9/11 remembered

In post-9/11 world, Labs’ strategic objectives leverage diverse capabilities to serve nation

Labs Director Paul Hommert talks about impact of 9/11 on national security mission

Note: The Lab News recently sat down with Sandia President and Labs Director Paul Hommert to talk about how the terrorist attacks of Sept. 11, 2001, and the nation’s subsequent response have shaped Sandia’s strategic direction over the past decade and how those attacks have framed the discussion about the just-completed 2012-2016 strategic plan.

Lab News: In September 2001 you were working in the UK. Did you happen to be in England on 9/11 itself?
Paul Hommert: Yes, I was in England. I’d been in the States and had flown back to England the Sunday before, the 9th. Like anyone, I can remember 9/11 precisely. In the UK, it was a little after lunch, in the early afternoon. I was in a meeting when one of my colleagues came in, grabbed me and said, “You have to come and see this.” As I watched the events unfold, I was just staggered; I mean I actually couldn’t stay at work, I had to leave because I was glued to the television. And you have such a range of emotions. One of the most telling things is the enormous outpouring of respect, the true depth of caring that came from my British colleagues. It’s something I will always remember. It was genuine and immediate; it was especially meaningful because I think they understood that in a situation like this, I wanted to be home. That was hard to wrestle with, that I couldn’t do anything.

(Continued on page 7)

Becoming a national security lab

9/11 terrorist attacks hastened a trend that began with end of Cold War

By Bill Murphy

Almost everyone older than 18 remembers where they were on Sept. 11, 2001. That day has joined other days of infamy — Pearl Harbor, the day President Kennedy was assassinated — in the collective consciousness of the nation. If you were around at the turn of the millennium you can recall, often in very specific detail, not just where you were, but what you were doing and who you were with when you heard that terrorists had attacked the World Trade Center in New York and the Pentagon near Washington, D.C.

The very date — 9/11 — has entered the language, with no other explanation needed. And when you hear it — 9/11 — the words summon up not just images, but...
9/11 remembered

A few months back — actually right after the ninth anniversary of the 9/11 terror attacks on the nation’s infrastructure — several of us here at the Lab News began to talk about doing something special marking the 10th anniversary of that horrible, consequential day and its impact on the Labs. As we drew closer to the time, I began to have a sense that we needed to begin pulling our content together, it became clear that our original vision — that we’d do a so-called double-truck spread in the center of our Sept. 9, 2011, issue — would be impossible to fulfill by the story of 9/11 from the Sandia perspective.

And now, as I look at the stories and other content we’ve created for this issue, it’s really something special. Just from a purely logistical perspective, we haven’t in my nearly 17 years of association with the Lab News tried to put together an issue of this scale as part of our regular biweekly production schedule. To make that happen, every single member of our team had to pull extra duty, cheerfully taking on tasks outside their normal sphere of activity.

I don’t know what to expect when we started down this road, but it has exceeded both my hopes and my expectations. Anyone reading this novella-length look at the Labs’ first decade of the 21st century gets not only a sense of 9/11’s impact on Sandia and Sandians, they also get a pretty darned good sense of where we are right now, today, as a laboratory.

In this issue, the three laboratory directors of the post-9/11 era — Paul Robinson, Tom Hunter, and Paul Hommer — share their perspectives and insights about the state of the world and Sandia’s place in it. A number of our VPs weigh in, too, with their own ideas about how 9/11 has shaped the Laboratories and the challenges that may lie ahead for us as we continue to serve the nation. You’ll find, too, a fascinating, even gripping, account of those first fateful days after America was attacked and how Sandians responded to the challenge.

