

ASIA PACIFIC DEFENSE

VOLUME 38, ISSUE 3, 2013

# FORUM



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Expanding Awareness  
on Weapons of Terror



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### **ABOUT THE COVER:**

This photo illustration depicts a first responder in a protective mask watching over civilians during a defense drill. Combating terrorist threats requires preparation and preventive measures at all levels, including cooperation from militaries, law enforcement, government agencies, the private sector and individuals.

FORUM ILLUSTRATION





Dear Readers,

Welcome to the latest edition of *Asia Pacific Defense FORUM*. This issue explores various aspects of weapons of terror, along with ways militaries and governments can keep these weapons from falling into the wrong hands.

The threat of chemical, biological, radiological, nuclear and high-yield explosive attacks presents a serious challenge to nations in the Asia Pacific. Everyone must work together to combat such threats.

For example, nations that possess nuclear capabilities have certain responsibilities within the international community to maintain transparency and safeguard their stockpiles. Meanwhile, corporations and other entities that deal with potential precursor chemicals, biological agents and nuclear components also have an obligation to protect against intentional and accidental disasters.

Even as militaries, governments and the private sector strive to guard against weapons of terror, extremists are always looking for new ways to attack and terrorize populations. One recent trend among extremists online, for example, is the use of “gamification” in recruiting, where budding terrorists earn video-game-like points when they complete tasks such as spreading extremist messages or videos of attacks. This tactic is intended to spread radicalization and push recruits into action, but authorities can counter such efforts by strategically launching their own messages into cyberspace.

In the end, the keys to neutralizing threats from any weapons of terror are preparedness and cooperation. As long as nations remain vigilant, terrorists will find themselves at an increasing disadvantage.

*FORUM* strives to provide useful information to facilitate dialogue. Please reach us at [contact-apdf@apdforum.com](mailto:contact-apdf@apdforum.com) and share your thoughts.

Warmly,

SAMUEL J. LOCKLEAR, III  
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## APD FORUM

### Weapons of Terror

Volume 38, Issue 3, 2013

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COURTESY DR. IMES CHIU

**DR. IMES CHIU** brings her extensive expertise in Southeast Asian security to this issue with two articles highlighting cooperation in the Philippines. Dr. Chiu has taught in leading universities in the United States and the Philippines, and she won the Global Filipino Non-Fiction Literary Book Award.

Featured on Pages 10 and 46



JENNIFER WOOD

**ROHIT GANDHI** had the privilege of interviewing Malala Yousafzai, the teenage blogger who dared to challenge the Tehrik-e-Taliban in Pakistan. In this issue, he reflects on those interviews as he shares his insights on the psychological effects of terror. Gandhi is an award-winning journalist and documentary filmmaker. Featured on Page 36



COURTESY HUGH ASHTON

**HUGH ASHTON** is a freelance writer, journalist and novelist who has lived in Japan since 1988. The first draft of his 2010 novel, *At the Sharpe End*, describes a major earthquake and resulting nuclear disaster. For *FORUM*, he details lessons learned from the real-life nuclear incident at Japan's Fukushima Daiichi plant.

Featured on Page 24



COURTESY DR. JAMES CAMPBELL

**DR. JAMES CAMPBELL** serves as professor of crisis management and health security at the Asia-Pacific Center for Security Studies. With a doctorate in microbiology, a master's in public health and experience as a U.S. Navy medical service corps officer, Dr. Campbell offers a well-rounded perspective on biosecurity.

Featured on Page 52



COURTESY SOPAC PUBLIC AFFAIRS

**SCOTT M. MCGEHEE** is a foreign service officer serving as foreign policy advisor to the commander of the Special Operations Command Pacific. During his 22 years with the State Department, he has served in a variety of political-military, counterterrorism and peacekeeping assignments, primarily in the Middle East. Featured on Page 50

# Join the Discussion

We want to hear from YOU!

*Asia Pacific Defense FORUM* caters to military and security personnel in the Asia-Pacific region. A product of U.S. Pacific Command, the quarterly magazine provides high-quality, in-depth content on topics that impact security efforts across the region — from counterterrorism to international cooperation and natural disasters.

*FORUM* provokes thoughtful discussions and encourages a healthy exchange of ideas. Submit articles, pictures, topics for discussion or other comments to us ONLINE or at:

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## AUSTRALIA

## Boosting Malaria BATTLE

Australia will spend more than AUS \$100 million (U.S. \$104 million) over the next four years to help reduce deaths from malaria in the Asia-Pacific region. The money will support several country and regional programs, Foreign Minister Bob Carr announced at a November 2012 malaria conference in Sydney. The programs aim to control drug-resistant malaria along the lower Mekong River and anti-malaria efforts in the Solomon Islands, Vanuatu and Papua New Guinea.

Most malaria deaths occur in Africa, but 64 percent of the Asia-Pacific population are exposed to the mosquito-borne illness. The region had more than 30 million malaria cases and about 42,000 deaths in 2010, according to the World Health Organization. The Associated Press



AFP/GETTY IMAGES



## HONG KONG

EPA

## 119 ARRESTED IN CIGARETTE SMUGGLING CRACKDOWN

Hong Kong authorities arrested 119 people and seized 3 million untaxed cigarettes in November 2012 after cracking down on smugglers running home delivery services of the illicit smokes.

Customs officials said smuggling groups sent fliers to residents in Hong Kong's public housing estates advertising the cut-rate smokes for order by telephone, with delivery in one to two days. One flier advertised cartons of Marlboro cigarettes at HK \$200 to HK \$240 (U.S. \$26 to U.S. \$31) per carton — less than half the typical retail price.

Wan Hing-chuen, a divisional commander at the Hong Kong Customs and Excise Department, said the crackdown on stores had forced smugglers to change their "mode of delivery."

Authorities made arrests and seizures in 96 cases from April to October 2012, Wan said. They seized 41 vehicles, including trucks involved in smuggling the cigarettes into Hong Kong from mainland China.

The seized cigarettes were worth HK \$7.2 million (U.S. \$930,000) and were liable for unpaid duties of HK \$5.2 million (U.S. \$671,000). The Associated Press



## SOUTH KOREA

# Fishing village to rival Macau

South Korea's Incheon city said it aims to transform a small fishing island off the country's west coast into a hub of tourism, shopping and gambling to rival Macau and Las Vegas.

Incheon, 28 kilometers west of the capital Seoul, hopes to attract up to U.S. \$290 billion in investments by 2030 to build casinos, hotels, auto racing tracks, a marina and pop music concert halls in its district of Yongyu-Muui.

Incheon hopes the tourism complex will lure the growing middle and upper classes from China, who are spending more on leisure and travel, and tourists from Japan. To increase its appeal to Chinese tourists, the new island will be named "EIGHTCITY" and built in the shape of an "8" after the auspicious number in China.

The 5.7 million passengers traveling through Incheon International Airport every year will also be targeted, said a project representative. The Associated Press



AFP/GETTY IMAGES

## A GREEN LIGHT FOR FOREIGN CREDIT CARDS

## BURMA



AFP/GETTY IMAGES

Burma has approved the introduction of Visa and other foreign credit cards, whose absence has been a longstanding headache for visitors. Visa, MasterCard, China UnionPay and Japan Credit Bureau have been granted permission by the finance ministry to enter the long-closed country, the state-run *New Light of Myanmar* newspaper announced in October 2012.

Due to decades of U.S. sanctions, major credit cards are not widely accepted in the country, obliging tourists and businesspeople to carry wads of cash.

But Washington opened the door to their return in 2012, easing restrictions after reforms including the release of political prisoners and the election of Nobel Peace Prize winner Aung San Suu Kyi to parliament.

MasterCard said in October that it had signed a deal with Burma's Co-Operative Bank that would pave the way for electronic payments; a move it said would have a "huge impact on tourism and travel."

Agence France-Presse



# STOPPING PROFITEERING AT TEMPLE SITES



AFP/GETTY IMAGES

## CHINA

*China is telling tourist-favored Buddhist temples: Don't let money be your mantra.*

Authorities announced a ban in October 2012 on temples selling shares to investors after leaders of several popular temples planned to pursue stock market listings for them as commercial entities. Even the Shaolin Temple of Kung Fu movie fame was once rumored to be planning a stock market debut — and critics have slammed such plans as a step too far in China's already unrestrained commercial culture.

"Everywhere in China now is about developing the economy," complained Beijing resident Fu Runxing, a 40-year-old accountant who recently went to a temple where incense was priced at 300 yuan (U.S. \$50) a stick. "It's too excessive. It's looting," Fu said.

Centuries-old Buddhist pilgrimage sites Mount Wutai in Shanxi, Mount Putuo in Zhejiang and Mount Jiuhua

in Anhui all had been moving toward listing on stock markets to finance expansions, according to state media. The government's religious affairs office called on local authorities to ban profiteering related to religious activity and told them not to allow religious venues to be run as business ventures or listed as corporate assets.

Companies that manage temple sites may be able to bypass the prohibition on listing shares simply by excluding the temples themselves from their lists of assets. A Buddhist site at Mount Emei in Sichuan already has been on the Shenzhen stock exchange since 1997, but its listed assets include a hotel, cable car company and ticket booths — not the temples, which date back several hundred years. Shanghai lawyer Wang Yun said the new prohibition was not likely to affect Emei but might make additional companies think twice before listing. The Associated Press

## Asian men pampering their skin

Asia is driving global sales of men's skin care products, with Chinese, Japanese and South Koreans the most avid users in the region, a December 2012 report on male grooming trends revealed. Consumer research group Euromonitor International said the Asia Pacific accounted for nearly 60 percent of worldwide sales of men's

skin care products, the fast-growing section of a U.S. \$33 billion male grooming industry.

"As features from women's skin care are replicated in male-specific products, an array of products targeting issues from aging and blemishes to brightening has become available," according to the report.

Euromonitor said the global market for male grooming products has plenty of room for expansion, with average growth over the past five years at only 6 percent. By 2016, the Asia Pacific will be the second-biggest contributor to growth in the category after Latin America, Euromonitor said.

Agence France-Presse



# INDONESIA PASSES



AFP/GETTY IMAGES

## *anti-terrorism* FUNDING BILL

THE ASSOCIATED PRESS AND AGENCE FRANCE-PRESSE

**I**ndonesia's parliament has passed a bill aimed at cracking down on terrorism by freezing suspicious financial transactions domestically and abroad. The bill was approved in February 2013 in a plenary session of the 550-seat house.

Deputy Speaker Priyo Budi Santoso, who presided over the session, noted the bill's importance in emphasizing Indonesia's position in the world's battle against terrorism. The bill obliges banks and other financial service operators to report any suspicious transactions to the government agency that fights money laundering. The Financial Transaction Reports and Analysis Center then has the power to freeze and confiscate bank accounts and assets.

Indonesia has been battling terrorists since the 2002 bombings on the resort island of Bali that killed 202 people, mostly foreign tourists.

Just weeks before the legislation passed, police discovered a stash of more than 20 homemade bombs in central Indonesia after uncovering plots to attack tourist destinations in the region. Anti-terror police found bombs, explosive materials, detonators, nails and books on jihad in raids on the island of Sulawesi, where police have reported increased militant activity in recent months.

"A total of 20 pipe bombs and a 16-kilogram bomb housed in three Tupperware containers

stuck together were found," national police spokesman Boy Rafli Amar said in January 2013, adding that the raids took place in the southern district of Enrekang. Police said interrogations of suspected militants revealed several men in the group had been trained to assemble bombs, and two of them were still at large, according to Amar.

Authorities shot dead seven terror suspects and arrested four in raids in January 2013 on Sulawesi and Sumbawa islands, where the men were allegedly planning to attack holiday spots. An additional 75 kilograms of explosive materials were found in raids in five locations around the popular tourist town of Tana Toraja, one of the suspected targets.

Police said the suspects were connected to a militant training camp and had been involved in killings of several police in central Sulawesi's Poso district, a known hotbed of militant activity.

Indonesian authorities have strengthened security in Poso since late 2012 after two police officers investigating a camp were found with their throats slit. Several small bomb plots were subsequently foiled.

A crackdown on terrorism has weakened the al-Qaida-linked group Jemaah Islamiyah and key militant groups, and only low-impact attacks have been carried out in recent years by networks targeting law enforcement officers.

**Indonesia's maritime anti-terror special forces participate in a drill on the resort island of Bali in November 2012.**







# STOPPING WMD TRAFFIC

**MILITARY  
AND CIVILIAN  
FORCES  
COOPERATE  
TO CLOSE THE  
PHILIPPINES'  
"BACK DOOR"**

**Dr. Imes Chiu**

A Filipino policeman wears a chemical protection suit during an anti-terrorism drill in Camp Bagong Diwa, Taguig City, south of Manila. EPA



**T**he porous southern Philippines archipelago presents a challenge to military and security officials in preventing the smuggling of weapons of mass destruction (WMD) through the region. Some experts fear the use of Mindanao as the “Philippine back door” for WMD trafficking, proliferation and dissemination of WMD-related expertise.

With Philippine President Benigno Aquino III’s Internal Peace and Security Plan, known locally as “Oplan Bayanihan,” the Armed Forces of the Philippines (AFP) finds itself refocusing on maritime security and territorial defense while transitioning the responsibility of enforcing the internal security of conflict-prone areas to the Philippine National Police. Among its initiatives, the AFP is targeting Mindanao.

The AFP’s Office of Strategic and Special Studies first alerted Philippine policymakers of the danger of Mindanao becoming a WMD conduit in a 2006 book by Raymund Jose G. Quilop, a professor at the University of the Philippines, titled *Weapons of Mass Destruction: A Challenge to Global and Regional Security*.

In the foreword, then-AFP Chief Brig. Gen. Oscar Randy S. Dauz advocated the state’s role in eliminating and interdicting WMD materials to defense policymakers and military leaders. Quilop’s book, a collection of articles to advance discussions on effective mechanisms for managing WMD proliferation, urged greater international coordination of regional state actors to defeat the network of black marketers who could potentially serve as the infrastructure for transit of WMD materials.

More recently, the U.S. State Department’s “Country Reports on Terrorism 2011,” published by the Office of the Coordinator for Counterterrorism in July 2012, sparked a flurry of Philippine media reports warning of the potential for terrorists to establish WMD smuggling routes through Mindanao. The U.S. State Department highlighted the challenges of monitoring illicit activities in the rugged and extensive terrain of the Sulu Archipelago and the vicinity of the Sulawesi Sea in particular. Terrorist groups, such as Abu Sayyaf, have exploited networks there traditionally used for smuggling, human trafficking and piracy to move personnel, equipment and funds. High traffic in the region due to global trade paired with Mindanao’s weak governance makes the province ripe for exploitation. Long-standing violence, frequent natural disasters and high levels of poverty exacerbate the risk. The feeble justice system further emboldens criminals to prey on the area.

## MUCH WORK ALREADY DONE

However, Quilop’s AFP-sponsored book had already instigated regional action on this front. The same year the book was published, Australia hosted a three-day workshop in Manila to teach Philippine security and law enforcement agencies how to screen for WMD-related materials, news agencies reported.

About 50 representatives from the coast guard, customs and immigration, and other officials from the Philippines trade, agricultural, security and law enforcement agencies attended the export control workshop in 2006 and created a list of about 4,000 controlled substances, including equipment and materials with dual uses such as carbon fibers and dry freeze. “The dry-freeze equipment for making instant coffee could be easily used to preserve bacteria for a major biological attack,” explained Gen. Florencio Fianza, a retired police general and



Philippine Army troops maneuver armored infantry fighting vehicles in Datu Saudi Ampatuan, Maguindanao province, in August 2012. An extremist group targeted 11 towns in the province earlier that month, opening fire at Army outposts and cutting electric posts with chainsaws. EPA

special envoy on transnational crime.

Gen. Fianza, who later championed the establishment of a comprehensive legislation to prevent proliferation of WMD-related materials and illicit arms, said, “We really have to harden our government, our systems and our regulations to prevent, control and stop the spread of weapons of mass destruction.”

Pablo Kang, then deputy head of mission and counselor of the Australian Embassy in Manila from 2006 to 2008, expressed concern to Reuters regarding terrorists using WMD: “We are trying to enforce tighter export control regimes to help countries



develop their own systems so that terrorists' use and access to weapons of mass destruction is cut down. ... There are a lot of materials that could be used to make weapons of mass destruction, so we'll make sure that we have the right export control regimes. If these materials fall into the wrong hands, we'll have a much more dangerous world."

In March 2007, Canada provided the first set of protective suits for chemical, biological, radiological, nuclear or high-yield explosive (CBRNE) attacks to the Philippines. The donation of the 300 WMD outfits came with a training package. Canadian authorities trained Filipino Soldiers, policemen from the elite Special Action Force and firefighters on the use of CBRNE equipment.

Defense Secretary Hermogenes Ebdane Jr. described the event as a "major step forward." It was the first time the Philippines received a CBRNE-related equipment and training package from a

of Investigation, Philippine National Police Special Action Force and the Philippine General Hospital. CBRNE issues in the Philippines are now directly linked with national disaster response preparedness, including those involving WMD-related calamities.

In 2008, the Trilateral Interagency Maritime Law Enforcement Working Group was charged with promoting better coordination for executing interdiction missions, domain awareness and maritime security in the peninsular Southeast Asia. The working group countries included Malaysia, Indonesia and the Philippines, which aim to stop the illicit arms trade and unmanned delivery of WMD. A formalized legal framework for controlling trade in dual-use goods passed in the lower house of the Philippine Congress a year later.

Weapons of Mass Destruction Non-Proliferation and Strategic and Dual-Use Goods and Items Regulation Act of 2009 prevents "the proliferation



**Personnel from Filipino Explosive Ordnance and Disposal units collect evidence after a car bombing in July 2012 in General Santos City in the southern Philippines.** EPA



**Philippine police officers participate in a mock assault during an anti-terrorism drill in Pasay City, south of Manila, in November 2012.** EPA

foreign country.

A year later, Canada donated another 300 CBRNE protective suits to Defense Secretary Gilberto Teodoro Jr., chairman of the National Disaster Coordinating Council, at Camp Aguinaldo. Many Philippine agencies received their own protective gear, including the Armed Forces of the Philippines Special Operations Group, Bureau of Fire Protection, Department of Health, Environmental Management Bureau, Philippine Nuclear Research Institute, Philippine Coast Guard, Manila International Airport Authority, Philippine Port Authority, Metro Manila Development Authority, National Bureau

of weapons of mass destruction by regulating the import, export, re-export, transit, transshipment and re-transfer of strategic goods, services or technology containing nuclear, chemical or biological weapons" through licensing goods, items and technologies listed in the National Control List, which began in 2006 with Australia's three-day workshop in Manila.

Since passing the act, the Philippines has actively supported the United Nations' initiatives to eliminate WMD around the world. Meanwhile, in the region, the trilateral working group has helped the Southeast Asian maritime countries achieve improvements due to joint efforts and patrols of shared boundaries through the

U.S.-funded Coast Watch South radar network.

In September 2011, President Aquino expanded the network by establishing the National Coast Watch Center (NCWC) to encourage a unified approach through interagency coordination in managing maritime issues and domain awareness. On September 6, Aquino signed Executive Order 57, aimed at defending the Philippines from maritime threats. The order stood up the National Coast Watch System (NCWS), a joint initiative of the Department of National Defense and the Armed

Forces of the Philippines. Also participating in the center are the Philippine Departments of Transportation and Communications, National Defense, Foreign Affairs, Interior and Local Government, Justice, Energy, Finance, Environment and Natural Resources.

