

the shield

THE OFFICIAL MAGAZINE OF DTRA/SCC-WMD
VOLUME 1, ISSUE 4

SPRING 2012

A Matter of Trust

How the world's two largest superpowers have successfully come together to reduce the size of their nuclear arsenals. *pg. 12*

Letters to the Editor

theshield@dtra.mil



Since the last issue, *the shield* has won 4 more awards, raising the 2011 total to 16: 3 Platinum MarCom Awards (including Best Magazine and Best Government Magazine), and a Platinum LACP Spotlight Award.

Additionally, *the shield* was rated one of the 'Top 100 Communication Materials of 2011' by the LACP (League of American Communications Professionals) and is currently being used at the Defense Information School (DINFOS) in the Public Affairs Officers Course and the Editor's Course as an example of "outstanding writing and design."

DTRA/SCC-WMD LEADERSHIP

Director

Kenneth A. Myers

Deputy Director, DTRA

Rear Adm. Garland Wright, Jr., USN

Deputy Director, SCC-WMD

Maj. Gen. Eric W. Crabtree, USAF

Command Senior Enlisted Leader

Command Sgt. Maj. Scott C. Mykoo, USMC

Director, Public Affairs

Richard M. Cole

the shield STAFF

Managing Editor

Dan Gaffney

Senior Editor

Anne F. Marek

Art Director/Sr. Graphic Designer

Ann M. Fox

Contributors

Bianka J. Adams, Ph.D.

Zack Cannon

Lt. Col. Craig Hess, USAF

Chris Kwan

Amanda Martin

CD Wright

Reproduction

Rey Ovalle

the shield is an authorized publication for members of the the Defense Threat Reduction Agency/USSTRATCOM Center for Combating Weapons of Mass Destruction. Contents of *the shield* are not necessarily the official views, or endorsed by, the U.S. Government, the Department of Defense, or the Defense Threat Reduction Agency/USSTRATCOM Center for Combating WMD. (DoDI 5120.4)

Photograph rights are owned by DTRA/SCC-WMD, unless otherwise indicated.

Public Affairs

Defense Threat Reduction Agency
8725 John J. Kingman Road, MSC 6201
Ft. Belvoir, VA 22060-6201
(703) 767-5870
www.dtra.mil

» *The Shield* is an example of outstanding journalism and eloquently captures the diversity and importance of the DTRA mission. It is a superb publication that provides coverage of lesser known capabilities of the organization as well as its historic legacy. The layout and photography is superb. Your magazine will provide the template and inspiration as we revamp our magazine.

Irene Smith
Public Affairs Officer
DLA Energy

» An envelope containing issues of *The Shield* landed in my mailbox yesterday. Your new magazine is outstanding — I found it highly informative, with a visual presentation that is absolutely top-notch. Keep up the good work.

Adam Hebert
Editor-in-Chief
Air Force Magazine

» I recently discovered *The Shield* online and was wondering if it was possible to receive print copies.

Richard Balliram
Staffer
Senate Homeland Security and Governmental Affairs Committee

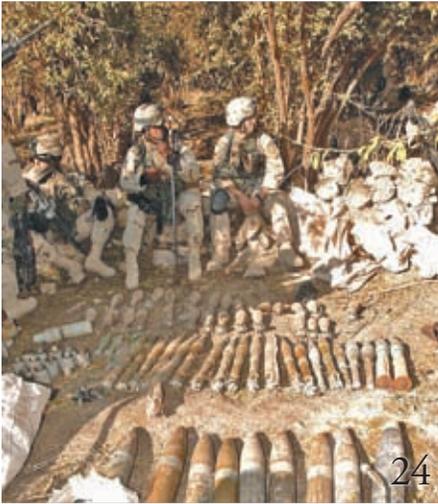
» I think the magazine should share more information directly relating to the warfighter. As an example, it could cover how a research project at DTRA impacts the warfighter in completion of their duties and responsibilities. Perhaps, your writers could also travel to some of the research locations and profile what the agency is attempting to accomplish through DTRA contracts.

Anonymous

Due to a shift in focus to internal communications efforts, *the shield* has been suspended until further notice. However, we will continue to share agency news and information with our readers through a variety of more frequent electronic communications products. We encourage you to continue sharing your thoughts and story ideas with our communications team by sending us an email at theshield@dtra.mil. It has been our pleasure to serve you.



Spring 2012



CONTENTS

VOL. 1, ISSUE 4

features

4 Behind the Desk

USSTRATCOM Commander Gen. Robert Kehler discusses the important relationship between DTRA and SCC-WMD.

12 A Matter of Trust

How the world's two largest superpowers have successfully come together to reduce the size of their nuclear arsenals.

24 Center of Gravity

Why SCC-WMD was created and how the center stands ready with DTRA to counter today's WMD threat.

32 DTRAIC: Serving the Nation for 50 Years

A look at the organization that collects and preserves the nation's largest collection of nuclear-related information.

departments

- 2 Around the World
- 8 A Look Back
- 22 DTRA Journal
- 34 Sightings
- 35 Inside DTRA/SCC-WMD
- 40 Legacy

Inside DTRA/SCC-WMD

- 36 Welcoming a New CSEL
- 37 DTRA Europe Moves its Headquarters
- 38 Reservists Fill a Unique Role in Emergency Preparedness
- 39 CTR Director Honored by Alma Mater

Around the World

GRAPHIC: ANN FOX

BY CHRIS KWAN

USA

Virginia

On December 20, 2011 Defense Secretary Panetta approved a concept to establish the Standing Joint Force Headquarters for Elimination (SJFHQ-E) of WMD. The SJFHQ-E will provide a full time, trained joint command and control (C2) element that can quickly integrate into a strategic-to-operational level headquarters to provide WMD elimination expertise in planning, intelligence, and operations. The SJFHQ-E will be commanded by Maj. Gen Crabtree, Deputy Director of SCC-WMD, and is planned to be co-located with DTRA/SCC-WMD at Ft. Belvoir where it will leverage the agency's diverse resources, relationships, experience, and expertise. ●

USA

Texas

Technicians at the Pantex facility in Amarillo dismantled the last B-53 nuclear bomb on October 26, 2011. Weighing in at 10,000 pounds, the B-53 was the largest and most powerful nuclear bomb in the U.S. arsenal with the ability to wipe out an entire metropolitan area with its nine-megaton yield. In comparison, the atomic bomb dropped on Hiroshima had a yield of 12 kilotons, or 0.012 megatons.

USA

Alabama

The Anniston Army Depot destroyed the last batch of its remaining stockpile of chemical weapons on September 22, 2011. Since 2003, the Army's chemical weapons incinerator at Anniston has destroyed more than 660,000 munitions filled with nerve agents and mustard gas. Chemical weapons have been stored in igloos at Anniston Army Depot since 1963.

Brazil / Argentina

On July 28, 2011, United Nations Secretary-General Ban Ki-moon congratulated the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) for its 20 years of working for nuclear disarmament and nonproliferation. According to the Secretary-General's statement, ABACC played a key role in facilitating the entry into force of the Treaty of Tlatelolco, the nuclear weapon-free zone encompassing the entire Latin America and Caribbean region.

VIRGINIA

GERMANY

Potential WMD threats exist on almost every continent.



Germany

During exercise GUARDIAN SHIELD 11, the 21st Theater Sustainment Command (21st TSC) and 7th Civil Support Command (7th CSC) in Kaiserslautern tackled a scenario involving a nerve agent terrorist attack in a European city affecting 250,000 people. DTRA/SCC-WMD foreign consequence management subject matter experts participated in the exercise and assessed the 7th CSC's response to the government of Poland's request for U.S. assistance. ●

Russia

U.S. military inspectors under the Open Skies Treaty carried out a flight over Russian territory from August 1-6, 2011. The Open Skies Treaty, signed in 1992, permits unarmed aerial observation flights over the territories of its 35 member states to promote openness and transparency of military forces and activities. ●

Japan

Japanese scientists at Fukushima University are enlisting the help of local wild monkeys to measure the impact of radiation in a forest affected by the Fukushima nuclear crisis. As many as three monkeys from a forest in Minami Soma City will be fitted with collars equipped with dosimeters to measure radiation levels. The monkeys are expected to wear the collars for a month and the experiment will provide researchers with a better understanding of how radiation in the forest can affect human beings and wild animals. ●

Azerbaijan

In June 2011, DTRA/SCC-WMD Associate Director for Operations, Ronnie Faircloth, participated in the opening ceremony of two animal disease monitoring laboratories in Azerbaijan's Imishli and Sabirabad regions. Through the Cooperative Biological Engagement Program, the U.S. government financed over \$2 million to construct the modern laboratories. Mr. Faircloth noted that the laboratories will make it possible for the country to combat dangerous viruses and the research will benefit the region.

Tanzania

The East Africa Border Security Workshop was held September 12-16, 2011, in Dar es Salaam. Participants from seven East African countries, regional organizations, the United Nations, and U.S. government agencies (including DTRA/SCC-WMD) discussed best practices on nonproliferation and security. The workshop follows a successful workshop held earlier in 2011 in West Africa that was hosted by NNSA and DTRA/SCC-WMD. Both workshops are strong testaments to continued cooperation among nations to prevent the smuggling of nuclear materials and technology on the African continent. ●

TANZANIA



RUSSIA



JAPAN



General
Robert

Kehler

INTERVIEW

He is a four star general in the United States Air Force. He's responsible for the plans and operations of all U.S. forces conducting strategic deterrence and Department of Defense space and cyberspace operations. When *the shield* sat down with General Kehler, we learned quite a bit more about the Commander of U.S. Strategic Command, how he values the support of our agency, and why he's made combating weapons of mass destruction one of USSTRATCOM's top priorities...



DANIEL J. ROHAN JR.

During your testimony to the House Armed Service Subcommittee last year, you stated “of the threats we face, WMD clearly represents the greatest threat to the American people, particularly when they are pursued or possessed by violent extremists or state proliferators.” What is the importance of SCC-WMD to USSTRATCOM?

First of all, I still believe that to be a true statement. The President has said some very similar words. The National Security Strategy says very similar words. And as I sit here at STRATCOM looking at the range of threats we face, I still believe this is the greatest threat to the American people. Having said that, STRATCOM’s role in combating weapons of mass destruction and, in turn, the Center for Combating WMD is extraordinarily important to us. When I look at the expertise across the Department of Defense and when I look at the expertise more broadly across the government, there is no question the combination of SCC-WMD and DTRA represents the greatest single concentration of expertise for all of the issues related to WMD. Whether that’s counterproliferation, countering threats, elimination activities, or building partnerships — every facet of combating WMD is represented in the combination of SCC-WMD and the support that the center receives from DTRA.

How vested is STRATCOM in combating today’s WMD threat?

We have five primary objectives and priorities at STRATCOM, but there’s one that transcends all five — the responsibility to combat WMD. The nature of our CWMD responsibility is to coordinate and synchronize the activities of all of the combatant commands. That’s a huge planning responsibility for us and an extremely important advocacy responsibility for us. The way we are trying to refine and synchronize the combating WMD plan, and establishing the Headquarters for the Joint Task Force for Elimination to strengthen our advocacy and improve information sharing collaboration — all of these are critically important steps for STRATCOM, and we are clearly vested in this. I tell people here that if this



(left) Gen. Kehler testifies before Nebraska Senator Ben Nelson during a Senate Armed Services Subcommittee Field Hearing on Strategic Forces at the Bellevue Welcome Center in Bellevue, Neb. — June 3, 2011 *(above)* Gen. Kehler speaks with students at the Naval War College in Newport, R.I. as part of a professional military education engagement — Sept. 6, 2011.

is the greatest threat we face, the greatest threat facing the American people — and I believe it is — then, the plan for dealing with this threat should be on the top shelf of STRATCOM headquarters as well as the rest of the combatant command headquarters. We’re working hard to make that happen.

