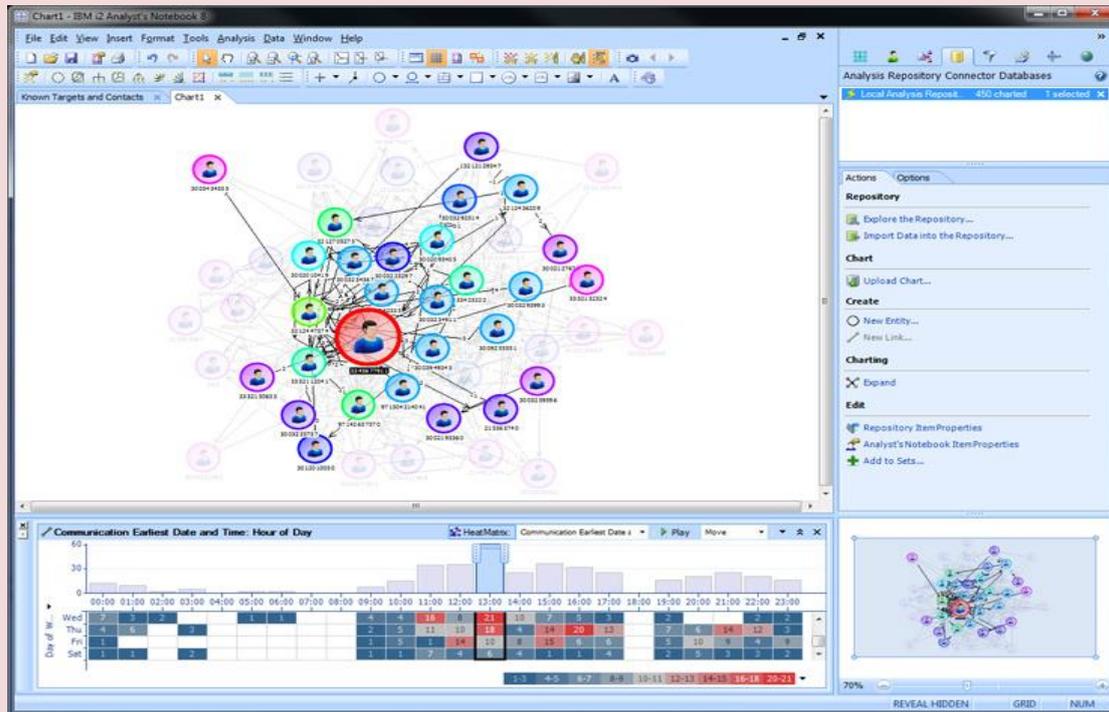
that a cause for concern in regard to ISIS and, if so, could this type of solution be helpful?" said Andrew



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Borene, strategic initiatives executive at IBM. IBM hoped to show that the i2 EIA could separate the sheep from the wolves: that is, the

they were, and do it fast enough to be useful to a border guard or policeman walking a beat. Borene was careful to indicate that the



masses of harmless asylum-seekers from the few who might be connected to jihadism or who were simply lying about their identities.

“Could we look at a quick background of ISIS leadership based off of existing knowledge stores using unstructured data analytics? Could we identify people who were potentially traveling under false identities or passports? Which identities might they be using? If someone was a sleeper that we came across, would they be building a new legend [or alias]?... How would they be getting those passports?” said Borene.

IBM created a hypothetical scenario, bringing together several data sources to match against a fictional list of passport-carrying refugees. Perhaps the most important dataset was a list of names of casualties from the conflict gleaned from open press reports and other sources. Some of the material came from the Dark Web, data related to the black market for passports; IBM says that they anonymized or obscured personally identifiable information in this set. Another data set was made up, but modeled on the kind of metadata currently available to border guards.

The results depended on who was asking what from the data. Borene said the system could provide a score to indicate the likelihood that a hypothetical asylum seeker was who they said

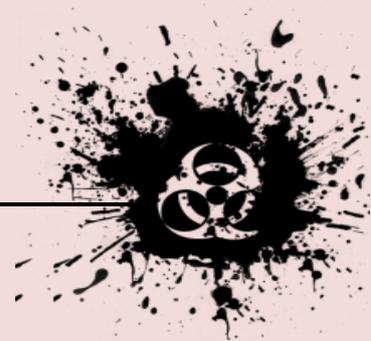
hypothetical score was not an absolute indicator of guilt or innocence.

“It’s like a credit score. A credit score is a wonderful piece of data. But it’s a *piece* of data. For big financial decisions, in addition to looking a score... someone with a high credit score can still be high risk. Someone with a mediocre credit score can be a safer bet,” he said.

At a higher level, back at headquarters, an analyst with a dedicated terminal could use the system to immediately see a wide web of possible connections or intersections about a particular subject, potentially revealing places, institutions, other people or targets to which they might be connected. The scrubbed-down Dark Web data was particularly useful here.

“We could come up with a list with this level of granular detail: Here’s the person; here’s the address they were associated with; here are the countries where they were suggesting they could get artificial documents from,” said Borene.

It’s the sort of capability that could feature in a Hollywood techno-thriller. Consider *Person of Interest*, a hit television show about a massive government-funded data analysis engine that can, in the hands of a scrappy team of vigilantes, anticipate who



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will be involved in a crime, but not exactly how. With the right data, the i2 EIA platform takes that fictional capability one step further.

Say you're an analyst, and one of the data sources that you pull is municipal parking tickets. You find that one of the suspicious persons that you are looking at received several parking tickets in front of a popular concert venue, then that someone else has also gotten tickets at the same place but at different times. Does this indicate a team working in shifts?

That type of small detail might elude a room full of detectives. If you had to manually enter all the information into a single database, the process could take days or weeks. Says IBM, i2 EIA makes it instantaneous.

Let's now say that the data shows that parking violator A and parking violator B also both follow a popular DJ on Twitter, a musician playing at the venue next month. Now you have not only the identity of a potential accomplice but the date and location of a targeted strike. The system can also alert analysts as new events of interests occur and new connections are made, as new people who follow that DJ also get strange parking tickets, try to buy passports from the same vendor, etc.

Another scenario that Borene's group ran as part of the demonstration involved a hypothetical bomb at a train station, detonated by an SMS text. Using made-up but realistic SMS and phone metadata for a typical urban area, an analyst opened a map, drew a circle around the area, and—using on the exact moment of detonation — discovered the number of the phone that had sent the text. Searching on that number immediately brought more phone numbers, addresses of potentially connected individuals, social security numbers, all related to the original number.

"From a variety of sources comes a single baseball card showing all the information," Borene said.

Software Design Predicts Life ... And Controversy

IBM finished building the demonstration in October, just before ISIS-affiliated attackers killed 130 people in Paris and injured hundreds more. One of the attackers was carrying a false passport, according to Agence France-Presse. German interior minister Thomas de Maiziere speculated that the attacker may have carried

the passport deliberately to turn public sympathy against refugees.

If that was the plan, it worked. In the U.S., presidential contenders, led by Sen. Ted Cruz, R-Texas, along with governors in more than 30 states, called for a moratorium on the resettlement of Syrian war refugees.

The reactions were seen by as many as extreme. As *Defense One* has reported, the United Nations High Commissioner for Refugees, or UNHCR, conducts a variety of screening tests to ensure that refugees are who they say they are. The Department of Homeland Security likewise conducts screening on refugees headed into the United States.

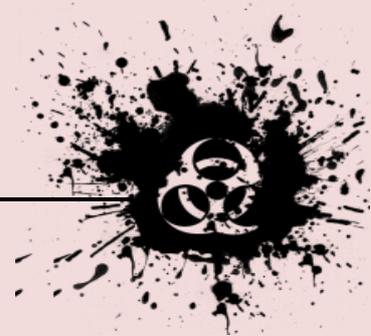
But the threat isn't entirely manufactured, at least, not by political opportunists. Recent reports indicate that ISIS has developed an "industrial" ability to produce false passports. Platforms like i2 EIA could potentially strengthen screening processes and reassure the public about the identities of those seeking to enter the country, while at the same time depriving some ambitious officeseekers of a fearful talking point.

But that doesn't mean that such capabilities won't come without risk or controversy.

IBM representatives pointed out that the i2 EIA doesn't collect intelligence; it just helps ingest and make sense of unstructured data. They aren't spies or agents or operatives, just engineers.

But the more data i2 EIA gets, the more helpful it becomes. And that could put pressure on lawmakers and others to keep feeding new, and potentially sensitive, data streams to the beast.

Consider the debate over the U.S. government's collection of the public's bulk telephony metadata. The NSA's program that officially expired in November, but now telephone companies must collect the metadata themselves and give it to the government under certain conditions. Many defenders of the old program maintained that it was an essential tool against terrorism. The National Academy of Sciences publication *Bulk Collection of Signals Intelligence: Technical Options* enshrines this view clearly: "There is no software technique that will fully substitute for bulk collection where it is relied on to answer queries about the past after new targets become known."



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Yet defenders of the government's program couldn't connect the practice of bulk metadata collection to clear public safety outcomes, at least not in a way that many members of Congress, the president, or the public found convincing.

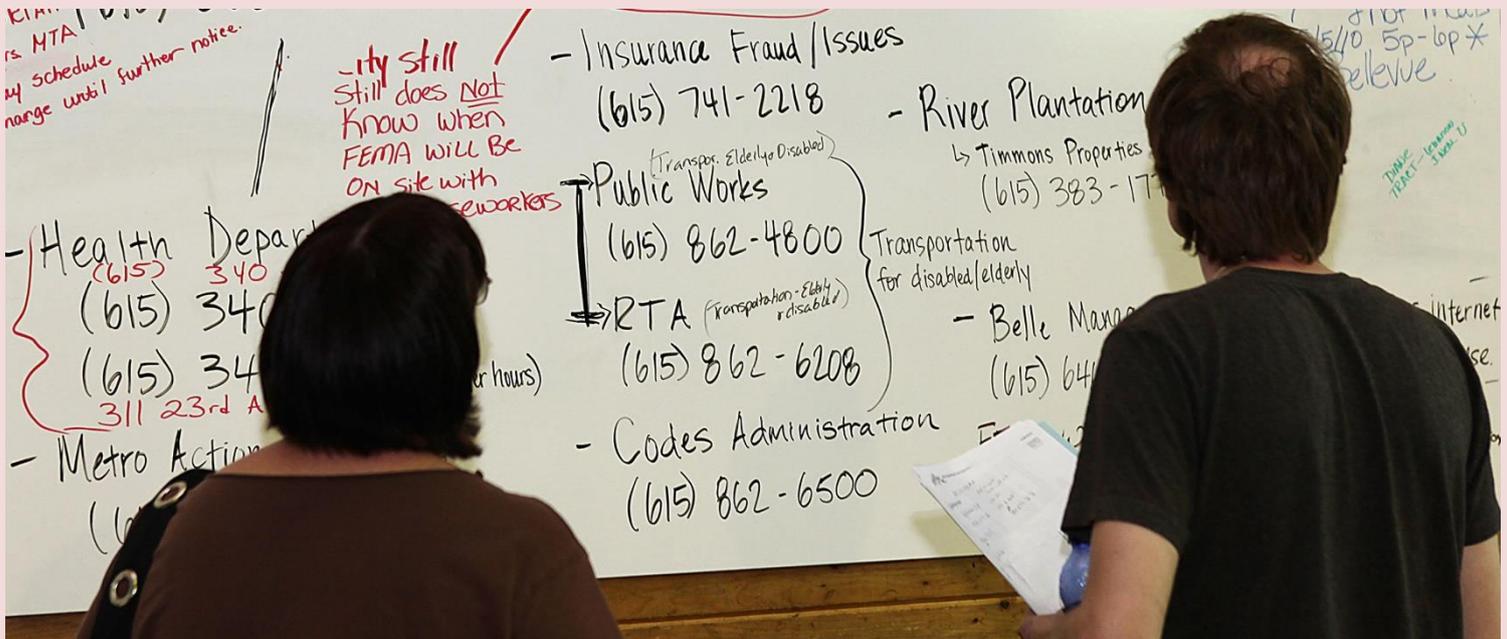
That may not have been a reflection of the data so much as a poverty of tools to analyze it correctly.

Bottom line: the tools are improving quickly, and that could alter calculations as the public and its leaders debate future data-collection policies.

Patrick Tucker is technology editor for Defense One. He's also the author of The Naked Future: What Happens in a World That Anticipates Your Every Move? (Current, 2014). Previously, Tucker was deputy editor for The Futurist for nine years. Tucker has written about emerging technology in Slate, The Sun, MIT Technology Review, Wilson Quarterly, The American Legion Magazine, BBC News Magazine, Utne Reader, and elsewhere.

Emergency Management: 5 Elements of Proactive Information Management!

Source: <http://www.d4h.org/blog/post/20150521-emergency-management-5-elements-of-proactive-information-management>



In the world of business, the heaviest users of information management applications are enjoying benefits such as increased knowledge sharing and more effective operations. These benefits have a measurable effect on their business. Emergency response organizations could be benefiting in the same way.

Emergency situations occur unpredictably and cause individuals and organizations to shift their focus and attention immediately to deal with the situation. When disasters become large scale, all the limitations resulting from a lack of integration and collaboration among all the involved organizations begin to be exposed and further compound the negative consequences of the event. Often in large-scale events the people who must work together have no history of doing so; they have not developed a trust or understanding of one another's abilities, and the totality of resources they each bring to bear have never before been exercised.

As a result, the challenges for individual or group decision support systems in emergency situations are diverse and immense. Having a predetermined plan on what your information management requirements are, can aid in establishing structures and



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developing a normative environment with defined tasks regarding what should be done during a response.