Philippine Executive Secretary Paquito Ochoa Jr. viewed the NCWS as the “central inter-agency mechanism for a more coordinated approach on maritime issues and maritime security operations to enhance governance of the country’s maritime domain,” PhilStar.com reported. The order effectively abolished the Commission on Maritime and Ocean Affairs created in 2007. Ochoa further stated that the new executive order “harmonizes the policies, programs and activities on intelligence work, border control, interdiction and law enforcement of several government agencies such as the Philippine Navy, the Philippine Coast Guard and the Philippine National Police-Maritime Group, among others, for better maritime governance.”

To carry out the goals of the NCWS, the U.S. pledged to help its ally build the NCWC to implement and coordinate maritime security operations under the new system. The center will improve Philippine maritime domain awareness on issues related to countering the proliferation of WMD and illegal smuggling, U.S. Maj. Catherine Wilkinson, a Pentagon spokeswoman, told Agence France-Presse in June 2012.

U.S. support for the center became evident during President Aquino’s meeting with U.S. President Barack Obama in the White House on June 8, 2012. That September in Manila, the U.S. Defense Threat Reduction Agency conducted the first series of Philippine senior executive seminars on maritime domain and weapons of mass destruction awareness. Participants created a “road map” for protecting the nation’s coasts.

In October 2012, the Philippine Coast Guard (PCG) and United States Coast Guard conducted a maritime law enforcement instructor development course focusing on anti-terrorism in which the PCG learned new ways to detect and interdict the delivery system of WMD, including advanced conventional weapons and other related materials.

Two weeks after the training, U.S. Sen. Richard Lugar arrived in the Philippines to meet President Aquino and Foreign Affairs Secretary Albert del Rosario on a WMD reduction drive. President Aquino shares a bond with Lugar because the U.S. lawmaker led a team of foreign observers during the snap election between the

**“We really have to harden our government, our systems and our regulations to prevent, control and stop the spread of weapons of mass destruction.”**

— Gen. Florencio Fianza



**An airport police K-9 unit inspects baggage at Manila International Airport in November 2010. Military and civilian officials are working together to prevent WMD trafficking.**

AFP/GETTY IMAGES





Philippine and U.S. Navy and Coast Guard teams practice maneuvers during Cooperation Afloat Readiness and Training, an interoperability exercise, in July 2012. EPA

late dictator Ferdinand Marcos and Aquino's mother, Corazon Aquino, who in 1986 became the first female president of the Philippines.

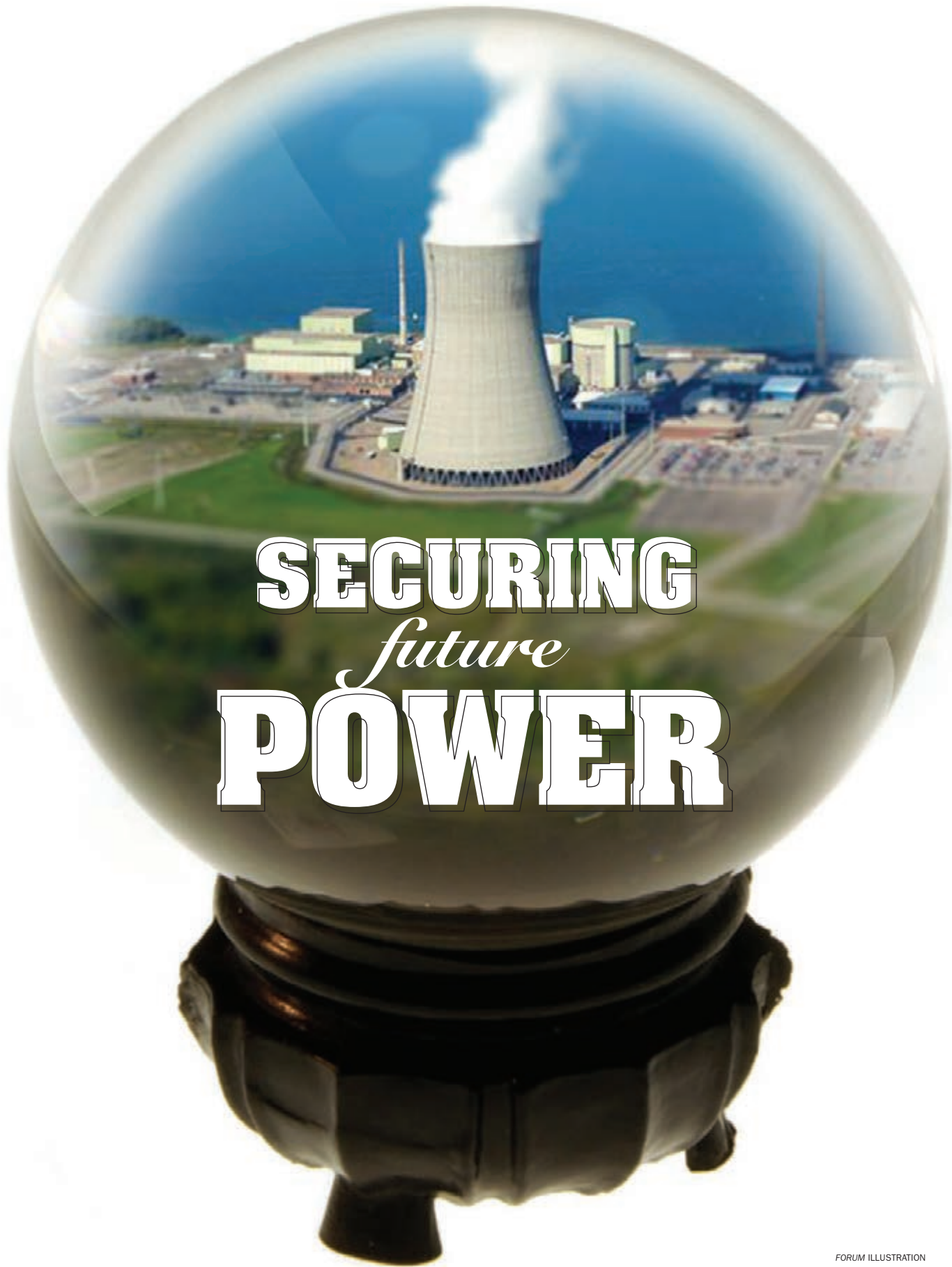
The PCG had previously trained in January 2012 with the U.S. Coast Guard on detecting explosives hidden in ships. "The goal is the nonproliferation of WMDs, conventional firearms, explosives, hazardous and dangerous commodities," said Lt. Cmdr. Marco Antonio Gines, head of PCG-Special Operations Group and Anti-Terrorism Unit. He suspects WMD-related materials and similar devices are being smuggled piecemeal or as raw materials in and out of the country.

The PCG is authorized to board and search a vessel at sea without a search warrant as long as the PCG has information on the presence of an illegal substance or an irregularity. Lt. Cmdr. Gines also said that selected students attended the advance boarding course as well as received training on radio encryption using the encrypted radio donated by U.S. Export Control and Border Security.

### CREDIT TO PHILIPPINE INITIATIVES

Although efforts to counter WMD in the Philippines seem to be a relatively new phenomenon, their roots go further back than many realize. Key officers in the AFP had already begun talking about WMD well before Western nations started engaging the Philippines in joint counter-WMD training and surveillance. The government enacted laws specifically focused on countering WMD. It incorporated interdiction training and the use of counter-WMD equipment as part of its security forces daily routine. The Philippines also actively engages in international relations dealing with counter-WMD programs.

Key Philippine leaders in the public and academic realms have emerged as champions of countering WMD in the country. Although recent efforts seem to be making headlines, the quiet advocates who have been working toward keeping the Philippines safe and secure should be praised and credited for their prescient leadership. □



FORUM ILLUSTRATION



## **As the use of nuclear energy expands globally, nations are implementing better health and safety standards and guarding against proliferation**

FORUM STAFF

**A**s countries across Asia and throughout the world continue their quest for modern sources of energy, nuclear power often sits at the top of the list for viable alternatives to oil. In some cases, it's even more desirable than renewable energy sources such as wind or solar.

Yet the realm of nuclear energy consists of polarizing ideologies as vast and evolving as cyberspace. Opponents argue that the risks outweigh nuclear's positive potential to power the future. Supporters say that with the proper guidelines and training, it's an asset that simply can't be ignored.

Those who believe in nuclear power typically promote that it has low operating costs, depends on uranium instead of oil and is a cleaner source in terms of air pollution. On the opposite end, it has high construction costs, produces potentially dangerous waste and creates a harmful work environment without proper safeguards (including being a terrorist target).

Such point-by-point pros and cons appear to only fuel the desire to prove that nuclear power generation can be done and done responsibly, particularly in Asia, where experts project the greatest increase in nuclear power will be in China, India and South Korea. In East and South Asia, 117 nuclear power reactors are in operation, 44 remain under

construction, and there are "firm plans" to build an additional 90 with even more proposed, according to October 2012 data from the World Nuclear Association.

"Long term, we cannot reject the possibility of looking at nuclear," Idris Jala, a minister in the prime minister's office in Malaysia, told *The New York Times* newspaper in November 2011, adding that there shouldn't be an adverse, knee-jerk reaction to the Fukushima Daiichi disaster in Japan. "We need to put a cool cover on our head and ask the question, 'How might we deal with nuclear technology in a manner that is safe?' Then, we can distribute energy much more cheaply using nuclear."

### **Voluntary Regulation**

The world's major suppliers of civilian nuclear power plants have agreed to a set of operating standards called the Nuclear Power Plant Exporters' Principles of Conduct. Though they carry no legal parameters, these guidelines establish procedures for negotiating export contracts, designing facilities and engaging customers. The principles also address standards for safety, nonproliferation and environmental protection, among other areas.

"The impulse to create a nuclear security gold standard is understandable. Obtaining fissile material is the greatest barrier preventing al-Qaida and other terrorist groups from attaining a nuclear weapon," William Tobey, a senior fellow





AFP/GETTY IMAGES

**Commission members from Japan's Nuclear Regulation Authority inspect a fault zone near the country's only working nuclear power plant, the Kansai Electric Power Co.'s Oi Nuclear Power Plant in Fukui prefecture, in December 2012.**

at the Harvard Kennedy School's Belfer Center for Science and International Affairs, writes in a March 2012 working paper titled "Building a Better International Nuclear Security Standard." "Moreover, the security chain preventing terrorists from buying or stealing such material is only as strong as its weakest link. Thus, all states — and particularly states that might be targeted by terrorists — have an abiding interest in establishing uniformly high standards for securing nuclear materials, wherever they are kept."

The Principles of Conduct were born from a meeting of civilian nuclear power plant vendors and nuclear experts who first met in October 2008 at the behest of the Carnegie Endowment for International Peace. Participants held the belief that nuclear played an important role in future energy provisions for many countries, making it imperative that responsibility guidelines were created. Companies that have agreed to the principles include AREVA, Atomstroyexport, Candu Energy, GE Hitachi Nuclear Energy, Hitachi-GE Nuclear Energy, Ltd., Korea Electric Power Corp., Mitsubishi Heavy Industries (including Mitsubishi Nuclear Energy Systems), Toshiba, Westinghouse Electric Co. and ATMA (an AREVA-Mitsubishi joint venture).

"The Principles of Conduct are intended to promote free and fair competition in the market for nuclear power plants and to enhance the likelihood that the global development of nuclear energy will proceed safely, securely and in an environmentally sustainable manner," according to the website NuclearPrinciples.org.

The principles have been designed to constantly be reviewed and updated as needed, including necessary adjustments as new lessons emerge from incidents

such as the Fukushima nuclear disaster and aftermath. The principles are strictly voluntary and have no legal binding or repercussions. (The U.N. International Atomic Energy Agency also has a set of nuclear safety standards that lay out advisory guidelines but create no legal obligation.)

The six Principles of Conduct include detailed ideologies involving:

- Safety, health and radiological protection
- Physical safety
- Environmental protection and the handling of spent fuel and nuclear waste
- Compensation for nuclear damage
- Nonproliferation and safeguards
- Ethics

"The Principles of Conduct reflect a recent trend in the management of global challenges. Leading industries, including those in the oil and gas, apparel and pharmaceutical sectors, increasingly have recognized the value of their reputations as socially responsible actors to their long-term business success," NuclearPrinciples.org states in a section about corporate responsibility. "Growing awareness of the business risks that can arise when global companies do not meet society's expectations regarding their environmental and social performance led these major industries to establish shared norms of self-regulation. These industries have committed to apply such norms even when not legally required to do so, because the industry participants do well by doing the right thing."

### **Nuclear Variables**

Some spectators see China on a fast-paced course to develop clean, inexpensive and safe nuclear power



through energy from thorium, a naturally occurring radioactive chemical element that's more abundant than uranium.

"China is the country to watch," Baroness Bryony Worthington, head of the All-Parliamentary Group on Thorium, told *The Telegraph* newspaper in January 2013. "They are really going for it and have talented researchers. This could lead to a massive breakthrough."

Not to be left behind, Japan's International Institute for Advanced Studies is also experimenting with thorium. The Japanese have begun a partnership with Norway's Thor Energy to explore thorium's potential, according to *The Telegraph*. Japan's pursuit of thorium technology has some wondering whether thorium exploration represents some of the "new technology" that Japanese Prime Minister Shinzo Abe alluded to when announcing U.S. \$116 billion in emergency stimulus spending for Japan's economy.

"Not only is thorium thought to be three to four times more abundant than uranium, cleaner, safer, and vastly more powerful, but it also has byproducts that — rather than killing people — could save lives," according to a January 2013 *Business Insider* news article.

The same report warns of thorium's dangers, saying it could be used as a weapon of mass destruction if converted to weapons-grade U-233 by using standard laboratory equipment.

According to *Business Insider*, researchers suggest "this would be extremely hard to trace — which makes the development of such a weapons system a potential goal for terrorist organizations, or more likely, an unruly nation-state."

### A Cautious Approach

Some countries are more cautious about joining the nuclear power race, taking care to evaluate whether it's an acceptable solution their people will support.

"We're looking at it on a long-term basis. We're counting on [nuclear as an option]," Philippine Energy Secretary Carlos Jericho L. Petilla told Asia News Network. "At the same time, we have to look at the technical side, and then recommend later on if studies show that it's good for the country," Petilla said, adding that the social dynamic of nuclear energy has hindered the Philippine government from moving forward too fast.

"In the end, however, we always have to [consider] social acceptability," Petilla told the news agency. "One thing I can guarantee, nuclear power will have a level playing field, but we just need to take into account social acceptability."

Other countries such as Singapore aren't satisfied that technology has advanced enough to consider nuclear energy as an alternative energy source.

"The risks to Singapore, given that we are small and dense, still outweigh the benefits at this point," Singapore's Second Minister for Trade and Industry S Iswaran said in October 2012, according to Channel NewsAsia. "As we are planning for the very long term and not for our immediate energy needs, we prefer to wait for technology and safety to improve further before reconsidering our options. Over time,

**A South Korean woman looks at a diagram at the Seoul Science Park showing how uranium can be used as a nuclear bomb or to generate nuclear power.**



THE ASSOCIATED PRESS

### THE INTERNATIONAL ATOMIC ENERGY AGENCY

has developed an assessment for countries interested in developing nuclear power known as the Integrated Nuclear Infrastructure Review. The process involves a list of 19 areas considered the "Milestones Approach" for developing a nuclear power plant. Among the things discussed during the assessment:

- National position
- Nuclear safety
- Management
- Funding and financing
- Legislative framework
- Safeguards
- Regulatory framework
- Radiation protection
- Electrical grid
- Human resources development
- Stakeholder involvement
- Site and supporting facilities
- Environmental protection
- Emergency planning
- Security and physical protection
- Nuclear fuel cycle
- Radioactive waste
- Industrial involvement
- Procurement

Source: International Atomic Energy Agency



AFP/GETTY IMAGES

**Anti-globalism activists perform in front of the headquarters of Tokyo Electric Power Co. in October 2012 to denounce the Japanese government's nuclear power plan.**



AFP/GETTY IMAGES

**A man casts his vote in Japan's general elections in December 2012 at a polling station in Tokyo. Some 78 percent of people who voted said they wanted nuclear power to end now or to be phased out.**

nuclear power plants with safer and more robust designs will be developed.”

The Singaporean government intends to support nuclear science research and train experts on the topics. The country has also vowed to participate in regional cooperative efforts on nuclear safety.

“It is also important to track related developments in areas such as emergency response and radioactive waste disposal,” Iswaran told Channel NewsAsia. “Then we can assess the implications of evolving nuclear energy technologies and regional nuclear energy developments for Singapore. This will also strengthen our operational preparedness and our existing capabilities in radiation and incident response.”

### Obtaining the Right Information

The U.N. International Atomic Energy Agency (IAEA) has served as the “world’s center of cooperation” on nuclear power for more than five decades, working with member states and their partners to promote safe, secure and peaceful nuclear technologies. As countries decide to initiate a nuclear power program, the IAEA has what it calls the Integrated Nuclear Infrastructure Review (INIR) program that aids in crafting a plan. The assessment involves 19 infrastructure issues known as the “Milestones Approach.” (See sidebar on Page 19.) It ranges from being clear about a government’s national stance on nuclear power to securing items and services needed to operate a nuclear power plan to emergency planning.

“By providing a comprehensive assessment of all facets of a nuclear power program, spanning the regulatory body, utility and all relevant government stakeholders involved, INIR is a valuable tool for promoting transparency and openness,” according to the IAEA’s January 2013 nuclear power newsletter.

During an IAEA conference in December 2012 held in Japan’s Fukushima prefecture, the nuclear community rallied around a nonbinding agency plan to strengthen the global nuclear security framework.

“The actions of the IAEA in pursuing the action plan on nuclear safety and, in fact, this very conference attest to the seriousness of the world nuclear community in seeking to maximize learning from the Fukushima Daiichi accident,” said Mike Weightman, the U.K.’s chief inspector of nuclear installations. Weightman facilitated a session on lessons learned from the Fukushima accident, according to a December 2012 report by the IAEA. “All of this is based on a fundamental approach to nuclear safety, namely, that of continuous improvement. No matter how high the standards, the quest for improvement must never cease.” □





# Practice Makes Perfect

South Korea holds regular civil defense drills as preparation for an attack from the North

AGENCE FRANCE-PRESSE

**S**irens blare across the South Korean peninsula, and traffic comes to a complete halt. Pedestrians seek the nearest shelter, choosing underground bunkers where available. Then for the next 15 minutes, everyone waits — until the final siren signals that life can resume as normal.

South Korea holds these regular drills to train its people how to respond in the event of a chemical, biological, nuclear or other attack from North Korea. South Korea's National Emergency Management Agency (NEMA) administers the exercises commonly known as civil defense drills, even mobilizing fighter jets at times during the drills to simulate air strikes by the North.

South Korea, which has remained technically at war with the North for six decades, usually conducts such drills several times a year. They had been widely ignored until recently.

On this day, residents were ushered to basements and advised on handling gas masks and other emergency kit supplies. Similar sessions were staged at several Seoul subway stations.