California site contact . . . . . . . . . Mike Janes

Department of Energy’s National Nuclear Security Administration.
Division 8000 leadership cites changes in homeland security mission since 9/11

New constituencies, expanding chemical/biological and radiation/nuclear countermeasures activities are noted

Lab News reporters Mike Janes and Pat Koning interviewed Div. 8000 VP Rick Stulen and Senior Manager Duane Lindner, as well as retiring Min John and Carolyn Pura, about the impact of 9/11 on Sandia’s homeland security, defense and countermasure activities during his 15-year Sandia career. Rick served as VP of the Labs’ homeland security and defense organization. As he was in 2001, Duane is program director for chem/bio national security programs at Sandia, while Carolyn played an integral role in rad/nuc countermasures activities during her time at Sandia. Min served as the Div. 8000 VP from 1999-2006 and led the stand-up of the Labs’ Homeland Security Strategic Management Unit (SMU) in 2003.

LN: Though it may not have been called “homeland security” at the time, how would you characterize the Sandia programs — especially those in chem/bio and rad/nuc countermasures — that existed at the Labs pre-9/11?

Duane Lindner: In 1996, DOE took the lead in standing up a program aimed at civilian chemical and biological defense. Sandia began to get involved, specifically in developing detonation technologies, an effort led by Mark Tucker (6632), and systems that could detect the release of chemicals and, subsequently, biological agents in places like subways and transportation hubs.

Rick Stulen: In the mid to late-1990s, I remember that Min was the one who began to raise this issue of the asymmetric threat and, with Al Romig’s support, was able to get enough LDRD funding to have some competency developed. We had some large LDRD investments like MicroChemLab, beginning in the mid-1990s.

LN: Why did we make these decisions to get into this? Was it due to the club Shimokyo subway attack in Japan in 1995?

Rick Stulen: That clearly played a role.

Duane Lindner: It had an immediate impact at the national level. One of the large DOE projects, which we co-led with Argonne National Laboratory, was PROTECT Program for Response Options and Technology Enhancements for Chemical/Biological Terrorism. The objective of PROTECT for Response Options and Technology Enhancements for Chemical/Biological Terrorism was to develop a system to reduce the impact of an Asam Shimokyo-like attack on a US subway system.

LN: How did our rad/nuc capability come about?

Carolyn Pura: In addition to the work for DOE in the mid-1990s, there was already a pretty healthy radiation detection program, meaning the detection of smuggled materials as well as weapons. There were deployments at Dulles airport and a number of military bases, and studies to look at what assets fit best — detection technologies, detection architectures, and so on. In late 2000, we completed the Haystack study that looked at the unsmuggling of nuclear assets into major urban areas. We also had a 6-month effort during the first half of 2001 that essentially was the beginning of WMD-DASC — the Weapons of Mass Destruction Decision Analysis Center.

Duane Lindner: There was a large, DOE-funded study called the Defense of Cities to lay out an architecture for bio-detection and response systems in US cities. Todd West (6114) led that effort for Sandia. Our pre-9/11 capabilities, in both chem/bio and rad/nuc, were in developing expertise in systems analysis and really understanding systems architectures. Pat Falcone (now on assignment at the Office of Science and Technology Policy) was a key player in establishing Sandia’s system analysis expertise in this arena.

Rick Stulen: There was a real sense — and has been for a long time — of the Laboratory’s systems engineering competencies. It is really trying to stand back and look at the totality of the problem, and that’s been very much a part of our capabilities set. We were beginning to apply that competency to the emerging WMD threat.

Div. 8000 VP RICK STULEN, right, is joined by Carolyn Pura and Duane Lindner to talk about changes in Sandia’s homeland security mission since the terrorist attacks of Sept. 11, 2001. Former California site VP Min John joined in the discussion via teleconference. (Photo by Dino Voumas)

(Continued on page 13)
Reflections on Sept. 11, 2001

By C. Paul Robinson, president emeritus

Having once written an article for the Lab News in the wake of the 9/11 attacks, I immediately agreed to do New Editor Bill Murphy's request to write a similar piece for the 10th anniversary. He asked me to relate "what it felt like in those long work days in the immediate aftermath of the terrorist attacks," and "to assess from today's vantage point what changes those events might have made in the Labs" (and in our sister labs).