Here are 5 key elements you must try to define to create this environment**1. Define your information requirements.**

A decision maker during a large scale event, needs an accurate representation of all information known by the organization at that exact point in time. To make effective and defensible decisions, a common operational picture is needed. It is necessary to identify the 'key indicators' that will help an emergency manager to plan, manage, and control their area of responsibility. This method is based on the need for managers to focus, at any point in time, on the most significant aspects of their responsibilities.

**2. Determine how to gather information.**

Managing your large or unexpected events using spreadsheets, whiteboards, email, and paper makes gathering together all information for your decision makers really difficult. The problem starts in the field. Incidents are of many types, scope and impact. The trick is capturing this data as early as possible, but then processing it into useful information, which is the next step.

3. Decide who will analyze that information.

More data means better situation assessment but can lead to information overload. Analyzing

information involves examining it in ways that reveal the relationships, patterns, trends, etc. that can be found within it. It is important to choose someone who understands the benefit of information for your organization. The point, in terms of their evaluation, is to get an accurate assessment in order to better understand the organizations capabilities and in course better understand the overall situation.

4. Determine how that information will be shared.

The number of sign-off's required to implement a decision is one of the major issues during a fast-moving event. Speed always counts in every organization, having the ability to share information can have a positive effect on productivity, and efficiency. There should be a predetermined source of information that responders can rely on being their definitive single source of truth.

5. Choose the technology that will help communicate and manage the information.

The options are endless, for many years spreadsheets have been used as an aid for compiling emergency response activities. However, the evolution of technology has allowed public and private sector organizations to capture, store, and analyze their data in a structured way, adding real value to compiled information.

It's important to remember, when you can't get your hands on the information you need, or when the information you have isn't appropriate, you can miss opportunities and your performance drops. As it happens, the information management ability organisations need to succeed is already within their grasp.

Israel's Cyber Sector Blooms in the Desert

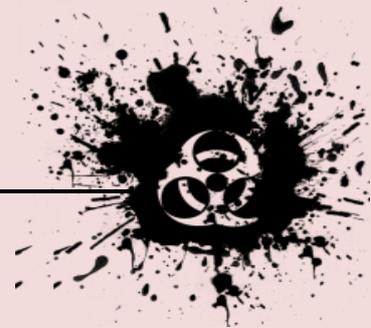
Source: <http://www.terrorismwatch.org/2016/01/israel-cyber-sector-blooms-in-desert.html>

Jan 31 – A modern metropolis rising from Israel's Negev desert stands on the frontline of a global war against hacking and cyber-crime, fulfilling an ambition of the country's founding father.

David Ben Gurion famously said he wanted to make the Negev bloom.

Today, in the streets of Beersheba, a city of 200,000, his dream is taking shape in a form he likely did not anticipate.

Long a poor relation of hyper-modern Tel Aviv, Beersheba has traditionally been a refuge for poor, working class and



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Sephardic Jews of Middle Eastern descent. But the city in the vast Negev desert of southern Israel has experienced a rapid gentrification since the start of the decade, during which middle class neighbourhoods have expanded.



The real estate boom in Beersheba has been fuelled by the city's ambition to be Israel's cyber capital, especially since the creation of its industrial park **CyberSpark**.

Already, 1,500 technicians, engineers and researchers are hard at work.

Many have been trained in the computer sciences department of the local Ben Gurion University part of a planned symbiosis between the university and the company, which are linked by pedestrian bridges.

"We have established a perfect ecosystem with the integration of Israeli companies and foreign multinationals, the university and the foundation of the Israeli army specialised in cybersecurity, which will move from the region of Tel Aviv to Beersheba," said Tom Ahi Dror, CyberSpark project leader at the Israeli National Cyber Bureau.

Starting From Scratch

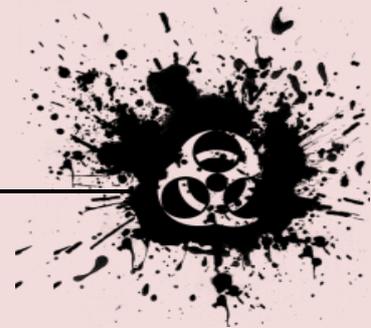
Israeli Prime Minister Benjamin Netanyahu has spoken highly of the development, saying the close proximity allows "a physical interaction between security officials, academia and industry, in Israel and abroad".

"They meet, they talk and they create together," he told a "CyberTech" conference in Tel Aviv, calling cyber security "vital" for a small country like Israel, which is faced with multiple threats and a favourite target of hackers.



Two ultra-modern complexes house a dozen Israeli companies, start-ups, venture capital funds and foreign groups such as Lockheed Martin, Deutsche Telekom, Oracle and IBM.

According to a study carried out in 2012, Israel "may be the most heavily targeted country in the world, by hostile hackers,



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nonstate actors, and states, with as many as a thousand web attacks per minute".

Tal Elal, deputy mayor of the city, pinpoints the secret of CyberSpark's success: "We started from scratch four years ago and we designed a customised project to meet the exact needs of companies specialising in cybersecurity."

Two more complexes comprising 27 buildings are to be added, and the municipality expects the population to grow by 100,000 in the next 10 years.

About 30,000 soldiers, including 7,000 career officers, will move in the coming years to bases and a technology campus to be built on 100 hectares (250 acres) near CyberSpark and around Beersheba.

As a lure from the bustle of cosmopolitan Tel Aviv, the government plans a bonus of \$18,000 for single officers and \$50,000 for families who spend at least five years in Beersheba.

Cyber Security's Future

"We will do everything to integrate this population and avoid creating ghettos where officers live, as has been the case in the past in other places," Elal said.

For the private sector, the government is also offering subsidies equivalent to 20 percent of salaries for three years to company employees who settled in Beersheba.

The state hopes to expand a sector which already has 250 companies of all sizes, Israeli and foreign, in the country.

Last year, the sector's exports reached a record \$3.5 billion, according to government figures.

"Israel represents only 0.1 percent of the



world's population but 20 percent of global investments (in cyber security)," said Dror.

"Cyber security has a very bright future," said Dudu Mimran, head of a Deutsche Telekom innovation laboratory based in Beersheba.

"It is an endless race in which hackers are always one step ahead because it is they who take the initiative," he added.

"And it is then up to us to respond to protect businesses, governments and individuals."

Terrorists could control our thermostats

Source: <http://www.stripes.com/opinion/terrorists-could-control-our-thermostats-1.394426>

Feb 16 – The Munich Security Conference is an annual catalog of horrors. But the most ominous discussion last weekend wasn't about Islamic State terrorism but a new generation of weapons — such as killer robots and malignantly programmed "smart" appliances that could be deployed in a future conflict.

Behind the main events at the annual discussion of foreign and defense policy was a topic described in one late-night session as "The Future of Warfare: Race with the Machines." The premise was that we are at the dawn of a new era of conflict in which all wars will be, to some extent, cyber wars, and new weapons will combine radical advances in hardware, software and even biology.

Espen Barth Eide, the former foreign minister of Norway, imagined a future weapon that fuses GPS guidance, facial-recognition

technology and artificial intelligence and can be programmed like an electronic hit man. Kenneth Roth, the head of Human Rights Watch, noted the advantages of such "killer robots" for military planners: They don't get tired, they wouldn't get scared, and they would exercise consistent, if merciless, judgment.

"The genie will come out of the bottle," predicted retired Adm. James Stavridis, a former NATO commander who now runs the Fletcher School of Law and Diplomacy at Tufts. He noted that "warfare has always been a process of invention and adjustment." A century ago, many people thought submarines were terrifying and unethical. Compared with, say, land mines or nuclear bombs, the effects of the new high-tech weapons may be less toxic and more precise.



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Guests at a “Cyber Dinner” hosted by the Atlantic Council considered the dawning world of killer appliances. In the coming “Internet of Things,” speakers noted, there will soon be more than 30 billion smart chips embedded in cars, elevators, refrigerators, thermostats and medical devices. These pervasive, connected systems may well have poor security and be easily hackable.

The big worry in the future, argued several tech experts at the dinner, may not be data privacy — forget about that — but data security. “You can know my blood type, but don’t change it,” one speaker explained. Hackers may be able to alter data in financial markets, hospitals and electronic grids — paralyzing normal economic and social activity.

The rapidly evolving interface of technology and security was one theme of an unusual panel discussion here that brought together intelligence chiefs from the U.S., Britain, the Netherlands and the European Union. Spy chiefs don’t usually attend such foreign policy gatherings, least of all in Germany, a country with a deep mistrust of intelligence agencies. But led by James Clapper, the U.S. director of national intelligence, this group made a collective pitch for greater transparency on intelligence issues as technology empowers individuals and adversaries.

Clapper opened the door on the brave new world of weaponry with his annual threat-assessment testimony last week before Congress. He made headlines with comments about the explosive growth of the Islamic State group and Russia’s onslaught against Syrian rebels. But the most surprising part of Clapper’s testimony involved technology —

especially the mischievous uses of the “Internet of Things” (or IoT), smart devices embedded in vehicles, appliances and other computer products.

“In the future, intelligence services might use the IoT for identification, surveillance, monitoring, location tracking and targeting for recruitment, or to gain access to networks or user credentials,” Clapper told Congress. And he warned in his testimony that as artificial intelligence is built into weapons, they will be “susceptible to a range of disruptive and deceptive tactics that might be difficult to anticipate or quickly understand.”

Iran’s Press TV predictably read Clapper’s testimony as a threat that America is about to enlist the world’s refrigerators as agents of the Great Satan:

“The head of the U.S. intelligence community has acknowledged for the first time that American spy agencies might use a new generation of smart household devices to increase their surveillance capabilities,” the Iranian news agency warned.

American, Russian and Chinese ability to use these New Age weapons is indeed worrisome. But more frightening is the ability of terrorist groups, whose signature may not always be discernible, to use cyber and other high-tech skills. The Islamic State has already used chemical weapons in battle, according to Clapper, and the group is known to be working with drones. The next step, experts here said, may be bioweapons.

“We may look back on the good old days when all we had to worry about was nuclear weapons,” said Eide. That sounds like a joke, until you think about what’s ahead.

Why Apple is battling investigators over San Bernardino terrorists’ iPhone

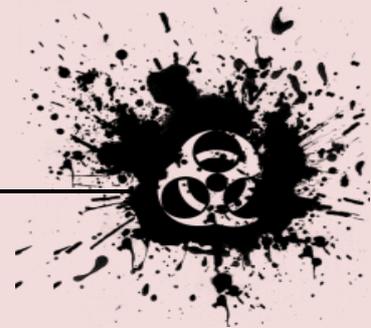
Source: <http://www.latimes.com/local/lanow/la-me-ln-why-apple-is-battling-terrorism-investigators-over-san-bernardino-shooter-s-iphone-20160217-story.html>



Feb 18 – Apple Inc. CEO Tim Cook’s stand against having his firm help unlock encrypted data on the San Bernardino shooters’ cellphone is part of a larger battle between the federal government and Silicon Valley.

U.S. Magistrate Judge Sheri Pym in Riverside directed Apple on Tuesday to help the FBI get around the phone’s passcode protection and any auto-erase functions the device might employ.

In a statement, Cook said that such a move would undermine encryption by creating a backdoor that could potentially be used in the future on devices.



Here's a breakdown from The Times reporting:

How big a problem is encrypted technology?

In general, [prosecutors and intelligence officials](#) say current technologies can make it impossible to examine suspects' communications even if police have a court order.

Law enforcement officials note that some tech companies have boasted to customers that when their technologies are used, nobody can gain access to their messages ever, including the government.

The Manhattan district attorney's office said in a report issued in November that it was [unable to execute 111 search warrants](#) for smartphones over the last year because they were running on encrypted technology offered through Apple's iOS 8 operating system.



Several cellphone models, including Apple's iPhone 6 and Samsung's Galaxy S6, use advanced encryption algorithms that scramble all the data on the device when a pin code is set.

Encrypted cellphones and text-messaging apps have made it harder for investigators and intelligence services to track suspected plots in real time, or trace locations and connections once they acquire a suspect's device, the FBI has said.

Apple changed the way it manages phone encryption in September 2014, a move that makes it more difficult for law enforcement to access encrypted data on cellphones, according to Clifford Neuman, director of USC's Center for Computer System Security. Previously, forensic investigators could tap into a device's hardware port and gain access to a

phone's data "independent of needing to try passcodes," he said.

"That path into the device is no longer possible," Neuman said.

The change in the encryption method means Apple may not be able to decrypt the data, according to Neuman. The company could, however, bypass the access code system that would cause the data to be erased, and then grant the FBI access to the encrypted data. Federal investigators would then have to decrypt the data themselves, Neuman said.

Is the federal government pressuring Silicon Valley?

In the wake of San Bernardino, [President Obama addressed the nation](#) in urging high-tech and law enforcement leaders "to make it harder for terrorists to use technology to escape from justice."

Although the tech industry says it wants to help, it's reluctant to give away private information and data to government agencies, arguing that doing so fosters user distrust and raises the risk of hacker attacks.

What has the government been trying to do?

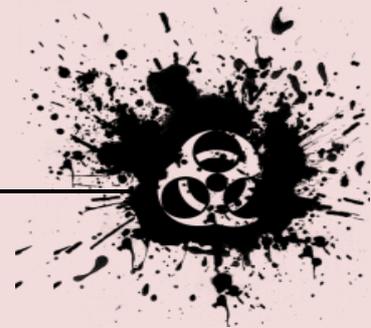
In January, federal officials announced the creation of a task force to help prevent extremist groups from using social media to radicalize and mobilize recruits.

The interagency group will be led by the Homeland Security and Justice departments, but will include staff from the FBI, the National Counterterrorism Center and other federal law enforcement and intelligence agencies.