In the border city of Paju, about 200 residents, police, Soldiers and firefighters trained in how to combat a North Korean chemical attack. Residents wearing gas masks moved to underground apartment parking lots.

People at one Seoul station acknowledged the need for civil defense, but several said it was hard to take it seriously in the heart of a gleaming modern city.

"If war breaks out, none of these drills are going to help much unless they are very realistic," businessman Choi Duk-Soo said. Choi said the exercises should be made more realistic, with people told to wear gas masks.

Public Administration and Security Minister Maeng Hyung-Kyu acknowledged previous exercises had been perfunctory. "The government will no longer tolerate any fresh provocations by North Korea, and we should be well prepared for contingencies," he said.

**Spectators take pictures of someone pretending to be a victim during a civil defense drill in South Korea.**

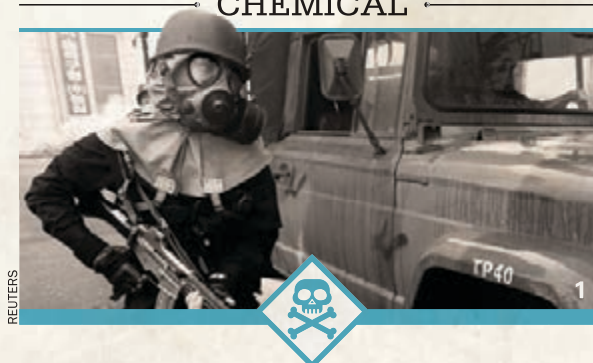
# WEAPONS *of* TERROR GLOSSARY



FORUM STAFF

**W**hether deliberate or unintentional, a chemical, biological, radiological, nuclear or high-yield explosive (CBRNE) event can strike fear in the community and surrounding area where it occurs. The delivery and impact vary agent to agent, but the end result for each remains the same: a public disruption that should prompt authorities to improve their plan for responding to such incidents and strive harder to prevent them. It's important for first responders to not only be able to identify the type of attack or accident that has occurred but also to have the knowledge and skills to contain the threat and remove the public from danger. What follows is a look at each CBRNE agent and its impact.

## CHEMICAL



- **Impact:** Chemical agents can kill, seriously injure or incapacitate people by causing sickness or trouble breathing. They can also destroy livestock and agriculture, thereby hurting a local economy. Emergency responders, including police, fire, hazardous materials teams and hospital personnel, should be equipped and ready to respond immediately to a chemical incident.
- **Delivery:** Typical plots for disseminating chemical agents focus on poisoning foods or spreading the agent on surfaces to poison through skin contact. However, other techniques may include using aerosol devices or sprayers.
- **Examples:** Choking agents (cyanide); blood agents (hydrogen chloride); nerve agents (sarin); blister agents (mustard) and tear gas
- **Effect:** Chemical attacks usually have an immediate effect or are delayed for only a few hours.

## NUCLEAR



- **Impact:** Unlike a dirty bomb, which disperses radioactive material using conventional explosives, nuclear attacks use a device that produces a nuclear explosion. A nuclear explosion is caused by an uncontrolled chain reaction that splits atomic nuclei (fission) to produce an intense wave of heat, light, air pressure and radiation, followed by the production and release of radioactive particles. For ground blasts, these radioactive particles are drawn up into a "mushroom cloud" with dust and debris, producing fallout that can expose people at great distances to radiation.
- **Delivery:** A nuclear terrorist attack might be carried out with an improvised nuclear device, often built from the components of a stolen weapon or from scratch using nuclear material.
- **Examples:** Plutonium or highly enriched uranium
- **Effect:** Immediate impacts are usually announced with a huge fireball and mushroom cloud. The ionization of the atmosphere around the blast can result in an electromagnetic pulse (EMP) that, with ground detonations, can drive an electric current through underground wires, causing local damage. For high-altitude nuclear detonations, an EMP can cause widespread disruption to electronic equipment and networks.



## BIOLOGICAL



REUTERS

- **Impact:** Biological agents can spread fast and cause high casualties. Unlike chemical attacks, there may be a delay between contact from a biological agent and seeing the effects through symptoms.
- **Delivery:** Spray devices disseminating biological warfare agents have the highest potential impact. Mohammad Atta and Zacharias Moussaoui, the leaders of the September 11, 2001, attack, both expressed interest in crop-dusters, raising concern that al-Qaida had considered using aircraft to disseminate biological warfare agents, according to the U.S. Central Intelligence Agency.
- **Examples:** Bacteria (anthrax); viruses (dengue fever, Ebola or smallpox); toxins (botulinum or ricin)
- **Effect:** Effects of a biological attack may not show for several hours or several weeks, depending on the type of pathogen involved.

## HIGH-YIELD EXPLOSIVE



GETTY IMAGES

- **Impact:** Conventional high-yield explosive devices, such as bombs, can be used to disperse chemical, biological or radiological agents. Components and instructions for improvising such a device are typically easily obtained on the Internet. Using these devices in attacks carries the potential for fires.
- **Delivery:** Many commonly available materials, such as fertilizer, gunpowder and hydrogen peroxide, can be used as explosive materials in improvised explosive devices. Explosives must contain a fuel and an oxidizer, which provides the oxygen needed to sustain the reaction.
- **Examples:** Highly explosive materials include dynamite, ammonium nitrate fuel oil solution and potassium chlorate.
- **Effect:** There's an immediate impact that may cause buildings and infrastructure to crumble and shrapnel to injure bystanders.

## RADIOLOGICAL



AFP/GETTY IMAGES

- **Impact:** A radiological dispersion device, also known as a dirty bomb, combines conventional explosives, such as dynamite, with radioactive materials in the form of powder or pellets. The idea behind a dirty bomb is to blast radioactive material into the area around the explosion. This could possibly cause buildings and people to be exposed to radioactive material. The main purpose of a dirty bomb is to frighten people and make buildings or land unusable for a long period of time.
- **Delivery:** The dirty bomb can be almost any size, limited only by the amount of radioactive material and explosives used to create it. Because radiation cannot be seen, smelled or tasted, those who are potentially contaminated by a dirty bomb explosion should wash their bodies as completely and thoroughly as possible to reduce total exposure and follow other instructions from authorities.
- **Examples:** Radioactive materials include Cesium-137, Strontium-90 and Cobalt-60. Hospitals, factories and construction companies are often sources of such materials.
- **Effect:** Immediate injuries from a dirty bomb would probably occur from the heat, debris, radiological dust and force of the conventional explosion used to disperse the radioactive material, affecting only people close to the site. At the low radiation levels expected from a radiological dispersion device, the immediate health effects from radiation exposure would likely be minimal.

**1** A policeman in Seoul, South Korea, runs from a truck during a civil defense drill in August 2011 in preparation for a possible chemical attack by North Korea.

**2** A North Korean military vehicle carries what is believed to be a Taepodong-class Intermediary Range Ballistic Missile during a parade in Pyongyang in April 2012. Despite sanctions, the rogue state has continued to pursue its nuclear weapons program.

**3** Citizens walk by policemen standing guard in Seoul, South Korea, during an anti-chemical and biological terrorism drill in preparation for a possible attack from North Korea.

**4** Thai bomb squad officials inspect the site of an explosion in Bangkok in February 2012. Three minor blasts rattled the Thai capital, leaving a foreigner seriously wounded when a grenade he was suspected of carrying exploded, police said.

**5** A Thai Soldier helps clean off a colleague during the chemical, biological, radiological, nuclear and high-yield explosive training as part of Exercise Cobra Gold in February 2012.

Sources: U.S. Central Intelligence Agency, U.S. Army Combined Arms Center, the National Terror Alert Response Center, U.S. Department of Homeland Security, the Air University



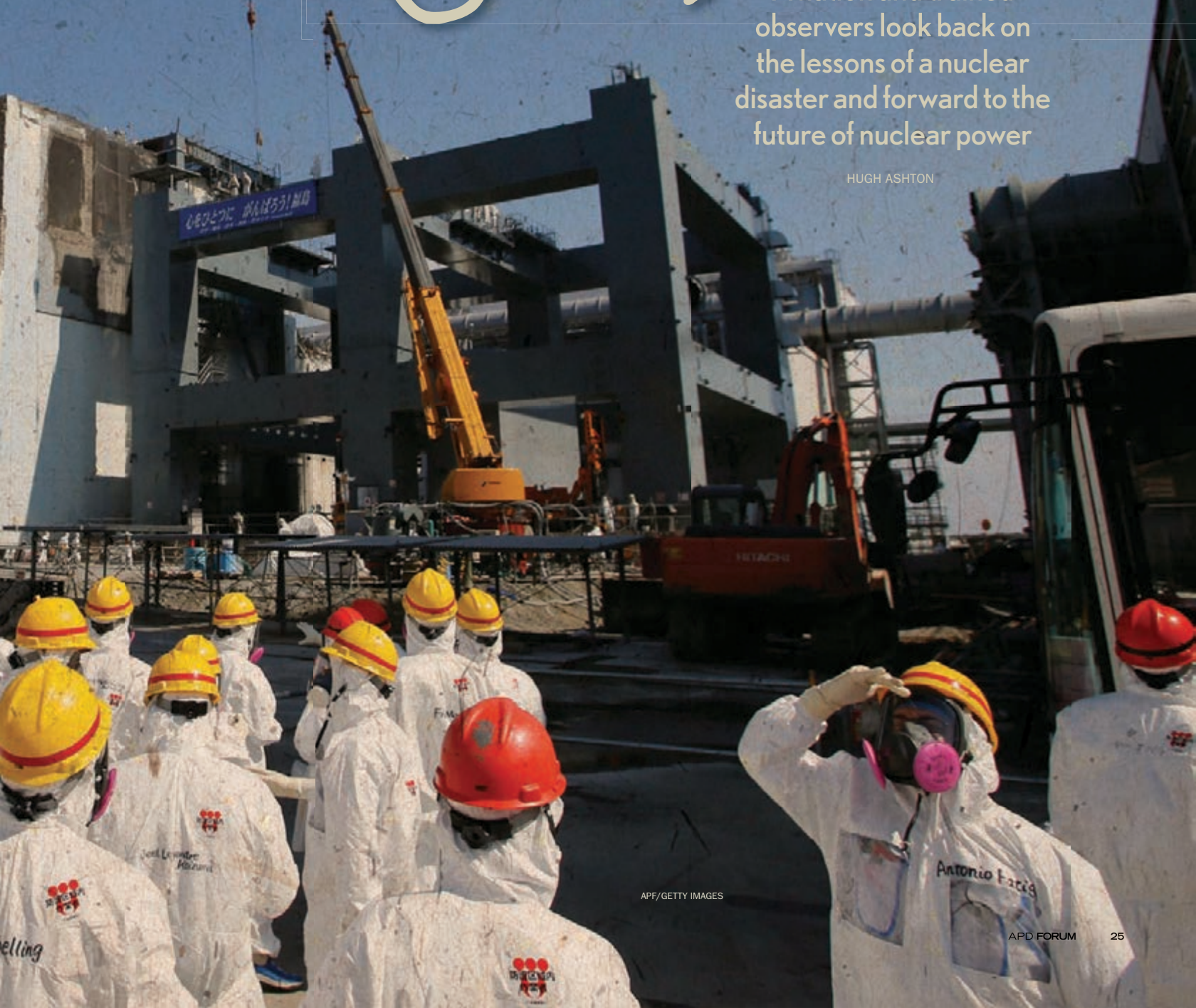




# FUKUSHIMA DAIICHI *in Retrospect*

A nation and trained observers look back on the lessons of a nuclear disaster and forward to the future of nuclear power

HUGH ASHTON

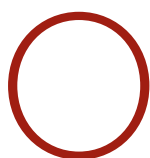


APF/GETTY IMAGES

APF FORUM

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On the drizzly afternoon of October 2, 2012, the Japan Atomic Energy Agency (JAEA) dispatched an unmanned helicopter to Futaba, a town located three kilometers from the Fukushima Daiichi Nuclear Power Station. Its mission, according to JAEA, was to monitor radioactive materials in the soil and its change over time.

Takeo Torii, the helicopter's developer, explained to reporters gathered for the event that the use of manned aircraft near the plant was restricted but that his helicopter faced no such restrictions. "With the unmanned helicopter," Torii said, "air dose rates and radioactive cesium deposition over the areas within the three-kilometer radius can be measured exhaustively." The findings and analyses of the helicopter team's seven-day mission were then compiled and shared with the International Atomic Energy Agency and other authorities for use in ongoing cleanup efforts.

The Fukushima Daiichi nuclear power plant disaster that followed the largest-recorded earthquake to hit Japan on March 11, 2011, is still providing lessons to the world on how to prevent, prepare and respond to such calamities. Meanwhile, Japan, led by its new Prime Minister Shinzo Abe, and many other nations are crafting future nuclear energy policies.

The quake, which measured 9.0 on the Richter scale and struck off the northern coast of Honshu, the country's main island, generated a 40-meter-high tsunami. The destructive duo left more than 20,000 people dead or missing and destroyed or damaged nearly 200,000 buildings, according to Japan International Broadcasting. The Fukushima Daiichi nuclear power plant operated by Tokyo Electric Power Co. (TEPCO) headlined the wreckage.



**The Japan Atomic Energy Agency flew this unmanned helicopter in October 2012 to survey aerial radiation levels in the three-kilometer radius, no-fly zone over the Fukushima Daiichi power station.**

THE ASSOCIATED PRESS

## HOST COUNTRY-LED COORDINATION

Within minutes of the earthquake's strike, the Japan Self Defense Force (JSDF) had set up a disaster response headquarters in the country's Ministry of Defense, and within days, the JSDF had mobilized approximately 107,000 personnel, 540 aircraft and 59 vessels, according to Ministry of Defense reports. The JSDF accounted for 70 percent of all quake-related rescues, about 19,000 of 27,000 in total. In addition to helping evacuate, clearing transportation arteries, and providing food, hygiene products and medical care, the JSDF played a vital role in containment and cleanup efforts at the nuclear power plant and in affected areas, as chronicled by Japan's National Institute for Defense Studies in early 2012.

Japan immediately asked for assistance from foreign search and rescue teams, specifically from Australia, New Zealand, South Korea and the United States, according to a Reuters account. Teams from 45 countries offered aid.

Within six days of the quake, a three-reactor meltdown occurred. Tsunami waters flooded emergency generators, and plant cooling systems crashed. This caused the release of massive amounts of radioactive cesium-135 into the atmosphere, which blew inland and forced the evacuation of up to 160,000 residents.

As plant personnel evacuated, JSDF helicopters and fire trucks descended on the disaster site on March 17, 2011, to cool the reactors' superheated spent fuel rods. Civilian firefighters soon came to the scene and augmented their efforts, eventually stabilizing the situation. By this time, however, much air, water and ground soil had been contaminated, setting the stage for more delicate cleanup operations.

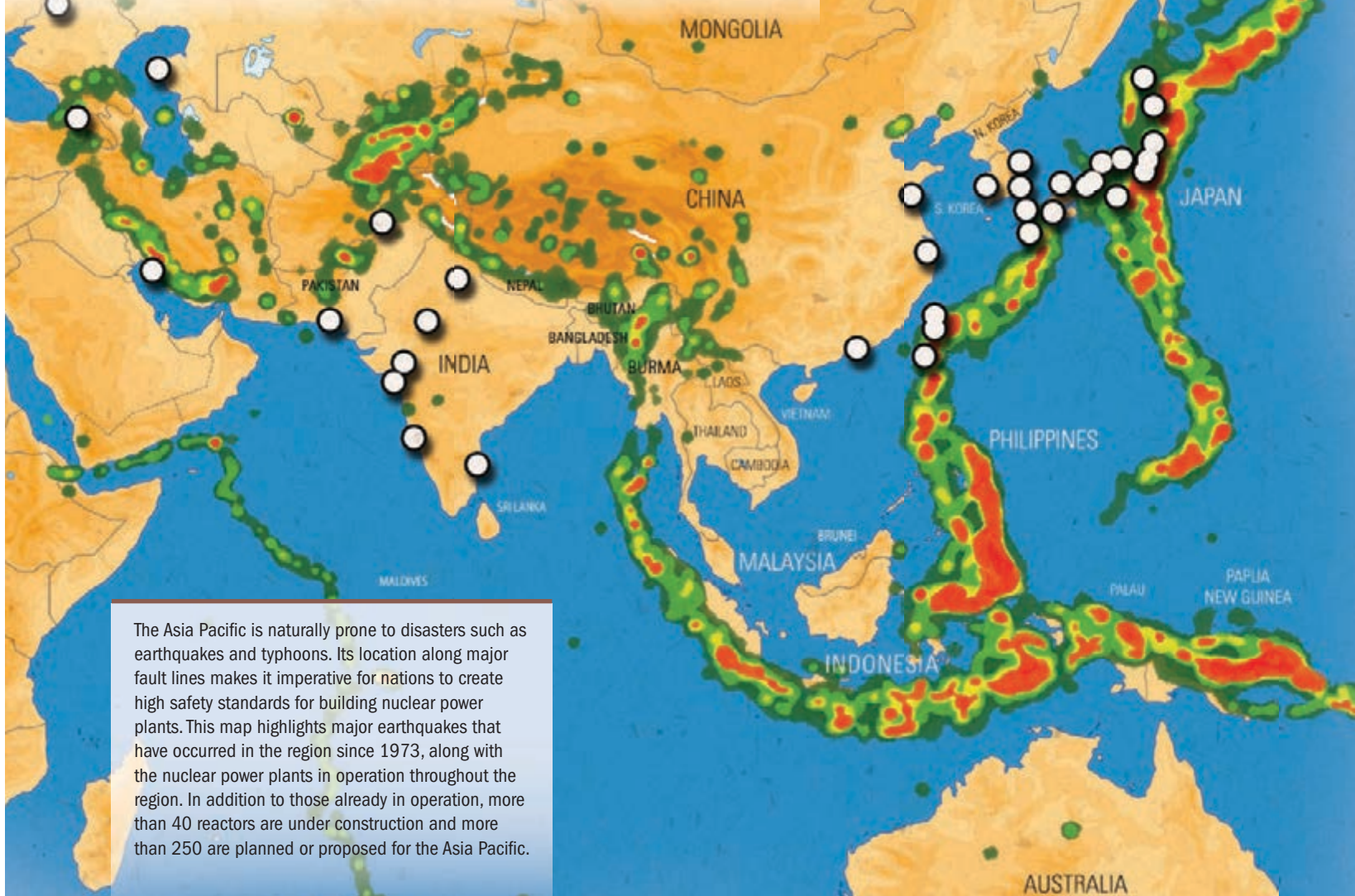
The National Institute for Defense Studies counted "the enhancement of readiness to accept aid from overseas" as a lesson learned from the response to the multifaceted disaster. Such foreign aid came in the form of U.S. Marines from the Chemical Biological Incident Response Force (CBIRF). They deployed to Japan two weeks after a series of explosions at the Fukushima Daiichi plant from March 12 through 15, 2011, caused the release of radioactive substances into the air.

"We accept the deployment of this unit as a matter of great importance," then Japanese Defense Minister Toshimi Kitazawa said at an April 1, 2011, news conference. "This force is a special unit that provides capabilities for agent detection and identification, decontamination and medical care related to a chemical, biological, radiological, nuclear or high-yield explosive [CBRNE] incident."