As I look back on those awful events, some memories are very intense, while others are fading. Let me try to give you a flavor of how our work intensified in the immediate days and weeks, and then share what I believe were some important lessons we learned about ourselves, with relevance for Sandia's future.

The first thought that permeated all of our minds that day was that "we are at war." We expected that the attacks of that morning were just the first, and we would face many more until we could counter the threat, protect ourselves against it, or eliminate the source of such attacks. The work of the entire Laboratories began to take on a new urgency, and we soon ramped up our efforts in many areas to a fevered pitch as we immersed ourselves in counteracting new threats, all while paying attention to our continuing missions.

I am handicapped from being able to share with you everything that was done, as a new classification sensitivity instantly arose, requiring that we protect information about our capabilities against such terrorist threats, and, in particular, not reveal publicly any major vulnerabilities we might uncover in critical infrastructures. Without waiting for new classification guidelines, we already had an innate trait within our culture to keep tight lips in what we were thinking about and working on. The traffic on classified phones ramped up immediately from our traditional volume to a new pitch, and we began to take custody of DOE's national security labs, which had been considered secure, but were now critically needed. A corollary conclusion is that our job of addressing this question would involve a wide variety of disciplines, many of which were Sandia's forte. Sandia had first attempted computer modeling to try to calculate the likely effects for the scenario, but then realized that the uncertainties were too large to yield a reliable answer to such a theoretical question. Sandia then suggested that some experiments would be required to better understand the likely phenomena that would dominate the physical processes involved. The experiments would also allow us to benchmark the effects with real data. A team of Sandians then designed an experiment in which an F-4 Phantom aircraft would be attached to a sled, where it could be accelerated on Sandia's rocket sled track to a speed of nearly 500 mph, and then crashed into a test wall. The wall was designed to measure the most critical parameters of the complicated impact in the intended scenario. Sixteen high-speed framing cameras and a variety of sensors were used to collect data on the resultant impact.

Modeling the 9/11 crashes

The first full-scale experiment (ca. 16,000 pounds of explosives) was carried out in Albuquerque in April 1988 and was a major success in meeting the desired aims. The video showing that impact has continued to be the number one, most-viewed Sandia video on YouTube around the world. However, most people are not aware that the data mined from the test has been used many times since to improve the models for calculating such phenomena. At Sandia, every time we would install a new high-fidelity large jet aircraft into structures.

We expected that the attacks of that morning were just the first, and we would face many more until we could counter the threat, protect ourselves against it, or eliminate the source of such attacks. The work of the entire Laboratories began to take on a new urgency, and we soon ramped up our efforts in many areas to a fevered pitch as we immersed ourselves in counteracting new threats, all while paying attention to our continuing missions.

A corollary conclusion is that our job of addressing this question would involve a wide variety of disciplines, many of which were Sandia's forte. Sandia had first attempted computer modeling to try to calculate the likely effects for the scenario, but then realized that the uncertainties were too large to yield a reliable answer to such a theoretical question. Sandia then suggested that some experiments would be required to better understand the likely phenomena that would dominate the physical processes involved. The experiments would also allow us to benchmark the effects with real data. A team of Sandians then designed an experiment in which an F-4 Phantom aircraft would be attached to a sled, where it could be accelerated on Sandia's rocket sled track to a speed of nearly 500 mph, and then crashed into a test wall. The wall was designed to measure the most critical parameters of the complicated impact in the intended scenario. Sixteen high-speed framing cameras and a variety of sensors were used to collect data on the resultant impact.

Modeling the 9/11 crashes

The first full-scale experiment (ca. 16,000 pounds of explosives) was carried out in Albuquerque in April 1988 and was a major success in meeting the desired aims. The video showing that impact has continued to be the number one, most-viewed Sandia video on YouTube around the world. However, most people are not aware that the data mined from the test has been used many times since to improve the models for calculating such phenomena. At Sandia, every time we would install a markedly different generation of supercomputers (which has occurred at least every seven to 10 years), we would go back to that test data (and from a few subsequent tests funded by the US Nuclear Regulatory Commission) to refine and improve our models of the physics of such events.