In addition, the State Department will establish a unit called the Global Engagement Center to work with allies to deter terrorists from carrying out attacks overseas.

Why does the government want to unlock the phone?

Authorities are trying to determine the couple's movements between the time of the attack at the Inland Regional Center the morning of Dec. 2 and their deaths in a wild firefight with police hours later. Last month, the FBI asked for the public's help in



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filling in an 18-minute gap in the narrative of the couple's whereabouts.

The FBI is also probing whether the couple received any help in plotting or carrying out the attacks.

How did this get to court?

The device, an iPhone5, was given to Syed Rizwan Farook by the San Bernardino County Health Department and was used in his job as an inspector, according to the motion.

It is the tech giant's policy to require law enforcement to obtain search warrants or subpoenas before aiding in investigations.

But the company sees the order as an "overreach by the U.S. government," according to the statement.

The health department gave the FBI consent to search the phone, according to the motion, but authorities have been unable to bypass the phone's passcode lock for fear its operating system would destroy all data on the phone after 10 failed attempts.

Does this battle go beyond cellphones?

Yes, terrorism spreading through social media has also been a major issue.

Sen. Dianne Feinstein (D-Calif.) has led a push in Congress for legislation that would require social media companies to root out and report suspicious activity. Tech firms and privacy advocates beat back an effort by Feinstein earlier last year.

Ankara Cracked: Anonymous Releases 18GB of Classified Turkish Police Data

Source: <http://sputniknews.com/middleeast/20160216/1034829786/anonymous-hack-turkish-police.html>



Feb 19 – **The hacker group Anonymous has announced that they've released a large database of data belonging to Turkey's General Directorate of Security (EGM) in retaliation for "various abuses" by the Turkish government.**

According to a hacker, who uploaded the database on Monday, he had "persistent access to various parts of the Turkish government infrastructure for the past two years."

The uncompressed version of the file is almost 18 GB, which means there might be some very "interesting" information for some.

**Hollywood hospital held to ransom by hackers**

Source: <http://www.bbc.com/news/technology-35584081>

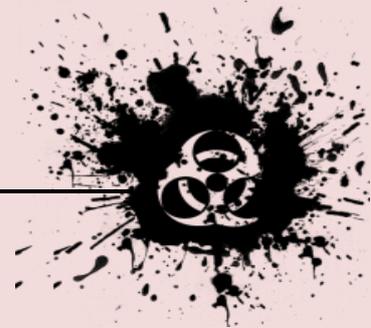
Feb 15 – Ransomware is a growing menace for computer users - but when a hospital is targeted, it makes the disruption far more serious.



Computer systems at Hollywood Presbyterian Medical Center have been offline for more than a week following a ransomware attack. According to local news sources, hackers were said to have demanded \$3.4m (£2.4m) to provide the codes to unlock the stolen data.

The hospital has confirmed the attack took place, but has not commented on the ransom.

A voicemail message at the hospital reassures patients that medical records had not been accessed by the hackers.



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Investigations into the source of the attack - which hospital officials said appeared to be random rather than targeted at the facility - are being conducted by the FBI, Los Angeles Police and computer forensics experts hired by the hospital.



An example of a ransomware-locked system screen.

The hospital insists that day-to-day operations have not been impacted, although many tasks normally carried out on computer are now being done on paper, much to the frustration of staff.

Patients are also being told they must travel to pick up medical test results in person rather than receive them electronically.

Ransomware attacks are increasingly common, and are difficult to fully protect against.

Malicious software is placed on a computer - often via phishing attacks - and proceed to lock up files.

Ransomware will typically try to extort money from the user quickly, saying that if the demand is not met, the files will be deleted.

The most common type of ransomware is a malware package known as Cryptolocker, which experts say has infected hundreds of thousands of machines around the world.

Last month, the council for the English county of Lincolnshire was hit with a £350 ransomware demand - but it said it refused to pay.

MACSIM

Source: <http://www.macsim.se/>

EMERGENCY RESPONSE



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MACSIM is a simulation system for

- Scientific development and evaluation of methodology used in the medical response to major incidents and disasters
- Education and training for this response from basic to advanced level and for staff of all categories
- Testing an existing organization with regard to planning and preparedness for, and performance in, major incidents or disasters

MACSIM is primarily developed for scientific evaluation of methodology, which means that it has to provide complete and accurate information as a base for the process under evaluation. This makes it also very suitable as an instrument for realistic education and training, for validation of educational methods and for testing of an organization.

Since MACSIM is developed for scientific and not for commercial purpose, it is also available for those with limited budget (who often are those who have the biggest need for a system of this kind for education and training).

Why select MACSIM?

When selecting a simulation system for this purpose, it is important to compare and carefully evaluate advantages and disadvantages of available systems. Different systems may be the most appropriate for different users, depending on variations in practical and economic conditions. We have below listed

what we see as positive with selecting MACSIM. If you consider some of these factors important for your own situation, MACSIM might be an alternative for you or for your organization:

- MACSIM is based on high professional and scientific competence combined with considerable experience within this field. Initiator and responsible for the development of the system is Professor Sten Lennquist (Sweden) who also initiated and developed the Emergo Train System®, a simulation system for training for major incidents that was developed 1984, is used in many countries in all parts of the world and has been translated to 9 different languages. Sten Lennquist has extensive experience of this kind of training with commitments for the World Health Organization, the European Community and many countries in different parts of the world. The

development of MACSIM has been done in collaboration with the Prehospital & Disaster Medicine Centre in Gothenburg together with a team of international experts within this field.

- MACSIM was launched 2009 and is thereby updated to the rapid and extensive development of disaster medicine during the latest years. It is based on experiences from the latest big disasters, among those the terror attacks in London and Madrid and a number of other major incidents during recent years. It is also updated to the terminology, organization and principles of triage most widely used today, as well as to the latest principles for medical care in these situations.

The image shows a MACSIM POSITION assessment chart. It includes a central human figure with various assessment points marked. The chart is divided into several sections:

- B BREATHING:** FAST (1-30), NORMAL (10-30), SLOW (5-10), VERY SLOW (=5), NOT DETECTABLE (0).
- A AIRWAY:** OK, THREAT, BLOCKED.
- E EXPOSURE:** COMMUNICATION INSPECTION, PALPATION AUSCULTATION.
- C CIRCULATION:** HEART RATE (<50, 50-100, >100-<120, !120, NOT DETECTABLE 0), SYSTOLIC BP (<90, >75, 75-50, <50), PERIPH SKIN (NORMAL, COLD).
- D DISABILITY:** GCS = 13-15 (ALERT), GCS = 9-12 (INACCURATE RESPONSE TO TALK), GCS = 6-8 (ACCURATE RESPONSE TO PAIN), GCS = 4-5 (INACCURATE RESPONSE TO PAIN), GCS = 3 (NO RESPONSE TO PAIN).
- Other indicators:** STRIDOR (YES/NO), HEMOPTYSIS (YES/NO), CYANOSIS (YES/NO), SEX/AGE (~25), PATIENT NR (01).

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• MACSIM is primarily developed for scientific evaluation and analysis of methodology and thereby gives more extensive and detailed information both as base for decisions (=input data) and consequences of decisions (=output-data) than any other system available today.

• MACSIM is simple to use, the manual gives sufficient information, and an instructor course is not mandatory to start to use the system. However, instructor-courses will be organized in different countries for those who want to further develop their skills (the system has a great potential for users).

• MACSIM requires minimal material to run, in addition to the symbols. The cards can be used as they are (preferably after laminating). If you want to magnetise the cards (self-adhesive magnetic tape) and use them on magnetic white-boards, minimal space is requested because of the design of the symbols.

• Since MACSIM primarily is developed for scientific and not for commercial purpose, it is available

also for those with limited budget. Using the module that symbols are based on, you can make your own system. It is also possible to purchase series of patients with prepared injuries including complete data (see below), laminated, magnetized and ready for use. If so, you can adapt what you purchase to your economy – it is not mandatory to buy complete sets. No licence is required to use the system.

COMMUNICATION/ INSPECTION	PALPATION/ AUSCULTATION	TREATMENT SYMBOLS
PAIN, MODERATE	TENDERNESS, MODERATE	AIRWAY
PAIN, SEVERE	TENDERNESS, SEVERE	A1 NASOOROPHAR. TUBE 1
SCRATCH	FRACTURE, CLEAR	A2 LARYNGEAL MASK 2
HEMATOMA, CONTUSION	FRACTURE, SUSPECT	A3 TRACHEAL INTUB. FASTER WITH GCS-8 7
BURN, SUPERFICIAL	FRACTURE, DISLOCATED	A4 CRICOTHYROIDOT. 4
BURN, DEEP	FRACTURE, OPEN	BREATHING
WOUND	DISLOCATED JOINT	B1 OXYGEN 2
WOUND, BLEEDING	IMPAIRED ACTIVE MOVEMENT	B2 OXYGEN + VENTIL. SUPPORT 2
PENETRATING WOUND	IMPAIRED SENSIBILITY	B3 NEEDLE THORACOTOMY 4
EXIT WOUND	REDUCED PERIPHERAL PULSE	B4 CHEST DRAIN 7
EXTENSIVE LACERATION	REDUCED BREATHING SOUNDS	CIRCULATION
TRAUMATIC AMPUTATION	REDUCED HEARING	C1 INTRAVENOUS/ INTRAOSSEOUS NEEDLE 4
IS / HAS BEEN TRAPPED	FRONT SIDE BACK SIDE	C2 INTRAVENOUS/ INTRAOSSEOUS NEEDLE + FLUID C1 +2
STANDING, SILENT	SUPINE POSITION, SILENT	C3 ANALGESIA C1 +2
STANDING, CALLING FOR HELP	SUPINE POSITION, CALLING FOR HELP	C4 BANDAGE/ TOURNIQUET 2
		FRACTURE STABILIS.
		F1 NECK STABILISATION 3
		F2 PELVIC GIRDLE 4
		F3 LIMB STABILISATION 3

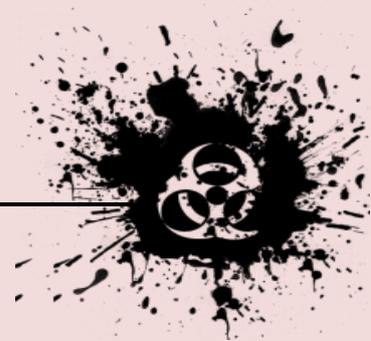
Using MACSIM to test an organization (planning, preparedness and performance)

MACSIM supplies you with sufficient input- and output data to be used as an instrument for testing, evaluating and developing your own organization and methodology for major incident response, and also the knowledge and skills of your staff. A recommendation is to first run a course according to a standardized course package as described above to set up the system and give your staff the opportunity to work with the system. After that, you can replace the data on resources, geographic conditions, organization and methodology used in the package with your own corresponding data and design your own scenario.

MACSIM can for this purpose supply you with standardized protocols for evaluation including:

- Alert- and response times
- Efficiency in the alert process
- Reporting, timing and quality
- Over-and under-triage on scene and in hospitals
- Efficiency of transport (waiting times for staffed ambulances/helicopter)
- Utilization of hospital resources
- Identification of critical limiting factors for hospital surge capacity
- Preventable deaths and complications related to trauma score

You get a numerical result on the outcome of the simulated response that can be improved by further training, modifications in organization and methodology and/or addition of specific resources. To get corresponding information using a "live" exercise would cost considerably more money and also more work, even if limited "live" tests can be required for specific purposes as test of material.



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MACSIM has been used for one such full-scale test of the Utrecht hospitals, the Netherlands November 2011 with very successful results which still are under evaluation.

What the “Whole Community” Means to the Whole Community

By Richard Serino & Jennifer Grimes

Disaster response involves the whole community. To support a united effort, leaders must build a network of trust, establish a history and habit of cooperation, and learn the goals and vulnerabilities of stakeholders. By asking a few key questions, leaders can expand the sphere of their preparedness, response, and recovery efforts.

Source: <http://www.domesticpreparedness.com/pub/docs/DPJJanuary16.pdf>

Hands across the Water: The International Nature of Disaster and Emergency Management

By Frank G. Rando

Source: <http://www.cbrneportal.com/hands-across-the-water-the-international-nature-of-disaster-and-emergency-management/>

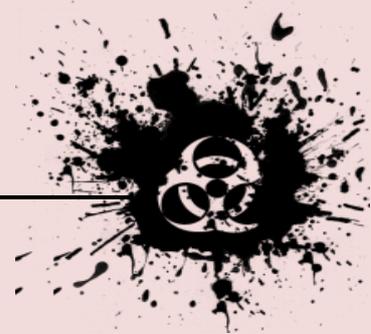
“What the world needs is an Emergency Boss. An Emergency Czar. A true Master of Disaster, one person completely responsible for the anticipation, immediate reconnaissance, and urgent execution of rescue and relief efforts around the world”

Steven Van Zandt, actor, musician.

Jan 25 – While it is considered true by emergency and disaster managers that all disasters commence as local events, it is undisputed that even “local” crises and disasters can generate both effects and responses within the international community. It has also been said, time and again, that crises, disasters, catastrophic and extreme events do not recognize international borders or boundaries. The effects of man-made and natural events have the ability to reverberate throughout the global community; and be perceived in many ways; whether or not the crisis or disaster directly impacts nations or regions outside of the epicenter.

Throughout history, there have been vivid examples of events having a ripple effect around the globe: pandemic threats, political violence and terrorism, technological disasters and natural catastrophes. It has become clear that the full and evolving spectrum of threats requires a global perspective which incorporates prevention, preparedness, mitigation, response, recovery and community resiliency, the fundamental components of the emergency management cycle. Global stakeholders need to re-explore the emergency management process while improving the process of international cooperation and mutual assistance in times of crisis and disaster. Collaboration amongst public, private and voluntary sectors are essential in crisis, disaster and emergency management.