The approximately 150 CBIRF Marines spent a month in Japan engaged primarily in training their counterparts in JSDF. This training focused on core CBRNE tactics and procedures such as search and extraction in a contaminated environment, decontamination, command and control, and deployment training practices.



# NATURAL DISASTERS & NUCLEAR DANGERS



The Asia Pacific is naturally prone to disasters such as earthquakes and typhoons. Its location along major fault lines makes it imperative for nations to create high safety standards for building nuclear power plants. This map highlights major earthquakes that have occurred in the region since 1973, along with the nuclear power plants in operation throughout the region. In addition to those already in operation, more than 40 reactors are under construction and more than 250 are planned or proposed for the Asia Pacific.

## REGIONAL NUCLEAR ENERGY GROWTH

### JAPAN

50 units (44 GWe [gigawatt-electric or 1 billion watts of electric capacity]) operable (many of these shut down temporarily), 3 under construction, 10 planned (total 16 GWe), 17 research reactors

### SOUTH KOREA

23 units in operation (20.8 GWe), 4 under construction, 5 planned (total 12 GWe), 2 research reactors

### INDIA

20 units in operation (4.4 GWe), 7 under construction, 18 planned, 39 proposed, 5 research reactors

### CHINA

15 units in operation (11.9 GWe), 26 under construction (27.6 GWe), 51 planned (57.5 GWe), 120 proposed, 13 research reactors

### PAKISTAN

3 reactors in operation, 2 under construction, 1 research reactor

### NORTH KOREA

2 units partially built but subject to political delays, 1 research reactor

### VIETNAM

4 reactors planned, 6 proposed, 1 research reactor

### BANGLADESH

2 units planned, 1 research reactor

### INDONESIA

2 reactors planned, 4 proposed, 3 research reactors

### THAILAND

2 reactors planned, 4 proposed, 1 research reactor, 1 under construction

### PHILIPPINES

1 reactor proposed, 1 research reactor

### MALAYSIA

1 research reactor

## LEGEND

○ = NUCLEAR POWER PLANT IN OPERATION

GREEN - RED = SEVERITY OF EARTHQUAKE  
(Red being most severe)

Source: [www.world-nuclear.org](http://www.world-nuclear.org)

Sources: U.S. Geological Survey, International Atomic Energy Agency, maptd.com

FORUM ILLUSTRATION

APD FORUM

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# JAPAN TIGHTENS NUCLEAR REACTOR REGULATIONS

Japan's new nuclear regulator plans to require power companies to make reactors terror-proof as well as quake-resistant. Shunichi Tanaka, chairman of the Nuclear Regulation Authority (NRA), said plants need to be able to survive a direct hit from a hijacked airliner or ship, as well as withstand tsunamis like the one that crippled Fukushima. "For absolutely sure, if we continue ... Japan will have the world's toughest standards in terms of earthquakes and tsunami," Tanaka said at a January 2013 news conference.

The NRA also unveiled draft proposals in January for new safety measures designed to prevent a repeat of the world's worst nuclear accident in a generation. Under the plans, power plants must build backup control rooms and secure emergency power supplies on higher ground 100 meters from reactors.

The authority wants nuclear plants to prepare for "external human-caused events," including "flying objects such as falling planes, the collapse of a dam, explosions, fire at nearby plants, toxic gas, a ship crashing into a facility and the interruption of communication systems."

The nuclear authority is also crafting new safety criteria to deal with earthquakes and tsunamis, including toughening regulations on siting plant near geological fault lines. Once adopted, Japanese regulations will match standards in the United States, which tightened its nuclear rules after the September 11, 2001, terror attacks. Agence France-Presse

A worker holds a radiation monitor near the Unit 3 and Unit 4 reactor buildings at the Fukushima Daiichi nuclear power station in Okuma in February 2012.

EPA

Additional aid in response to the plant disaster came from the U.S. Department of Energy, whose National Nuclear Security Administration dispatched 33 personnel and more than 7,711 kilos (17,000 pounds) in equipment "to help assess, survey, monitor and sample areas for radiation." According to the U.S. Department of Energy, some 40 hours of flights on U.S. military aircraft provided a map of the radiation levels in the region.

The U.S. Navy, meanwhile, provided two water barges that supplied 500,000 gallons of fresh water to contribute to cooling efforts at the damaged reactors in the weeks after the tsunami struck, reported the Congressional Research Service. In addition, the U.S. Department of Defense contributed such advanced equipment as the Global Hawk drone and U-2 surveillance planes that collected data in flights over the reactor site. This information and training helped guide JSDF efforts at decontamination in the two evacuated areas closest to the nuclear plant and in those settlements in Fukushima prefecture in the areas surrounding the plant.

## AGENCY-LED COOPERATION

In the wake of the disaster, JAEA successfully fostered such cooperative efforts among academics, government, the private sector and foreign nuclear agencies from as far away as Kazakhstan. The agency worked to help the country recover from the Fukushima disaster and to develop programs and tools to mitigate potential grief from possible nuclear calamities in the future. Formed in 2005 to advance nuclear energy research and circulate information, the agency quickly redefined its mission in the disaster's aftermath.

On May 6, 2011, JAEA launched the Headquarters of Fukushima Partnership Operations. "The purpose of headquarters is to address strategically medium- and long-term challenges utilizing the fullest extent of its R and D [research and



development] equipment and facilities in addition to its human resources,” JAEA President Atsuyuki Suzuki said in a statement. Suzuki added that the JAEA aimed to support recovery efforts at the Fukushima Daiichi nuclear power plant and provide environment-related assistance.

JAEA’s early headquarters efforts included compiling various commission reports on the disaster and making them available to the public. More recently, however, the efforts have become more directly proactive. For example, a contaminated swimming pool at the Municipal Okeuri Day Care Center in Ikawa City, about 60 kilometers from the site of the Unit 1 reactor meltdown, prompted a call for help to JAEA in late October 2012. Due to its “Children First” policy, the agency had experience clearing radiation from schools across the prefecture during 2011. The policy, put in place by JAEA some five months after the disaster, has directed the agency to work in tandem with the Ministry of Education, Culture, Sports, Science and Technology to implement decontamination efforts in schools and other facilities used by children, as well as to provide important information to teachers, parents and children.

A JAEA team used high-pressure water nozzles and suctioning equipment along with decontamination equipment to remove radioactive elements from the water and pool surfaces at the day-care center. “The results showed that while surface radioactive contamination before the decontamination was between 444 and 1,049 counts per minute [cpm],” announced JAEA in its report of the cleanup, “it decreased to between 45 and 116 cpm after the decontamination. The current state has almost no contamination, and the pool can be used without any worries.”

JAEA documented the day-care center cleanup and will use the data as a road map for similar decontamination efforts in the future. Other JAEA headquarters initiatives have included a survey of radiation doses in buildings in Fukushima prefecture’s Date City, with the cooperation of University of Fukui, and an inspection of Date City decontamination sites with representatives from the Atomic Energy Agency of Kazakhstan.

Kazakhstan has an agreement with Japan for “cooperation in the peaceful uses of nuclear energy” and hopes to build its own nuclear reactors with Japan’s help. Apparently, the Kazakhs, like the leaders of many nations, hope to learn from Japan’s nuclear shortcomings as well as its successes.

## AVOIDING MAN-MADE VULNERABILITIES

The JSDF’s disaster work has been generally praised. However, much criticism has been leveled at TEPCO for constructing the nuclear plant so close to tsunami-prone waters and for the way it managed the crisis and handled communication. Such criticism included a

rebuken by Naoto Kan, Japan’s prime minister from June 2010 to September 2011. “The crisis exposed a host of man-made vulnerabilities in Japan’s nuclear industry,” Kan told The Associated Press.

In July 2012, Japan’s Nuclear Accident Independent Investigation Commission released its 88-page report on the incident. Chairman Kiyoshi Kurokawa traced the disaster’s cause to the accelerated development of nuclear power in Japan in the late 1970s, which the country sought as a means to energy security “pursued with the same single-minded determination that drove Japan’s postwar economic miracle.” This single-mindedness, Kurokawa maintained, enabled bureaucrats to overlook potential dangers that led to the disaster.

The panel’s report recommended that Japan:

- Create a permanent committee in the National Diet to oversee nuclear regulators.
- Revamp the nation’s crisis management structure by delineating a clear chain of command among national and local authorities.
- Set up a system to address long-term public health effects of the disaster.
- Reform the corporate structure of TEPCO.
- Establish a new nuclear regulatory body.
- Reform nuclear energy laws to meet international standards.
- Create a network of independent investigation commissions to help enforce laws.

Although Kurokawa’s commission sought to investigate the causes of the disaster to avoid its recurrence, other efforts have been under way to address the damage it has caused and to learn from such recovery efforts to mitigate possible future crises.

Meanwhile, Prime Minister Abe, known as a nuclear proponent, considers rebuilding Fukushima and building new reactors as a key part of reconstructing Japan, according to a January 2013 account by The International.org website. Japan’s government under his predecessor had planned to shutter all nuclear plants by 2030 and had stopped operating 48 of its 50 commercial reactors after the Fukushima disaster.

Abe contends that reforming environmental and energy polices and redesigning nuclear reactors will prevent future disasters, according to the website TheInternational.org.

Nations worldwide are taking cues from the pages of the report and the experiences of Japan, as they move forward on shaping their own nuclear energy policy and programs. An August 2012 tally by the World Nuclear Organization counted 60 new plants under construction in 13 countries and Taiwan, with the majority in China, Russia and South Korea. The U.S. also has plans for 13 new reactors.

Globally, nuclear energy seems here to stay, and its safe management and use will hinge on how closely other countries heed the warnings and lessons of Fukushima Daiichi. □



# COUNTERING THE IED THREAT

FORUM STAFF

Certain weapons have changed the way wars are fought — spears, artillery, tanks and, in recent years, improvised explosive devices (IEDs).

IEDs make headlines around the world for their use by insurgents in Iraq and Afghanistan, but extremist groups regularly employ the deadly devices outside of combat zones as well.

“The IED threat is broader than our current major combat operation,” explained Australian Army Maj. Gen. Richard Burr, who serves as deputy commanding general for U.S. Army Pacific, “and the IED threat out here in the Asia-Pacific region is greater than many people realize.” In 2011 and 2012, for example, security forces in the region responded to about 100 IED events each month, including detonations, caches found and cleared, hoaxes and threats.

Extremist groups favor IEDs because the devices provide a big bang for the buck. The devices are easy and inexpensive to make, but they can cause mass destruction. “For less than [U.S.] \$30 in raw materials each, roadside bombs and other IEDs can wreak disproportionate damage and disruption. They can be strategic, not just tactical, weapons, by sowing fear, lowering troop morale, limiting freedom of movement and undermining public support for combat operations,” according to “IEDs: The home-made bombs that changed modern war,” a report from the International Institute for Strategic Studies (IISS).

Depending on the materials available and the operating environment, IEDs can take many forms. The various combinations of explosives, triggers, containers and placement options prevent experts from recommending a one-size-fits-all solution for countering the threat. However, a combination of situational awareness, intelligence gathering, training and technology has proven effective in preventing and neutralizing attacks, experts say.

## 1

## Know Your Enemy

### THE IED NETWORK

Although insurgent forces and tactics vary depending on the area of operation, there are common elements that military and security forces should target to break up the IED network, experts say.

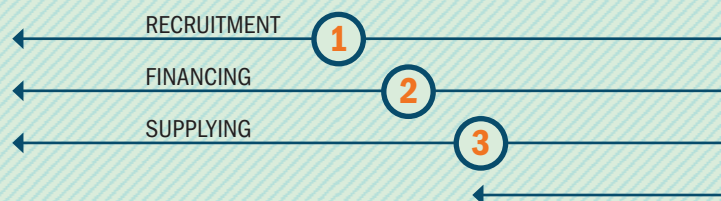


INTERNATIONAL/  
REGIONAL/LOCAL  
LEADERSHIP



FUNDRAISERS  
AND DONORS

### THE IED STAGES



TIME

1 YEAR

1 MONTH

**No matter where an IED attack is planned, a common methodology exists among those who perpetrate such attacks.** Awareness of these stages helps both military and law enforcement personnel, as well as the general public, break the IED cycle. Common steps in the planning of an IED attack are:

- 1. RECRUITMENT**  
Building a force of operatives, trainers, financiers and technicians to carry out attacks
- 2. FINANCING**  
Raising money to fund IED operations
- 3. SUPPLYING**  
Acquiring and providing materials for IED operations



Policemen inspect a 7-kilogram IED that they diffused before it could explode in Jammu, India. Security officials must target extremist networks to stop IED attacks before they happen, experts say.



THE ASSOCIATED PRESS



RECRUITERS  
AND TRAINERS



PROVIDERS OF  
SAFE HOUSES



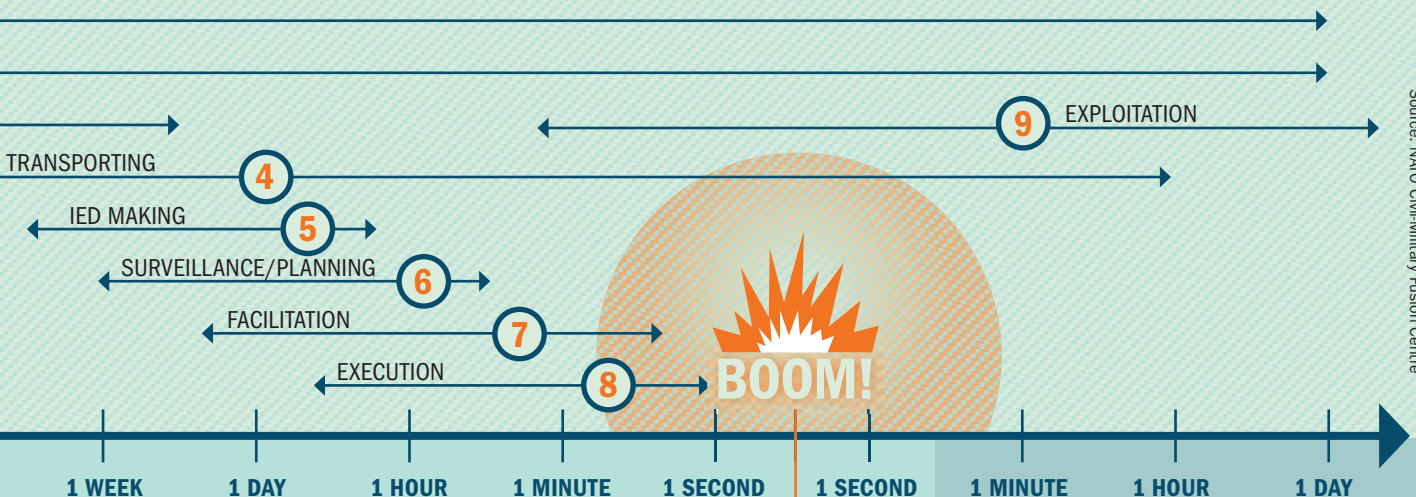
SUPPLIERS OF EXPLOSIVE  
MATERIALS AND DUAL-USE  
ELECTRONICS



BOMB-MAKERS



OPERATORS/  
TRIGGERMEN



Source: NATO Civil-Military Fusion Centre

## THE PATTERNS

Although preventing IED attacks is the ideal, evidence gathered after a blast provides valuable insight into the operating patterns of the enemy. Intelligence gleaned from various blast sites in a region can reveal the type of explosive material the enemy is using, for example, and common triggers. This information helps authorities target suppliers of IED components and develop tactics to prevent attacks. Of course, extremists will always try to adapt their IED formulas to stay one step ahead, but that's why attacking the network as a whole is important.

### 4. TRANSPORTING

Moving devices, supplies and personnel into and out of an area before and after an attack

### 5. IED MAKING

Designing and fabricating an IED

### 6. SURVEILLANCE AND PLANNING

Collecting information on troop movement, vulnerability, and areas of approach and escape

### 7. FACILITATION

Watching for troops during IED placement, providing safe houses, donating supplies or passively assisting by not alerting friendly forces

### 8. EXECUTION

Placing, monitoring and detonating the IED

### 9. EXPLOITATION

Using the incident to promote group success, fuel recruiting efforts and encourage support

## 2

## Know Your Operating Environment

### DETERMINE POTENTIAL TARGETS

Extremist groups choose IED targets with the potential to result in mass casualties or media attention. Depending on the situation, extremist forces may target:

#### Shopping areas

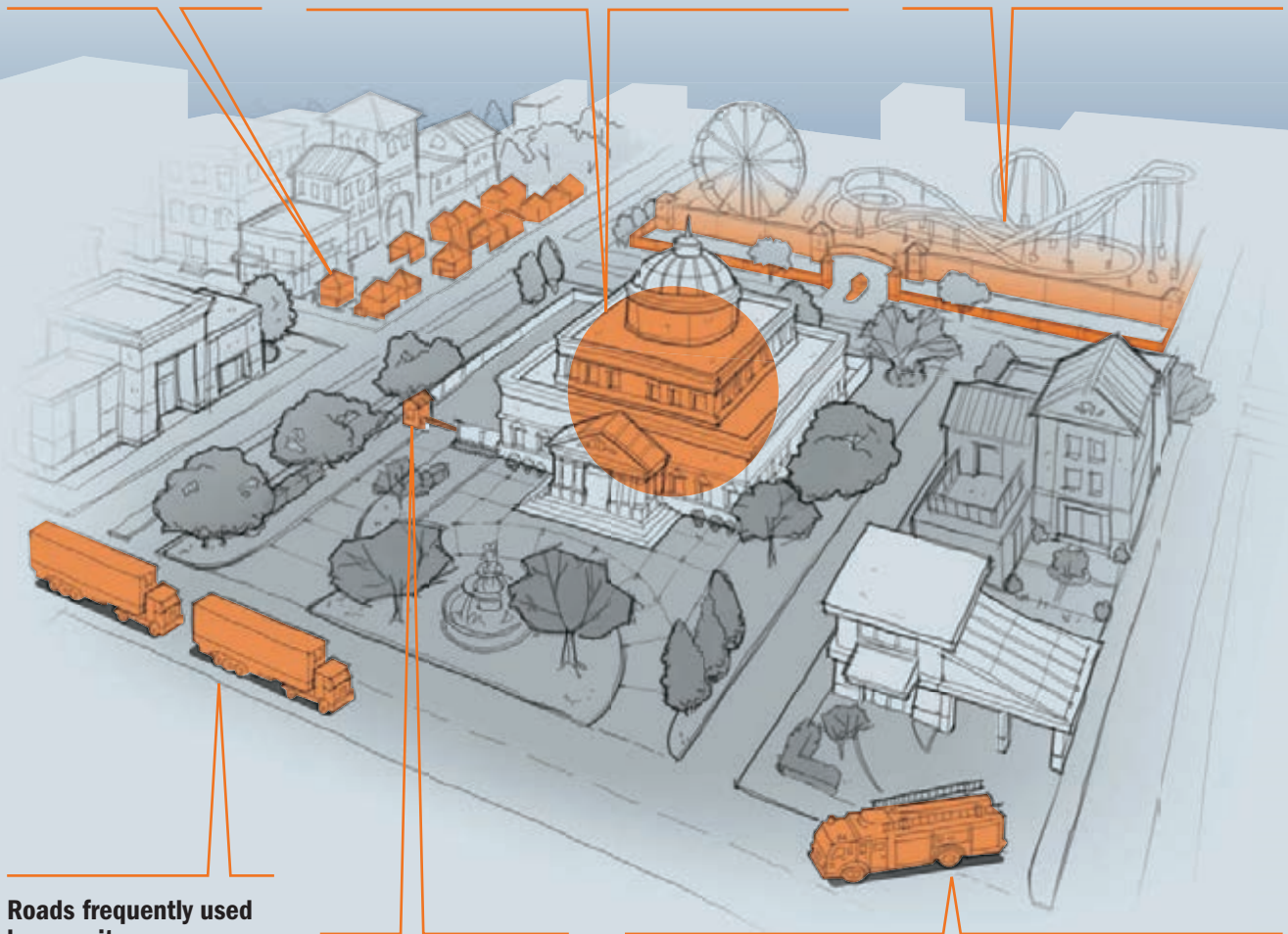
The hustle and bustle of busy marketplaces make it easier for a suspicious package or person to go unnoticed.