You were the Deputy Commander of USSTRATCOM when it was decided that SCC-WMD would be stood up at DTRA. During SCC-WMD’s inception in August 2005, how did you envision SCC-WMD’s union with DTRA?

The intent behind doing this was to create a center of gravity on the issues. The relationship between SCC-WMD and DTRA was not the only association we pursued. We did the same thing — what we called the functional components for network warfare — at the National Security Agency. We did something very similar with our functional component with Air Force Space Command and with our functional component at the Defense Intelligence Agency. So, it was a logical relationship between STRATCOM and the experts at DTRA to stand

up this Center for Combating WMD. And I think dual-hatting the boss did much to make sure we didn’t have a seam between the two. It was about leveraging the intellectual, technical, and operational expertise of DTRA and marrying that with the mission responsibilities held at Strategic Command to put a global perspective on all of this. I think it made sense then and it has definitely evolved in a way that I would have envisioned five or six years ago.

How has the Center and the CWMD mission progressed in those six years since the stand up?

One of the interesting things about being here as the deputy, leaving for three plus years and then coming back, is I’ve gotten to see the maturity of the mission. When I left, I think we were still trying to get our feet on the ground and trying to make sure we understood what the responsibilities of SCC-WMD really were. But when I came back, a number of things had happened. Number one, I think we grew with more experience in the set of responsibilities, and number two, we focused our efforts a lot more. We understood what it was to be a global synchronizer.



Gen. Robert Kehler, Commander, U.S. Strategic Command, and **Capt. Luke Jayne, 325th Weapons School**, after a B-2 Spirit orientation flight at Whiteman Air Force Base. The B-2 Spirit — a multi-role bomber capable of delivering both conventional and nuclear munitions — represents a major milestone in the U.S. bomber modernization program.

STRATCOM's planning responsibilities and our synchronization responsibilities were solidified. And I think we knew a lot more about what our role in elimination should be. The relationship between SCC-WMD and STRATCOM Headquarters has matured. The addition of that relationship between SCC-WMD at DTRA and STRATCOM headquarters has also matured. I feel very comfortable today with the quality of advice I get from SCC-WMD, and the fact that Mr. Myers is able to put both of his hats on and synchronize efforts within DoD and across the government has been tremendously important.

USSTRATCOM is responsible for integrating and synchronizing global WMD efforts. Has integrating the WMD mission into USSTRATCOM changed the command's mission?

The command's mission really hasn't changed, but the way we go about performing that mission has changed quite a bit with the addition of SCC-WMD, the integration, and the designation of our synchronization. The Secretary of Defense and the Chairman have both put some teeth into that role by requiring all combatant commands planning for combating WMD will be synchronized by STRATCOM. That's

been a big help. We've had a couple of recent sessions with the Secretary of Defense to explain to him the way we are trying to go about our synchronization role and what it means to all of us to have that role. We've seen great progress in terms of being able to inform the Combatant Commanders and get them engaged in this issue and to begin to break down the seams we naturally find in geographic boundaries. Being able to work together is a hallmark of being able to combat WMD.

Last summer's Global Synchronization Conference saw events come full circle as you and General Cartwright both participated in the conference. What were some of the key themes and messages of that conference?

This was another very positive step forward. I decided to give a presentation about a sense of urgency and wanting to go faster with what we're doing. That's not to suggest people didn't want to go faster, I just wanted to "turn up the gain" of our entire area of responsibility. I gave a presentation in which I reminded all participants that WMD is the top threat to the American people and therefore, we need to treat it that way. The message that we need to have a sense of urgency in dealing with these problems reso-

nated very well at the entire conference. But we were reminded there are some impediments to doing that and one of those is we need to do a better job at having common awareness of the WMD threats and activities that are going on out there. They are a global problem. The other big issue that we worked on is doing a better job in identifying and sharing intelligence and doing a better job in synchronizing our intelligence collection. CWMD is very much related to counter terrorism. In fact, counter terrorism and counterproliferation touch, if they don't overlap. Both of those areas are focused on intelligence, the quality of intelligence, the fidelity of intelligence, and our ability to share intelligence. The conference participants pointed out there is more work to do in that regard, and there's more work to do in establishing some kind of a global common operating picture.

What do you think will be the biggest changes regarding combating WMD in the next 15 years?

This is one of those areas, unfortunately, that some around the world see as a way to gain advantage over the United States and our allies. The proliferation of WMD is still too attractive for some actors around the world, particularly violent extremists.



Gen. Kehler addresses the blue and gold crews of the Ohio-class ballistic missile submarine USS *Rhode Island* (SSBN 740) at an awards ceremony at Naval Submarine Base Kings Bay, Ga. – May 31, 2011.

This problem is going to persist. I believe it's going to continue to give us great difficulties, especially as actors try to operate more and more in the shadows. But, I do think we are going to make great strides in synchronizing our efforts where counterterrorism and counterproliferation meet... and where intelligence collection, processing and dissemination meet. I believe we'll get better and better at what we do as we go forward. That includes the entire spectrum of possibilities from intelligence collection all the way through elimination if that ever becomes necessary. This doesn't become less difficult problem, but it becomes a problem we are far better equipped to manage.

How will the new Standing Joint Force Headquarters for Elimination (SJFHQ-E) augment USSTRATCOM's mission and how might this change USSTRATCOM's relationship with DTRA?

The purpose of the headquarters is to allow us to fulfill the Unified Command Plan responsibilities we've been given. It's going to provide us with a full-time and trained joint C2 element able to integrate into forward headquarters, most likely, at the COCOM level, perhaps at the joint task force level. It will give us an opportunity to place a group of experts with a forward

commander so they can help manage the elimination mission. Then, the professionals in the services will execute that mission in whatever way is necessary, based upon the demands of the forward commanders. But I believe, the SJFHQ-E is being structured in such a way that there will be a small standing element that then will expand as needed to meet the needs of a forward commander. I think it's going to leverage DTRA very heavily as we plan the mixture of resident experts, including the experts at DTRA we would ask to participate with us.

What else should *the shield's* readership know about the relationship between DTRA and SCC-WMD?

The relationship between SCC-WMD and DTRA is a model relationship. It is exactly what I thought would happen when we were working some years ago to establish SCC-WMD. It has matured very well. The expertise at DTRA is a tremendous resource for STRATCOM — a tremendous resource, really, for the entire Department of Defense and for the nation. The people who work at DTRA are phenomenal people with a tremendous depth and breadth of experience. I want to make it very clear to all of your readers how important the job is that they do, how important their experience



is, what a tremendous set of achievements they've had over many years. Just look at the numbers of weapons that have been eliminated and the number of threat reduction and counterproliferation activities that have occurred — DTRA and now SCC-WMD are a part of all of that. I think all of those people should be very proud of what they do. There is a tremendous need for their services, expertise and experience, and I look forward to continuing to work with all of them as we go forward. I'm very proud of this relationship, and I'm very proud of the people at SCC-WMD and DTRA for what they do every day. ■

Nuclear Weapons Effects Tests IN THE 1950s

BY BIANKA J. ADAMS, Ph.D.
Historian, Defense Threat Reduction Agency

The nuclear monopoly of the United States ended on August 29, 1949, when the Soviet Union fired its first nuclear shot. The American military nicknamed it 'Joe 1,' after "Uncle Joe," a 'term of endearment' for Soviet dictator Josef Stalin. The Soviet bomb triggered the first nuclear arms race of the Cold War. It also set off a decade of breathtaking research advances and stepped up testing at a new site in the Nevada desert. During that time, the U.S. nuclear arsenal expanded from about 840 weapons with a combined yield of 50 megatons to more than 5,500 with a total yield of more than 17,500 megatons. When President Dwight D. Eisenhower assumed office in 1953, the huge nuclear stockpile became the centerpiece of his "New Look" national security policy.

The detonation of the first "Communist" atomic bomb came on the heels of two years of heightened U.S.-Soviet tensions over the independence of Turkey and Greece and the freedom of the city of Berlin, Germany. U.S. support for the Turkish and the Greek governments against Soviet pressure led President Harry S. Truman in 1947 to formulate his doctrine that pledged to defend any free nation against Soviet oppression. The next year, when the Soviets blocked all land and water access routes to western Berlin to force the Allies out of the city, the Americans and British foiled their plan with an unprecedented airlift. Barely a year after its end, the Truman Administration saw the outbreak of the Korean War in 1950, as a further attempt by the Soviet Union to divide the United States from its European allies by drawing it into a full scale conflict in Asia. In this strained atmosphere, the U.S. government realized that the

Soviet atomic bomb detonation, along with advances in missile technology and long-range aviation, had left the United States increasingly vulnerable to a devastating nuclear attack. Alarmed, Washington began to search for an appropriate response. Two options seemed feasible. The first was to increase



NATIONAL NUCLEAR SECURITY ADMINISTRATION

(above) Army troops from Camp Desert Rock attack towards an atomic blast during a maneuver held by the Army at the Nevada Proving Ground in conjunction with the Atomic Energy Commission's Tumbler-Snapper George nuclear test, June 1, 1952. *(right)* History's first atomic artillery shell fired from the Army's new 280-mm artillery gun at Frenchman's Flat, NV. Hundreds of high-ranking Armed Forces officers and members of Congress are present — May 25, 1953.

nuclear weapons production substantially, and the second was to explore development of a much more powerful “super” explosive device, a thermonuclear bomb. The U.S. chose to pursue both.

The Korean War Effect

Responsibility for developing, testing, and studying the effects of new devices rested with two agencies. The Atomic Energy Commission (AEC)¹ had assumed responsibility for nuclear weapons development and testing from the Manhattan Project on January 1, 1947, in accordance with the Atomic Energy Act of 1946. Simultaneously, the Armed Forces Special Weapons Project (AFSWP)² became the successor to the U.S. Army’s Manhattan Engineering District; with responsibility for the functions not assigned to the AEC, namely weapons effects testing in a military environment. Until 1954, the ‘double-names’ of operations reflected this division of responsibilities.

Increased funding for the development of new and better weapons to deter or defend against a Communist onslaught made increased nuclear testing imperative. Before the Korean War, Los Alamos Laboratory tested its new devices in the Bikini and Eniwetok atolls, the so-called Pacific Proving Ground. The area was far away from regular air and sea routes and therefore offered specific advantages to weapons testers, particularly the ability to test very high yields. With the outbreak of the Korean War, however, the Department of Defense became concerned about security and logistics for the area of operations and decided to establish a test site in the continental United States. The first atomic bomb had been tested near Alamogordo at the Northern end of the White Sands Missile Range, several hundred miles south of Albuquerque, N.M. This area was too small for the expected test volume. Instead, the choice fell on Nellis Bombing and Gunnery Range in southern Nevada, an expanse encompassing more than three-and-a-half-million acres of nearly uninhabitable desert north and west of Las Vegas. Another advantage was the location’s convenient distance to Los Alamos Laboratory and its newly established weaponization laboratory at Sandia Base near Albuquerque. In December 1950, President Truman approved Nellis Bombing and Gunnery Range as the new nuclear weapons test site. Renamed the Nevada Proving Grounds (later designated as the Nevada Test Site), the first AEC atmospheric nuclear weapon development test series (Operation RANGER), took place there from January to February 1951.