Evidence of goal being realized

Let me close with two thoughts: (1) Sandia's work on "airplanes crashing into structures" was created quite by serendipity, but our long-term investments in both analytic and intricate technologies over the years made it into a "national asset," and (2) Do we have the unique abilities to counter terrorism, which Sandia's leadership embraced in the mid-1990s, the first time we were able to realize, convincingly, what we had also proposed several years before as Sandia's highest goal: "to become the laboratory the nation turns to first for solutions to the most challenging problems that threaten our nation and the globe." In the response to Sept. 11, 2001, we could see evidence of that goal being realized. Yet over time it seemed that in our strategic planning, we must anticipate key technical problems to provide options for decision makers to address, critically needed. A corollary conclusion is that our job of helping to secure our national's future is one that will necessarily continue.

In the years since 9/11, all the NNSA laboratories have broadened their efforts from the primary mission of supporting the nuclear enterprise to how to secure Sandia. Sandia has taken on more and more national security work, with efforts to develop countermeasures to protect against emerging threats, and in that process we constantly move forward along the path toward achieving the Laboratories' ultimate destiny — which we had voiced as "helping our nation secure a peaceful and free world through technology."
US Looks to Sandia to lead

By Bill Murphy

Tom Hunter, who was head of Sandia's weapons program and also VP of Div. 9000, was in his truck on his way to work on the morning of Sept. 11, 2001, when he heard a radio report on the World Trade Center. "It didn't amount to anything at the time," Tom recalls. At 8:45, 20 minutes later, he drove down to a regularly scheduled Nuclear Weapons Leadership Council meeting. The group had a TV set turned on in the conference room, peripherally following the terrorist attacks on CNN about the airplane accident.

When the second plane hit, Tom says, "We knew there was clearly something going on. We immediately ordered targets. We were alarmed, but very focused on trying to understand the situation.

Vulnerability analysis had enormous impact

Sandia set up a wide range of response teams analyzing everything from the attacks and identifying solutions that could be used right away to help keep Americans safe. Tom, for his part, mobilized people in the weapons program, who started examining issues uniquely related to nuclear weapons facilities and resources. One task of special note, Tom says, was the effort to understand and analyze the vulnerability of critical national defense facilities done by a "tower" led by Jaime Moya and Tom Bickel. "Those efforts were coordinated with numerous federal agencies and had enormous impact from Sandia," Tom says.

"This was all done pretty much behind the scenes," he says. "After the attacks, new security procedures dramatically increased the time it took to get into the Labs facilities. As a result, new relationships were directly related to antiterrorism."

"One task of special note, Tom says, was the effort to identify the inherent strategic capabilities we had that could be applied to new challenges."

In the days immediately following the attacks, the three NNSA laboratories worked together very closely, Tom recalls, noting that NNSA's management of the crisis demonstrated that the then-relatively new organization could be applied to new challenges.

In the wake of the attacks — in fact, it was before noon on 9/11 — Sandia sent almost the entire workforce home, with just pockets of key people in various organizations staying to help meet ongoing demands.

When employees were brought back in several days after the attacks, new security procedures dramatically increased the time it took to get into the Labs facilities. As a result, Tom recalls, "Our workdays were a little bit altered. We'd sometimes have to show up before 7 a.m. to get through the gates and into the building."

Tom says the thing that has stayed with him over the years is how, even when everyone was told to go home, "everyone still wanted to be there, everyone wanted to do something, everyone wanted to contribute. Keeping people

phone home was a special challenge."

"Life at the Labs, Tom says, "was intense for weeks; I've never seen such intensity. And I've never seen everyone here pull together in such a phenomenal way."

In 2001, most of Sandia's work was still being done largely for DOE — in the weapons program and in other significant DOE-funded areas. In 2005, when Tom became Labs director, Sandia moved to be more involved in supporting other agencies besides DOE, a situation that had expanded dramatically from 2001.