#### Gatherings of government officials

Meetings of high-value targets, such as politicians, always require stepped-up security efforts. In preparation for the Association of Southeast Asian Nations' 2012 summit in Phnom Penh, for example, Cambodia's National Counterterrorism Special Forces participated in a special exercise to hone their counter-IED skills.

#### Tourist attractions

With throngs of foreigners around, these targets are sure to gain international media attention. The Bali bombings in 2002, for example, targeted two nightclubs popular among foreign tourists, killing 202 people.



#### Roads frequently used by security convoys

Insurgents often target the lead vehicle to try to stop the convoy, leaving the rest of the vehicles vulnerable to subsequent explosions or enemy fire.

#### Security checkpoints

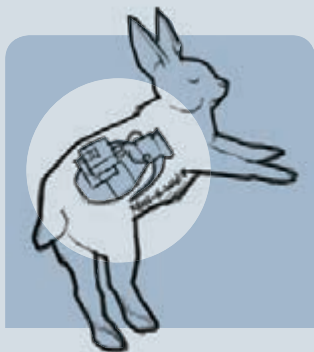
Attacks at busy checkpoints create chaos and can allow other attackers to slip through in the aftermath.

#### First responders

An initial attack may be used to lure security officials and aid teams to the area as targets of secondary explosions. In Thailand, for example, insurgents use this tactic in an attempt to delay first responders and make security officials appear incapable, according to a report from Raven International Security Consultants Management.



## IDENTIFY TRENDS IN DELIVERY METHODS



### Packaged in disguises

Extremists have gone beyond just hiding bombs in bushes along the side of the road. IEDs have been disguised as trash such as soda cans or empty meal boxes, and bombs have even been stuffed into dead animal carcasses, according to [globalsecurity.org](http://globalsecurity.org).



### Suspicious vehicles

Car bombs are a popular choice for terrorists around the world. Vehicles packed with explosives have been detonated in crowded areas or been left parked outside targeted buildings. Fake emergency vehicles such as ambulances are a particular concern as extremists try to sneak in a secondary blast after an initial IED attack, experts warned at the Homeland Security Professionals Conference in November 2012.



### Suicide bombers

Experts warn that people on suicide missions often can't help but exhibit signs of their nefarious intentions. They often wear clothing that is too big or unseasonably warm in order to conceal explosives, or they carry a bag or backpack that they keep checking. They tend to sweat a lot, mumble to themselves and keep their hands in their pockets. They also tend to head directly to their target, ignoring authorities or others who may unknowingly try to distract them.

AFP/GETTY IMAGES

## NINE COUNTER-IED PRINCIPLES

The Asia-Pacific Counter-IED Fusion Center conducts training for troops from across the region who will be operating in IED environments. One of the key methods of defense is for troops to know and take cues from their surroundings. The center suggests that troops:

1. Keep an offensive mindset. Always be ready for an IED encounter.
2. Maintain situational awareness.
3. Remain observant.
4. Avoid setting patterns. Never go the same way twice. Never do the same thing three times in a row.
5. Employ 360-degree security, with no vulnerable points and with weapons systems covering all sides of the force.
6. Maintain standoff from suspected IEDs. The farther away Soldiers remain, the greater their chances of surviving a blast.
7. Disperse Soldiers and vehicles strategically.
8. Always use blast and fragmentation protection.
9. Take advantage of available technology.

**An Indian National Security Guard commando demonstrates disposal of an IED.**





# 3

## Know Your Capabilities

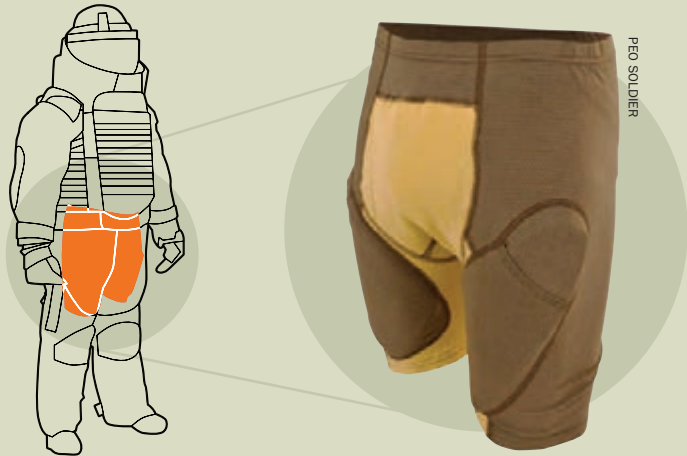
### Training

Experts recommend counter-IED training for all troops. Mohd Jamal Khan of the Central Reserve Police Force's Institute of IED Management in Pune, India, suggests a tiered training approach, with basic training for all units, intermediate training for affected units and advance training for counter-IED technicians, according to his presentation at the Counter-IED India Conference in Mumbai in 2012.

In addition to troop training, experts recommend teaching security officials such as police officers, guards and first responders about IED awareness. The public should also know what to look for and how to report suspicious activity. Just as extremists use IEDs as a force multiplier, militaries can use the eyes and ears of the people to expand their defense capabilities.

### Body armor

Packed with nails or other small metal objects and designed with powerful charges, IEDs produce far-flung shrapnel intended to cause maximum damage. Over the years, body armor has expanded from helmets and vests that protect vital organs to include underwear that guards the intestines and groin area, all with increased levels of fragmentation protection.

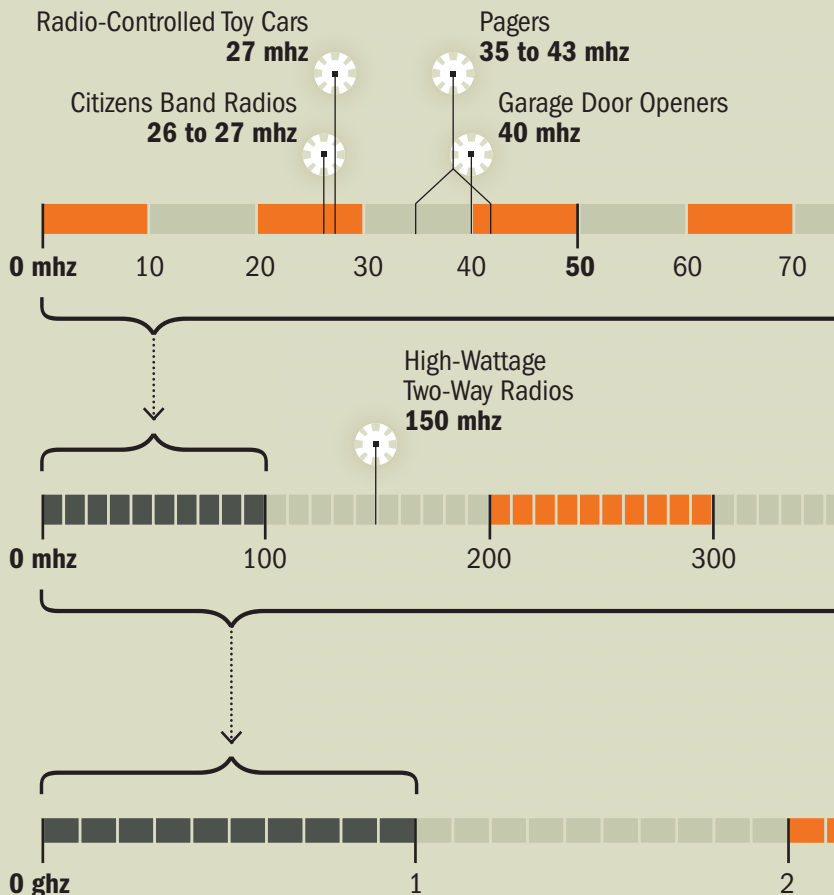


### Detection and disposal technology

Unmanned ground and aerial vehicles, as well as robots, have been used to identify and dispose of IEDs. Technologies ranging from electronic jamming mechanisms to ground-penetrating radar have proven successful in countering the devices.

### Jamming signals that trigger IEDs

The proliferation of wireless technology has added to insurgents' IED arsenal. However, devices that are commonly used to remotely trigger a blast operate over radio waves, making them susceptible to "jamming." Electronic jammers interrupt signals on various frequencies to block explosives from being triggered. They can be carried in briefcases, mounted to vehicles or even installed in planes and boats. Here's a look at the devices insurgents use as remote triggers for IEDs, along with the frequencies authorities can target to jam them.





## Vehicle protection

Security vehicles have also been enhanced with armor for their underbellies in case they drive over IEDs, along with V-shaped hulls that direct the force of the blast away from personnel within the vehicle.

MAHINDRA



## The best defense

Of course, the latest technology is nice to have, but experts say the best defense against IEDs does not lie in the latest high-tech gadget. "Experts repeatedly say that the best tools remain sniffer dogs with handlers, a well-trained Soldier's eye and local informants. Using such tools, teams on foot patrol have an average 80 percent detection rate," the IISS reports.

AFP/GETTY IMAGES

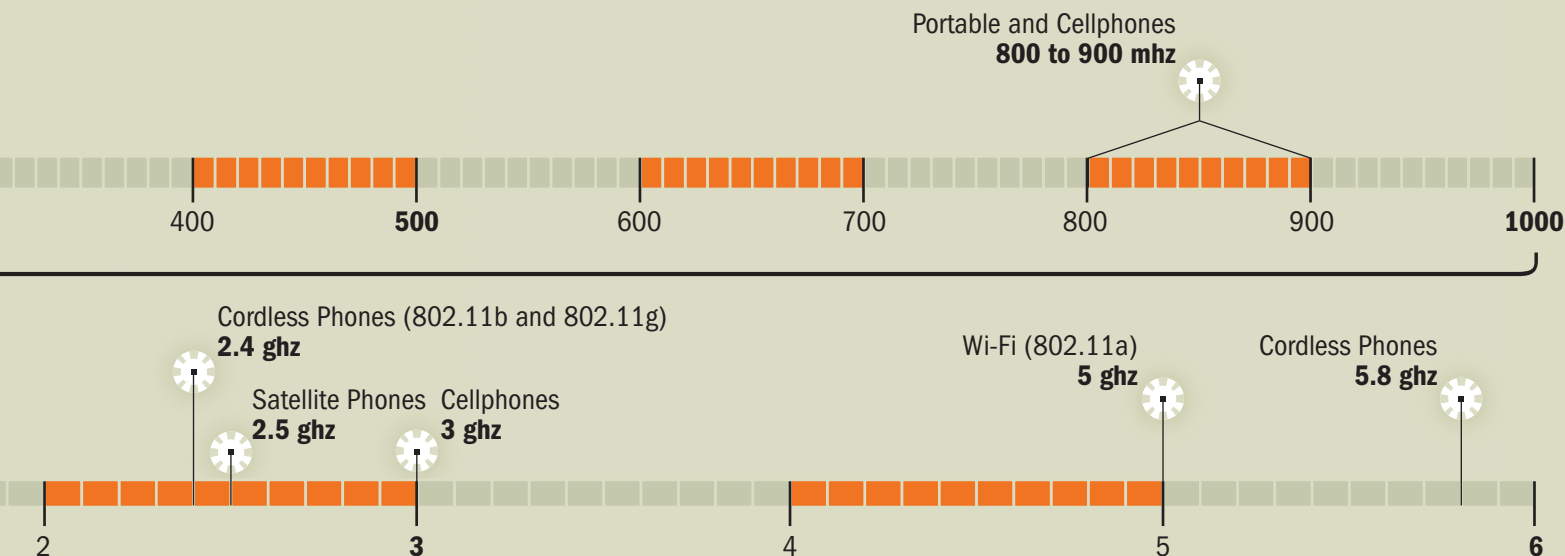
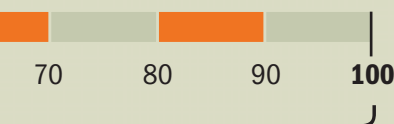


**LEFT:**  
Defense Land Systems India unveiled the Mine Protected Vehicle India in 2010 as a way to transport security forces who operate in areas fraught with mines and IEDs.

**RIGHT:**  
A policeman with a bomb-sniffing dog inspects a church in the East Java city of Surabaya, Indonesia, after a suicide bomber attacked a church in Solo in September 2011.

“Ideally, what you want to be able to do is have something that can grab very precise signals, capture the signals and render them irrelevant without knocking out your own communication.”

- Retired U.S. Army Brig. Gen. James "Spider" Marks, telling CNN how IED jamming technology works





# DEFUSING

## Psychological Terror





## MALALA TAUGHT THE WORLD HOW TO TAKE ON THE TALIBAN

ROHIT GANDHI

Fourteen-year-old blogger Malala Yousafzai was attacked in October 2012 by Pakistan's terrorist group Tehrik-e-Taliban for commendably exposing the group's atrocities and advocating for girls' education in the face of religious extremists. In the volatile northern Swat Valley, the terrorists intent on suppressing the teenager, admired across a battle-scarred region of Pakistan, had a Pakistani Taliban gunman walk up to a bus taking children home from school and shoot Malala in the head and neck. The shooting horrified Pakistanis across the religious, political and ethnic spectrum. Intended as a scare tactic, instead the shooting sparked an outrage that many hope will mark a turning point in Pakistan's long-running battle against the Taliban.



THE ASSOCIATED PRESS

Malala reads a book while recuperating at England's Queen Elizabeth Hospital in November 2012. The Taliban's attack on the girl was intended to suppress those who may speak out, but it had the opposite effect.





**Dr. Iftikhar Hussain treats a woman suffering from severe depression in July 2012 at Iftikhar Psychiatric Hospital in Peshawar, Pakistan, after a mortar killed her cousin.**

THE ASSOCIATED PRESS

### MALALA, THE FACE OF DEFIANCE

I first met Malala in 2009. I saw a young, frail 11-year-old girl walk toward me, making her way up the incline on the road, wearing a loose tunic and pants; she had a veil loosely covering her hair. I had become interested in speaking to her when I heard that a girl from the Swat Valley had a reputation of standing up against the Taliban by insisting on the right to female education.

Malala was a breath of fresh air. Although her demeanor was that of a young child, tiny in height and petite in structure, she had a mind and speech clearer than that of a well-honed politician. She thought clearly and spoke eloquently in English, a language that was not her mother tongue. In a place where she could not really practice her spoken English, she had picked up English by listening to broadcasts on PBS, the BBC and CBC.

Malala talked about how under the Taliban rule, girls continued to go to school in hiding. They would wear their ordinary clothes because wearing school uniforms would be a giveaway. To make it to school, she would hide her books under her shawl. In school, she said, “we would go into the primary section of the school, so that the Taliban could not object to our being in the school.”

She fought them head on, knowing very well the dangers. She told me, “If I were caught going to school, they could kidnap me or throw acid on my face or kill me.”

### TERRORISM AS FEAR

Malala’s attackers intended her shooting to be more than just an assault on her when they pulled the trigger. Sources say Maulana Fazlullah himself planned this attack. Fazlullah, or Radio Mullah as he is called, came

to power in the western Pakistan valley of Swat to bring “true Islam.” Instead, he brought terrorism to the region as his influence extended further into Pakistan.

Malala told me in 2009 that “Taliban would slaughter people who would defy them and then hang their bodies upside down and tell everybody that nobody would touch the body till 11 a.m. next day, so that people saw what could happen to them.”

Terrorism thrives on the idea of creating an environment of fear. Dr. Iftikhar Hussain is a psychiatrist who has been treating patients of terrorism in Swat and the terrorism-stricken Federally Administered Tribal Areas of Pakistan. “Terrorists terrify so that people don’t show resistance. It also induces a psyche in civilians that they are helpless and at their mercy,” he says.

“This happens when the state loses its writ and terrorists systematically kill social leadership, creating a vacuum; this space is then occupied by terrorists. Children are given guns to play with from their very childhood, changing the social landscape of the entire region,” Dr. Hussain says.

Dr. Hussain knows what it is to fear because he was kidnapped by terrorists September 9, 2011, and held hostage for telling people to stand up against terrorism.

### SUICIDE BOMBING AND INDOCTRINATION TACTICS

To kill for a cause and to die for one are separate things. The latter requires a strong self-conviction and trained thought process of what is sociologically regarded as altruism: placing community before self. Suicide bombing is used by terrorists as an act of martyrdom



**Internally displaced people gather at a free psychiatric camp in Pakistan. Terrorist attacks take a huge psychological toll on both victims and witnesses.**

IFTIKHAR PSYCHIATRIC HOSPITAL

in the indoctrination process. The “martyr” is promised “jannat,” which is conceptualized as a heaven earned through this martyrdom, marked by a sense of pleasure in an afterlife, an aspiration in Islam.

Also, as an act, suicide bombing has a chain of psychological impacts on witnesses, which have been best described by terrorism expert Bruce Hoffman, director of the Center for Security Studies at Georgetown University. “You have what is, in essence, the ultimate human smart bomb or human cruise missile, perhaps driving a vehicle or even walking on foot. But in other words, that bomb can hone in as close to the target as possible and inflict the maximum damage. It also has, I think, a devastating psychological impact on the society, because it creates the impression that there’s no way to defend against it.”

People witnessing such a bomb directly or through the media would be instantly terrorized into believing that their basic survival is in jeopardy. More importantly, suicide bombing also carries a weight of ideology, which distinguishes it from other forms of attack, creating new categories of communal notions of fear and communal notions of safety, leading to, in fact, new notions of solidarity.

Although adult suicide bombers may experience some “existential grappling,” young children are unable to process the meaning of ending one’s life, especially if rewards are promised in the afterlife. Once in the hands of the Taliban, these sheltered, naïve and susceptible youth proceed through the organization’s brainwashing process. In the words of one such victim, “I thought that there would be a little bit of pain, but then I would be in heaven.”

A significant majority of suicide bombers in Pakistan are believed to be between the ages of 12 and 18, with some studies putting the number near 90 percent. Pakistan-based Taliban Commander Qari Hussain has boasted that his organization recruits children as young as 5 for suicide attacks, saying that “children are tools to achieve God’s will; whatever comes your way, you sacrifice it.” Thus, children, due to their lack of mental development, are used as tools, marked by a degree of unaware absorption of fundamentalist ideas.

Most are impressionable children from poor families who are indoctrinated through networks of religious schools that provide the only hope of advancement in isolated regions poorly served by the Pakistani government, although many are also procured through outright kidnapping and coercion by armed gangs.