Planning for the first joint AEC-AFSWP test series scheduled for October 1951 began as soon as RANGER ended. Operation BUSTER-JANGLE was primarily a weapon development series designed to collect data for weapon design, but three of its seven shots, DOG,

¹ Over the years, the AEC evolved into the Energy Research and Development Administration (ERDA) and then into the Department of Energy (DOE). ² In 1959, AFSWP was renamed the Defense Atomic Support Agency (DASA). Twelve years later, DASA turned into the Defense Nuclear Agency (DNA); in 1996 into the Defense Special Weapons Agency (DSWA); and in 1998 into the Defense Threat Reduction Agency (DTRA).

SUGAR, and UNCLE, also served to indoctrinate combat troops to a nuclear war-fighting environment of a future war against Communist aggression either at home or possibly in Europe. The troop exercises were called DESERT ROCK after the participating soldiers’ housing area located at the edge of the test site. Except for RANGER and the last test HARDTACK II, tens of thousands of military personnel served as observers or maneuver troops throughout the course of the 1950s.



With tests continuing in 1952, the AEC and AFSWP planned for the next large weapons effects test program of eleven shots in Nevada. In April 1953, three months after President Dwight D. Eisenhower’s inauguration, Operation UP-SHOT-KNOTHOLE went off as planned. It included troop orientation and training, a volunteer officer observer program, tactical troop maneuvers, operational helicopter tests, and damage effects evaluation. It also marked the first time an atomic artillery shell was fired and detonated. Shot GRABBLE was a Mk-9 nuclear artillery shell fired from a 280 mm cannon. The Secretary of Defense, the Secretary of the Army, the Army Chief of Staff, and 96 Congressional observers watched the detonation from an area about seven miles west of “Ground Zero.” Besides training troops, the exercises included subjecting military hardware, uniforms, and fortifications to nuclear blasts and analysis of the resulting damage.

In addition to the military, the Federal Civil Defense Administration (FCDA) and state organizations responsible for civil defense matters also participated in the nuclear weapons effects tests. The civil defense organizations focused their experiments on the impact of nuclear explosions on standard frame houses, cars, plants and animals, and bunker designs for the civilian populations. Construction in preparation of nuclear shots was extensive and began many months before the actual test. For one test, the FCDA even invited French and German engineers to Nevada to build prototypes of their bomb shelters and expose them to the nuclear blasts. The FCDA also developed proposals to the AEC for so-called Open Shots to familiarize government officials, industry partners, and members of the media with atomic bomb explosions. Many of the structures from the civil defense studies of the 1950s survived and are still visible in Frenchman Flat of the Nevada Test Site.

Development of the Hydrogen Bomb

In 1952, while the American public and media focused on the presidential election campaigns and the continuing war effort in Korea, scientists at Los Alamos engaged in secret debates over the feasibility of developing a hydrogen bomb program. Soon the scientists split into two camps — those favoring researching the subject aggressively and those opposing it. One of the most outspoken proponents was Edward Teller. He chaffed at what he perceived as foot dragging by the AEC General Advisory Committee and by the senior leadership at Los Alamos. Becoming more alienated from Los Alamos as the debate continued, Teller began campaigning for an additional nucle-



Complete destruction of House No. 1, located 3,500 feet from ground zero, by an atomic blast at Yucca Flat at the Nevada Proving Ground – March 17, 1953.

ar weapons design laboratory with broad responsibilities and in competition with Los Alamos. He found allies in Ernest Lawrence and Luis Alvarez at the University of California, Berkeley. They helped him found a new Radiation Laboratory in a facility available at the University of California in Livermore. Two years later, Edward Teller's Livermore Radiation Laboratory succeeded in delivering a prototype bomb that used a new thermonuclear fuel, which eliminated the need for cryogenic equipment. Operation CASTLE, scheduled for February 28, 1954, tested this first thermonuclear device at Bi-

kini. Shot BRAVO had a yield of fifteen megatons, which was about twice the expected yield, and was the largest yield test the U.S. ever conducted. The unexpectedly high yield of BRAVO resulted in serious fallout exposure that extended well beyond the safety perimeter. Inhabitants of the surrounding islands, some American observers, and the crew members of a Japanese fishing boat in the area received high levels of radiation and had to be hospitalized. The incident was widely covered in the media and stirred up international debate on the implications of the nuclear arms race.

Before

After





A Change in Strategy

When the Korean War ended in July 1953, the huge stockpile became the centerpiece of the Eisenhower administration’s “New Look” national security policy. President Eisenhower interpreted Soviet expansionist goals not only as a threat to the nation’s security but also to its economy. He was convinced that any U.S. attempt to match the overwhelming number of Soviet land forces would bankrupt the economy. As a result, Eisenhower sought, and received, bold cuts to the defense budget, swollen by the demands of the Korean War. To compensate for the loss in conventional military capacity, he offered increased reliance on the deterrent and destructive power of improved nuclear weapons and delivery systems as America’s foremost line of defense. Eisenhower vowed that the U.S. would not hesitate to use massive retaliatory force to counter Soviet acts of aggression.

Reactions and Consequences

Within the United States public concern over fallout from tests at the Nevada Test Site increased over the years. Residents living to the east and northeast of the test site, so called Down-winders, claimed that their communities suffered increased numbers cases of cancers and other diseases associated with exposure to fallout from nuclear testing in the atmosphere. The public health debate continued for the next four years — as did nuclear testing. In 1958, the United States and the Soviet Union sent delegates to a Conference of Experts in Geneva to negotiate terms of a moratorium on nuclear testing. Following publication of the recommendations of the experts, President Eisenhower announced in August that the U.S. would begin a one-year moratorium on October 31. The Soviet Union followed suit a few days later. The moratorium lasted almost three years. For a number of the military volunteers participating in the DESERT ROCK exercises, radiation exposure resulted in medical problems decades later, which only gained public and congressional attention in the late 1970s. In response, the Department of Defense formed the Nuclear Test Personnel Review and put the Defense Nuclear Agency in charge of it.

During the 1950s, the United States made enormous strides in nuclear weapons development and in understanding their effects. The

(left) Before and after pictures of Operation DOORSTEP. Conducted during the larger Operation UPSHOT-KNOTHOLE nuclear bomb test, mannequins representing a typical American family are positioned in House No. 2 by civil defense officials who were testing the effects of an atomic explosion on houses and occupants at the Nevada Proving Ground – March 15, 1953.

arsenal grew from a relatively small number of fairly simple fission devices to a large number of tactical and strategic weapons with a very broad spectrum of yields. The nuclear arms buildup had profound repercussions for U.S. national security policy and for the personnel involved in testing the weapons of mass destruction. On the one hand, the large and rapidly growing inventory of nuclear weapons allowed the Eisenhower Administration to give U.S. national security policy a “New Look,” saving the American tax payers untold millions of dollars. On the other, a number of soldiers and civilians involved in the tests paid for the advances in nuclear weapons technology with their health. Their attempts to receive recognition and compensation for their sacrifice would continue until the late 1970s when the DNA, DTRA’s predecessor, assumed responsibility for them. ■

Suggestions for further reading:

Defense’s Nuclear Agency 1947-1997, (Washington, D.C.: U.S. Department of Defense, Defense Threat Reduction Agency, 2002);

John Foster Dulles, “The Evolution of Foreign Policy,” Before the Council of Foreign Relations, New York, N.Y., Department of State Press Release No. 81 (January 12, 1954) reprinted by Nuclear Peace Foundation;

Barton C. Hacker, *Elements of controversy: The Atomic Energy Commission and Radiation Safety in Nuclear Weapons Testing, 1947-1974*, (University of California Press, 1994);

Barton C. Hacker, “Radiation Safety, the AEC, Nuclear Weapons Testing,” *The Public Historian*, Vol. 14, No. 1 (Winter, 1992), pp. 31-53;

Richard G. Hewlett, Jack M. Holl, *Atoms for peace and war, 1953-1961: Eisenhower and the Atomic Energy Commission*, (University of California Press, 1989);

John C. Hopkins, Barbara Killian, *Nuclear Weapons Testing at the Nevada Test Site: The First Decade*, (DTRA Technical Report Series, DTRA-IR-10-56, May 2011);

Samuel F. Wells, Jr., “The Origins of Massive Retaliation,” *Political Science Quarterly*, Vol. 96, No.1 (Spring, 1981), pp. 31-52;

Nuclear Test Personnel Review (NTPR) Program: Program Reviews and Scientific Studies, DTRA Fact Sheet, May 2007;

The Effects of Nuclear Weapons, compiled and edited by Samuel Glasstone and Philip J. Dolan, Third Edition, (Washington, D.C.: United States Department of Defense and United States Department of Energy, 1977);

“Armed Forces: Exercise Desert Rock Monday,” *Time Magazine*, November 12, 1951.

Most of the texts are available at: DTRA/SCC-WMD1 Homepage/Quick Links/DTRA/SCC-WMD Historian Library (Nuclear Weapons Effects Test, 1951-1958 folder.)

a

Matte



r of Trust

By Anne Marek



In 1962,

U.S. reconnaissance photographs revealed that the Soviet Union was building secret missile installations in Cuba, within firing range of the United States. In response to the threat, the U.S. military, under the leadership of President John F. Kennedy, raised its defense readiness position to its highest level in history, DEFCON 3, indicating that any launch from Cuba would be considered as an act of war against the United States. The subsequent arms standoff between the U.S. and the Soviet Union was the closest the world ever came to nuclear war.

Nearly four decades later — on September 11, 2001 — U.S. Secretary of State Condoleezza Rice phoned Russian President Vladimir Putin to inform him that the U.S. was under terrorist attack and had raised its defense readiness position to DEFCON 3 for the second time in history. Putin, who had already ordered the Russian military to lower its alert posture, asked Secretary Rice if there was anything else his country could do to help the United States.

So, what caused the dramatic shift in policy and perception between the U.S. and Russia during the 40 years that separated these two events? The fall of the Soviet Union? The end of the Cold War? Or was it more than circumstance that brought the world's two largest nuclear powers together after half a century of Cold War fear and mistrust... and how do they remain on stable, predictable footing today?

Around the midpoint of the Cold War, Moscow was forced to turn its attention inward to deal with the Soviet Union's deep-seated domestic economic problems. Soviet leaders began to embrace the notion of easing strained political and economic relations with the U.S., a thaw that resulted in a series of strategic arms limitation talks (SALT I) that took place between 1969 and 1972. Following the SALT I talks, U.S. President Richard Nixon and the General Secretary of the Communist Party of the Soviet Union, Leonid Brezhnev, signed the Anti-Ballistic Missile Treaty (1972), which banned the development of systems designed to intercept incoming missiles. The measure helped improve relations between the U.S. and the Soviet Union, a relationship further accelerated in 1974 when U.S. President Gerald Ford and General Secretary Brezhnev agreed on a basic framework for the SALT II arms limitation agreement to curtail the manufacture of strategic nuclear weapons. President Jimmy Carter signed SALT II in 1979, but the treaty was never formally ratified by the U.S. Senate, due largely to U.S. opposition of the Soviet invasion into Afghanistan in December 1979. However, both sides continued to honor the SALT II agreement in principal.

In 1982, President Ronald Reagan proposed The Strategic Arms Reduction Treaty (START) — which he referred to as SALT III at the time — to reduce U.S. and Soviet nuclear forces. Under the treaty, both sides would be required to significantly reduce the number of warheads and nuclear weapons delivery systems within their arsenals. START negotiations continued into the following year, delayed several times because various U.S. agreement terms were considered non-negotiable by Soviet leaders.