"I saw that as an area to push the Labs into more aggres- sively," Tom recalls, adding that then-Executive VP Al Romig was especially effective in fostering broader engagement beyond DOE. And, Tom adds, not all the new work or new relationships were directly related to antiterrorism work, although there was plenty of that. As an example, Tom says, Sandia's role in cybersecurity began to grow. "Cyber is still a primary threat to the nation and one that we are still deeply involved in," Tom says.

As Labs director, Tom says he was less role changing as the Labs' engagement increasingly extended beyond DOE.

"Who we were and what we could do became much more apparent to other federal agencies" by the middle of the post-9/11 decade, Tom says. Much that Sandia did — and does — to protect the nation is not a matter for public discussion, but an occasional high-profile demonstration of the Labs' ca- pabilities helped bolster Sandia's reputation with key agencies. As an example, Tom cites the 2008 shoot-down of an errant satellite. Using its Red Storm supercomputer, Sandia helped assess the ability to destroy the satellite and the best way to make sure it was destroyed with a single shot. The shoot-down was successful, adding another welcome boost to Sandia's growing reputation beyond DOE.

Sandia, Tom notes, has stated in its strategic planning the intention to be "the laboratory the nation turns to first" to solve the toughest technical challenges. In the post-9/11 decade, the Labs went a long way toward achieving that goal. The Labs didn't just change the balance of work at the Labs; it also changed the way the work was done and the way the Labs was managed.

"We did a lot more business with a lot more customers," Tom says. "And that meant a lot more projects, some bigger, some smaller, some with complex security requirements, some with high engineering rigor or high manufacturing rigor. We had dealt with those kinds of factors in our weapons work over the years, but we were now engaging with new customers with similar requirements.

Those requirements led the Labs toward embrac- ing ISO 9001 model, which establishes rigorous, mea- surable quality standards in both processes and products. So, Tom says, "9/11 did ultimately affect the way Sandia conducted its business, "but it didn't change our fundamental values."

In the latter part of the post-9/11 decade, Tom says, Sandia was leading an effort to make work for others (WFO) — that is, work for other agencies besides DOE.

WFO, Tom recalls, "went from discouraged, to tolerated, to expected, to essential. The change in approach from DOE represented a big change in how we worked with other agencies. That change, which has facilitated engagement with a wide range of new customers, as much as anything, has helped make Sandia a true national security laboratory, Tom says.

As the nation continues to respond to the challenges of the post-9/11 world, Tom says, "the absolute single most important thing Sandia can do" is have the best possible people diving deep into technologies that can have long-term security impacts.

"Hiring the best people, people motivated to serve the nation, represents the best contribution we can make," Tom says. "It is important, too, that Sandia look beyond immediate challenges — important as those are — and continue to build fundamental capabilities over time. With a broad base of capabilities, a deep pool of the best people, and a commitment to national service, Tom says, "Sandia is well positioned to virtually any problem the nation experiences."

Role hasn't really changed

But there's more. Sandia needs to think beyond taking on a list of tasks, it must lead.

"So many of the challenges we face have a technical dimension," Tom says. "Our own elected leaders, our nation's policymakers, look to us for understanding, look to us to provide leadership in addressing these challenges. We must embrace that role. It's essential." While the nature of threats facing America has changed over the years, in a curious way, Sandia's role hasn't really changed at all.

"As its service to the nation continues to evolve to meet 21st century challenges, Sandia needs to make sure Sandia be recognized not just for what we do for the nation, but how we do it," Tom says. "And how we do it, he says, is a unique institu- tion that exists to serve the nation.

"We serve the country and we support the Department of Energy," says Tom. "But the Laboratories are special enti- ties, our people are not federal employees, nor should we be thought of as contractors focused on profit or fee. We are a unique federally constituted entity that exists and is motivated only to serve the nation's interests."