Those young people who have agreed to take part in suicide bombings have in many cases done so particularly “out of fear of losing mothers and sisters” — a fear impressed upon them by their militant handlers’ extensive psychological manipulation.

There are an estimated 2,000 madrassas in the border regions of Afghanistan and Pakistan, a small yet significant percentage of which are believed to be involved in the brainwashing and indoctrination of young boys into militancy. Madrassas are schools that are supposed to educate students about Islam.

Students in these schools receive free board and education, something that appears to be a remarkable opportunity for poor and isolated children whose parents cannot afford to send them to good schools but that ultimately comes at a terrible price to both them and Pakistani society.



Malala's attackers intended her shooting to be more than just an assault on her when they pulled the trigger.

A Pakistani youth places an oil lamp next to a photograph of Malala in Karachi in October 2012. The attack on Malala prompted many to speak out against the Taliban.







AFP/GETTY IMAGES

#### EFFECTS ON THE MIND

The impact of suicide bombings is devastating on children, Dr. Hussain says. "Suicide bombings have long-term physical, economical and psychological side effects on children as eye witnesses. But they also have a huge impact on people exposed to it through the media."

There is a clear difference in the demeanor of people and children in the West and in Pakistan, Dr. Hussain says. "The people in the West seem more calm, contented, composed and satisfied because of the security provided by the state," he explains.

Dr. Hussain says that as a result of the insecure environment that some children live in, "they develop phobias and anxiety. It adversely affects their normal grooming and their recreational and creative activities. The fallout is these children are irritable, noncompliant and stubborn. They also suffer from behavioral disorders, post-traumatic stress, anxiety, evident in their lack of sleep, lack of appetite, bad dreams and lack of interest in leisure activities."

Suicide bombings and other terrorist attack tactics have a greater short-term and long-term physical and psychological effect on the victims. However, the intended impact may also backfire, causing outrage and protest among the population that the terrorists were trying to scare into submission. This can be seen through Malala, a symbol of "standing up to protest." The attack on her has set in motion other forces. In fact, a group of 50 clerics in Pakistan issued a fatwa against those who sought to kill her.

#### POWERFUL BACKFIRE

Everywhere you go in Pakistan, you find people talking animatedly about this teenager. It seems that her courage has awakened Pakistan's silent majority who are no longer prepared to tolerate the threats and intimidations of the Pakistani Taliban. One million signatures from out-of-school Pakistani children are being put together for a 1 million-strong petition.

"I want to serve. I want to serve the people. I want every girl, every child, to be educated," Malala said in a video released in February 2013, her first public statement since her shooting. "Today, you can see that I am alive. I can speak, I can see you, I can see everyone. It's just because of the prayers of people. Because all people — men, women, children, all of them — have prayed for me. And because of all these prayers, God has given me this new life. A second life."

The support shown to Malala, who has been nominated for the Nobel Peace Prize, is exemplified by what her classmate said after the horrific attack on this icon, "Every girl in Swat is Malala. We will educate ourselves. We will win. They can't defeat us." □

Malala Yousafzai says goodbye to nurses upon her release from Queen Elizabeth Hospital in Birmingham, England, in January 2013.



# THE "GAMIFICATION" OF TERRORIST RECRUITING



FORUM ILLUSTRATION

# UNDERSTANDING AND COUNTERING EXTREMIST TRENDS ONLINE

UNIPATH STAFF

## IT HAS BECOME A GAME WITH DEADLY CONSEQUENCES.

Harnessing the power of the Internet, tech-savvy terrorists are using the types of rewards found in video games to engage new recruits. Eager to earn badges, points and avatar status upgrades, members compete to post extremist propaganda on websites and blogs. These online forums — dedicated to spreading the doctrines of groups such as al-Qaida — serve as incubators for future terrorists.

The incentives and rewards for contributors on these forums are similar to those employed in most online groups. “The online world of Islamic extremists, like all the other worlds of the Internet, operates on a subtly psychological level that does a brilliant job at keeping people ... clicking and posting away — and amassing all the rankings, scores, badges and levels to prove it,” experts Jarret Brachman and Alix Levine explained in their analysis of the trend, published in an April 2011 issue of *Foreign Policy* magazine. “Like virtually every other popular online social space, the social space of online jihadists has become ‘gamified,’ a term used to describe game-like attributes applied to non-game activities.”

### GAMIFICATION BREAKDOWN

So how does it work? Gamification is a strategy used by legitimate businesses and organizations to gain and sustain brand loyalty. It infuses seemingly mundane activities with elements that inspire competition and engagement, Brachman and Levine wrote. “If you’ve used frequent flier miles, earned stars with your coffee purchase at Starbucks or checked in on Foursquare, you’ve had a gamified experience,” they explained.

In the dark recesses of the Internet, extremists operate online discussion

rooms and troll digital bulletin boards in hopes of garnering new recruits. It’s not glamorous work. Forum administrators may spend hours each day posting content, commenting on discussion threads and urging others to do the same.

The encouragement doesn’t simply come from praising individuals in text, though. Participants collect privileges that include online badges or points (often called reputation points) that reflect the quality of their posts or their commitment to extremist causes. Just as they can in a video game, users can also earn VIP status or titles, as well as access to special private online discussion groups. These tactics entice users to keep coming back and to post often.

Although the rewards may seem trivial, these tactics work because people have a psychological and emotional need to be part of a group. That’s why a majority of extremist forums, tracked by authorities and experts, use these points-based systems to spread their ideology and infect the minds of new recruits.

In their 2010 paper “Social Influence in the Online Recruitment of Terrorists and Terrorist Sympathizers,” psychology professor Rosanna Guadagno and her co-authors assert that terror groups such as al-Qaida understand this principle and use it to their advantage. “[Because] al-Qaida cannot transform ordinary people into fully committed terrorist operatives overnight, it uses sophisticated social influence techniques to induce them to become terrorist sympathizers.”

The indoctrination starts with small, seemingly trivial requests, the authors continue. Often recruits are asked to find and post religious texts that support group doctrine. This gives the new member time to identify with the group,



satisfy curiosities and form relationships. “For most potential terrorist recruits, this desire to be part of the in-group and to establish social bonds with other members of the organization is just as important, if not more important, as the ideological appeal of the group.”

As a forum user’s reputation grows, so does his or her eagerness to contribute and the intensity of the online relationship. A susceptible user might be asked to send out “feeler” emails to other prospects or to make a financial contribution. Once a recruit’s resolve is established, he or she may be encouraged to meet in person to further the indoctrination.

## RECRUITING 2.0

Internet operations are crucial to extremists, who use them as a primary recruitment tool with worldwide reach. Messages posted online remain on forums and websites long after the author has logged off, transforming the recruiter’s words into lasting weapons.

“Al-Qaida and its affiliate groups today largely communicate not through dedicated websites but instead through a range of online discussion forums,” extremism expert Mohammed Ali Musawi wrote in a 2010 report for the Quilliam Foundation. He found the three most popular Web forums for al-Qaida affiliates at the time boasted more than 10,000 registered members each.

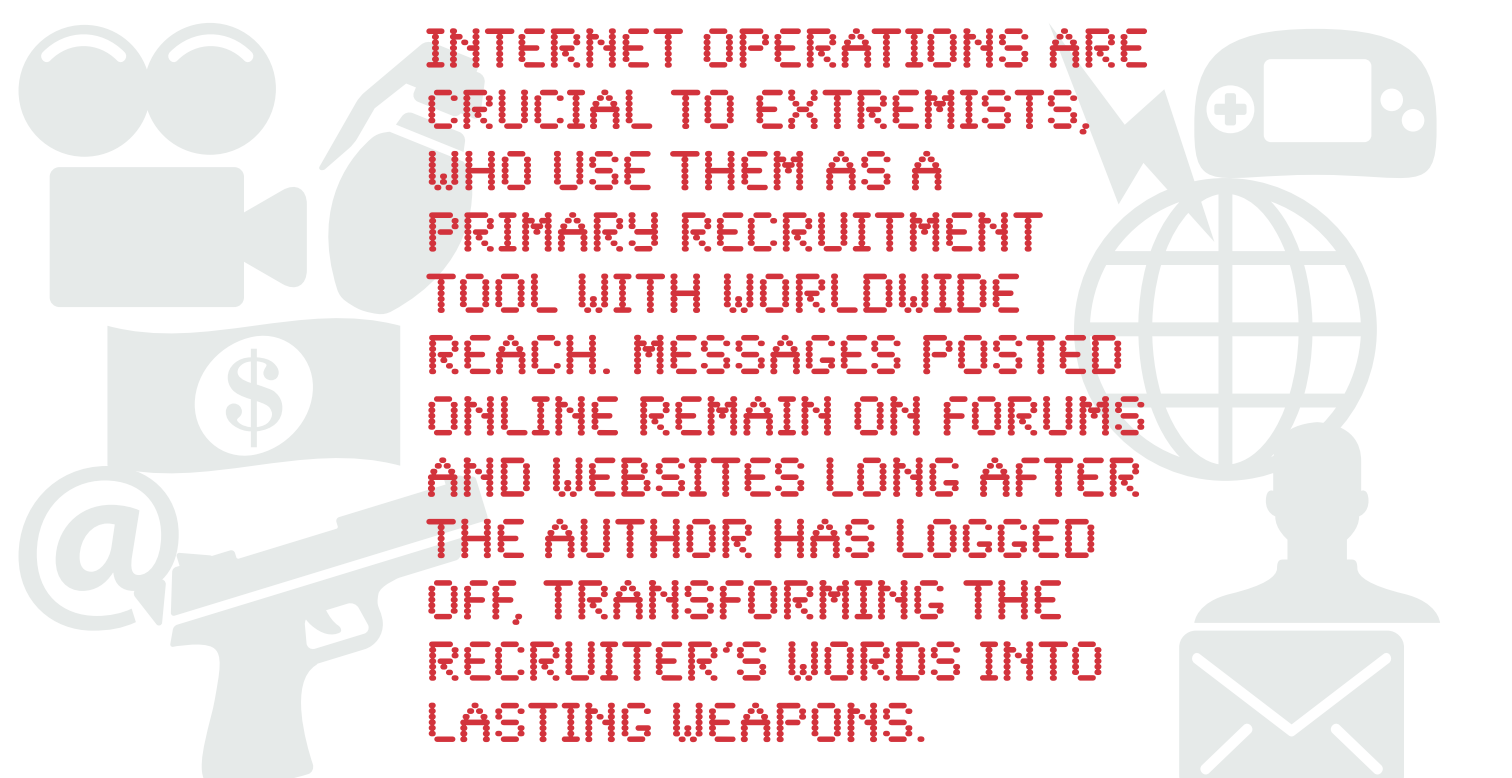
Extremist forums, blogs and file-hosting sites are loaded with violent, graphic material. The sites and their well-crafted content allow terror groups such as al-Qaida and Lashkar-e-Tayyiba to use the cyber

realm as a propaganda machine. Visitors can not only discuss ideology and tactics but download photos, videos of purported terror attacks, leaflets and other materials that they in turn can post on other sites or print and distribute to others.

Whether these tactics encourage members to go from contributing content to committing physical acts of terrorism is still being debated. Gaming techniques alone don’t create extremists. But for some, the video-game-style rewards provide the impetus to immerse themselves in terrorist doctrine and connect with like-minded individuals.

“For a select few, the addiction to winning bleeds over into physical space to the point where those same incentives begin to shape the way they act in the real world,” Brachman and Levine noted. “These individuals strive to live up to their virtual identities, in the way that [other] teens have re-created the video game Grand Theft Auto in real life, carrying out robberies and murders.”

The late Anwar al-Awlaki, for example, used game elements in his online interactions to attract a large and devoted fan base. The Yemeni-based extremist encouraged people to collect his writings, online videos and other propaganda and repost them on various forums and blogs. Their reward: meeting Awlaki or earning online praise from him. In 2010, a Singaporean national serviceman was arrested for planning to undertake extremist activities based on Awlaki’s teachings. The serviceman had listened to Awlaki’s lectures online and had even made and posted his own propaganda videos. Authorities say he contacted Awlaki about joining militants on the front lines.



INTERNET OPERATIONS ARE  
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OFF, TRANSFORMING THE  
RECRUITER’S WORDS INTO  
LASTING WEAPONS.



Just as players earn points and status upgrades in video games, terrorist recruits are earning digital rewards for reposting propaganda and spreading extremist ideology online, experts report.

GETTY IMAGES

## COUNTERING THE THREAT

The exploitation of the Internet as a facilitator to bring violent-minded extremists together helps terror groups expand their networks and pose a larger threat. “These networks are resilient and adaptive, despite growing law enforcement efforts to take them down,” according to a summary from the United Nations Counter-Terrorism Implementation Task Force. Once officials dismantle a forum, extremists can easily re-establish it under a different Web address.

A more effective way to counter threats sprouting from extremist forums might be to provide alternative messages. “Social-networking such as Facebook and Twitter was increasingly used by terrorist organizations without any sustained/credible counter-effort in those forums. ... When searching for statements about al-Qaida or similar extremist groups, search results were more likely to turn up extremist content than counter narratives — and with about 75 percent of users never going beyond the first page of search results, this presented a major challenge,” a task force working group explained in a summary after a 2011 meeting in Riyadh, Saudi Arabia.

Governments and organizations using online counternarratives should employ search engine optimization techniques to push anti-extremist information to the top of search results, experts suggested.

Access to counternarratives proved effective in places such as Pakistan’s Swat Valley, where videos of the Taliban’s abuses were broadcast on the Internet and local television, exposing the true violent nature of extremism. “Nothing had been more powerful,” the working group explained, “than a video of the Taliban flogging a young woman, or a recording of a Taliban leader claiming to be the only true Muslim, and every advantage should be taken of such self-inflicted setbacks.”

Beyond providing counternarratives to help refute the distorted views of terrorist groups, officials need to find out why extremist messages are appealing and address those issues: Are people frustrated by unemployment? Do they mistrust their government? Lack educational opportunities? By looking at the problems and potential solutions through a wider lens, experts say, officials may be able to mount a more effective attack on all forms of terrorist recruiting efforts — not only those online. □



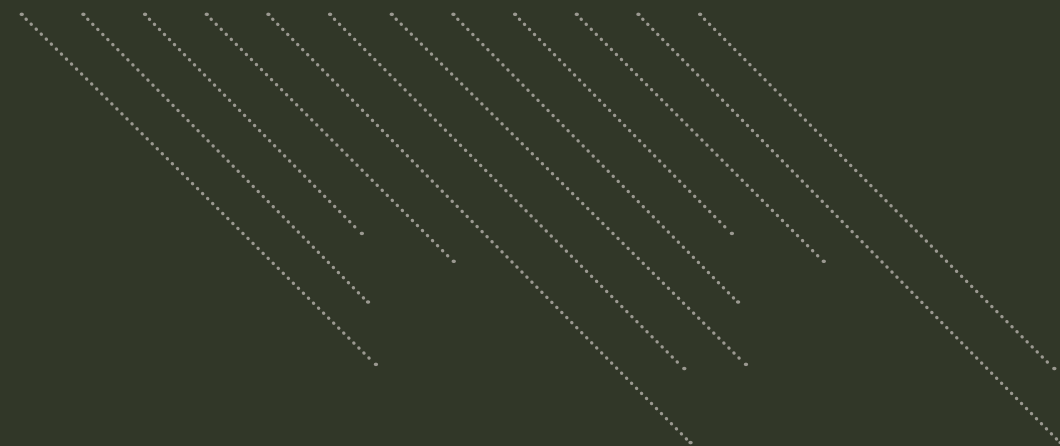
# *Recovering from a* SUPER TYPHOON

## **Military partnership prevails in the Philippines** DR. IMES CHIU

At the dawn of December 4, 2012, the small, sleepy town of Baganga, population 19,000, awakened to the strongest tropical cyclone to hit the southern Philippines in 22 years. The historic super typhoon Pablo (international code name Bopha) devastated entire villages, leaving nothing but bits of wooden poles and planks.

The Joint Typhoon Warning Center measured waves rising as high as 15.85 meters at sea. Roads strewn with uprooted banana and coconut trees became impassable. According to Stephen Antig, the executive director of the Filipino Banana Growers and Exporters Association, Bopha destroyed 10,000 hectares of the country's 42,000 hectares of banana farms, about a quarter of the total banana production in the Philippines, costing about U.S. \$318 million in exports.

The Philippine National Disaster Risk Reduction and Management Council reported the official death toll from typhoon Bopha rose to 1067 by late December 2012. According to [BophaRecovery.org](http://BophaRecovery.org), more than 6.2 million individuals and 701,224 families suffered from the devastation. Fifty provinces, towns and cities declared a state of disaster for several weeks.





**Philippine Soldiers look for survivors amid ruins in New Bataan in December 2012.** AFP/GETTY IMAGES

### RESCUE AND RECOVERY

Philippine security forces bravely traversed mudslides and raging flash floods to get to remote areas to help villagers reach safer ground and to search for missing persons. At least seven Soldiers died during recovery efforts, and the Armed Forces of the Philippines gave awards to 21 Soldiers from the Army's 66th Infantry Battalion Charlie Company for their "acts of heroism" during the Bopha rescue efforts.

"While our ground troops were flood victims themselves during the recent tragedy, they never abandoned their assigned duties as they continued helping many people, and for this, they will be honored," Army spokesman Maj. Harold Cabunoc said. Army Chief Lt. Gen. Emmanuel Bautista personally awarded the Bronze Cross Medal, one

of the highest awards given to military personnel, to four injured Soldiers for their heroism.

Many witnesses recalled Soldiers saving children during the flash flood, including a 2-year-old boy and his pregnant mother about to be hit by rolling boulders and logs along a national road. The pregnant woman turned out to be the wife of an Army officer assigned to another station.

The wind was so strong that Army trucks were almost blown over, Senior Superintendent Rommil Mitra, the provincial police director of Davao Oriental, told Balita.com, a Filipino-American news magazine.

"The waters came so suddenly and unexpectedly, and the winds were so fierce," the governor of Compostela Valley, the worst hit province in Mindanao, told Reuters.



Corn farmer Jerry Pampusa and his pregnant wife survived in their hut and told Reuters, “We were very scared. We felt we were on an island because there was water everywhere.”

### JOINT SPECIAL OPERATIONS

Mindanao suffered from power outages and lack of communications for weeks with short supplies of food and clean water. To facilitate the delivery of relief aid and supplies in areas where they were most needed, the Joint Special Operations Task Force-Philippines (JSOTF-P) assisted Philippine security force helicopters in conducting aerial surveillance in the devastated provinces of Davao Oriental and Compostela Valley. JSOTF-P surveyed 37,980 square kilometers and provided 600 images for military advisors on the ground. Using a P3-Orion reconnaissance aircraft in the search for survivors in coastal areas in Sarangani, the U.S. covered 7,200 nautical square miles in the rescue efforts.

The Philippines and the U.S. joining forces in fighting disasters and carrying out rescue efforts has

could not reach these areas, so we had to deploy rubber boats,” said Col. Remigio Valdez, a Philippine marine brigade commander on Jolo who coordinated with the U.S. troops during the rescue efforts.

The Philippine-U.S. efforts in conducting humanitarian assistance and relief efforts have occurred at various magnitudes. In contrast to these citywide and nationwide rescue efforts, in February 2011, the Philippine Navy’s Task Force-62 and the Joint Special Operations Task Force-Philippines saved a family of five who had been floating for more than 12 hours at sea near Tawi-Tawi island, at the southwestern tip of the Sulu Archipelago in the southern Philippines.