Tensions reached a boiling point in 1983, when President Reagan introduced the Strategic Defense Initiative — a proposed program to use ground and space-based systems to protect the U.S. — which was viewed as a threat by the Soviet Union. Soviet leaders subsequently withdrew from setting a timetable for START and entered into a dramatic nuclear arms race with America that drove U.S. and Soviet defense budgets to some of their highest levels in history.

By the mid-1980s, the Soviet Union's enormous military expenses, including the intervention in Afghanistan — dubbed 'The Soviet's Vietnam' — had cost them dearly. Coupled with a weakened central government and a series of failed economic programs, the Soviet economy was in a state of rapid decay. The Kremlin had little choice but to start making military and political concessions with the U.S., agreeing to participate in a series of bilateral talks about economic issues and the scaling-back of the arms race.

The first of these arms control talks was held in Geneva in 1985, where both countries agreed in principal to reduce each country's nuclear arsenal by 50 percent. The Geneva Summit was followed by a second summit in Reykjavik, Iceland, that ended after the focus shifted to President Reagan's Strategic Defense Initiative, but helped pave the way for the 1987 Intermediate-Range Nu-



(top) U.S. President Gerald Ford and Soviet General Secretary Leonid Brezhnev sign a Joint Communiqué on the SALT treaty following talks on the limitation of strategic offensive arms — Nov. 23, 1972. *(middle)* U.S. President Ronald Reagan meeting with Soviet General Secretary Mikhail Gorbachev at Maison de Saussure during the Geneva Summit — Nov. 20, 1985. *(bottom)* Soviet inspectors and their American escorts stand among dismantled Pershing II missiles as they view the destruction of other missile components being destroyed in accordance with the Intermediate-Range Nuclear Forces (INF) Treaty, Pueblo Army Depot Activity — Jan. 14, 1989.

clear Forces (INF) Treaty between the United States and the Soviet Union. The United States deployed Pershing II and Ground Launched Cruise intermediate range missile systems into Europe in a counter to Soviet deployed SS-20 mobile ICBMs, which drove the Soviets to the negotiating table. The INF Treaty resulted in the elimination of all nuclear-armed, ground-launched ballistic and cruise missiles within ranges between 300 and 3400 miles. It was also the first time that on-site inspection was used as a means of treaty verification which resulted in the formation of one of the legacy agencies of DTRA, the On-Site Inspection Agency (OSIA). The agreement was considered an enormous step-forward for both countries.

Strategic arms talks culminated in 1991, when after nearly a decade of treaty negotiations, U.S. President George H. W. Bush and Soviet leader Mikhail Gorbachev gathered in Moscow to sign the START treaty, requiring each country to reduce thousands of nuclear warheads with strategic nuclear delivery vehicles for the first time.

Five months after START was signed, the Soviet Union collapsed leaving newly independent countries in control of former Soviet Union (FSU) economic and military resources. A half a century worth of Soviet-era nuclear, chemical and biological weapons were scattered across independent nations, many without the infrastructure or manpower to support them.

“With START, we knew that we could continue conducting our arms control efforts in the former Soviet Union (FSU) because we would be working with the same personnel from the FSU that we worked with during the INF Treaty,” says Jim Leahy, Deputy Director of the DTRA/SCC-WMD START Nuclear Division. “I think one of the greatest challenges moving forward with another arms-control treaty [START], was that the Soviet Union had collapsed and we didn’t know what was going to happen to the newly independent countries that were suddenly part of the strategic arms control process.”

START entered into force on December 5, 1994, having been delayed for several years after signature by the restructuring of the Soviet Union into the members of the FSU which included Belarus,

Kazakhstan, the Russian Federation, and Ukraine who all became Parties to START in accordance with the Lisbon Protocol. The Treaty limited the United States and the members of the Former Soviet Union to no more than 6,000 warheads which were attributed to no more than 1,600 intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs) and heavy bombers. An extensive verification regime which included the exchange of a comprehensive list of all strategic offensive arms as well as their locations, the exchange of notifications related to changes to that comprehensive list, the use of national technical means (satellites for example), as well as the conduct of on-site inspection, ensured that all of the parties were in compliance.

Inspection teams from the On-Site Inspection Agency (OSIA) — what would later become the Defense Threat Reduction Agency (DTRA) — supported treaty verification, conducting various on-site inspections that included data updates, reentry vehicle inspections, suspect sites, eliminations, and continuous portal monitoring. DTRA escort teams accompanied Russian inspection teams when they came to the U.S. to conduct START inspections at American military bases and facilities.

“There was still a level of uncertainty between the U.S. and Russia during those early days of START,” says Leahy. “Our Russian counterparts were used to working with us, but in many instances the military and civilian support personnel at Russian START sites had never seen or worked with Americans. Some of them were suspicious, some were just curious, a few were indifferent. All they knew about Americans — good or bad — came from the movies or from what they read in their propaganda newspapers. Our teams had to keep that in mind during the initial inspections.”

As DTRA on-site inspection teams supported START inspections, DTRA was simultaneously supporting another program to secure, store and eliminate weapons of mass destruction (WMD) throughout Eurasia. Under this program, known as Nunn-Lugar Cooperative Threat Reduction (CTR), the U.S. worked side-by-side with Russia, deactivating thousands of nuclear warheads and their delivery systems, as well as thousands of tons of lethal chemical and

“I think one of the greatest challenges moving forward with another arms-control treaty [START], was that the Soviet Union had collapsed and we didn’t know what was going to happen to the newly independent countries that were suddenly part of the strategic arms control process.” – Jim Leahy

biological weapons. Nuclear weapons delivery systems were physically dismantled. Strategic bombers, submarines, missile silos and ground vehicles were destroyed, ripped apart, blown up or otherwise made irreversibly unusable for war.

START and the Nunn-Lugar program reached a key milestone in December 2001 when all five signatory states — the United States, Russia, Ukraine, Kazakhstan and Belarus — declared that the levels of their nuclear warheads were below the required treaty limits. Ukraine, Kazakhstan and Belarus — three of the world’s largest nuclear powers after the Soviet Union fell apart — became nuclear weapons free.

“In truth, we’ll never know if the Russians would have met their START responsibilities without Nunn-Lugar,” says DTRA/SCC-WMD Director Kenneth Myers. “You can’t prove a negative. But, I can tell you that having seen these weapons up close and watched them and their delivery systems being dismantled, I am very confident that START and the Nunn-Lugar program, together, made critical contributions to global security.”

Even after the goals of START had been largely achieved, the U.S. and Russia kept the inspection, verification and compliance mechanisms in place for the remaining life of the treaty. Inspections of weapons systems eliminations, missile assembly production plants, and new types of strategic weapons continued and efforts were underway for a new U.S.-Russia strategic arms agreement to replace START I.

By the time START expired on December 5, 2009, it was arguably one of the largest and most complex arms control treaties in history, having eliminated about 80 percent of all strategic nuclear weapons in existence.

“The mutual confidence-building that our teams got *(con’t on page 20)*

(right) U.S. President Barack Obama and Russian Federation President Dmitry Medvedev after signing the New START treaty in Prague – April 8, 2010.

“ In many ways, nuclear weapons represent both the darkest days of the Cold War, and the most troubling threats of our time. Today, we’ve taken another step forward by — in leaving behind the legacy of the 20th century while building a more secure future for our children. We’ve turned words into action. We’ve made progress that is clear and concrete. And we’ve demonstrated the importance of American leadership — and American partnership — on behalf of our own security, and the world’s.”

– President Barack Obama
March 26, 2010



“The mutual confidence-building from the on-site inspections and direct engagement with the Russians played an important role in the success of START. Those personal and professional relationships that we built allowed us — and continue to allow us — to feel comfortable asking each other questions about compliance and to move forward, working together in a cooperative manner.” – Hunter Lutinski

The monumental task of reducing and reshaping our strategic forces to enhance stability will take many years of concentrated effort. But I believe that it will be possible to reduce the risks of war by removing the instabilities that now exist and by dismantling the nuclear menace.

– President Ronald Reagan
May 9, 1982

1982 – The first START proposal is presented by U.S. President Ronald Reagan. He refers to the proposal as SALT III.

1985 – START talks resume with a summit in Geneva.



1987 – The U.S. and the Soviet Union sign the Intermediate-Range Nuclear Forces Treaty.

1991 – Nunn-Lugar Cooperative Threat Reduction legislation is signed into law.

1980s

1983 – President Reagan introduces the Strategic Defense Initiative; the Soviet Union withdraws from setting a timetable for further START negotiations.



1986 – START talks fail at a summit in Reykjavik, Iceland, after focus shifts to the Strategic Defense Initiative.

1991 – U.S. President George H. W. Bush and Soviet President Mikhail Gorbachev sign the START treaty in Moscow; the Soviet Union collapses and the Cold War ends.



START timeline

2001 – The five signators of START – the United States, Russia, Ukraine, Kazakhstan and Belarus – declare that the levels of their nuclear warheads are below the required treaty limits.

2010 – U.S. President Barack Obama and Russian President Dmitri Medvedev sign The New START treaty in Prague, agreeing that both countries will place further reductions and limitations to their nations' strategic offensive arms.

1994 – START is entered into force, arms-control inspections begin.



1990s

2000s

1994 – Nuclear weapons delivery systems, chemical and biological weapons, and related materials are destroyed and dismantled under Nunn-Lugar.



2009 – START expires, roughly 80 percent of all strategic nuclear weapons in existence having been eliminated.

2011 – New START enters into force, the old START is renamed START I.



(left) **START Data Update Inspection** conducted by a U.S. inspection team of Tu 95 Heavy Bombers, Ryazan Air Base, Russia – January 2004. *(right)* **U.S. and Russian officials** at the INF Memorial at the Votkinsk Portal Monitoring Facility, Russia.

out of doing the on-site inspections and engaging directly with the Russians played an important role in the success of START,” says Hunter Lutinski, Director of the DTRA/SCC-WMD On-site Inspection Directorate. “Those personal and professional relationships that we built allowed us — and continue to allow us — to feel comfortable asking each other questions and to move forward, working together in a cooperative manner.”

In July 2009, U.S. President Barack Obama and Russian President Dmitri Medvedev declared in the Joint Understanding that both countries would place further reductions and limitations to their nations’ strategic offensive arms. The expired START — which subsequently became known as START I — was replaced with the New START Treaty (NST), an arms reduction treaty built on the

foundations of START I and calling for further reductions in the numbers of ICBMs, SLBMs, heavy bombers, and the warheads and launchers associated with them over a period of 10 years.

One of the most notable differences between START and NST is that the warhead limits under NST are much lower. The United States and the Russian Federation are limited to 1,550 warheads loaded onto deployed ICBMs, deployed SLBMs, and which are counted for deployed heavy bombers. Of particular note is that this limit reflects the number of warheads which are actually loaded onto ICBMs and SLBMs since this number is no longer an attributed number as it was under START. In the case of heavy bombers, each heavy bomber counts for one nuclear warhead which reflects the reality that nuclear weapons are not loaded onto heavy bombers day to

ARMS LIMITS	START 1	New START
Warheads	6,000 warheads attributed to deployed ICBMs and SLBMs, and heavy bombers.	1,550 warheads on deployed ICBMs, SLBMs and nuclear warheads counted for deployed heavy bombers.
Delivery Vehicles	1,600 strategic nuclear delivery vehicles, deployed ICBMs/SLBMs and their associated launchers, and heavy bombers.	700 deployed ICBMs, SLBMs, and heavy bombers, 800 deployed and non-deployed ICBM/ SLBM launchers and heavy bombers.