Jerry McDowell, executive VP and deputy Labs director for national security programs

On Sept. 11, 2001, I was director of the Integrated Military Systems Center and actively engaged with DoD on providing innovative products and support in support of our mili- tary. I still remember the sense of astonishment I felt as I watched television coverage of the airlines colliding with the World Trade Center and then later on the Pentagon. I can still clearly recall the sense of fear, disbelief, and the realization that we had not anticipated this and done more to help protect our citizens. These feelings grew even more intense as I made my way out to my region, D.C., and experienced new airport security rules and saw firsthand the damage to the Pentagon.

Almost overnight, all the old rules were out and new ways to do business were being created.

On Sept. 12, 2001, Sandia was closed except to a few senior leaders who convened in a conference room at the main entrance to the Union. I was asked to join this group and it became clear that while we all felt angry and sad, we had a job to do and just the fact that we were moving quickly to provide solutions was a tonic that helped start the healing process. We could help, and we would. Of course, every employee felt the same way and it was and continues to be a great source of pride that Sandians step up when challenged.

As a laboratory, we made many contributions to what would become the war on terror. Many of our greatest contributions remain cloaked in secrecy, but you may rest assured that Sandia has made sig- nificant contributions to our nation.

In 2005, Sandia formed the Defense Systems & Assess- ments Division Strategic Management Group (SMA) and was named VP. As a result, Tom says, "we saw the opportunity to bring our support for DoD and other security agencies into alignment, including our work for Sandia, and supporting the crit- ical, space, general, and the military services. Many great teams of Sandians were formed and over the past decade, they have helped our warfighters and intelligence operators pre- vail in a countless number of engagements with terrorists.

When the DSA SMA was formed, we conducted more than $200 million in research from our dollar bill, "Nunis Uno Osuldo Sckarm": A New Order for the Ages. I came to this conclusion and believe that Sandia has contrib- uted to this great cause, and in the process transformed us into a true national security laboratory that is relevant and open to the new security challenges our nation faces.

(Continued on next page)

Jerry McDowell
The 9/11 attacks, followed by the anthrax letters, added new dimensions to the US national security landscape in the minds of Americans. From a threat perspective, all air transport was treated in a new light and bio threats moved into the public view. On the adversary front, organized nonstate actors, individual terrorists, and domestic insiders all suddenly became more relevant. We shifted, having realized from response forces being the US military to our response forces including first responders and the general public. From both the actual events and the associated government response, Americans replaced their fears from the Cold War with fears about terrorists and religious extremists.

Sandians were ready to engage! We were immediately able to label many of our activities initiated during the 1990s (or earlier) aimed at terrorism and religious extremists. Fears from the Cold War with fears about terrorism moved as fears from the Cold War. The difference was that now include concept of operations as well as dynamic national security threats. Within about a year, we had a new government agency that was encouraged to use the DOE national labs. Sandia became a resource for the war on terror — an activity we considered a long-term mission.

Today, there are notable differences in Sandia as a result. We moved from a nuclear weapons lab to a national security lab, a transition that is now woven into our culture. The national security mission attracts new talent to our laboratories, and has greatly expanded the amount of work we do for agencies other than the NNSA.

The way we think about national security is expansive, and we anticipate new threats in a much more sophisticated manner. Mainline skill sets at Sandia now include biology, cyber, infrastructure security, and human factors. We are a part of the nation’s response to emergencies and incidents far beyond nuclear events. Our engineering thought processes now include concept of operations as well as dynamic threat, resilience, and acceptance by the public.

We find ourselves in an exciting time, with significant work to do on the nation’s nuclear deterrent combined with the war on terror. But I also think we all sense work to do on the nation’s nuclear deterrent combined with the war on terror. — an activity we considered a long-term mission.

The aftermath of 9/11 brought a surge of patriotism and pride in what we do at Sandia. Many areas of work being performed by Sandia took on greater meaning, including the work we do in Div. 10000. Since the events of 9/11, Sandia has taken proactive steps in preparing for possible business disruptions. Fortunately, much of the work the business community prepared for Y2K could be used in the development of the business continuity plan. The controller organization identified the critical business functions of the Laboratories and implemented a continuity plan to ensure vital business processes would be able to continue in an emergency. Some of these processes include processing employee and vendor payments, local, state, and federal tax liabilities, employee reimbursements, and 401k benefits. Business continuity planning is maintained and tested quarterly to ensure the plan is updated and remains viable. The business processes affected by a disaster are being expanded to provide more capacities to keep the business running as close to normal as possible during an emergency.