Philippine and U.S. military personnel were completing joint military drills when they spotted a man in the sea clinging to floating debris. Without hesitation, a U.S. special warfare boat operator jumped into the water and swam for 300 meters without a life jacket to save the man, who was barely conscious from exhaustion. The man, unable to speak from fatigue, pointed in the general direction where the rest of his family was adrift.



**Rescuers help a flash flood survivor across a surging river in New Bataan in December 2012.**

AFP/GETTY IMAGES

Philippine security forces bravely traversed mudslides and raging flash floods to get to remote areas to help villagers reach safer ground and to search for missing persons.

been a long-standing capability of the two allies. A JSOTF-P element stationed in Jolo in February 2011 joined the Philippine Marines and civilian volunteers to rescue villagers trapped in their homes during a weeklong downpour in Jolo’s coastal provincial capital. “In my 13 years in politics, I have never experienced anything like what happened last night,” Jolo Mayor Hussin Amin told The Associated Press.

U.S. troops lent their rubber boats and joined the Philippine security forces to rescue thousands of villagers from waist-deep raging flash floods. “The water was too deep in some areas that even our trucks

With only an hour of daylight, the Philippine-U.S. Navy team quickly joined forces and dropped a rescue boat into the water to search for the remaining family members. The mother, two children and their grandmother, barely holding on to plastic containers and wood debris, had been floating since 4 in the morning when they were found by the joint forces. “I am thankful to the Sailor who risked his life to save my father,” said the young boy, who had second-degree burns from the boat’s gas spill. The family profusely thanked the joint forces, who provided them with first aid, clothes and food before bringing them back to the city mayor for further care.



1.

EPA



2.

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**1. Philippine Soldiers and U.S. Marines unload relief goods for transport to areas in Mindanao affected by Typhoon Bopha in December 2012. 2. Philippine Sailors move relief supplies for transport from a Cavite City naval base after Typhoon Bopha.**

### SPIRITED RELIEF

The practice of donating food and clothing has a particular communal effect that unifies different groups of people. As a message of partnership and peace with the Muslim community, Philippine Soldiers together with JSOTF-P celebrated Eid al-Fitr with Mindanaoans through Ramadan gift giving in September 2010. Then Western Mindanao Command's Lt. Gen. Benjamin Dolorfino and JSOTF-P's Capt. Robert Gusentine distributed food packages containing basic items to a poor remote village that did not have a good water source. More than 90 percent of the villagers were Muslim, and they shared their Ramadan gift bags with their families who otherwise would not have sufficient food to celebrate Ramadan.

In a similar spirit of sending support to Muslims, the Philippine National Police and the Armed Forces of the Philippines canceled Christmas parties in their head offices in suburban Quezon City and donated their party budgets to the Bopha typhoon victims in Mindanao. Philippine government agencies canceled their holiday parties after President Benigno Aquino's decision to cancel his annual Christmas party to show solidarity with Mindanao.

President Aquino's cabinet members canceled their holiday celebrations, as well, and instead distributed Christmas food packs to typhoon survivors at evacuation centers and in isolated areas in southern Philippines. "Instead of pouring our resources into a party, we'd like to use those resources for our assistance to the typhoon

victims," presidential spokesperson Edwin Lacierda said.

The Christian north reaching out to the Muslim south, whether in times of calamity or peace, manifests the trend toward the increasing breakdown of cultural barriers that used to separate the two ethno-religious groups. As the peace process between the Moro Islamic Liberation Front and the Philippine government continues its steady course toward resolution, there will be greater official recognition and accommodation by the government to the various ethnic groups living in the largely Christian nation. Indeed, the practice of collaborative dialogue has also increasingly permeated the military culture.

"The different approaches employed by other countries in HA/DR [humanitarian assistance/disaster relief] will surely help us widen our perspective and improve our policies, procedures, preparations and responses in the emergence of natural calamities and man-made disasters in the Philippines," Armed Forces of the Philippines Chief of Staff Gen. Jessie D. Dellosa said during Balikatan 2012, whose theme for the year was to strengthen and enhance internal Philippine HA/DR processes through collaborative dialogue.

Whether recovery efforts demand large-scale rescue missions during nationwide calamities, small groups of joint forces in rubber boats helping Jolo villagers, or the heroic rescue of a family in Tawi-Tawi by a handful of joint forces, the Philippine-U.S. military partnership continues to become interoperable at all levels, prepared to face any challenges. □





# PASOC 2013

EXPLORES SECURITY, PARTNERSHIPS  
AND SPECIAL OPERATIONS FORCES

SCOTT M. MCGEHEE/FOREIGN POLICY ADVISOR FOR SPECIAL OPERATIONS COMMAND PACIFIC

*The Pacific Area Special Operations Conference (PASOC) is the premier U.S.-hosted multinational special operations event in the region, bringing together military officers, academics, diplomats and private-sector experts from across the Indo-Asia-Pacific region. Since its inception in 1992, PASOC has convened 18 times, providing a forum for participants to review threats to regional peace and prosperity, to compare experiences and to build partnerships that expand collaborative approaches to shared security challenges. PASOC 2013, hosted by Special Operations Command Pacific (SOCPAC), was held in Honolulu from March 4 to 7, bringing together more than 250 participants from 23 security partners.*

**PASOC 2013** focused on the complex challenges and opportunities emerging in today's Indo-Asia-Pacific region and how special operations partnerships and whole-of-government approaches can best serve the preservation of regional security and prosperity.

The conference focused on unique security issues emerging from the region's expanding trade; the need to secure energy supplies and protect commercial shipping; environmental and natural disaster concerns; the expanding influence of China and India; and the U.S. rebalance to the Pacific. Also examined were the regional responses to North Korea's provocative actions, increasingly sophisticated transnational links of extremist and criminal groups, nefarious uses of cyberspace, and proliferation of dangerous materials and technology.

Against this backdrop of security challenges, participants noted that importantly, most governments have come to recognize that multilateral security cooperation is essential to countering many of these challenges and dangers. The Association of Southeast

Asian Nation's growing role in broadening regional security cooperation was also highlighted. Thus, a continuum of consultations is already in place, it was noted, which can serve as a foundation for new security cooperation endeavors. While many participants and speakers acknowledged that much good collaborative security has been accomplished, there was also broad recognition that more could be done through expanded partnerships.

In today's Indo-Asia-Pacific region, special operations forces carry out a variety of critical roles, and the trend is for national authorities to want these forces to continue to expand and diversify their roles and responsibilities. Because they are by design adaptable, rapidly deployable and effective in a range of missions, special operations forces have proven to be effective as multipurpose assets, whether to deter or defeat specific threats, provide rescue or crisis response or help provide long-term stability. Importantly, special operations forces have also been on the leading edge of understanding and demonstrating that building



**South Korean Special Warfare Forces participate in a winter drill in Pyeongchang, 180 kilometers east of Seoul, in January 2013.**

AGENCE FRANCE-PRESSE

enduring relationships with counterpart forces in other countries is an indispensable foundation for expanding cooperation.

The message emerging from PASOC 2013 was clear: Building partnerships, employing whole-of-government approaches and combining efforts of special operations forces and other partner organizations across the Indo-Asia-Pacific region is one of the most effective strategies to deal with new and unpredictable challenges to common security in the region. □

**PASOC 2013 ATTENDEES:** Australia, Bangladesh, Cambodia, Canada, Germany, Hong Kong, India, Indonesia, Japan, Republic of Korea, Malaysia, Maldives, Mongolia, Nepal, New Zealand, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, United Kingdom, United States, ASEAN

## REGIONAL SOF COORDINATION CENTER PLANNED

At 2012's International Special Operations Forces (SOF) Week in Tampa, Florida, the idea for Regional SOF Coordination Centers (RSCC) was introduced to a global audience by U.S. Special Operations Command. At PASOC 2013, Maj. Gen. Norman J. Brozenick Jr. confirmed progress in planning an RSCC for the Indo Asia Pacific and sought feedback and input from the participants.

For the Indo Asia Pacific, RSCC is proposed as a regional hub where SOF and others can share information, participate in multinational education and develop opportunities to address common security challenges. Using interactive polling technology, participants overwhelmingly signaled their desire to participate in the development of an RSCC for the region.



# BOLSTERING BIOSECURITY

## ASIA-PACIFIC NATIONS

*need to work together  
to guard against  
biothreats*

DR. JAMES CAMPBELL/ASIA-PACIFIC CENTER  
FOR SECURITY STUDIES





South Koreans wearing gas masks evacuate a building during a civil defense drill in Seoul in August 2012.

AFP/GETTY IMAGES



In the past two decades, biotechnology has produced game-changing advances in energy, food production and medicine that have dramatically improved the health and livelihoods of billions of people worldwide. Biotechnology also has the potential, however, to create novel threats to public health if used irresponsibly or with malicious intent.

Biosecurity involves protection from adverse consequences of biological research. From a national defense perspective, it refers to efforts to mitigate and respond to the potential for destructive use of biology particularly through the application of biotechnology.

Scientific research, meanwhile, is characterized by novel experimentation, and few limitations are placed on the type of research that may be conducted. As a result, well-intentioned, peer-reviewed scientific investigations have occasionally produced results that inadvertently present opportunities for misuse of the data in the production of bioweapons.

Why should bioterrorism concern nations in the Asia Pacific, and what should they do to mitigate this threat? Nations throughout the Asia-Pacific region need first to recognize and accept the threat exists.

With the global penetration and application of biotechnology research, the opportunity increases daily for individuals or states to develop bioweapons for use in clandestine attacks on targets anywhere in the world. In addition to being potential targets themselves for bioterrorism, Asia-Pacific nations must recognize a greater international responsibility. To begin with, country leaders must confront the potential for production of biopathogens at facilities within their borders for use in attacks on other countries.

### Biotechnology Misuse

Legitimate research data could be misused in many ways (see sidebar below). For example, experiments completed

in 2001 by Australian scientists on genetically engineered mousepox virus, which were intended to create an animal vaccine model for a novel human smallpox vaccine, unexpectedly had the exact reverse effect. They produced a lethal vulnerability to the disease rather than protective tools. The experiments raised concerns over the potential of such research to develop bioweapons instead of biodefenses.

More recently in 2012, Yoshihiro Kawaoka at the University of Wisconsin and Ron Fouchier from Erasmus Medical Centre in Rotterdam, the Netherlands, independently engineered the H5N1 avian influenza virus, which normally causes deadly infections in birds, to readily infect mammals by airborne transmission, potentially opening the door to a human pandemic. Their research was intended to produce greater understanding of how the bird flu virus is transmitted between humans. However, the research has sparked contentious debates over regulation of scientific research with “dual-use” potential. Currently, no international body exists with the mandate or authority to regulate or provide oversight for this complex problem.

The U.S. government has responded with a plan to conduct more stringent funding reviews of certain kinds of H5N1 avian influenza research — and perhaps even require some studies to be kept secret. The problem with this type of response is twofold: First, genetic information on dangerous pathogens, essentially biotechnology “parts lists,” is freely available to anyone from several public databases, and these data can enable construction of novel microorganisms with dangerous attributes. Second, biotechnology continues to advance, and individuals conducting research with malicious intent are unlikely to publicize their findings and invite scrutiny of their activities.

At the same time, materials and tools to conduct such work are increasingly accessible. Used laboratory equipment, for example, is available for purchase

#### EXAMPLES OF MALICIOUS DUAL-USE OF BIOTECHNOLOGY RESEARCH

- Demonstrate how to render a vaccine ineffective
- Confer resistance to therapeutically useful antibiotics or antiviral agents
- Enhance the virulence of a pathogen or render a nonpathogen virulent
- Increase transmissibility of a pathogen
- Alter the host range of a pathogen
- Enable the evasion of diagnostic/detection modalities
- Enable weaponization of a biological agent or toxin

Samples of a smallpox vaccine to counter bioterrorism are displayed at a Singapore security conference.



EPA

throughout the Asia-Pacific region at bargain prices on eBay, and Web resellers take credit cards and will ship chemicals and biological research supplies anywhere in the world.

### Countering the Bioterror Threat

Given that biotechnology research is inevitable, and increasingly within the capability of small programs or even individuals in the Asia Pacific where appropriate oversight may not be enforceable or even feasible, a better strategy than constraining research is to actively support such research and promote unlimited public dissemination of results. Through such radical transparency, relevant research may reveal potential vulnerabilities, leading to timely countermeasures to thwart potential future biothreats.

Related aspects of biosecurity involve responsibility for interdiction of storage or transshipment of bioweapons precursors and disruption of bioterrorist financing that supports bioweapons development and distribution. Bioterrorist financing, which is distinct from money laundering typically associated with transnational crime activities such as drug trafficking, is a mechanism whereby funds are processed from legitimate or illegitimate sources to finance bioterrorist activities or those who encourage, plan or engage in bioterrorism.

Bioterrorism actually has limited tactical value in terms of morbidity and mortality. However, the potential for strategic effects is real, in terms of disrupting regional and international flow of goods and services, stressing bilateral relations and creating loss of public confidence in the government's ability to protect its citizens.

### Vigilance Against Natural Threats

Much of the Asia-Pacific region is also at constant risk for resurgence of natural infectious diseases such as malaria and dengue, as well as emergence of new pathogens or known pathogens exhibiting new and more dangerous characteristics such as increased virulence, greater drug resistance or expanded host range. More than 70 percent of new infectious diseases of humans are derived from animals (zoonotic diseases) including high-profile diseases with epidemic potential such as H5N1 bird flu, H1N1 swine flu and severe acute respiratory syndrome (SARS).

Southeast Asia and southern China historically have formed the "crucible" from which the new seasonal influenza strains arise each year, as well as a host of entirely new zoonotic diseases.

Comprehensive national public health preparedness for natural outbreaks of infectious disease simultaneously makes nations less vulnerable and more resilient to attacks with bioweapons.

To mitigate the global challenge of infectious disease threats, the 2005 World Health Organization (WHO) International Health Regulations (IHR) require all 194 signatories to conduct enhanced surveillance within their countries for outbreaks of infectious disease that constitute public health emergencies of international concern, which includes bioterrorism, and to report outbreaks to WHO within 24 hours. Rebecca Katz and Julie Fischer observed in a 2010 article for the *Global Health Governance* journal that the 2009 H1N1 pandemic marked the first use of the IHR to address a global public health emergency. The regulations succeeded for the most part in delaying or



mitigating the effects of the pandemic. However, the pandemic also highlighted shortcomings of the regulations, particularly their reliance on uneven national capacities and limited responses to states that exceeded evidence-based public health, trade and travel recommendations. Moreover, compliance with this international requirement has been poor in many lower- and middle-income countries, where the costs of enhanced surveillance compete with more pressing public health needs.

Moreover, in the case of zoonotic disease threats such as bird flu, the standard government response strategy to an outbreak in chickens or other commercial bird stocks is simply to cull the entire flock. Financial compensation for the impacted farmer, however, is typically inadequate, and important cultural considerations of culling are generally ignored, further diminishing compliance in future outbreaks.

Lack of compliance with surveillance and outbreak reporting puts human populations at increased risk of exposure and raises the specter of pandemic spread. The positive side of reporting disease outbreaks is that WHO is obligated to provide resources to help control the outbreak should the impacted country request assistance, although this aspect is generally underappreciated or unknown at the local level.

For members of the Association of Southeast Asian Nations (ASEAN), the ASEAN Agreement on Disaster Management and Emergency Response (AADMER), ratified in 2009 by all member states, offers a legal framework for responding to disasters including pandemics. Specific tools and resources for response activities are provided under AADMER through the Standby Arrangements for Disaster Relief and Emergency Response (SASOP).

### Biosecurity Through Cooperation

What can security officials, particularly those responsible for the Asia-Pacific region, do to counter the increasing challenge of natural and man-made infectious disease threats? As pandemics and bioterrorism often present problems that are beyond the capacity of single countries, national governments can demonstrate proactive leadership through greater compliance with the World Health Organization's International Health Regulations surveillance and reporting requirements, and enhanced information sharing through existing regional security mechanisms such as the ASEAN Regional Forum.

To accomplish these goals, close and confident personal relationships must be built between regional leaders. Also, recognition and acceptance that a nation's security sector is more than just military and police, and includes numerous government ministries plus civil society and academia, will facilitate greater whole-of-society cooperation in developing effective

Police, fire and medical services personnel participate in a chemical, biological, radiological and nuclear exercise in Hong Kong.



strategies to deal with the multisectoral impacts of infectious disease.

Civil-military cooperation in pandemics is also addressed in the SASOP, which considers military assets as part of a whole-of-government response to any disaster that threatens national security. Regional standards are also needed for national policy to address biosecurity risks associated with the increasing number of biocontainment research laboratories being constructed throughout the Asia Pacific, although past regionalization efforts have run afoul of traditional concepts of national sovereignty. Traditional security personnel must work collaboratively with health security professionals to develop comprehensive policy recommendations for joint information sharing and collective action in outbreaks of infectious disease, including suspected acts of bioterrorism.

Although cooperation on forensics and law enforcement is essential for assigning responsibility and arresting perpetrators in the case of bioterrorism, top priority in any infectious disease outbreak must remain identification of the threat and mitigation of its immediate human health consequences. As the greatest number of emerging infectious disease threats



AFP/GETTY IMAGES

to humans comes from contact with animals, including potential bioterrorism agents such as anthrax and brucellosis, a priority strategy for security personnel is to become informed on and support the comprehensive “one health” approach that integrates human, veterinary and environmental health surveillance.

From a prevention standpoint, security personnel can cooperate regionally with the scientific and public health communities to restrict access to laboratory strains of microbial pathogens and dispersal technologies, without hindering legitimate research and development. Although global responses may be optimal, particularly in the event of a pandemic, problems that are primarily regional in scope are likely to be dealt with better at the regional level, given limitations of time, attention, commitment and resources at the global level.

Although regional collaboration on biosecurity is unquestionably superior to unilateral or bilateral actions, collaboration will not be easy. First, there are gaps in capacity for

biosurveillance and response between countries in the Asia-Pacific region, and imposition of strict, standardized measures of preparedness would place a disproportionate burden on less-advanced countries. From a security standpoint, there is understandable concern that imposition of a multinational surveillance and data-sharing system could potentially compromise confidential information critical for law enforcement, to the advantage of terrorists.

There are also important differences in legal cultures, domestic institutions and social circumstances that make any legally binding international framework problematic, particularly in the Asia-Pacific region where great value is placed on national sovereignty. However, the range of suggestions offered in this paper to security officials, backed by sufficient political will to address the dual threats of bioterrorism and emerging infectious disease, provides a framework for reducing vulnerability of regional states and increasing regional biosecurity. □





The escort ship Kurama from the Japanese Maritime Self Defense Force leads a formation of ships during a fleet review off Sagami Bay in October 2012.

AFP/GETTY IMAGES

# AN ANALYSIS OF THE REGIONAL SECURITY ENVIRONMENT

JAPANESE MINISTRY OF DEFENSE

**I**n the Asia-Pacific region, alongside the various changes that have taken place in tandem with the growing power of China, India and Russia, efforts are being made to enhance and strengthen coordination and collaboration among countries in the region with a particular focus on nontraditional security sectors such as humanitarian aid, disaster relief and counterpiracy measures.