► Read the rest of this article at source’s URL.



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Frank G. Rando possesses over 30 years of real world experience as a public safety professional, clinician, educator, emergency and crisis manager, author and consultant in the areas of tactical, disaster and operational medicine, weapons and tactics, law enforcement



Disaster Resistant Communities Group

Essential disaster planning, training, and exercising for America's

/criminal investigations, counterterrorism, hazardous materials management and emergency response, toxicology, environmental safety and health, and health care and public health emergency management.

Just In Time Disaster Training – Library

Source: <http://www.drc-group.com/project/jitt.html>



The purpose of this on-line video library is to provide a single, easy to search source in which individuals, agencies and organizations can access Just In Time Disaster Training videos.

The videos found in this library cover disaster related mitigation, preparedness, response and recovery training for a wide variety areas. If your agency or organization has produced disaster mitigation, preparedness, response or recovery videos or you know of videos that should be added to the library please access the Just In Time Disaster Training Library [video submittal portal](#) to provide information regarding the video.

Self-dispatching in Emergencies and Disasters

By Dr. Luiz Hargreaves

Source: <http://www.experts.com/Articles/Self-dispatching-Emergencies-Disasters-By-Dr-Luiz-Hargreaves#.VqIDl5ysAEo.linkedin>

As an emergency professional, we are prepared to deal with unexpected situations, including disasters.

Every time we hear about potential or real crisis, we automatically review the procedures in our minds and the desire to help is enormous. On many occasions, I would like to go directly to a scene to assist the victims and my peers. I believe that this feeling is not different among everyone involved in this field.

There are a lot of situations in which we are prepared to make a difference, including natural and man-

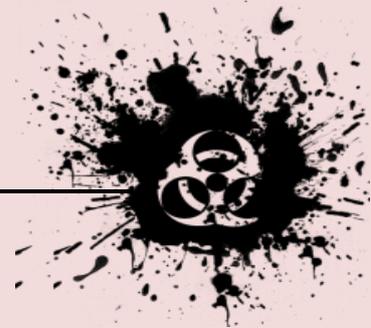


made disasters, emergencies, complex police and security operations. Exactly, for this reason, the self-dispatching is a pitfall.

It is essential that professionals act as a team in any type of crisis.

Self-dispatching has been criticized for many years for different reasons. All operations require an all-hazardous plan and an immediate action plan.

Usually, self-dispatching occurs in two circumstances. The first one is when a professional, who is a member of a Public Safety/Health Agency, is on duty. The information about a critical situation is received by radio or phone, and he decides to go, without a defined mission and without following the protocols. In this case, the information is probably reliable because it is



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coming from an official source but when professionals decide to go by themselves, some problems can arise. The immediate consequence is that they are leaving the area under their supervision, without previous notice. It means that people living in that area will become more vulnerable. We must remember that, despite the fact that a critical situation must be prioritized, the city is still working, and problems still come from different causes. Crimes will not disappear, and medical emergencies will not vanish because an emergency is happening in the city. The decision to deploy the emergency teams to the scene must be taken by who is in charge of the emergency operations. Only people directly involved in the coordination and supervision of the situation have the required knowledge and capacity (legal and operational) to determine what will be the best resources to be employed in a particular case. Another question is that a lot of resources on the same site cause traffic problems. Some professionals not only dispatch themselves, but they also do not want to go to the staging area as required by the Incident Command System, causing a problem of coordination and potential chaos.

No one should work in emergencies without a clear mission and a plan. Self-missions do not exist. Acting with no attention to the protocols or a plan is just improvisation, and it can lead to an increase in the risk of the operation, which means that lives can be jeopardized. We can never forget that the life of the rescuer, which means our lives, must be prioritized. We cannot save other people if we are not safe.

Self-dispatching also means that protocols are not being followed. This issue is especially true when professionals are going to work in an area with different protocols and resources.

History has a lot of cases in which people perished because they were trying to save lives, but they did not have a mission, they were not following guidance, and they have self-dispatched.

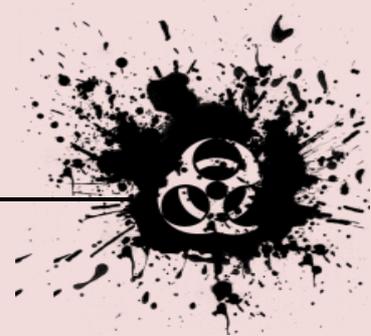
Another possibility is that off-duty professionals, as well as those that are not members of a public or private emergency organization, that dispatch themselves because friends or media advice them that an emergency was going on. The first problem here is that the information cannot be reliable. Whether they arrive on scene they can enter directly into a Hot Zone, if they arrive before the official response. Many critical situations

involve risks for first responders, which include chemical, biological, radiological and explosive devices. Many terrorist attacks were reported as having secondary explosive artifacts addressed to the first responders. Natural and man-made disasters produce debris that are important causes of injury and death.

Another problem is that, as discussed above, no one should act in an emergency situation without a mission clearly defined or an established plan. Of course, we're not talking about the events in which the survivors of an emergency are trying to save themselves, and they need to use the available resources in a precarious situation, to escape from the threat. Likewise, when a police officer or a firefighter is a witness of a tragedy, and all efforts are taken to save the victims and deal with the hazard is not self-dispatching. However, even in this situation, it is important to seize the scene and work according to the previous training and protocols they have received, beyond the necessity to inform the emergency services what is going on.

Volunteers are crucial in various emergency incidents. However, they must be connected to an Agency or Organizational. They must be trained and follow protocols. They must be summoned, deployed or dispatched to the scene. Showing up to an incident or disaster scene by themselves, will put the volunteers at risk and instead of being understood as a sum of efforts, actually they can complicate the coordination process and additional problems can occur. Many volunteers have been injured in incidents because they did not follow these primary rules.

Thus, it is understandable and expected this feeling of urgent necessity to act to save people by who is involved in emergency and crisis management. However, the best outcomes are obtained in hostile environments when plans are taken in place, protocols are followed, and missions are accomplished. The emergency agencies must have channels to activate additional personnel if necessary, and volunteers and employees should follow guidelines for unexpected events in which they can be allowed to work in a professional and safe manner. Sometimes, the best response to an incident is to be on standby for your agency. They will know when, why and how to activate you.



Luiz Hargreaves, AAS, MD, MS, MA is a Brazilian qualified Expert in Crisis Management and Disaster Preparedness. He has been working in these fields for more than 30 years, with a large experience in major events, counterterrorism, disaster prevention and emergency planning.

Tools to help communities predict, cope with floods

Source: <http://www.homelandsecuritynewswire.com/dr20160203-tools-to-help-communities-predict-cope-with-floods>

Feb 03 – Anticipation and preparedness of large-scale flood events play a key role in mitigating their impacts and optimizing the strategic planning of water resources. Although many countries have well-established systems for river monitoring and early flood warning, an increasing number of inhabitants are affected by floods every year. The [Global Flood Awareness System](#) (GloFAS) has been set up providing an overview on upcoming flooding in large world river basins.

CORDIS reports that on 16-17 January the European Center for Medium-Range Weather Forecasts (ECMWF) hosted a hackathon aimed at improving GloFAS by developing innovative ideas and approaches. More than 3.5 TB of data have been prepared, partly served in an OGC-compliant Web Coverage Service Standard (WCS) for easier data access and retrieval. In the [EarthServer-2 project](#), this WCS service is currently set up at ECMWF and other institutions in Great Britain. Earthserver-2 is funded under Horizon's 2020 call H2020-EINFRA-2014-2.

Five teams submitted their work, most of them based on the Big Datacube server rasdaman running at ECMWF, which offers 5-dimensional river discharge data, among others:

- **FloodIT:** Providing more intuitive information based on GLOFAS which helps forecasting local flooding and pre-empting a catastrophe
- **GloFAQ — Global Flood Awareness Queries:** Innovative ways of providing end users with key information on potentially impacted infrastructures due to flooding
- **Interception:** A flood awareness education platform which helps informing people about alternative courses of action when a flood watch/warning alert is issued
- **LIVE — Logistic and Infrastructure Visual Evaluation:** Using GloFAS forecast information to create a 'time to respond' map
- **The (flooded) Italian Job:** An automatized modification of fixed GloFAS thresholds for warnings

The winning team, LIVE, used GloFAS information creating a “time to respond map” that helps prioritizing decision making before or during a flood event. The second prize went to FloodIT, the third winner was Interception.

CORDIS notes that the GloFAS system is currently used by the International Red Cross in a pilot project in Daares-Salaam, Tanzania for finance forecasting which enables Red Cross to spot early on where flood disaster support is required. The FloodHack prize money — in total 1.050 GBP — was donated to this project.

► For more information see the [DevPost Web site](#).



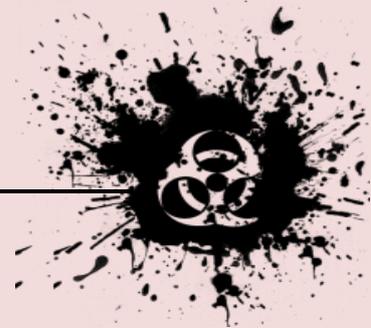
Plans for mile-high skyscraper unveiled in Japan

Source: <http://therealdeal.com/2016/02/06/plans-for-mile-high-skyscraper-unveiled-in-japan/>

Feb 06 – We're living in the age of the super tower. Around the world, buildings are reaching record heights. But the next generation of super-tall buildings is preparing do something that seems like science fiction: break the mile-high barrier.

For one, architects at Kohn Pedersen Fox and structural engineering firm Leslie E. Robertson Associates are planning to build a mile-high building in Tokyo Bay in Japan, according to the New York Post.

Dubbed “Next Tokyo,” the development is in fact a mini city designed around a massive skyscraper. Its goal is to combat climate change and rising tides.



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Next Tokyo is a chain of man-made, hexagon-shaped islands that form a barrier to protect Japan's capital from flooding. It would also provide housing for roughly 500,000 people – the main mile-high tower would hold roughly a 10th of those people.



The main structure would be a 5,577-foot skyscraper (called Sky Mile Tower) that is slated for completion in 2045. To put that into perspective, the tallest building in the world, Dubai's Burj Khalifa, is 2,716.5 feet.

The building's hi-tech facade will collect, filter and store water from the atmosphere, providing water to the apartments. And naturally, the elevators will be cable-free and able to move both vertically and horizontally.

► Read more technical data at: <http://global.ctbuh.org/resources/papers/download/2335-next-tokyo-2045-a-mile-high-tower-rooted-in-intersecting-ecologies.pdf>

EDITOR'S COMMENT: Impressive – there is no doubt about it! But given the seismic potential of Japan and Tokyo in specific is it wise to contain 55,000 people in a mile long box? Perhaps it is time for an international agreement limiting the height of skyscrapers. This “mine is taller” race might be considered as a provocation to mighty Nature. Why not focusing on making safer, greener friendly houses for people around the globe?

Social Media's Role in Crisis Management

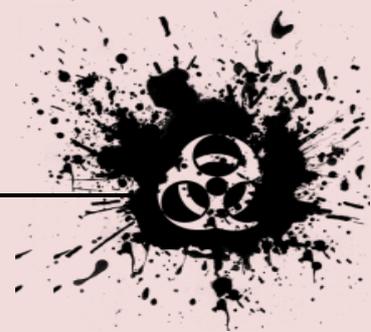
By Vivian Marinelli

Source: <http://www.athleticbusiness.com/gameday-security/social-media-s-role-in-crisis-management.html>

Feb 2016 – It is difficult these days to find someone not on some form of social media — especially during sports and entertainment events. The 2014 World Cup final holds the record for the most tweets per second with 9,667. The game took more than three hours to complete, accumulating more than 100 million tweets.

Twitter, Facebook, Instagram, Tumblr and so many more social media platforms are intertwined with people's daily lives. People turn to them as a first source for news and information, a fact that athletic venue operators can use to their advantage during an emergency situation. In recent crises, we have seen the digital environment as an immediate outlet for information. The speed by which pictures and videos can be uploaded and shared is almost instantaneous.

Every facility should have an emergency preparedness plan that identifies any hazards or disasters particular to its industry and location, assesses the likelihood of each type of situation, and define a set of standard response measures that provide specific information



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and guidance to venue staff to protect the health, safety and welfare of fans. Adding social media as a crisis communication element takes a basic emergency response plan to the next level.

Step by step

The first step is to designate a social media crisis owner within your organization. This is likely someone on the team who manages day-to-day social media and is added to the overall crisis team. He or she will have a high-level understanding of how to relay information in a clear and concise way.

The next step is to create internal and external social media communication policies to eliminate confusion on what can and cannot be posted, identify who is in charge of posting and provide guidance on the values of transparency, consistency, connection, creativity and promptness. In order to use social media most appropriately during a crisis, your organization should already be utilizing these outlets on a day-to-day basis and have a clearly identified presence.

To stay ahead of the rumor mill and provide a strong voice during a crisis, the social media portion of your emergency response plan

and your organization's response in a timely manner. Communications should first identify the disaster and the organization's role in the response, offering a voice of accuracy amid confusion. Care should be taken to ensure the information is correct and up to date, and the language used is clear, understandable and consistent. It is imperative to have the same messaging across all channels, not just social media — if information is shared with news outlets, the same message should be on Facebook and Twitter.

Transparency, honesty and sincerity — Disasters or crises do not just affect event attendees, but their families and friends, as well. Messaging aimed at these groups should acknowledge fear, uncertainty and pain, express concern for those affected, and be up front about your organization's objective and commitment to it. This builds trust among people at their most vulnerable times.