(left) Russian inspection team arriving at a U.S. Air Force Base for the final START inspection in the U.S. – December 1, 2009. *(right)* Chief of OSSF Lt. Col. Barrett Morris, USAF and Russian inspection team chief, Capt. 2 Rank Andrey V. Lyasovskiy, during the first NST inspection in the U.S. – May 13 2011.

day but still recognizes their nuclear threat by using the attributed number of one. The launch platforms for nuclear weapons are also limited at reduced numbers under NST. The sides are limited to 700 deployed ICBMs, SLBMs, and heavy bombers and 100 non-deployed ICBM launchers, non-deployed SLBM launchers, and non-deployed heavy bombers.

START I also assigned a maximum number of warheads per ICBM or SLBM. But, under NST, missiles are only counted as deployed if they are actually in or on a deployed launcher, and reentry vehicles are only counted if they carry missile components, with the exception of heavy bombers which are still counted by attribution.

The new treaty does not contain any limits on missile defense activities; it simply identifies that there is a relationship between strategic offensive and defensive systems. Missile production is monitored through notifications, National Technical Means, and unique identifier numbers, rather than continuously manned monitoring facilities, as required under START I.

There are fewer overall inspections under NST and fewer areas are inspected. The verification regime combines elements of START I with new verification elements specific to the new treaty. Measures for NST — on-site inspections and exhibitions, data exchanges and notifications related to strategic offensive arms and facilities — are adapted and simplified with the intent to be less disruptive to operational strategic forces and less costly than those provided for under START I.

“Our START inspections are much more collegial than they were 15 years ago,” said Lutinski. “We try to get in and out of their facilities with minimal disruption to their bases. It’s a much better atmosphere.”

In a world where all countries face the challenges of preventing nuclear proliferation and nuclear terrorism, the New START Treaty is a critical measure in making America more secure. The treaty limits the number of strategic nuclear weapons and helps the U.S. to better track the remaining ones. It ensures that America’s military has the flexibility to deploy and maintain its forces — including bombers, submarines, and missiles — in ways that best meet U.S. national security interests. And it places no limits on America’s missile defense systems, plans and long-range conventional strike capabilities, allowing the U.S. to make smart investments in America’s nuclear security enterprise to ensure that our own weapons remain safe, secure, and effective.

Additionally, the New START Treaty creates powerful momentum for broader U.S.-Russian cooperation on important other issues ranging from cooperation in Afghanistan, to responding to Iran, to facilitating trade and investment. The treaty allows America to continue working with Russia on addressing today’s threats to global security, seeking further nuclear reductions, improving the transparency of the U.S. nuclear arsenal and encouraging Russia to do the same.

“In my view, ultimate success for the New START Treaty is when the inspections operate so smoothly that it gives the U.S. and Russia confidence in their ability to move forward with the next round of dialogue, whatever that will be,” says Lutinski. “The greatest importance that we at DTRA can offer is to ensure that the implementation process goes smoothly. The dedication and professionalism of our on-site inspectors and escorts is second to none... and if we continue to prove that we can do this well and we continue to provide good insights on potential inspection procedures for a follow-on treaty to the interagency, the two countries may be able to move forward on another dialogue.” ■

DTRA Journal: Supporting Operation Tomodachi

By CD Wright

ON FRIDAY MARCH 11, 2011, an estimated 9.0 magnitude earthquake rocked the east coast of Honshu, Japan, causing enormous damage and destruction. The earthquake was followed by a devastating tsunami that resulted in even more damage and a tremendous loss of life. And as damage reports from the earthquake and tsunami reached the Japanese government leadership, the Tokyo Electric Power Company (TEPCO) was working to prevent a third disaster — nuclear meltdown.

Earthquake damage and loss of onsite power were not immediate issues for the staff of the Fukushima Daiichi One reactor site. According to TEPCO management, reactors one, two, and three were operational before the earthquake and backup generators ensured that cooling continued in those reactor vessels during the earthquake. Reactor vessels in reactors four, five, and six were defueled and offline and did not appear to present any immediate issue because backup power continued circulating water.

But within an hour of the deadly earthquake a tsunami estimated at 10 meters high hit the Fukushima Daiichi one facility. Diesel backup generators were flooded and fuel tanks designed to supply the generators were reportedly washed out to sea. As a result, all power generation and cooling activity of fueled reactor vessels and spent fuel storage stopped and the temperature in the reactor cores began to rise.

In response to the crisis, Commander United States Forces Japan (USFJ) Lt. Gen. Burton Field assembled the USFJ Crisis Action Team to address damage to U.S. installations and prepare to provide humanitarian assistance under immediate response authority if requested. Lt. Gen. Field began to manage the crisis and orchestrate the complex movements of what would soon become known as “Operation Tomodachi.”

Approximately 800 miles away from Fukushima Daiichi a small DTRA team was completing support of United States Forces Korea EXERCISE Key Resolve 2011. The Consequence Management Team (CMAT) and the liaison element paid close attention to the developing situation in Japan, discussing how DTRA might support USFJ if the threat of hazardous or toxic industrial chemicals became an issue at Fukushima.

The United States Forces Korea (USFK) J3 activated

the commands’ Crisis Action Team (CAT) recalling DTRA liaison officers to support course of action development in support of Japan. The DTRA LNO and CMAT team began backwards planning potential support and movement to Tokyo as soon as USFK could arrange a military aircraft.

In the meantime, TEPCO decided to vent gases from the 460 megawatt reactor number one that resulted in an explosion of hydrogen gas damaging outer containment. It became apparent that while hazardous and toxic industrial chemicals may be a concern, the immediate hazard was radiological in nature.

Later that evening, DTRA on-site leadership gave the order to proceed to Japan. Five CMAT personnel and one liaison departed Seoul Air Base via a C12 Huron piloted by the 2nd Combat Aviation Brigade, 2nd Infantry Division at 0430 on Sunday March 13, 2011. By 0730 the team reported to United States Forces Japan, relieving the DTRA OS Detachment Japan personnel who had supported USFJ for approximately 30 hours following the earthquake and 16 hours since the first explosion at the Fukushima site.

Deployed DTRA personnel joined individual augmentees from the U.S. Navy Reserve Detachment 105 already in Japan to support EXERCISE Key Resolve 2011 to form the core of a Radiological Consequence Management Team (RCMT). The RCMT took over responsibility for interpreting potential radiological release prediction, tracking current reactor status based on available information, and advising Commander United States Forces Japan and United States Ambassador Japan on potential radiological hazards and response responsibilities.

Within 96 hours, the RCMT was joined by additional DTRA personnel as well as planners from the Joint Task Force Civil Support (JTF-CS), and advance party personnel from the United States Marine Corps Chemical, Biological, Incident Response Force (CBIRF).

The most important tools at the

disposal of the deployed DTRA team were the DTRA Operations Center and DTRA Reachback. For three months, the DTRA Operations Center fielded countless requests for information incorporating radiological sensor data provided by TEPCO and the Government of Japan to produce models at a rapid pace. They provided daily update briefings and video teleconferences with Japan and worked to educate USFJ leaders and components on the potential hazard.

DTRA personnel were also called upon to fill non-traditional roles. Reachback experts learned about high pressure fresh water pumps with TEPCO and Japanese Self Defense Force (JSDF) counterparts. DTRA linguists and CMAT personnel assisted USFJ transfer approximately five metric tons of boric acid to TEPCO custody for use at the reactor site. Other DTRA personnel conducted radiological survey and collect radiological samples for analysis, which produced the first ground, vegetation, and water samples at the Fukushima response site, which provided the USFJ with better situation awareness.

While the full health and environmental impacts of the accident are still unknown, Operation Tomodachi is likely to change the way the Department of Defense supports Consequence Management operations, policies, plans, training, and exercises. Veterans of Operation Tomodachi and the Japanese people will likely have questions about the incident and the radiation hazard encountered. The case for nuclear power and hope for new nuclear power facilities worldwide will likely suffer. And returning to the “pre 3/11 norm” in terms of Department of Defense Consequence Management planning and response may prove challenging. ■

Mr. CD Wright currently serves as the Defense Threat Reduction Agency Assistant Liaison Officer assigned with duty to United States Forces Korea and the United States Embassy Seoul. He is certified as a Consequence Management Advisory Team (CMAT) member at the Advanced level. Mr. Wright is a graduate of the University of Maryland, the United States Naval War College, and the University of Saint Andrews. He deployed to Japan in support of Operation Tomodachi from March 13 to April 16, 2011.



4th Floor of Unit 4 Reactor Building
(pictured on June 10, 2011)

CENTER

By Zack Cannon and Chris Kwan

of

GRA

QUALITY



While presidents during the Cold War had their own WMD problems — a powerful Soviet Union with thousands of nuclear weapons aimed at the U.S. and our allies — post-Cold War presidents face a different WMD challenge: proliferation and adversaries that ally themselves with terrorists.

By early 2003, Iraq was front and center of the WMD challenge. The events of Sept. 11, 2001, created a new sense of urgency that radically changed how the U.S. dealt with WMD, and President George W. Bush made it clear that the U.S. would not accept what had become the status quo with respect to Iraq — a country ruled by a dictator that, according to U.S. and allied intelligence at the time, possessed an active WMD program.

While the suspected program and massive stores of WMD were not found in Iraq, planning revealed a chink in the U.S. military's armor — a lack of readiness to locate and eliminate WMD. The Bush administration remained persistent about preventing WMD from proliferating into dangerous hands. It was clear the U.S. would still need an integrated and robust WMD elimination capability, one that ensures that “well-equipped personnel have the proper concepts, doctrine, and training to use those capabilities effectively to accomplish their mission,” as explained by then-Deputy Secretary of Defense Paul Wolfowitz in May 2003.

In January 2005, then-Secretary of Defense Donald Rumsfeld initiated a series of directives to keep the combating WMD (CWMD) mission in the spotlight. And in 2006, the Unified Command Plan handed the operational WMD mission to USSTRATCOM. Its commander at the time, General James Cartwright, wanted to collocate joint functional component commands (JFCC) with organizations and agencies that specialized in those areas. In the same way that the JFCC for Integrated Missile Defense partnered with the Missile Defense Agency, the STRATCOM Center for Combating Weapons of Mass Destruction (SCC-WMD) found a perfect fit with The Defense Threat Reduction Agency (DTRA). As explained by General Robert Kehler, current Commander USSTRATCOM, “The intent behind doing this was to create a center of gravity on the issues.”

It was an exciting time for DTRA and for Dr. James Tegnalia, the

agency's director from 2005 to 2009. “STRATCOM, in addition to performing its deterrence missions, was given the responsibility to engineer an Initial Operational Capabilities (IOC) for missile defense — a national imperative since the presidency of Ronald Reagan — at the direction of the President and the Secretary,” says Tegnalia. “STRATCOM also began to create the DoD Capability to perform Cyber Defense activity that was ahead of its time. Being in STRATCOM gave DTRA the opportunity to contribute to these activities.”

Changes were coming to DTRA's organizational structure and culture. Anticipating the new USSTRATCOM component at DTRA, Tegnalia began to lay the groundwork within DTRA that would usher in a new center for combating weapons of mass destruction. General Cartwright issued the basic documents on August 26, 2005, that would later sync six new letters to the DTRA acronym: SCC-WMD.

“DTRA has always had that special relationship with STRATCOM,” says current DTRA/SCC-WMD Director Kenneth Myers. “USSTRATCOM is the COCOM with the counter WMD mission and we're the combat support agency of the counter WMD mission. Counter WMD policy, in most cases, starts here at DTRA and for STRATCOM, it starts at SCC-WMD.”