On the other hand, this region is considerably

rich in political, economic, ethnic and religious diversity, and conflicts between countries/regions remain. Because of this, major changes in the security environment have yet to emerge even after the end of the Cold War, and long-standing issues of territorial rights and reunification continue to plague the region.

On the Korean Peninsula, the Korean people have been divided for more than half a century, and the faceoff continues between the military forces of the Republic of Korea and North Korea. There are

issues concerning Taiwan and the South China Sea. Japan also confronts unresolved territorial disputes over the Northern Territories and Takeshima, both of which are integral parts of Japanese territory.

### **The Threat from North Korea**

In North Korea in December 2011, longtime leader Kim Jong Il died, and a new framework was established with his son Kim Jong Un as the new leader. Concerns over North Korea's nuclear weapons and ballistic missiles have grown more serious, as was seen with North Korea's provocation of the missile launch, which it called a "satellite," in April 2012.

The Six-Party Talks aimed at the verifiable denuclearization of the Korean Peninsula in a peaceful manner have been suspended since December 2008, but in light of the series of North Korean announcements and actions, including two previous announcements (in October 2006 and May 2009) of nuclear tests, the possibility that North Korea has already made considerable progress in its nuclear weapons program cannot be dismissed.

Furthermore, there is a possibility that the country is developing nuclear weapons using highly enriched uranium. In addition to conducting nuclear tests, steps taken by North Korea to enhance its ballistic missile capability pose a significant threat to Japan's security and are absolutely unacceptable because they are significantly detrimental to peace and stability in Northeast Asia and the international community. There is great concern toward such movements by North Korea, and developments in North Korea continue to be unpredictable and need to be closely monitored.

North Korea's abduction of Japanese nationals is also yet to be resolved. It is a major threat to the lives and security of the Japanese public, and its solution will require concrete actions by North Korea.

### **China's Role**

Many countries in this region have taken advantage of economic growth to modernize their military forces by increasing their defense budgets and introducing new weapons systems. In particular, as China has become an influential country both politically and economically, its military trends draw attention from other countries. On the one hand, the international community welcomes the fact that China has started playing a major role in the region and the world, as illustrated by its active participation in international activities in nontraditional security areas. On the other hand, China has been broadly and rapidly modernizing its military forces, backed by the high and constant increase in its defense budget.

China has not clarified the current status and future vision of its military modernization, and the transparency of its decision-making process in military and security affairs is not enough. This is why it has been pointed out that this could lead to a sense of distrust and

misunderstandings by other countries.

Furthermore, China has been expanding and intensifying its activities in waters close to Japan. These moves, together with the lack of transparency in its military and security affairs, are a matter of concern for the region and the international community, including Japan, which should require prudent analysis.

This is why China is encouraged to further improve transparency regarding its military, and strengthening mutual understanding and trust by promoting dialogues and exchanges with China is an important issue.

### **Russia's Influence**

Russia is pursuing its national interests as a country with global influence, and it is seeking to develop its military posture in line with its resources against the backdrop of its economic development to date. Currently, it is moving forward with downsizing its troops, reforming its organizational aspects, improving the effectiveness of its readiness postures and modernizing its military, including the development and introduction of new equipment. Recently, there has been global deployment of its military, naval and air forces in particular, including joint training on voyages at long duration, antipiracy activities and patrol activities by strategic bombers. In the Far East, too, Russia continues with active operations of its vessels and aircraft and large-scale exercises, and its moves toward modernization of its equipment have been observed.

### **Partnerships and Stability**

As seen above, in the Asia-Pacific region, where a lack of transparency and elements of uncertainty still exist, the presence of U.S. forces remains extremely important to achieve regional stability. Japan and other countries have established bilateral alliances and friendly relations with the U.S., and they allow the stationing and deployment of U.S. forces in their territories. In addition, measures have recently been taken to further strengthen the presence of the U.S. forces.

Moreover, recent years have also seen an increase in opportunities for bilateral defense exchanges between countries in the region. Efforts are being made to engage in multilateral security dialogues, including the Association of Southeast Asian Nations (ASEAN) Regional Forum, the ASEAN Defence Ministers' Meeting-Plus and conferences hosted by nongovernmental institutions with the participation of relevant defense ministers, as well as bilateral and multilateral joint exercises. Japan has been hosting the Meeting for Defense Authority Senior Officials at the vice-ministerial level with Southeast Asian countries. Promoting and developing such multilayered approaches among countries is also important to ensure security in the region.

This is an excerpt from the "Defense of Japan 2012" white paper produced by the Japanese Ministry of Defense. To read the full white paper, go to [http://www.mod.go.jp/e/publ/w\\_paper/2012.html](http://www.mod.go.jp/e/publ/w_paper/2012.html).





# *An Homage to* HIMALAYAN HERITAGE

• AGENCE FRANCE-PRESSE •



The clansmen and monks of the mystical land of Upper Dolpa, Nepal, first gathered eight centuries ago to pray, feast, fight over property and vie for the title of fastest horseman in the Himalayas. They have met every 12 years since in the Tibetan Year of the Dragon for a festival in modern-day Nepal centered on the world's highest horse race, although these days they ride for honor rather than land.

In September 2012, about 50 cavaliers from tiny villages across the Himalayas prepared to run the perilous course, a narrow strip of rocky riverbed 4,300 meters above sea level in the rarified air of the world's tallest mountain range. A horn signaled the start, and men in silk headdresses, leather coats lined with yak fur and golden chains galloped away on their ornately adorned ponies.

Thousands of monks and other devotees who had walked for days to the Shey Dragon Festival roared on their favorites and waved the flags of their gurus.

The 1.6-kilometer course is essentially a ravine studded with boulders, ditches and a not inconsiderable stream of treacherously cold water. It was not long before the riders succumbed to the hazardous terrain. After the halfway turn, three of the runners lost their balance, stumbling on the rocks along the jagged bed of the stream before a pileup took out five more near the end.

The winner, by a clear distance, was 23-year-old farmer Tenzin Gurung whose mount, a chestnut brown Tibetan pony called Tika, rode the race of her life. Gurung's prize was to run Tika in a meadow dotted with about half a dozen 1,000-rupee notes

(U.S. \$11.50), provided by the organizers. He was allowed to keep what he could pick up without dismounting or slowing down, and he managed to scoop up 3,000 rupees, enough in the remote Himalayas to pay for a child's education for a year.

"I'm feeling good. I'm very happy," he said.

The Shey Dragon Festival, ostensibly a religious affair, is among the last of the great Himalayan clan gatherings that hark back to a time when warring tribes would meet during a weeklong armistice to take their disputes to the sporting field. Under the Tibetan Yarlung dynasty, there was a large migration in the eighth century toward Dolpa, which changed hands between the Purang, Guge, Mongolian and Lo kingdoms during the following 800 years before being swallowed up by Nepal.

The festival, one of the most important events for Buddhist pilgrims, has taken place under all these regimes, with about 15,000 from across the world celebrating in 2012, during five days straddling August and September. During the festival, prayers are conducted by Tulku Lama Rinpoches and pilgrims embark on an eight-hour walk, known as a "kora," around the sacred Crystal Mountain overlooking the festival site. Apart from horse racing and prayer, devotees take part in archery competitions and perform traditional dances.

"This festival means a lot to the pilgrims," said Zhechen Rapjam Rinpoche, 54, the head of the organizing committee. "It's nice to see this year the younger generation participating. In previous years, it was only elderly people. I hope it continues to grow."



A monk wears traditional garb at the Shey Dragon Festival in Upper Dolpa, Nepal.







HAITI

THE ASSOCIATED PRESS

## POST-QUAKE:

### *Artisans thrive again*

The sharp tang of varnish hangs in the air as a dozen women and a few men cut and scrape logs into bowls destined for U.S. department stores. In other Haitian workshops, vases sparkle with sequins of pink, green and blue, and dragonflies leap from picture frames cut from recycled steel drums.

Three years after a devastating earthquake, there's still not much economic traction in this Caribbean country, but one small niche has taken off: arts and crafts.

The artisan industry is enjoying a boost from advocacy groups that are helping organize workers and improve quality. Big retailers Macy's and Anthropologie and three high-end designers are among those working with at least five artisan groups to export Haitian arts and crafts. The Associated Press



THE ASSOCIATED PRESS

# POLICE FOIL BOMB PLOT

South African police said they foiled a December 2012 plot by suspected right-wing Afrikaner extremists targeting an African National Congress (ANC) conference attended by President Jacob Zuma and dozens of top government officials. Authorities arrested four men, saying there was evidence they were planning acts around the country and not just at the ANC meeting in the central city of Bloemfontein.

The vast majority of South Africa's whites accepted the ANC's victory in the 1994 election that brought Nelson Mandela to power and ended decades of white-minority rule. However, a tiny handful continues to oppose the historic settlement.

Preliminary information suggested the men were planning to bomb the marquee where Zuma and 4,500 delegates were holding a five-day meeting to choose the ANC's leadership for the next five years.

Reuters

## SOUTH AFRICA



AFP/GETTY IMAGES





PARAGUAY

THE ASSOCIATED PRESS

## Kids play Mozart with violins made from trash

The sounds of a classical guitar come from two big jelly cans. Used X-rays serve as the skins of a thumping drum set. A battered aluminum salad bowl and strings tuned with forks make a violin. Bottle caps work perfectly as keys for a saxophone.

A chamber orchestra of 20 children uses these and other instruments fashioned out of recycled materials from a landfill where their parents eke out livings as trash pickers, regularly performing the music of Beethoven and Mozart, Henry Mancini and the Beatles.

Word is spreading about these kids from Cateura, a town built on a vast landfill outside Paraguay's capital where 25,000 families live. The youngsters of "The Orchestra of Instruments Recycled From Cateura" performed in Brazil, Panama and Colombia in 2012 and hope to play more in 2013.

"We want to provide a way out of the landfill for these kids and their families. So we're doing the impossible so that they can travel outside Paraguay, to become renowned and admired," said Favio Chavez, a social worker and music teacher who started the orchestra.

The Associated Press



THE ASSOCIATED PRESS

## FOREST PROTECTION GOES DIGITAL

Landowners who broke Brazil's environmental laws by clearing their farms of native forest used to have just one way to make right with government inspectors: plant trees. Now, they can clear their names by just pointing and clicking.

After decades of trying to protect rapidly shrinking forests, Brazil has launched a digital platform called BVRio, short for Bolsa Verde do Rio de Janeiro (Rio de Janeiro Green Exchange). Growers who have more untouched forest than legally required can sell "quotas," one hectare at a time, to farmers who fall short for a price determined by supply and demand. Under the rule, growers have to keep a minimum amount of native growth on their properties, ranging from 20 to 80 percent of their land depending on the type of vegetation. The trading platform, launched in December 2012, allows farmers to find and negotiate directly with each other. The Associated Press

BRAZIL



AFP/GETTY IMAGES



# New Vehicle Boosts Singapore's Decontamination and Treatment Abilities

CYBERPIONEER, DEFENCE MEDIA CENTRE, MINISTRY OF DEFENCE, SINGAPORE

With the newly acquired Medical Decontamination/Treatment Vehicle (MDTV), the Singapore Armed Forces' Medical Response Force can take care of casualties swiftly and efficiently in the event of a chemical, biological or radiological (CBR) agent outbreak.

The 1995 sarin gas attack on the Tokyo subway, the 2001 anthrax attacks in the United States and, more recently, the nuclear disaster in Fukushima, Japan, serve as poignant reminders of the deadliness of CBR incidents. It is imperative to thoroughly decontaminate and quickly treat casualties who have been exposed to these threats. In view of this, the Medical Response Force (MRF) — an elite medical team on standby to handle such incidents at key armed forces installations — has acquired five of the specialized vehicles.

## IMPROVED RESPONSE TIMES

In the past, MRF personnel had to transport supplies to the incident site and then manually set up the casualty decontamination section, which is made up of tents and other equipment that have to be assembled on location. It was a physically arduous task, made even more difficult by the heavy Mission-Oriented Protective Posture suits the personnel wear.

Previously, such a deployment took about 20 minutes. However, with the new MDTV, the decontamination and treatment areas can be fully set up and ready in half the time.

Many labor-intensive processes are automated with the MDTV, easing the heavy workload of the MRF personnel and reducing the time needed before actual decontamination and treatment can take place.

## DIFFERENT CAPABILITIES

As its name suggests, the MDTV can be deployed in both decontamination and treatment modes. To maximize response time and capability, once a vehicle is configured

in a specific mode, it will remain that way for the entire operation. Hence, at least one vehicle will be deployed for decontamination and another for treatment. However, each can be quickly reconfigured to another mode if needed.

In decontamination mode, the shelters on each side of the vehicle are used as “lying lanes,” where casualties, usually unconscious or injured and unable to walk, are thoroughly cleansed by MRF troopers. The cabin is used to provide two “walking lanes,” where mobile casualties rinse themselves with the showers provided to remove contaminants from their bodies.

In treatment mode, the MDTV is designed to accommodate eight stretchers (three each in the two shelters outside and two in the onboard cabin). Casualties are assessed and given different priority statuses depending on the severity of their injuries.

## ENHANCED RESPONSE AND SAFETY

“It saves both time and manpower as it allows casualties to be seen and decontaminated more quickly, and it reduces the amount of effort and Soldiers needed to deploy such a facility,” Lt. Col. Michael Ong, commanding officer of MRF, explained. “Furthermore, it offers greater safety for the troopers as it reduces physical exertion, and thus decreases the degree of heat stress.”

The MDTV, manufactured by ST Kinetics, has been used in training exercises since June 2012 and achieved full operational capability in October 2012. When it comes to any lifesaving effort, every second counts. With this vehicle at hand, the MRF looks set to respond more quickly and efficiently in dealing with CBR situations.





# A Pharaoh's Tale

## Scientists solve 3,000-year-old murder mystery

An assassin slit the throat of Egypt's last great pharaoh at the climax of a bitter succession battle, scientists said in a December 2012 report about the 3,000-year-old royal murder. Forensic technology suggests Ramses III, a king revered as a god, met his death at the hand of a killer or killers sent by his conniving wife and ambitious son.

A cadaver known as the "Screaming Mummy" could be that of the king's son, possibly forced to commit suicide after the plot, according to scientists.

Computed tomography imaging of the mummy of Ramses III shows that the pharaoh's windpipe and major arteries were slashed, inflicting a wound 70 millimeters wide and reaching almost to the spine, investigators said. The cut severed all the soft tissue on the front of the neck.

"I have almost no doubt about the fact that Ramses III was killed by this cut in his throat," said paleopathologist Albert Zink of the Institute for Mummies and the Iceman at the European Academy of Bozen/Bolzano in Italy. "The cut is so very deep and quite large, it really goes down almost down to the bone [spine] — it must have been a lethal injury."

Ramses III, who ruled from about 1188 to 1155 B.C., is described in ancient documents as the "Great God" and a military leader who defended

Egypt, then the richest prize in the Mediterranean, from repeated invasion. He was about 65 when he died, but the cause of his death has never been clear. Sketchy evidence lies in the Judicial Papyrus of Turin, which recorded four trials held for alleged conspirators in the king's death, among them one of his junior wives, Tiy, and her son, Prince Pentawere.

In a yearlong appraisal of the mummy, Zink and experts from Egypt, Italy and Germany found that the wound on Ramses III's neck had been hidden by mummified bandages.

"This was a big mystery that remained, what really happened to the king," said Zink of the study, published by the *British Medical Journal*. "We were very surprised and happy because we did not really expect to find something. Other people had inspected the mummy, at least from outside, and it was always described [as] 'there are no signs of any trauma or any injuries.'"

It is possible that Ramses' throat was cut after death, but this is highly unlikely as such a practice was never recorded as an ancient Egyptian embalming technique, the researchers said. In addition, an amulet believed to contain magical healing powers was found in the cut.

"For me, it is quite obvious that they inserted the amulet to let him heal for

the afterlife," Zink said. "For the ancient Egyptians, it was very important to have an almost complete body for the afterlife," and embalmers often replaced body parts with sticks and other materials, he said.

The authors of the study also examined the mummy of an unknown man between the ages of 18 and 20 found with Ramses III in the royal burial chamber. They found genetic evidence that the corpse, known as the Screaming Mummy for its open mouth and contorted face, was related to Ramses and may very well have been Prince Pentawere.

"What was special with him, he was embalmed in a very strange way. ... They did not remove the organs, did not remove the brain," Zink said. "He had a very strange, reddish color and a very strange smell. And he was also covered with a goat skin, and this is something that was considered impure in ancient Egyptian times" — possibly a post-mortem punishment.

If it was Pentawere, it appears he may have been forced to hang himself, a punishment deemed at the time as sufficient to purge one's sins for the afterlife, the researchers said.

History shows, though, that the plotters failed to derail the line of succession. Ramses was succeeded by his chosen heir, his son Amonhirkhopshef.

Agence France-Presse



## TRESSES TO TREASURE

Hailed as a visionary in his native Vietnamese village, Do Van Thu has transformed the lives of hundreds of families through the sale of a precious and unorthodox crop — hair.

“We were very poor because we had hardly any farmland. This work has saved our lives,” Thu said as women from Binh An village washed and sorted piles of tresses in a workshop at his opulent home. The hair mogul said exports of Vietnamese locks sustain 500 families — 80 percent of the population in his area.

“Each employee at my business is earning 3 million dong (U.S. \$140) a month,” he said — three times the average rural wage in Vietnam.

Local people say their lives have been vastly improved by Thu’s hair enterprise. Agence France-Presse



AFP/GETTY IMAGES



THE ASSOCIATED PRESS

## Thai Hotel Brews COFFEE FROM DUNG

For those who like their coffee with a strong nose, Thailand could be the ideal destination after a blend made from elephant dung was put on sale by an upmarket hotel chain. The Black Ivory blend, made from coffee beans digested and excreted by Thai elephants, is billed as producing a particularly smooth cup.

“Research indicates that during digestion, the enzymes of the elephant break down coffee protein,” the Thai-based hotel group, which is selling the pungent brew at about U.S. \$50 for two cups, said in a statement in October 2012.

Agence France-Presse

## Elephant Imitates Human Speech

An elephant in a South Korean zoo is using his trunk to pick up not only food but also human vocabulary. An international team of scientists confirmed in November 2012 what the Everland Zoo has been saying for years: Their 5.5-ton tuskler Koshik has an unusual and possibly unprecedented talent.

The 22-year-old Asian elephant can reproduce five Korean words by tucking his trunk inside his mouth to modulate sound, the scientists said in a joint paper published online in *Current Biology*. They said he may have started imitating human speech because he was lonely.

Koshik can reproduce “annyeong” (hello), “anja” (sit down), “aniya” (no), “nuwo” (lie down) and “joa” (good), the paper says.

The Associated Press



AFP/GETTY IMAGES





## COOPERATION IN EXERCISE CROCODILO

Soldiers from Timor-Leste Defense Force conduct a building search during Exercise Crocodilo in Metinaro on October 12, 2012. The weeklong joint military exercise between the U.S. and Timor-Leste focused on military police training, small boat handling, jungle warfare, aviation and specific planning scenarios. In addition, troops worked together on local rehabilitation projects and medical clinics for civilians.

Photo By VALENTINO DE SOUSA, AFP/GETTY IMAGES

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