Crowdsourcing — Ask the general public for



should also address the following aspects:

Listening post — Acquire information on what is being said about the incident. A "listening post" is simply a term for the electronic platform used to synthesize news across all types of media, including traditional print, blogs and social media. These sources may provide details such as where a threat might be and who is in need of information. Google Alerts, Twitter Search and Social Mention are just a few of the tools that an organization can use to create a listening post.

Organizational messaging — Provide the public with factual information about the crisis

information. People who are actually in the heart of the situation might be able to provide important information, especially if they are in different parts of the venue. Their contributions can help put together missing pieces to create a more complete picture.

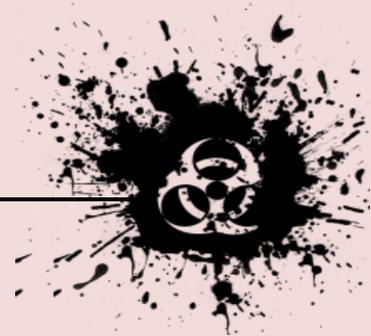
Post-incident monitoring — Keeping tabs on public sentiment of your organization's response is extremely important. How the public reacts is a good indicator of whether the actions your team has taken were effective. This is also a perfect time to re-evaluate the disaster plan and make updates if needed.

Mitigating disaster

Earlier this year, I had the opportunity to present at the National Football League's Security Conference on the topic of social media best practices during a disaster. While the presentation focused on an NFL stadium

event, social media will play an integral part in communication during any type of disaster.

All crises begin at a local level. In the event of a disaster or crisis, the coverage of the event will



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start small but quickly expand. This is why your response must be immediate. The sooner you are able to relay accurate information the better. This will help you reduce panic and build trust.

A disaster rarely kills a brand — it is your silence or miscommunication that does. Avoid common mistakes such as:

- Not having a strategy
- Assuming a bunker mentality
- Minimizing the incident
- Selecting the wrong spokesperson
- Acting emotionally disconnected
- Sending mixed messages
- Relaying late information
- Having a paternalistic attitude
- Not countering rumors
- Engaging in public power struggles

Use of social media should be more than just updates of the situation. Fans, staff, vendors, officials and media at the venue need to be informed of safe evacuation routes and areas

to avoid. To convey this information, use social media in conjunction with tools like:

- Public Service Announcements
- SMS/text messaging
- Stadium video screens
- Warning sirens
- Evacuation lighting
- An emergency website

Another great tool social media makes available to you is the ability to organize via hashtag. A hashtag groups all relevant information about the crisis on both Facebook and Twitter, and helps the public, employees and families of those involved find the information pertinent to them.

The use of social media could be an invaluable tool during a disaster or crisis to expedite the dissemination of information. When you are able to get the right message to the right person at the right time, you not only mitigate the impact of a crisis, but maintain the reputation of the organization.

Vivian Marinelli is the senior director of Crisis Management Services for FEI Behavioral Health (www.feinet.com) and oversees crisis support coordinators who provide assistance to victims and family members during emergencies.

EU DRIVER Project

Source: <http://driver-project.eu/>



DRIVER evaluates emerging solutions in three key areas: civil society resilience, responder coordination as well as training and learning.

These solutions are evaluated using the DRIVER test-bed. Besides cost-effectiveness, DRIVER also considers societal impact and related regulatory frameworks and procedures. Evaluation results will be summarised in a roadmap for innovation in crisis management and societal resilience.

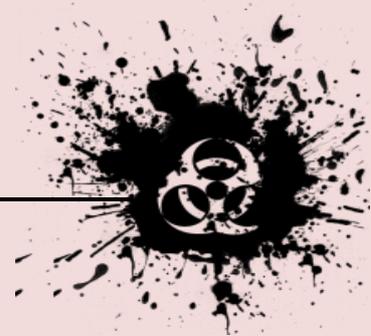
Finally, looking forward beyond the lifetime of the project, the benefits of DRIVER will materialize in enhanced crisis management practices, efficiency and through the DRIVER-promoted connection of existing networks.

DRIVER Step #1: Evaluation Framework

- Developing test-bed infrastructure and methodology to test and evaluate novel solutions, during the project and beyond. It provides guidelines on how to plan and perform experiments, as well as a framework for evaluation.
- Analysing regulatory frameworks and procedures relevant for the implementation of DRIVER-tested solutions including standardisation.
- Developing methodology for fostering societal values and avoiding negative side-effects to society as a whole from crisis management and societal resilience solutions.

DRIVER Step #2: Compiling and evaluating solutions

- Strengthening crisis communication and facilitating community engagement and self-organisation.



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- Evaluating emerging solutions for professional responders with a focus on improving the coordination of the response effort
- Benefiting professionals across borders by sharing learning solutions, lessons learned and competencies

DRIVER Step #3: Large scale experiments and demonstration

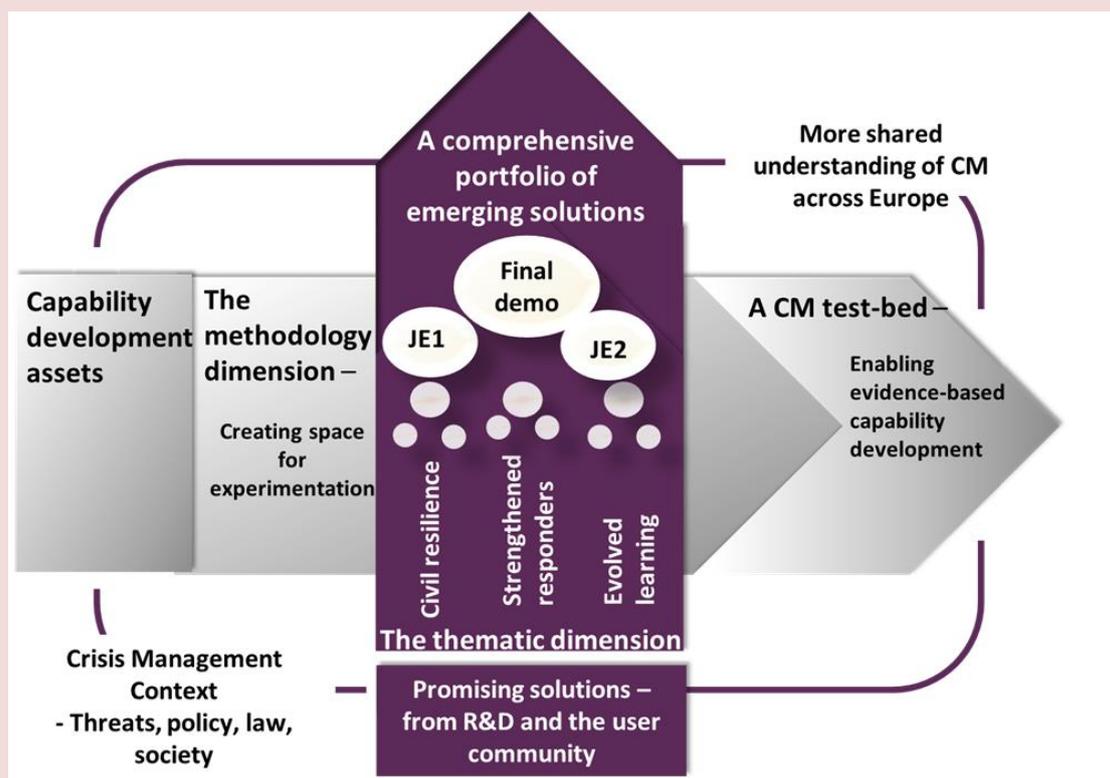
- Execution of large-scale experiments to integrate and evaluate crisis management solutions.
- Demonstrating improvements in enhanced crisis management practices and resilience through the DRIVER experiments.

Methodological & Thematic Dimension

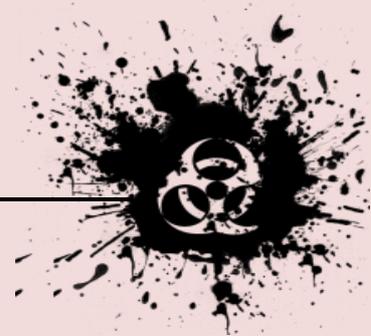
Inertia to innovation exists in all sectors, but Crisis Management and other domains of civil security have some particularly inhibiting characteristics. Since Crisis Management organisations are expected to deal with all types of crises, which are not handled by somebody else, it is easy to question whether a new solution is really better for all relevant contingencies than the one it is proposed to replace. A better **evidence-base for Crisis Management capability investment decisions** is therefore needed.

DRIVER is not about wholesale redesign of Crisis Management capabilities but about achieving innovation based on the systematic testing and adaptation of already existing ideas that are grouped into three main thematic strands:

- Civil Society Resilience
- Professional Response
- Evolved Learning



The test-bed will consist of virtually connected exercise facilities and crisis labs where users, providers, researchers, policy makers and citizens jointly and iteratively can progress on new approaches or solutions to emerging issues, and in developing a well-balanced comprehensive portfolio of Crisis Management tools. This portfolio should supplement the valuable European Crisis Management legacy in a cost-effective manner with regard to current and foreseeable challenges. The DRIVER Community will facilitate a more deeply shared understanding of Crisis management across Europe which is a prerequisite for a tailored adoption of the tools of the DRIVER portfolio in Member States.



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To align the concept of demonstration to the specific challenges of Crisis Management **DRIVER will introduce the concept of campaigns of experiments**

- **Subproject Experiment 1 & Subproject Experiment 1 (SE1 & SE2):** SP internal experimentation campaign
- Two parallel Joint Experiments
 - **Joint Experiments 1 (JE1):** Flooding in connection with pandemic
 - **Joint Experiments 2 (JE2):** Major ice storm with power & ICT failure
- **Final demonstration:** Mediterranean Tsunami with add-on hazards

Components of the DRIVER portfolio of emerging solutions ("the thematic dimension", non-exhaustive)

- Methods and Infrastructure for a distributed test-bed for evidence based Crisis Management capability and policy development.
- Civil resilience solutions: individual and community resilience; volunteer crisis preparedness; resilience of local governments; crisis communication with the general public; organisation and mobilisation of individuals and communities.
- Professional response: situation assessment tools: e.g. damage assessment, early warning, crisis dynamics, social dynamics, data sharing; tasking and resource management tools incl. volunteer management and logistics and supply chain resilience; interoperability; information exchange & communications.
- Evolved learning: harmonized competence framework; lessons learned framework; training for high-level decision-making; training concept for cooperation of Crisis Management professionals and the general public.
- Recommendations for Crisis Management structures, governance, standards.
- Tools for improvement of societal impact of Crisis Management.

Fire Department Preparedness Made Simple

By Michael Cox

Source:http://www.domesticpreparedness.com/First_Responder/Fire_HAZMAT/Fire_Department_Preparedness_Made_Simple/

In the fire service, it is time for leaders to think strategically, challenge long-held assumptions, and move beyond the "norm," to ensure that their communities are fully prepared for any emergency or incident they may encounter. This can be achieved through careful planning, effective communication, and extensive training.

Feb 09 – Effective preparation is an important element in all organizations. Without preparation, the achievement of an organization's overall mission would not occur. This is especially true in the fire service where members are charged with delivering an effective and efficient response to a multitude of different situations. Although such an array of different response situations might seem quite complex and overwhelming to some, fire service leaders can ensure an optimal level of preparedness within their organizations by following four simple steps.

Leadership – Thinking Strategically

The first step in the process is effective leadership. The fire service in general is very different from many other organizations. Members of the fire service are typically called upon to respond to many different types of

emergencies. In order to prepare for these numerous events, today's fire service leaders must think and function strategically. In other words, they cannot physically get marred



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down in the day-to-day operations of their organizations.

Strategic leaders must be able to look past the status quo or normal operations and function as a visionary. They must be able to anticipate or predict numerous threats and put in place a framework to effectively respond to, mitigate, and recover from such incidents. No longer is it acceptable for fire service leaders to put their heads in the sand and say “that will never happen here,” or to live by the motto: “But we’ve always done it this way.” Strategic leaders work to challenge long-held assumptions, question the norm, and ensure an appropriate level of preparedness is achieved for whatever emergency they may face.

An example of this type of strategic leadership would be the changes that were put in place in many fire service organizations over the past few years to effectively handle the way active assailant incidents are mitigated. Knowing that victims of severe trauma incidents are fighting the clock, many fire departments in conjunction with law enforcement partners have developed special weapons attack team (SWAT) medic programs or put in place operating procedures to get fire department medical providers inside as soon as possible to begin triaging and effectively treat the severely injured. This clearly is visionary thinking and a strategic change that will save lives; however, it is contrary the old thought process of waiting for an entire building to be secured before entering to conduct fire department operations.

Planning – Assess & Coordinate

The second step in the preparedness process for the fire service is planning. Like many other activities in life, planning is a key component in significant initiatives and it is something that should begin long before an event occurs. This process should start with the completion of a hazard, threat, and vulnerability assessment(s) for the targeted geographical area. These activities help identify both natural and manmade hazards that threaten the area. In addition to these assessments, the planning process should also take into consideration the operational needs for such threats. This helps to assess an organization’s capabilities and address the need for the establishment or updating of current automatic and/or mutual aid agreements.

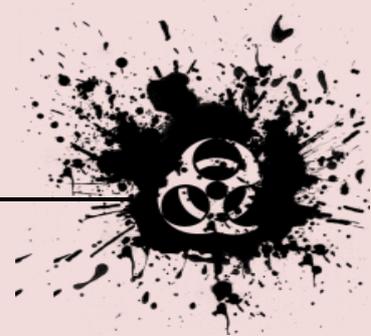
Similarly, other operational concerns such as schedule/shift changes, callbacks, staffing, specialized equipment, and other logistical needs can be addressed. Establishing relationships with other agencies and organizations like state and local emergency operations centers and emergency management officials are imperative. These multiagency coordination centers are key to requesting and receiving the various resources needed during large-scale manmade or natural disasters.