Other specific changes made in Div. 10000 include the increased sensitivity and understanding of the need for security alerts and the ability to track Sandia travelers and bring them home. In the area of transportation, commercial driver’s licenses and hazardous material endorsements have become highly regulated and have added numerous requirements to our processes. In Div. 10000, we have now received inspiration and a sense of unified determination. We are proud to work at Sandia and proud of the continued contribution we are making to our nation.

Steve Rottler, Div. 10000 VP and Chief Technology Officer

Steve Rottler was Director of New Mexico Weapons Systems Engineering in September 2003. On the morning of 9/11, I was in Albuquerque, scheduled to catch a morning flight to San Diego for a presentation and then to catch an afternoon flight to Washington, D.C. On my way to the airport, I stopped by my office for last-minute transition to supporting the local community, providing air and medical support and readying forces for worldwide deployment. What I’ll always remember is that everyone worked around the clock to save the nation. After 9/11, there was a great deal of clarity across the nation about the new threat we faced. There’s always a risk that the nation will lose some of that clarity. Our role as a national laboratory is to ensure that we don’t lose that, and that we not get caught by surprise again.

Mike Hazen, Div. 4000 VP and chief security officer

In the immediate wake of the attacks and at war. We were a ready wing, one that drilled for that scenario 10 years before so that on 9/11 we had the combat training and capabilities and technologies that could be deployed right on that trajectory.

One performed flawlessly, selflessly, and with service above our nation. Under the worst possible circumstances everyone performed flawlessly, selflessly, and with service above and beyond.

In my view here at Sandia is a portrait of a flag raised by the first responders to Ground Zero. In the background of the picture the artist has the responders casting a shadow that becomes the image of the Marines during World War II raising the American flag on Iwo Jima. This great portrait with the inscription “United We Stand” is a constant reminder to me of people called to serve this great nation. I’ll never be able to express my appreciation adequately to the families, first responders, military, civil, and yes, every single Sandian who serve America daily.

For comments from VP’s Rick Stulen (8000) and Pat Smith (9000) about 9/11 experiences at Sandia/California, see related stories beginning on page 3.

Steve Rottler
Strategic plan addresses post-9/11 challenges

(Continued from page 1)

as they should, because there is just no margin for error in matters that affect the security of this country. As we move forward, we need to leverage our engineering in the 21st century becomes a base of exceptional science and the ability to integrate science into our engineered products. The 2009-2011 (NNSA) strategic plan calls out a new set of national security challenges that require new solutions and engineering that address many major national security interests. And we must demand of ourselves, that we deliver those solutions by building on and continually improving the base of excellence we are known for.

LN: The new set of strategic objectives talks about amplifying our national security impact. Isn't that implicit in the objectives you've already mentioned?

PH: Probably, but we [the Labs] leadership felt it important enough to explicitly make it an objective. We have so many skills and abilities that we can go in many different directions, some of which we should go in, some of which we shouldn't. To me, magnifying our national security impact is all about how we leverage our diversity in a strategic way, gaining a greater focus, a greater recognition in Washington and amongst ourselves about where should we concentrate our capabilities for maximum impact.

LN: Has the post-9/11 security landscape shaped your thoughts about the Labs in a new or different way?

PH: Absolutely. As you know, our leadership team recently finalized our strategic objectives that we project us forward on where we are as a laboratory today. And certainly, where we are in 2011 has been fundamentally affected by the events of 9/11. Just take a look at the aggregate defense budget, including intelligence, that budget is unprecedented today — and I'm not even talking about the money that's been allocated to conduct two wars. That increase has definitely had an effect on us, it's given us the opportunity to work on a broader set of challenges and make broader contributions to the national security.