Launching the JFCC for WMD was challenging for DTRA at first. “Creating the SCC required the diversion of resources from other DTRA activities,” says Tegnalia. “Making the argument that the agency should give up resources now in the hope and belief that in the future this arrangement would be good for the agency is always a difficult argument to make.”

Also, contributing to the early struggles were some disparate views among DTRA senior leadership. Would DTRA's new relationship with SCC-WMD hinder the agency's ability to perform its mission



Former Secretary of Defense Donald H. Rumsfeld walks with Army Lt. Gen. Ricardo Sanchez after arriving at Baghdad International Airport – December 6, 2003.

as a combat support agency for all the other combatant commands — or would it strengthen DTRA’s combat support responsibilities even further?

“In the end, DTRA personnel respect authority and were prepared to implement Secretary Rumsfeld’s guidance and when the new arrangements were implemented the agency performed well,” says Tegnolia. “Early on, STRATCOM assisted in the budget battles, provided requirements for DTRA’s Research and Development community that helped justify budgets, and increased the utility of existing DTRA capabilities.”

The arrangement also meant that the director of DTRA became dual-hatted as the director of SCC-WMD. The prime advantage being that the person in charge of the DoD’s leading combat support agency that dealt with WMD would also be in charge of a combatant command’s leading element that synchronized military efforts on WMD. DTRA’s scientific knowledge could operate hand in hand with STRATCOM’s operational military capabilities. “It’s a symbiotic relationship where we benefit from the technical expertise and the various branches and connections that DTRA has, and DTRA gains a direct link into the Strategic Command,” explains Maj. Gen.

“...the proliferation of nuclear, biological and chemical weapons, and of the means of delivering such weapons, constitutes an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States ...”

— President William J. Clinton,
Executive Order 12868,
Sept. 30, 1993

Eric Crabtree, the SCC-WMD Deputy Director and Commander of the new Standing Joint Force Headquarters for Elimination (SJFHQ-E). “It’s a very good relationship — people here leverage each other. We are able to do things that DTRA is not, and vice versa.”

The biggest challenge is that the director of DTRA now has two



A U.S. Marine Corps officer; Dr. James Tegnella, former Director, DTRA; Sen. Richard Lugar, R-Indiana; Kenneth Krieg, former Under Secretary of Defense for Acquisition, Technology and Logistics; General James E. Cartwright, former Commander, U.S. Strategic Command; Dr. Dale E. Klein, former Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs attend the Defense Threat Reduction Center induction ceremony, Fort Belvoir, Va. — January 26, 2006.

bosses — the civilian who is the DoD Under Secretary of Defense for Acquisition, Technology and Logistics, and a four-star general. But Myers says that simply means he gets to synchronize the two organizations from square one. “It’s always a challenge, especially in a subject matter that is as challenging as counter-WMD. But my goal from the very beginning has been to ensure that Dr. Ashton Carter [who has since become Deputy Secretary of Defense] and General Robert Kehler, commander of USSTRATCOM, always end up together or in concurrence... that we’ve been able to serve both of our bosses that effectively says a lot about our people and about the way we’re doing the job.”

The SCC-WMD was declared fully operationally capable on Dec. 31, 2006, but to take full advantage of WMD elimination and interdiction missions, it needed an operational unit that would expand the capabilities of the Army’s 20th Support Command at Aberdeen Proving Ground, Md. — a rapidly deployable command and control component designed to coordinate with combatant commands, defense agencies, and units that deal with WMD elimination missions. The Joint Elimination Coordination Element (JECE) was born.

Today, SCC-WMD’s 70+ military and civilian personnel provide critical planning expertise and recommend ways to reduce vulner-

“ The grave threat from nuclear, biological, and chemical weapons has not gone away with the Cold War. It has evolved into many separate threats, some of them harder to see and harder to answer.”

— President George W. Bush
JCOM Headquarters,
Feb. 13, 2001

abilities in order to improve DoD’s effectiveness in CWMD. “SCC-WMD provides the joint staff with a planning agency that can tie-in and leverage DTRA’s expertise while at the same time, provide military options and consequences of actions if things were to happen,” explains Crabtree.



A weapons cache found buried in a wooded area by soldiers with 2nd Squadron 14th Cavalry Regiment, 1st Brigade, 25th Infantry Division, Stryker Brigade Combat Team, during a search for anti-forces and weapons in Avgani, Iraq – Dec. 4, 2004.

TOMODACHI and ODYSSEY DAWN

During Operation TOMODACHI, the DoD's disaster assistance effort in response to the Tohoku-Kanto Great Earthquake and tsunami, DTRA/SCC-WMD sent some of the world's best consequence management experts to Japan. Their knowledge of nuclear power plants and nuclear material, their ability to accurately model plumes of radiation escaping the damaged Fukushima nuclear power plant, and support from personnel back on Fort Belvoir meant the Japanese government and U.S. Forces Japan (USFJ) had timely, accurate information about the worst nuclear disaster since Chernobyl.

SCC-WMD's planning expertise was extensively utilized during Operation ODYSSEY DAWN, the DoD's initial mission in Libya. Team members were deployed to USAFRICOM headquarters to answer some very scary but very real 'what if?' questions about weapons of mass destruction. General Crabtree says U.S. and NATO operations needed quick, accurate answers to questions like "What if an air strike hits a facility where WMD materials are stored?" or "What if WMD material is somehow proliferated beyond our control?"

At the peak level of activity, over 200 DTRA and SCC-WMD personnel supported 33 liaisons, CWMD planners, JECE personnel, and consequence management experts deployed to AFRICOM headquarters and Japan. DTRA/SCC-WMD also responded to over 500 requests for information in support of both operations.

As a CWMD leader, the SCC-WMD twice a year hosts the Global Synchronization Conference, bringing together hundreds of CWMD experts from across the U.S. government and partner nations. Highlights from the most recent conference include panel discussions on Operations ODYSSEY DAWN and TOMODACHI, biosurveillance indications and warning, CWMD campaign plan development, intelligence prioritization, consequence management discussions, and a non-traditional agent introduction.

Myers and Crabtree praise the impact of General Kehler, and his longstanding support of the DTRA/SCC-WMD mission. Both agree that Kehler's focus on the WMD mission has had a tremendous benefit to the whole community because of his ability to share the DTRA/SCC-WMD story with his numerous connections at USSTRATCOM, the Pentagon, the Secretary of Defense, and other agencies. "We've seen great progress in terms of being able to inform the Combatant Commanders and get them engaged in this issue and to begin to break down the seams that we would naturally find in geographic boundaries," says General Kehler. "Being able to work together is a hallmark of being able to combat WMD."

The success of the close relationship between DTRA and SCC-WMD was showcased in 2011 when the U.S. military kicked off two large international missions in the middle of March — a humanitarian assistance effort in response to a massive earthquake and tsunami that hit Japan, and an international military effort to protect the people of Libya from the brutal dictator Moammar Gadhafi. The two concurrent operations presented unique challenges that required the combined expertise and skillsets from DTRA and SCC-

“...we need you to stay nimble and flexible to meet the full range of threats to our security, from plots against our homeland to nations seeking weapons of mass destruction...”

— President Barack Obama
CIA Headquarters,
May 20, 2011

WMD; each took leads on specific aspects of each operation, but the two staffs were linked so closely that it was difficult to separate what DTRA and SCC-WMD were specifically doing.

Reflecting on both operations, Crabtree says that although Operation TOMODACHI was more DTRA-focused and Operation ODYSSEY DAWN was more SCC-WMD-focused, DTRA and SCC-WMD personnel were working together at all levels on both missions. They were analyzing the situations, determining courses of action, and helping theater commanders identify additional resources to resolve situations. Crabtree shares that one of the key lessons learned involves his agreement with General Kehler that USSTRATCOM's ability to task DTRA/SCC-WMD as early as possible would grant

5 AREAS of GROWTH

- » **Global Viewpoint of WMD** – Move from theater-specific approach to a global mindset – a WMD incident can start in one theater/area of responsibility (AOR) and rapidly move across two or three other AORs within a matter of hours.
- » **Air Counter Proliferation Initiative (ACPI)** – Build upon DTRA/SCC-WMD's experience countering maritime proliferation to figure out how to check aerial cargo for WMD before it is airborne.
- » **SOUTHCOM and WMD trafficking** – Prevent drug trafficking routes from being used by terrorist groups to proliferate materials into the U.S. or allied nations.
- » **SOCOM** – Develop closer ties with the Special Operations community by bringing together SOCOM's focus on terrorism and the new Standing Joint Force Headquarters for Elimination (SJFHQ-E) to eliminate the WMD threat by destroying it in place, or transporting it.
- » **Domestic Terrorism involving WMD** – During one intelligence meeting, the FBI asked how DTRA/SCC-WMD can assist them. Although the FBI is responsible for a domestic WMD event, DTRA/SCC-WMD can share its extensive long-standing CWMD knowledge and expertise across the U.S. government.



USSTRATCOM Commander Gen. Robert Kehler observes members of the 22nd Chemical Battalion during a field capabilities exercise at Aberdeen Proving Ground, Md. – July 15, 2011.

SCC-WMD the extra lead time needed to plan, deploy, and execute at maximum ability.

According to Crabtree, the SCC-WMD's ability to build stronger and more direct ties between DTRA and USSTRATCOM is resulting in an evolutionary reordering on the agency's and the COCOM's thought landscape for WMD issues. In his remarks about the future of the SCC-WMD, Maj. General Crabtree highlighted five future areas of growth that take the counter WMD mission to the next level. *(see pg 30)*

Along with the aforementioned efforts, the establishment and growth of the Standing Joint Force Headquarters for Elimination (SJFHQ-E) is one of the most important future developments for the SCC-WMD. One year after then-Secretary of Defense Robert Gates directed the SCC-WMD to establish the SJFHQ-E, on December 20, 2011, the concept was approved and signed off by Secretary of Defense Leon Panetta.

Located at Fort Belvoir and commanded by the SCC-WMD Deputy Director, Maj. Gen. Crabtree, the new headquarters will leverage DTRA/SCC-WMD's extensive resources and expertise to plan, train for, and execute global WMD elimination operations. The SJFHQ-E is conceived to include a small "core" headquarters element working daily with DoD, interagency, and regional counterparts to plan

operations, analyze intelligence, train forces, and conduct exercises. "The SJFHQ-E is being structured in such a way that there will be a small standing element that then will expand as needed to meet the needs of a forward commander. I think it's going to leverage DTRA very heavily as we plan that mixture of resident experts, including the experts at DTRA that we [SCC-WMD] would ask to participate with us," says Kehler. The establishment and growth of the SJFHQ-E expands the current DTRA/SCC-WMD dual relationship into a comprehensive triad covering a significant portion of the CWMD spectrum. General Kehler presided over the activation ceremony on February 3 of this year.

As long as the threat posed by WMD continues to exist, DTRA/SCC-WMD and the SJFHQ-E will continue to stand ready, influencing the way these destructive weapons are combatted world-wide. Crabtree shares that more agencies are turning to DTRA/SCC-WMD, interested in how the agency can contribute to a domestic terrorist, WMD-type event. "They realize that they'd be foolish not to leverage the expertise that exists here in the Defense Threat Reduction Agency and to let us provide for them what we have available. As much as people like to think they understand all aspects, I like to tell people, 'If you think you understand a WMD problem, you don't know what the issues are.' They are so complex with so many branches to figure out what the whole picture is. It takes a team of experts." ■



DTRIAC: Serving the Nation for 50 Years

By Lt. Col. Craig Hess, USAF

Tucked away on Kirtland Air Force Base, N.M. resides an organization of vital importance to the nation that just celebrated its 50th anniversary. A key organization in the nuclear and radiation research community, the Defense Threat Reduction Information Analysis Center (DTRIAC) maintains the largest collection of nuclear-related information in the nation, and arguably the world. DTRIAC serves as the Department of Defense (DoD) official repository for all scientific and technical data pertaining to nuclear weapons and is the largest of the DoD's 19 Information Analysis Centers.