Examples of this type of planning are clearly seen in many fire department organizations today as they prepare for severe weather events such as hurricanes or severe winter storms. As a direct result of the planning and assessment process used to prepare for weather incidents, proactive actions can be implemented such as: staging specialized equipment; activating local/regional response teams; closing particular roads or buildings; and implementing pre-incident evacuations of low-lying areas or problematic structures such as mobile and manufactured homes. Simply put it is the transition of information into action to provide effective response and mitigation activities to protect property and prevent the loss of life.

Communication – Inform at All Levels

The third step in the fire service preparedness process is communication. Communications are key in any organization, especially emergency response agencies like the fire service. Information gained during the planning and assessment process has to be communicated within the department so members at all levels can gain an awareness and new understanding of such perceived threats, as well as potential steps needed to successfully mitigate such events.

In addition to communication at the department level, strategic leaders also need to communicate this information to elected and appointed officials within the jurisdiction. Communication at this level helps to keep them up-to-date regarding the types of incidents that threaten the area and the needs of the department to respond to such events. One final level where communication should occur is with the residents of the jurisdiction. Residents should be made aware of the potential threats in the area and



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the steps they can take to help prepare in the event of such an emergency.

An example of this communication process could be a large-scale drill such as a large hazmat/mass casualty incident in a local mall, casino, sports stadium, or subway. These exercises provide strategic fire service leaders the opportunity to demonstrate and allow elected/appointed officials to witness a fire department's response capabilities firsthand – especially the resource requirements for large incidents that involve a multiagency/multijurisdictional response. This type of drill or event(s) also provides an opportunity for the fire department to share educational and/or preparedness information through the local media, which may cover the drill for the residents in the area.

Training – Ensure Response to All Hazards

The final step in the fire service preparedness process is training. Training is the direct result of the compilation of information that was gathered and communicated throughout the previous steps of this process. An effective response force must be trained to respond and mitigate the wide array of emergencies. However, the training and tactics needed to mitigate a building fire is different than that required to mitigate the aftermath from a

category-4 hurricane or an active assailant incident. Today's fire service leaders must ensure that their response force is trained and ready to respond to whatever emergency occurs. The proper training ensures the safe and effective response to those in need.

A successful example of training for any type of response is the refresher/recertification programs delivered in many fire departments today. It was this type of training that prepared one east coast department that responded to a call for a couple of sick children at a summer camp swimming pool to quickly identify a hazardous materials incident. The quick thinking and reliance on adequate training allowed the first arriving units to identify the problem, request adequate resources, triage the injured, and transport more than 30 pediatric patients to local and regional hospitals.

Emergency preparedness is an important component in today's fire service organization. Although complex, the process can be made manageable by employing four simple steps: effective leadership, planning, communication, and training. These steps can assist a department in providing a response framework to mitigate the types of incidents responders will face within their jurisdictions.

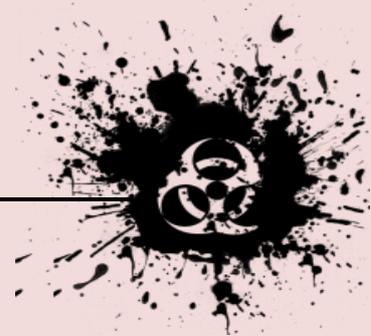
Michael E. Cox Jr. is a 30-year veteran of the fire service and currently serves as a faculty member at the University of Maryland's Fire and Rescue Institute, where he works as a member of the Institute's Management Team. He began his fire service career as a volunteer at age 16 as a member of the Woodland Beach Volunteer Fire Department in Anne Arundel County, Maryland. He joined the Anne Arundel County Fire Department as a career employee in 1988 and advanced through the ranks to become the 10th fire chief of Anne Arundel County, where he led a combination career/volunteer force of 1,400 personnel until his retirement in December 2014. He holds an associate's degree in emergency medical services from Anne Arundel Community College, a bachelor's degree in fire science from the University of Maryland, and a master's degree in executive fire service leadership from Grand Canyon University. A nationally registered emergency medical technician paramedic; he also is a state-certified emergency services instructor and a graduate of the National Fire Academy's Executive Fire Officer Program. The national Center for Public Safety Excellence also has designated him as a Chief Fire Officer.

Status of Preparedness: Emergency Medical Services

By Seth Komansky

Source:http://www.domesticpreparedness.com/First_Responder/EMS/Status_of_Preparedness%3a_Emergency_Medical_Services/

Responders in the pre-hospital emergency medical field must be in a state of readiness at all times. Working on the front lines of an emergency incident requires



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the ability to leverage external resources, the determination to harden operations, and the skillfulness to manage patient surge.

Feb 10 – Emergency medical services (EMS) leaders and practitioners must consider the planning process for, response to, and recovery from major incidents while contemplating domestic threats, including: manmade incidents such as acts of terrorism; biological epidemics such as an Ebola outbreak; or naturally occurring events such as weather-related events. Although it may be difficult to escape the numerous daily and routine responsibilities for EMS systems, it is important to take steps to ensure a state of readiness for the unique operating environments and scenarios. During these challenging times, EMS is looked to as the experts for pre-hospital care and the gateway to the larger healthcare continuum.

Leveraging External Resources

The modern EMS delivery model differs greatly from jurisdiction to jurisdiction with no standardization. Even within certain municipalities, fragmentation exists between: the numbers and types of agencies responding such as fire-based, private, government-based, third service (i.e., an independent municipal/government-based EMS agency that operates in a jurisdiction alongside a fire department and police department), hospital-based, or volunteer organizations; competing factors such as for-profit versus not-for-profit; and personnel pools ranging from fully staffed career EMS to volunteer EMS requiring members to respond from home or work. With all of these, and many other considerations, no single solution for preparedness exists to satisfy every community's needs.

However, what most EMS systems can agree upon is that a major incident requires external resources and help from surrounding agencies to respond to the initial impact. Jurisdictional lines and corporate boundaries that exist during routine day-to-day operations must be broken down during these major incidents. In order for this to occur, leaders must come to the table to break down the barriers that exist to create plans and train personnel well ahead of a major incident. These plans and trainings must be inclusive and adaptable to the variety of threats mentioned earlier.

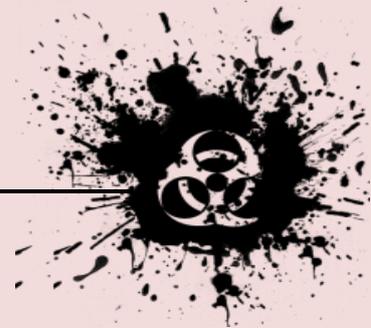
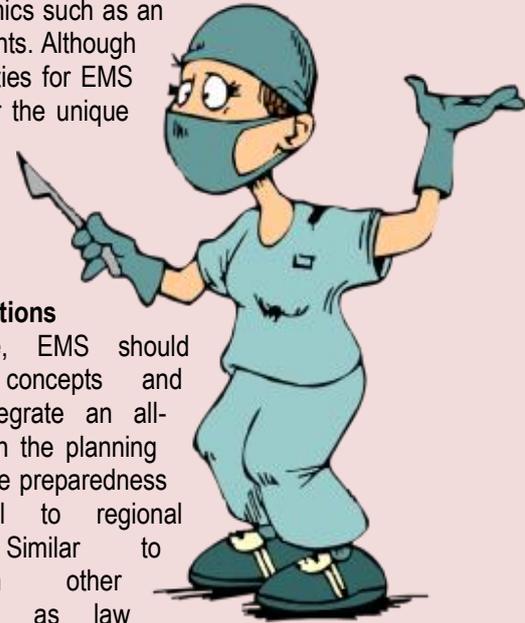
EMS has moved to a checklist-style clinical environment in an effort to minimize clinical misadventures when treating low-frequency, high-risk critical patients. A similar paradigm shift must occur to cultivate a culture for responding to the unknowns of the low-frequency, high-risk major incident in an effort to support the incident commander down to the street paramedic or emergency medical technician to best manage the challenges.

Hardening Operations

As a discipline, EMS should consider the concepts and strategies to integrate an all-hazards outlook in the planning process to improve preparedness from the local to regional perspectives. Similar to colleagues in other disciplines such as law enforcement and across the federal spectrum of agencies, EMS must determine how to match their elevated security postures or stand up and enhance capabilities during necessary times. Hardening EMS operations and supporting a proactive approach “left of boom,” or before the figurative and possibly literal bomb goes off, becomes essential in recognizing the co-location of EMS on the front lines.

Some ideas that could be implemented to harden EMS operations and enhance preparedness as a discipline might include:

- Educating providers for indicators to recognize suspicious activity
- Developing mobilization plans for civil unrest or other patient surge incidents and perform co-discipline training so that embedding with partner agencies becomes more seamless
- Testing plans for bio-events including mass vaccination clinics
- Increasing communications across sectors, disciplines, and jurisdictions ahead of major incidents, meeting the key players before staffing a command post
- Learning and understanding available state and federal resources
- Increasing regionalized communications and plans



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Aligning with the final bullet point, one of the greatest vulnerabilities the EMS systems around the nation face is surge capacity, or the maximum delivery of services a system can provide if all available and potential resources are mobilized. Surge capacity is typically associated with hospital systems but, similar to most hospitals, the reality is that most EMS systems already operate at full capacity. The unthinkable occurring during the busiest hour of the day would further complicate the situation.

Managing Surge

It is important to know how an EMS system would respond to an event requiring an unfolding incident command structure with a large demand for transport units in a short period of time. In most cases, systems do not have a callback program in place to recall employees. Coupled with budgetary constraints and the rising costs of ambulances and equipment, even if a callback system does exist, there are still questions about how these personnel would be deployed in the field for a major incident.

A complicated solution, which requires early collaboration, communication, and planning transcending the corporate healthcare world, involves regionalization. Establishing a plan with a bed monitoring system with a real-time ability to reconcile available beds at the regional level across all partner hospitals would benefit:

- The patient day-to-day by cutting down on wait times and improving satisfaction ratings; and
- EMS in the event of a large-scale incident or a maximum capacity time by incorporating this into destination planning and transportation decision-making.

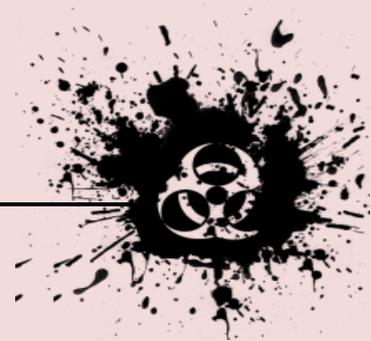
By developing this situational awareness, EMS could avoid overloading any single hospital and ease the global system that exists.

One successful example of this was seen during the November 2015 Paris attacks, where a coordinated terrorist attack resulted in explosions and active shooter scenarios occurring throughout the city, which included a hostage situation and massacre inside a concert hall. With information flowing into the Assistance Publique-Hôpitaux de Paris (APHP) crisis unit, it was quickly confirmed that the attacks were escalating dangerously and the potential for large numbers of patients existed. The APHP is Europe's biggest entity, able to coordinate 40 hospitals, 100,000 health professionals, 22,000 beds, and 200 operating rooms. For the first time ever, the "white plan" was activated – recalling staff, mobilizing hospitals, and releasing beds to cope with the influx of the expected wounded. Further, contingencies were put into place for "reservoir" capacities, which included other area hospitals and university hospitals that were more distant from Paris proper with a cache of available helicopters to evacuate the wounded if necessary.

It is important for EMS leaders to consider the big picture and think outside the box when planning in 2016. A reality exists that no single EMS agency has the resources to handle the influx of patients that could occur during the unthinkable event. Acknowledging the need for a collaborative approach, networking with regional colleagues to strengthen relationships for multidisciplinary partnerships ahead of a major incident, and working to develop plans to respond to large-scale incidents across jurisdictional lines will be the key to success.

Seth J. Komansky, MS, NRP is a district chief with the Wake County Department of Emergency Medical Services (EMS) in Raleigh, North Carolina. He is assigned to the operations division as a field supervisor in Raleigh's downtown district and manages Wake County's Medical Intelligence Unit. Additionally, he serves as the statewide EMS field liaison officer (FLO) coordinator at the N.C. Information Sharing and Analysis Center (NC ISAAC), North Carolina's state fusion center based at the N.C. State Bureau of Investigation. He has a Master of Science in Homeland Security Management from the Homeland Security and Terrorism Institute at Long Island University.

The number of 2015 earthquake around the world – 14,588 – on par with previous years



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Source: <http://www.homelandsecuritynewswire.com/dr20160211-the-number-of-2015-earthquake-around-the-world-14-588-on-par-with-previous-years>

Feb 11 – **Globally there were 14,588 earthquakes of magnitude 4.0 or greater in 2015. This worldwide number is on par with prior year averages of about forty earthquakes per day of magnitude 4.0, or about 14,500 annually.** The 2015 number may change slightly as the final results are completed by seismic analysts at the USGS National Earthquake Information Center in Golden, Colorado.

USGS says that in 2015, there were 19 earthquakes worldwide with a magnitude of 7.0 or higher. Since about 1900, the average has been about 18 earthquakes per year.