DTRIAC's predecessor, the Defense Atomic Support Agency (DASA) Data Center began in July 1961 at a contractor facility in Santa Barbara, Calif. DASA's origins can be traced back to the late 1940s when the Armed Forces Special Weapons Project (AFSWP) was established as the primary agency responsible for the DoD side of U.S. nuclear weapons development and custody. The project was renamed DASA in 1959.

The rationale for the establishment of the DASA Data Center was spelled out in a study called Quick Key. The study revealed that with the 1958 moratorium on nuclear weapon testing following the HARDTACK Test Series, the expertise on nuclear weapons effects had become less centralized, as knowledgeable researchers dispersed to other areas in which funding support was available.

This was a serious problem as the high-altitude shots of YUCCA, TEAK, ORANGE and the ARGUS series had revealed effects that were not well understood but were critical issues in ballistic missile defense, a topic beginning to gain serious attention. Among the key issues were atmospheric and ionospheric disturbances resulting in radar blackout, communications outages, interference with optical sensors, electromagnetic pulse (EMP) generation and trapped radiation depletion and enhancement.

The community of researchers and analysts that had been assembled for the 1958 high altitude tests represented some of the most prominent organizations, labs, and personnel typically associated with nuclear tests at the time. This community also included new contractors whose interests and capabilities were in electromagnetic effects.

The DASA Data Center was expected to provide a focus for this community. The Center was expected to collect all information, both open source and classified, pertinent to the subject of the effects of high-altitude detonations, and provide an accessible library of this information staffed by personnel knowledgeable in the subject matter. The center was also expected to provide reviews and assessments, announcements of pertinent publications, and special reports as required.

The DASA Data Center began these activities by publishing the proceedings of a Defense Advanced Research Projects Agency (DARPA)-sponsored symposium on Ballistic Missile Defense. The collection of pertinent technical reports, books and instrumentation files began. Then, at the end of August 1961, after the Russians resumed nuclear testing, the DASA Data Center's evolution was markedly affected as DASA prepared for the U.S. resumption of nuclear testing.

The subsequent critical tests conducted included the 1962 FISHBOWL test series which was the high-altitude phase of the larger Operation DOMINIC. The officer at DASA, perhaps most responsible for the DoD aspects of that series was Lt. Col. Billy McCormac (USA), who was also the project officer for the DASA Data Center contract. Lt. Col. McCormac was not only a Ph.D. physicist, but also a knowledgeable bureaucrat who had a clear vision of what he wanted done. He wanted the center to become more useful to DASA as a whole rather than being limited to the Radiation Branch which was the funding group. Publication and other information

services were subsequently rendered to the Airblast, Thermal, and Electronic Vulnerability Branches during these early years with funding issues being worked out on a trade-off between project officers.

Lt. Col. McCormac, and those that worked for him, labored to achieve an expanded vision. He saw the DASA Data Center as a tool to be used in the coordination of pre-test planning and in the rapid dissemination of test results. The first such special report was created and carried to Johnston Island as an on-site coordination aid.

The DASA Data Center was clearly, by definition and by function, an institution that fell under the rubric of an Information Analysis Center (IAC), a term that became increasingly used in the early 1960s. An IAC was defined as an activity that not only collected information on a narrow topic area, but also acted as a reference source and network for interested users.

The DoD sponsored several such IACs and in 1964, renamed the DASA Data Center the DASA Information Analysis Center (DASIAC). Thus, it became DoD's IAC for nuclear weapons effects. Its control from its inception in 1961 to the present was always DASA or its successors. In the mid-1960s DASA began a process of assigning various information activities to DASIAC, that for one reason or another were best placed within this IAC. A major interest area in the 1960s was the effects on communications equipment from high-altitude nuclear blasts.

The 1970s saw DASIAC develop an increased interest in x-ray and EMP effects and considered blast and ground shock associated with low-altitude and surface detonations. DASIAC also supported the agency's interest in simulation activities and testing. The organization began publishing technical handbooks to provide weapons effects information in an authoritative format. In 1971, when DASA became the Defense Nuclear Agency, DNA decided to retain DASIAC as the accepted name of the IAC.

The DASIAC continued with its traditional

emphasis throughout the 1980s but also began to branch out into other areas: Strategic Defense Initiative research, policy analysis, tactical warfare and non-nuclear areas. The organization also began to conduct research

and designed to contain all of the scientific and technical information (STI). The DASIAC was the first DoD IAC to create and adopt this capability which provided data at an approved user's desktop and greatly increased the value and utility of the IAC to the government and scientific community.

The 1990s also brought about relocation and organizational changes. The Santa Barbara facility which had served since 1961 was relocated to DNA field command facilities at Kirtland AFB in 1995. DNA was then succeeded by the Defense Special Weapons Agency (DSWA) in 1996 but only for two years. The latest organizational transformation was the creation of DTRA in 1998. It was in 2000 that the DASIAC, a name which had existed for 39 years, was renamed the DTRIAC. Throughout five decades of change, the DTRIAC has been a vital resource of nuclear and radiological information to the nation and its nuclear research community.

Today, the DTRIAC has a focused initiative in place to preserve and digitize the backlog of approximately 10 million feet of film and approximately 230,000 documents. A vast

amount of digitized data is already available via the Scientific Technical Information and Archival Research System (STARS) which replaced DARE in 2007. STARS contains over 400,000 abstracts and 150,000 media files available for download. A variety of new system enhancements will soon make research efforts quicker, easier and more productive for STARS users. The DTRIAC staff is located at Kirtland AFB, N.M. and in the STI Center in DTRA Headquarters on Ft. Belvoir, Va. The staff prides themselves on superior customer service and, as they have been doing for the last 50 years, stands ready to support the ever-evolving needs of the research and development community and the warfighter. ■

Many of the historical inputs to this article are due to the efforts of Edwin J. Martin who created an unofficial document that traced the key events and origins of the DASIAC. Mr. Martin was the first full-time hire for the DASA Data Center and continued this effort from 1961 through 1995. The DTRIAC acknowledges and thanks him for his efforts.



Warren Chan, DTRIAC's (DASIAC's) first program manager working in the stacks.

related to treaty verification. During this period, the film collection increased significantly, consisting of still photos, motion picture films, and videotapes from both atmospheric and underground nuclear tests and simulation programs. These media formats provided documentary record of experiment setup, execution and post-test analysis. They also provided record of explosion phenomena that can affect military concepts and construction of structures.

The 1990s saw the DASIAC's technical area task workload increase significantly and the collection expanded as the staff began to seek out and obtain orphaned collections. As the agency mission changed, so did the DASIAC as it began adding both conventional high explosives and chemical-biological data to its archives. Also during this period a significant decision was made to develop, operate, and maintain an electronic database. The Data Archival and Retrieval Enhancement (DARE) system was created

Guardian Shield 11



BY AMANDA MARTIN

It happened during the first week of August; 37 days after a terrorist group released a chemical attack on a major city in Europe. Tens of thousands of people were killed and injured. Overwhelmed, the host nation turned to their allies for help...

This was the scenario for Guardian Shield 11, a U.S. Army Europe (USAREUR) directed, 21st Theater Sustainment Command (21st TSC) conducted, DTRA/SCC-WMD sponsored Foreign Consequence Management and field training exercise designed to train the 7th Civil Support Command (CSC) Headquarters forces how to deal with the consequences of a major chemical attack in Europe.

The exercise occurred in Kaiserslautern, Germany, simulating a port city in Poland, and was designed to test the 7th CSC's ability to conduct the later stages of a response to a chemical attack.

DTRA/SCC-WMD provided a group of active duty, government, and contractor employees to test the response of the training audience. Many served as exercise observers and controllers, while others provided simulated media opportunities, testing the training audience's ability to deal with the press.

"We're giving the end-user, the 7th CSC, the tools necessary to conduct real world missions in the consequence management environment," said Lt. Joe Roberts, DTRA/SCC-WMD's lead for Guardian Shield 11. For those involved, the exercise was considered successful in achieving its mission.

"They had planned on discontinuing the Guardian Shield exercises, but after seeing how beneficial this exercise was, they have started planning Guardian Shield 12," said Lt. Nicole Waggoner, DTRA/SCC-WMD's deputy lead for the exercise. "And we've already accepted our invitation to participate." ■

Inside

DTRA/SCC-WMD



December 2, 2011
CFC Charity Fair



DTRA/SCC-WMD Welcomes a New CSEL

BY AMANDA MARTIN

In September, Sergeant Major Scott C. Mykoo joined DTRA/SCC-WMD as the Command Senior Enlisted Leader to the Director of the Defense Threat Reduction Agency and U.S. Strategic Command Center for Combating Weapons of Mass Destruction (WMD). As the senior enlisted leader, he offers an enlisted perspective on operational issues/missions.

Sergeant Major Scott C. Mykoo's career in the U.S. Marine Corps began in 1982 when he completed his recruit training at MCRD Parris Island, S.C. He was meritoriously promoted to Private First Class and reported to NAS Millington, Tenn., for Aircraft Maintenance and Hydraulics School, receiving follow-on training at TME 33 Camp Pendleton, Calif. He reported to Headquarters and Maintenance Squadron 29, MCAS New River, N.C., later that year and served as an intermediate maintenance level hydraulic mechanic.

In 1983, Mykoo reported to HMM 261 and deployed aboard USS *Guam* where he served as a Collateral Duty Inspector and NCOIC with the AIMD Hydraulic Shop in support of Operation Urgent Fury in Grenada and the Multi-Peace Keeping Force in Beirut, Lebanon. During this deployment he earned the Air Warfare Specialist Wings.

He reported to MAG 46, DET B, HML 767, New Orleans in 1988 as the SNCOIC for the Airframes Shop. In 1990, HML 767 was activated and deployed in support of Desert Shield and Desert Storm. After returning from Desert Shield/Storm, Mykoo transferred to HMLA 269, MCAS New River, N.C. where he served as the SNCOIC of the Airframes Shop, deploying in support of Ocean Venture, Battle Griffin, Norway cold weather training, multiple WTI's and Combined Arms training exercises.

In 1994, Mykoo reported to Recruiters School, San Diego, Calif. Upon graduation, he was assigned to RS Nashville, RSS Knoxville, Tenn. where he served as a Recruiter and SNCOIC of the station and was later promoted to Gunnery Sgt. After a successful tour on Recruiting duty, in 1997, he was reassigned to MCAS New River, N.C., for duties with HMLA 167 and HMM 266 and subsequently, deployed on board the USS *Nassau*, in support of operations in Kosovo.

Mykoo was promoted to 1st Sgt. in April 2000, and was reassigned to MWSG 17, 1stMAW Okinawa, Japan. In 2001, Mykoo transferred to MWCS 18, MACG 18, 1stMAW as the

Operations Company 1st Sgt. and deployed in support of numerous operations throughout his assignment, including Operation Enduring Freedom.

In 2003, Mykoo was reassigned to I&I Gulfport Miss., 4th Amphibious Assault Battalion. The following year, he was promoted to Sgt. Maj. and reassigned to VMFA (AW) 533 Beaufort, S.C. While assigned there he accompanied the squadron on a unit deployment program to Western Pacific. Shortly after his return, he deployed to Al Asad, Iraq, in support of OIF.

Mykoo was transferred to Marine Aviation Logistics Squadron 31 in 2006 where he served 870 Marines and Sailors. In 2008, he was transferred to Marine Corps Logistics Base, Albany, Ga., to accept the position as the Installation Sergeant Major. During his tour he served and supported over 4000 civilians and 500 military personnel aboard the installation. He was reassigned in 2010 to be the Command Senior Enlisted Leader for CJTF-HOA Djibouti, Africa. Throughout this assignment Mykoo supported 1800 men and women from all services in a joint operating area roughly the size of United States. He worked closely with 14 East African countries and embassy teams conducting partner nations capacity building. ■





Ashton B. Carter is administered the oath of office as the 31st Deputy Secretary of Defense by General Counsel of the Department of Defense Jeh C. Johnson in a ceremony at the Pentagon on Oct. 6, 2011. Carter was formerly the Under Secretary of Defense for Acquisition, Technology & Logistics.

Social Media Training

Online social networking is a great way to stay in touch with loved ones, friends and colleagues. But it's important to understand the benefits and risks of social networking before you use it. Employees can visit DTRA1 and take the Social Network Training online course to learn about what kind of information they can post online and what kind of information might jeopardize their personal security. Using realistic social networking scenarios, the course simulates events that one might face online that could cause their personal information to be exposed or stolen. For more information visit http://iase.disa.mil/eta/sns_v1/sn/launchPage.htm ■

Going, Going, Gone!

BY ANNE MAREK

After an enormous logistical effort that required the support of hundreds of employees from across the agency, DTRA Europe successfully moved its headquarters from Darmstadt, Germany to Kaiserslautern. This new forward-deployed location allows DTRA Europe to work more closely with its consequence management teams across the world to provide timely, mission-critical information to America's warfighters and partners during all phases of chemical, biological, radiological or nuclear events.

Members of DTRA Europe have already taken part in real-life CMAT operations to support Operation ODYSSEY DAWN in Libya and Operation TOMODACHI in Japan. Working side-by-side with the agency's WMD experts around the world, they provide task-organized, deployable, and technical expertise, advice, and hazard prediction assistance to our troops on the front line.

Currently, teams from DTRA Europe are conducting arms control inspections in support of the New START treaty. Not only are they helping America maintain openness and transparency with its longtime partner, Russia, but they are also working to build the foundation for global nonproliferation in the 21st century. ■

Reservists Fill Unique Role in Radiation Emergency Preparedness

BY PATRICIA CHAVEZ

The word — radiation — tends to instill worldwide fear and paranoia. And the recent Fukushima, Japan, nuclear power plant accident reminds us that the threat of radiation contamination is real.

Radiation fear is a vital aspect of the radiological training provided by the Defense Threat Reduction Agency (DTRA)

Reserve Component (RC). Reservists are both serving in war zone areas to combat terrorism, and are actively educating both DoD and civil first responders on how to prepare for any terrorist radiological incident.

DTRA's reservists serve as a unique training resource for the Department of

Defense (DoD), federal, local and state first responders. The RC troops from various service's Reserve and National Guard components — typically firefighters, police officers and emergency management technicians — provides training on consequence management response and supports civil authorities to prevent or mitigate consequences of a weapons of mass destruction (WMD) attack.

The RC is based at the Defense Threat Reduction University (DTRU) located at Kirtland Air Force Base, N.M. The component has a great working relationship with the DTRU; they assist with some of the DTRU courses and are able to use the DTRU resources, including classrooms and live radiation training sites. These training sites provide a realistic environment and simulation for students to apply class instruction in the actions required of a radiological emergency team member. Students receive hands-on instruction and experience in the use of radioactivity monitoring instruments.

Additionally, the RC takes their mobile training units on the road, training all over the nation, with subject matter experts ranging from nuclear engineers to health physicists to law enforcement specialists. Many have 30-plus years in emergency planning and response. Together, they have trained more than 800 first responders and National Guard members nationwide. ■



DTRA/SCC-WMD Nuclear Experts Support Air Force Exercise Crimson Rider

BY ANNE MAREK

Nuclear security experts from the Defense Threat Reduction Agency visited F.E. Warren Air Force Base, Wyo., in August to participate in exercise Crimson Rider with a delegation of senior Russian military officers. Crimson Rider is a nuclear security exercise designed to improve collaboration between the U.S. and Russia by exchanging best practices for security, safety, and control of nuclear weapons during transport.

“Crimson Rider is an example of the ongoing commitment of the cooperative relationship between the U.S. and Russia,” said Maj. Gen. C. Donald Alston, 20th Air Force commander. “Exercises like this enable good discussion among security experts from both countries, which in turn, can lead to adopting the best practices available to ensure the tightest security for

nuclear weapons.”

During the visit, the Russian delegation toured several on-base facilities and observed the procedures and physical means for protecting those facilities against attack.

“From the moment we arrived here, we saw that you take your duties very seriously,” said Brig. Gen. Vladimir Iskulov, Glavnoye Razvedyvatel’noye Upravleniye, directorate chief. “From the very top to the bottom, everyone knows their duties and they executed them flawlessly.”

As part of the cooperation, a similar exchange and demonstration will be provided by the Russian Federation in 2013. ■

CTR Director Dr. Elizabeth George Honored by Alma Mater

BY ANNE MAREK

Dr. S. Elizabeth George, Director of DTRA's Cooperative Threat Reduction Directorate, has been recognized by North Carolina State University as a 2011 College of Agriculture and Life Sciences (CAL S) Distinguished Alumni.

George was recognized for her outstanding career achievements and for her commitment to the land-grant principle of service to community, state and nation.

George is widely considered one of the nation's leading authorities on chemical and biological warfare. She previously served as deputy division head of the Chemical and Biological Countermeasures Division in the Science and Technology Directorate, Department of Homeland Security.

Her significant accomplishments include the design and deployment of BioWatch, the nation's first civilian biological threat agent monitoring system, and PROTECT, the first civilian operational chemical detection and response capability deployed in the Washington subway system. She spent 16 years at the U.S. Environmental Protection Agency, in the Office of Research and Development, National Health and Ecological Effects Research Laboratory, Environmental Carcinogenesis division, where she was chief of the Molecular and Cellular Toxicology branch. She also is an adjunct faculty member in the School of Rural Public Health, Texas A&M University.

George has received the DHS Undersecretary's Award for Science and Technology, the U.S. EPA Bronze Medal and Scientific and

Technological Achievement awards, and the Distinguished Presidential Rank Award. She is an ex officio member of the National Science Advisory Board for Biosecurity and provides leadership for several interagency working groups, most recently in the areas of national biomonitoring and biological restoration.

In 2007, George was named a CAL S Outstanding Alumnus, representing the Department of Microbiology.

A native of Austin, Texas, she received her master's degree and Ph.D. in microbiology from N.C. State, after receiving her bachelor's degree in biology from Virginia Tech. ■



DTRA's kids have talent!

BY ANNE MAREK

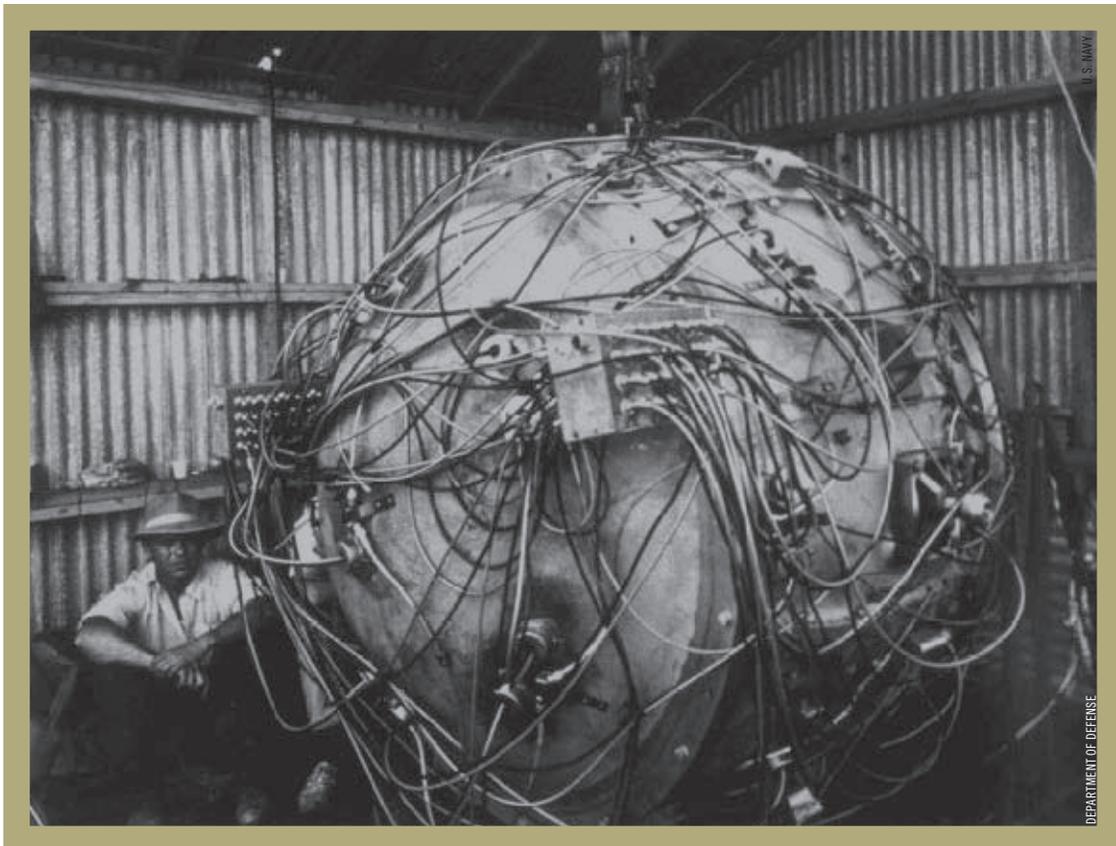
Our agency is made up of talented individuals who give of their time and energy to support our country.... So, it comes as no surprise, that the children of our employees have remarkable talents of their own!

Earlier this year, Brianna Thompson, daughter of National Escort Team Chief (OP-OSC) Commander Rick Thompson, performed with her high school dance team on NBC's reality TV show, "America's Got Talent."

Brianna, a rising junior at West Springfield High School in Fairfax, Va. joined her teammates in wowing the show's judges and viewers with dramatic choreography and zombie-inspired costumes, which earned the team a spot in the show's top-ten finals.

Although, the program's viewers did not vote the West Springfield High School dance team into the next round of competition, the team has earned plenty of other accolades, including 1st place in Hip-Hop dancing at every local competition from 2000 to 2010, as well as numerous choreography awards. ■

Exposed wiring of The Gadget, a nuclear device which exploded as part of Trinity, the first nuclear weapons test of an atomic bomb. At the time this photo was taken, the device was being prepared for its detonation, which took place on July 16, 1945.



U.S. NAVY

DEPARTMENT OF DEFENSE



U.S. Marines assigned to Chemical Biological Incident Response Force, from Indian Head, Md., rescue simulated civilian casualties from an elevator shaft after a simulated chemical, biological, radiological, nuclear and high-yield explosive (CBRNE) incident at Muscatatuck Urban Training Center, Ind., during Exercise Vibrant Response, Nov. 10, 2009 (Photo: U.S. Air Force/ Staff Sgt. Jacob N. Bailey)

Office of Public Affairs
8725 John J. Kingman Road MSC 6201
Ft. Belvoir, VA 22060-6201

DTRA/SCC-WMID

Making the World Safer