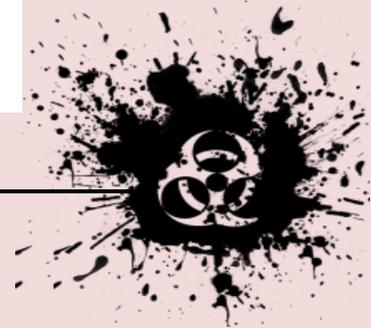
Earthquakes caused 9,612 deaths worldwide in 2015, a significant increase compared to 664 deaths in 2014. The majority of these fatalities – 8,964 people as reported by the United Nations Office for Coordination of Humanitarian Affairs — are attributed to the magnitude 7.8 earthquake that occurred on 25 April in Nepal. This was followed by another deadly earthquake with magnitude 7.3 on 12 May that killed an additional 218 people in Nepal. Deadly quakes also occurred in Afghanistan, Malaysia and Chile.

The biggest earthquake in the United States, a magnitude 6.9 southwest of Umnak Island, Alaska, occurred on 27 July. This occurred in a remote location so there was no damage. In the central United States, seismicity continued to increase, with 32 earthquakes of magnitude 4.0 and greater in Kansas, Oklahoma, and Texas in 2015 compared to 17 in 2014. Moderate earthquakes also occurred in Nevada and Arizona. A magnitude 5.0 east of Challis, Idaho, hit on 3 January. In the United States, there were no fatalities caused by earthquakes.

The USGS notes that it monitors earthquakes around the world, responds rapidly to events of magnitude 5.0 or greater and for the final catalogs publishes earthquakes with a magnitude of 4.0 or greater. In the United States, earthquakes with magnitude 2.5 or greater are published.

To monitor earthquakes worldwide, the USGS NEIC receives data in real-time from about 1,800 stations in more than 90 countries. These stations include the 150-station Global Seismographic Network, which is jointly supported by the USGS and the National Science Foundation and operated by the USGS in partnership with the Incorporated Research Institutions for Seismology consortium of universities. Domestically, the USGS partners with eleven regional seismic networks operated by universities that provide detailed coverage for the areas of the country with the highest seismic risk.

Real-time information about earthquakes around the world can be found at earthquake.usgs.gov. Visit the [USGS Significant Earthquakes Archive](#) to see the complete list of notable earthquakes from 2015 and previous years. Read about other natural disasters that occurred in 2015 [here](#).





Global water supply under increasing pressure

Source: <http://www.homelandsecuritynewswire.com/dr20160126-global-water-supply-under-increasing-pressure>

Jan 26 – **A new study projects that global demand for water could more than double by 2050, increasing pressure on already scarce water resources.** “Our current water use habits increase the risk of being unable to maintain sustainable food production and economic development for the future generation,” says one researcher. Water efficiency and water saving measures could stabilize demand.

If current trends continue, domestic and industrial water demand would more than double by the year 2050, and continue to increase after that, according to a new study published in the journal *Geoscientific Model Development*. The study introduces the first scenarios from the International Institute for Applied Systems Analysis (IIASA) Water Futures and Solutions (WFaS) initiative, a multi-year interdisciplinary research project focusing on global water challenges and solutions, and explains the methodology and models used by the research initiative.

“Our current water use habits increase the risk of being unable to maintain sustainable food production and economic development for the future generation,” said IIASA water program researcher Yoshihide Wada, also a researcher at Utrecht University in the Netherlands. “We need strong social, financial, and political commitments to reduce future water use.”

IIASA notes that estimating future water use is challenging because it is influenced by many factors, including population growth, economic growth, climate change, agriculture, energy production, and local, regional, and international policy.

The WFaS initiative, launched in 2012, combines multiple models with input from water managers and other experts on local and global water issues. It is the first multi-model analysis of twenty-first century water use, and is designed to be consistent with climate projections published in the latest report from the Intergovernmental Panel on Climate Change (IPCC).

Wada says, “Our multi-model framework also provides a possible range of future water use. This can be used to develop different types of management and policy options that are needed to understand the extent of water resource challenges faced around the world.”

The new study provides an overview of different approaches assessing water demand, and the uncertainty, strengths, and weaknesses of the various estimation methods. It reviews the models currently in use to understand water use across all sectors, and explains the methodology and models used in the WFaS initiative.

Wada says, “If we invest more to improve water use efficiency and water saving, we could substantially reduce and potentially stabilize future water use by 2050.”

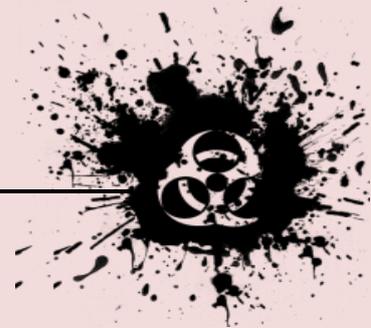
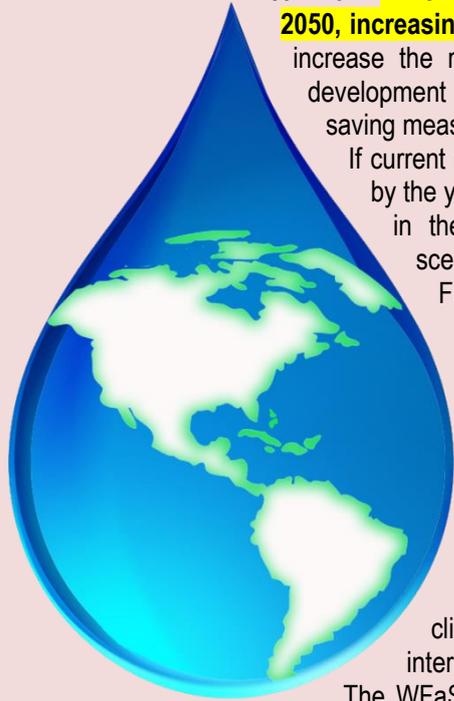
— *Read more in Y. Wada et al. “Modeling global water use for the 21st century: the Water Futures and Solutions (WFaS) initiative and its approaches, [Geoscientific Model Development](#) 9 (13 August 2015): 175-222.*

Storms vs. terror: More Americans killed in weekend blizzard than Islamic extremist attacks in 14 years after 9/11

By Ben Norton

Source: http://www.salon.com/2016/01/26/storms_vs_terror_more_americans_killed_in_blizzard_last_weekend_than_islamic_extremist_attacks_since_911/

Jan 26 – **Jonas was not kind, to put it mildly. The U.S. was hit with a record-breaking snow storm over the weekend. At least 41 Americans were killed in the massive blizzard, dubbed snow storm Jonas.**



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Many died in car accidents, with icy roads covered in blankets of snow greatly increasing

West Virginia was pummeled with 42 inches of snow.



U.S. politicians constantly warn about the threats of Islamic extremism, yet say little about climate change. In reality, however, climate change is exponentially more dangerous. Myriad scientific studies detail how extreme weather is directly linked to climate change.

As Salon stressed in its previous report on the Christmas storms, this extreme weather has become the new normal, in an era of out-of-control anthropogenic (aka, human-caused) climate change.

the chances of deaths and injuries. Several died from carbon monoxide poisoning, such as a 23-year-old New Jersey mother and her son, after their car was stuck in the snow.

New America, a non-partisan think tank, calculated in mid-2015 that 26 Americans were killed by self-proclaimed jihadists in the 14 years after the Sept. 11, 2001 attacks. That is to say, more Americans were killed in snow storm Jonas over the weekend than by Islamic extremists in the more than 5,000 days after the 9/11 attacks.

Just four weeks ago, in late December, Salon reported that more Americans had been killed in storms over Christmas weekend than in Islamic extremist attacks since 9/11, including the December attacks in San Bernardino, in which 14 Americans were killed.

At least 43 Americans died in December's extreme weather. Together, more than 84 Americans were killed in the two storms.

And the loss of human life is not the only damage the U.S. endured from the weekend's blizzard.

Economists estimate the damages and losses precipitated by snow storm Jonas will be approximately \$3 billion, not including the cost of repairing infrastructure. More than 12,000 flights were cancelled. Retailers lost an estimated \$860 million, and restaurants were particularly hard hit.

The House of Representatives postponed all votes for the week, and federal offices in Washington, D.C. remained closed on Monday.

The storm affected 20 states, and broke records in several on the East Coast. Glengary,

2015 was the hottest year ever on record. And with extremely hot temperatures come extremely cold ones — along with extreme weather.

The World Meteorological Organization warned that the “years 2011-2015 have been the warmest five-year period on record, with many extreme weather events — especially heatwaves — influenced by climate change.”

While Jonas was hitting the U.S., the Weather Channel's lead meteorologist Michael Palmer said the storm is “likely to go down as one of the most impressive blizzards we've seen on the Eastern Seaboard in recorded history.”

Meteorologist Eric Holthaus detailed in Slate “how global warming helped turned the blizzard of 2016 into a record-breaking storm.”

In the first two Democratic presidential debates, Sen. Bernie Sanders insisted anthropogenic climate change, not Islamic extremism, is the greatest threat to national security. “The scientific community is telling us that if we do not address the global crisis of climate change, transform our energy system away from fossil fuel to sustainable energy, the planet that we're going to be leaving our kids and our grandchildren may well not be habitable,” he warned.

Storms like those seen last weekend and over Christmas weekend show just how correct Sanders is.

Despite how much politicians talk about improving the economy,



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boosting business and growing the country's GDP, none of this ultimately matters if the climate change the economic system produces



brings with it more extreme weather, not to mention renders the environment and planet uninhabitable, in the process.

A [comprehensive U.N. report](#) released in November found that 90 percent of major disasters in the last 20 years have been weather-related. It also found that the U.S. had more weather-related disasters than any other country, including gigantic nations like China and India.

Roughly 606,000 people were killed in the thousands of extreme weather disasters in the past 20 years, and 4.1 billion more were injured, made homeless or left in need of emergency assistance.

The U.N. report estimated the costs of these thousands of weather-related disasters to

be between \$5 trillion and \$6 trillion — or between \$250 billion and \$300 billion every year.

Yet the U.S. media, like the political establishment it so frequently and obediently echoes, has demonstrated that it is much more interested in significantly smaller threats like Islamic extremism. A [study](#) by the Intercept found that, in a month-long period, CNN mentioned “terrorism” and “ISIS” 831 times, and climate change just 135 — 615 percent less (it mentioned poverty just 34 times, over 2,400 percent less). Other leading corporate media outlets had similarly poor records.

In short, the U.S. is missing the forest for the trees, ignoring the greatest threat it faces: climate change.

Snow storm Jonas is just another example — and there will, unfortunately, be many more as climate change gets worse and worse, as governments refuse to take drastic action and as fossil fuel corporations maintain their chokehold on the political and economic system.

“Greenhouse gas emissions, which are causing climate change, can be controlled,” World Meteorological Organization Secretary-General Michel Jarraud emphasized last year. “We have the knowledge and the tools to act. We have a choice. Future generations will not.”

Ben Norton is politics staff writer at SALON.

Record Missouri flooding was man-made calamity

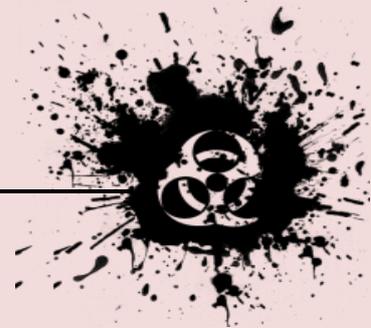
Source: <http://www.homelandsecuritynewswire.com/dr20160208-record-missouri-flooding-was-manmade-calamity-scientists>



Jan 08 – At the end of December 2015, **a huge storm named “Goliath”** dumped 9-10 inches of rain in a belt across the central United States, centered just southwest of St. Louis, most of it in a three-day downpour.

The rain blanketed the Meramec Basin, an area of 4,000 square miles drained by the Meramec River, which enters the Mississippi River south of St. Louis. The Meramec's response was dramatic. Gauging stations recorded a pulse of water that grew as it traveled down the main stem of the Meramec River, setting all-time record highs in the lower basin in the Missouri cities of Eureka, Valley Park and Arnold.

While extraordinary rain drenched the entire Meramec Basin, only 5



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percent of the Mississippi River's giant watershed above St. Louis was so affected. Yet only a day after the flood on the lower Meramec peaked, water levels on the Mississippi at St. Louis were the third-highest ever recorded. A few days later, record flood stages were recorded downstream at Cape Girardeau, Mo., and Thebes, Illinois.



Meramec River

Why was the flooding so bad? Most news reports blamed it on the heavy rain, but Robert Criss, PhD, professor of earth and planetary sciences in Arts & Sciences at Washington University in St. Louis, said there was more to the flood than the rain.

"I think there was significant magnification of the flood levels on the Meramec by recent developments near the river," he said. "Sure it rained a lot, but what happened here cannot be explained by the rainfall alone."

The flood on the middle Mississippi River, in turn, was remarkable for its short duration and the time of year. "It was essentially a winter flash flood on a continental-scale river," Criss said. "The Mississippi has been so channelized and leveed close to St. Louis that it now responds like a much smaller river."

WUSTL reports that in the February issue of the *Journal of Earth Science*, Criss and visiting scholar Mingming Luo of the China University of Geosciences in Wuhan, China, take a close look at data for the New Year's flood, treating it as a giant natural experiment that allowed them to test their understanding of changing river dynamics.

"Flooding is becoming more chaotic and unpredictable, more frequent and more severe," Criss said. "Additional changes to this overbuilt river system will only aggravate flooding."

"In the meantime," he said, "inaccurate Federal Emergency Management Agency flood frequencies based on the assumption that today's river will behave as it has in the past greatly underestimate our real flood risk and lead to inappropriate development in floodways and floodplains."

What happened at Valley Park and why?

The prior flood of record in most of the lower Meramec Basin occurred on 6 December 1982, Criss said. Given that the 1982 flood, like the 2015 flood, was a winter flood during an El Niño event, they should have been similar. Criss thought it would be revealing to compare them.

When he did this, he discovered that the peak flood stage at Valley Park in 2015 was three-feet higher than it would have been had the river responded as it had in 1982, and more than a foot higher upstream from Valley Park at Eureka in 2015 than in 1982.

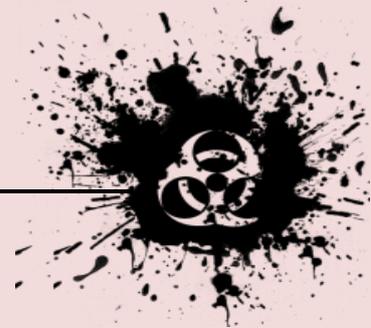
What had happened at Valley Park between 1982 and 2015? A three-mile-long levee had been built next to the river; a landfill partly in the river's floodway (as defined in 1995) had expanded; parts of the floodplain had been built up with construction fill; and development along three small tributaries of the Meramec had destroyed riparian borders, so that they became torrents after a rain but no longer flowed continuously.

The record high water levels on the Meramec were associated with these developments, Criss said. "The biggest jump in the flood stage was next to the landfill in the floodway and to the new levee, which restricted the effective width of the floodway and '100-year' floodplain by as much as 65 percent."

The long-term flood record also supports his case. The flood stages at Valley Park have recently increased compared to those at Eureka, Criss said. Of the eight great floods that have occurred on the Meramec since 1915, the flood stage at Valley Park was anomalously high relative to the other gauging stations in only 2008 and 2015, the two floods after the levee was built in 2005.

The Mississippi River's flashy response

A day after the peak flooding on the lower Meramec, water levels on the Mississippi at St. Louis were the third-highest ever recorded. But what made this



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flood remarkable, said Criss, was not the records it set but rather its short duration and the winter timing.

The Mississippi was above flood stage for only eleven days in January 2016, compared to 104 days in the record flood of 1993 and 77 days for the flood of 1973, the next biggest flood.

The Mississippi should just have swallowed this storm, Criss said. “Instead, this huge continental-scale river exhibited the flashy response typical of a river 100 times smaller.

“Why? Because we’ve made a small river out of a big river,” Criss said. The river channel is only half as wide as it was when Robert E. Lee mapped the St. Louis harbor in 1837, and it is full of thousands and thousands of wing dikes and other obstructions.”

Underestimating the risk

“We have gauge records for downtown St. Louis every day, going back to the Civil War,” Criss said, “but we are mistaken if we think we can base predictions of flood frequencies on averages over that period because the river today is not the river it was a century ago.

WUSTL notes that he drives home the point by breaking the flood data into two chunks and looking at the earlier half separately from the later half. When he does this, it becomes apparent the river is becoming more chaotic and unpredictable and that floods are more

frequent, higher and more damaging than they once were.

As the New Year’s flood demonstrates, when we assume an unchanging river, we greatly underestimate our flood risk, he said. “The St. Louis levees protected us from the 1993 flood, considered a 330-year event,” he said. “But if a real ‘200-year’ flood occurred on today’s river, the structures protecting St. Louis would be overtopped.

“The heavy rainfall was probably related to El Niño, and possibly intensified by global warming. But new records were set only in areas that have undergone intense development, which is known to magnify floods and shorten their timescales.

“People want to blame the rain, but this is mostly us,” Criss said. “It’s a manmade disaster.”

During the New Year’s flood, roughly 7,000 buildings near St. Louis were damaged, two interstate highways were closed for several days, the community of Valley Park was evacuated, and two Metropolitan Sewer District plants were swamped so that sewage was dumped directly into the water. The flood killed more than twenty people in Missouri and Illinois, caused several hundred million dollars of damage, and left millions of tons of debris in its wake.

— *Read more in Robert E. Criss, “Statistics of evolving populations and their relevance to flood risk,” [Journal of Earth Science](#) 27, no. 1 (February 2016):2-8.*

Severe drought no longer caused just by nature

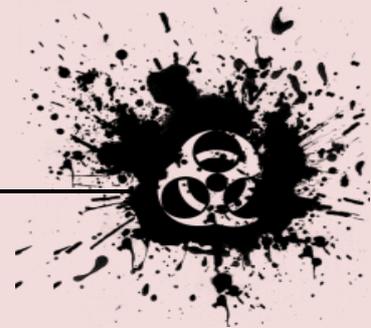
Source: <http://www.homelandsecuritynewswire.com/dr20160208-severe-drought-no-longer-caused-just-by-nature>

Jan 08 – Scientists at the University of Birmingham are calling on drought researchers and managers around the world to consider both human activity and natural phenomena in their battle to preserve increasingly scarce global water supplies. The experts say that severe droughts experienced recently in countries such as China, Brazil and the United States can no longer be seen as purely natural hazards. Changes to the way people use the water and the landscape contribute to extreme water shortages.

U Birmingham reports that the University’s Water Science Research Group is leading key

researchers from thirteen organizations in eight countries to redefine how the world should study and tackle drought. The researchers propose broadening the definition of drought to include water shortage caused and made worse — or sometimes improved - by human activity.

Drought research should no longer view water availability as a solely natural, climate-imposed phenomenon and water use as simply a socio-economic issue. It should, instead, more carefully consider the complex interactions between nature and society.





Evaporating and declining of Folsom Lake Reservoir, CA // Source: usgs.gov

The current California drought has severely affected the state's environment and economy. Storing water in reservoirs and extracting groundwater increase evaporation and decrease groundwater levels, making the drought worse. It demonstrates how strongly water and society are intertwined during drought periods.

Europe suffered a severe drought last summer with high heat causing soils and plants to dry out helping to spread wildfires. Agricultural and hydropower production decreased, whilst rivers fell to record low levels and inland water transport shut down in some places. Water and drought policies vary across the EU and more work is needed to understand their influence on drought.

University of Birmingham Water Science Lecturer Dr. Anne Van Loon said: "Society is not a passive victim of drought; it responds to water shortages and these responses again influence water levels in reservoirs, aquifers and rivers. Severe droughts in human-dominated environments, as experienced in recent years in China, Brazil and the USA, cannot be seen as purely natural hazards because human activities play a role.

"Managing drought effectively means we must acknowledge that human influence is as integral to drought as natural climate variability. This is why we're calling for research to explicitly consider the multidirectional relationship between natural drought processes and the role of people."

Recent research has focused on natural areas, such as the effects of climate change on drought under natural conditions. However, the validity of these studies is questionable if our world is strongly altered and managed by people.

"The traditional approach to drought research — focusing on natural phenomena - leads to poor prediction and management of this complex interdisciplinary phenomenon. The complexity of the issue and lack of data and information make it hard, but that is no reason to pretend that the water system is completely natural and we can ignore water use by people in quantifying drought."

Dr. Van Loon added that in California, one of the big questions is how much rain is needed to end the drought. It was particularly important to take into account human activity, such as groundwater abstraction and water transfers, when calculating how much rain is needed.

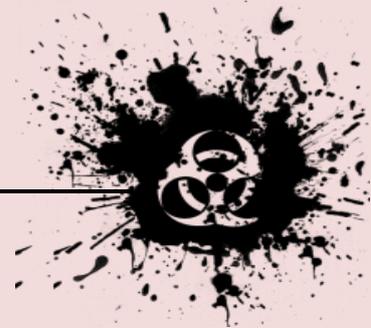
"We can see the water system as a bucket of water half-empty due to drought, which needs to be filled up to its original level," she said. "We can calculate how much rain is needed to fill up the bucket, but at the same time we are constantly taking water out of the bucket and putting water in."

The water science researchers say that defining the causes of drought is crucial in deciding whether management should focus on making changes to cope with climate-induced drought (adaptation) or tackling the actions that lead to human-induced drought (mitigation).

Innovative scientific methodology is needed to pull apart different causes of drought. Research should also analyze the impacts of drought on society, how society responds to water shortages and the effect of these responses on drought.

Direct effects of people on drought are water abstraction, reservoir building and water transfer.

Indirect effects are changes to the land surface made by people that can affect the development of drought by altering hydrological processes. These can include evaporation from land to air (evapo-



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transpiration) and the rate at which water penetrates the soil (infiltration), as well as surface runoff and storage of water.

These direct and indirect influences can be long-term (big engineering projects for reservoirs or gradual urbanization) and short-term (more efficient irrigation methods, different crops). Short term adaptation to drought can decrease the severity of the next drought or even cause within drought changes influencing the drought end.

A better understanding of how public perception of drought and strategies to tackle climate-induced factors is also needed. Large drought impact databases currently being compiled for the United States and Europe, together with improved data analysis methods should help in this area.

“Whilst human activity can contribute to worsening drought, society can also play its part in tackling water shortages. However, we can only begin to take positive global action

against drought when evaluating the relationship between nature and people and its impact,” said Dr. Van Loon.

Pertinent facts:

- Recent drought in China, which has reduced farmers' profits, is linked to policy changes on water rights and access, as well as water pollution. Industries such as agriculture, forestry, and leisure depend on regional ecosystems - how land is managed can affect how drought hits. Increasing fertilizer use and growing more crops in Northern China, for example, is leading to drier soils during the growing season.
- The current drought affecting south east Brazil, including the cities of São Paulo and Rio de Janeiro has been described as the worst drought in eighty years. It has been made worse by human activity such as deforestation, the growth of towns and reservoir construction.

— Read more in Anne F. Van Loon et al., “Drought in the Anthropocene,” *Nature Geoscience* 9 (2 February 2016): 89-91.

Largest fireball since Chelyabinsk falls into the ocean: Nasa reports huge explosion of seven meter space rock over the Atlantic

Source: <http://www.dailymail.co.uk/sciencetech/article-3459057/Largest-fireball-Chelyabinsk-falls-Earth-Nasa-reports-huge-explosion-seven-meter-space-rock-Atlantic.html>



Feb 22 – A huge fireball crashed into the Atlantic earlier this month - and went almost unseen.

The event took place on February 6 at 14:00 UTC when a meteor exploded in the air 620 miles (1,000km) off the coast of Brazil.

It released energy equivalent to 13,000 tons of TNT, which is the same as the energy used in the first atomic weapon that leveled Hiroshima in 1945.

This was the largest event of its type since the February 2013 fireball that exploded over Chelyabinsk, Russia, leaving more than 1,600 people injured.

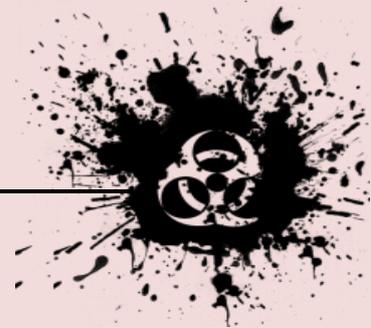
That fireball measured 18 meters across and screamed into Earth's atmosphere at 41,600 mph. Much of the debris landed in a local lake called Chebarkul.

The Chelyabinsk fireball had 500,000 tons of TNT energy - 40 times more than the latest impact, according to Phil Plait.

‘As impacts go, this was pretty small,’ Plait writes in an in-depth report in his Slate blog.

‘After all, you didn't even hear about until weeks after it occurred.

‘Had it happened over a populated area it, would've rattled



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some windows and probably terrified a lot of people, but I don't think it would've done any real damage.'

Ron Baalke, who works for NASA, first tweeted the event after it appeared on the space agency's Near-Earth Object Fireball [page](#).

Plait estimates that, given the explosive energy of the most recent fireball, it was likely to be around

five to seven meters wide.

It is believed to have exploded about 18 miles (30km) above the Atlantic Ocean, 6 miles above the troposphere, the atmospheric layer where the Earth's weather occurs.

It is unlikely that anyone saw it, but it was probably picked up by the military, who record atmospheric explosions.

'Impacts like this happen several times per year on average, with most going unseen,' Plait said.

It's the much larger impacts that we should be worried about.

NASA tracks around 12,992 near-Earth objects which have been discovered orbiting within our solar system close to our own orbit.

It estimates around 1,607 are classified as Potentially Hazardous Asteroids.

In September, Paul Chodas, manager of NASA's Near-Earth Object office at the Jet Propulsion Laboratory in Pasadena, said: 'There is no existing evidence that an asteroid or any other celestial object is on a trajectory that will impact Earth.'

'In fact, not a single one of the known objects has any credible chance of hitting our planet over the next century.'

One such asteroid is 2013 TX68, which poses no threat to Earth, but could get very close to the surface, according to the space agency – although it adds there is a very slim chance of this happening.

The 100ft-wide asteroid, first spotted when it flew by Earth two years ago, will make its



return On March 5 – and this time it could get incredibly close.

The whale-sized space rock may skim past Earth at just 11,000 miles (17,000 km), which is around 21 times closer to Earth than the moon. But NASA admits this estimate may be widely inaccurate, and the asteroid may also pass Earth as far out as 9 million miles (14 million km).

'The variation in possible closest approach distances is due to the wide range of possible trajectories for this object, since it was tracked for only a short time after discovery,' Nasa explained.

Scientists have identified an extremely remote chance that this small asteroid could impact on September 28, 2017, with odds of no more than 1-in-250-million.

Flybys in 2046 and 2097 have an even lower probability of impact.

'The possibilities of collision on any of the three future flyby dates are far too small to be of any real concern,' said Paul Chodas, manager of CNEOS.

'I fully expect any future observations to reduce the probability even more.'

Asteroid 2013 TX68 is estimated to be about 100ft (30 meters) in diameter.

If an asteroid the size of 2013 TX68 were to enter Earth's atmosphere, it would likely produce an air burst with about twice the energy of the Chelyabinsk event.