But beyond that, and in a more basic way, the past decade has changed how we view ourselves relative to both our nuclear weapons mission and to our broader set of missions. Our strategic objectives reflect that changed perspective, emphasizing that in the post-9/11 world, our mission diversity is an asset in our ability to serve the nation. But we have to be mindful of leveraging our diversity in a constructive way. If we treat our nuclear weapons mission and our other national security work as separate and unrelated, I think we lose a critical focus. That's why we now have our programmatic executive VP [Jeniy McDowell], in my view we are a national security laboratory first and foremost that has a unique nuclear weapons responsibility and then other programs it executes that are part of an overall national security mission. Our weapons work and other national security work are inseparable, they have to be managed in an integrated way.

PH: The new set of strategic objectives talks about amplifying our national security impact. Isn't that implicit in the objectives you've already mentioned?

PH: Probably, but we [the Labs'] leadership felt it important enough to explicitly make it an objective. We have so many skills and abilities that we can go in many different directions, some of which we should go in, some of which we shouldn't. To me, magnifying our national security impact is all about how we leverage our diversity in a strategic way, gaining a greater focus, a greater recognition in Washington and amongst ourselves about where should we concentrate our capabilities for maximum impact.

STRATEGIC OBJECTIVES

1. Deliver with excellence on our commitments to the unique nuclear weapons mission

2. Amplify our national security impact

3. Lead the complex as a model 21st century government-owned, contractor-operated national laboratory

4. Excel in the practice of engineering

5. Commit to a learning, inclusive, and engaging environment for our people

LN: You have described our new strategic objectives as game-changing. What do you mean by that?

PH: That phrase is perhaps overused. In this context, for me it means that the shift in focus from the Cold War era to those five areas [defined by the strategic objectives], the way the Department operates is different, must be changed in each one. We have to deliver and train and bring a whole new generation to the stewardship of our deterrent, we have to effect that change. We have to bring a new level of focus, strategic recognition, and investment to our diversity. We must be a more effective, efficient, and stronger cultural organization with respect to the way we operate under the GOCO model. When someone asks where to find the best national security product engineering, based in science, the answer rolls off their tongue — it's Sandia. And then, five years from now, we want our people to recognize that we've created an environment that amplifies the uniqueness of what Sandia has to offer. And that's what we've done, and we've done it in recent years. All of these things are about being at a different place than we are now.

PH: In thinking about our strategic objectives and where we’re going as a laboratory, I wonder: In the post-9/11 world is there anything like the sort of day-to-day urgency in our mission work that characterized our work during the Cold War?

PH: Yes. It's sometimes for hard for us to talk about all of the things that we're doing post-9/11, but I can tell you that there are many activities here that have saved the lives of our military personnel. When we're working on things that have that kind of realness to them, there is a sense of urgency.

We can't ever be on the hook to put in place a technology that has a fundamental impact on our national security capabilities at large, there's an urgency to that.

PH: I would remind everybody, too, that in the work we do in nonproliferation and in energy, for example, the faster we bring solutions, the sooner we can provide the policy-makers with technology options that bolster the nation's security. So there's an urgency there, and I think the folks working in those areas feel it.

And then I would come back to our unique nuclear weapons mission. I think the new set of objectives is more urgent as any less significant than it was during the Cold War. If anything, today, we're in a more complex environment, more dynamic, more complex. That model of strategic deterrence is still vitally important to the world and to our allies. In this post-9/11 world, our allies — and our adversaries — are looking to us, watching how we take on modernization [of our weapon stockpile], because they see it as an indication of the strength of our deterrent and of our commitment to that deterrent. That falls right in this Laboratory's lap. And I know our workforce senses that because I know how hard they're working right now on these programs. So, yes, that spirit of urgency is there.

LN: And when you know you're on the hook to put in place a technology that has a fundamental impact on our national security capabilities at large, there's an urgency to that.

PH: Absolutely, and I think that's one of the strengths of the new set of objectives. It's not that we're saying that because I know how hard they're working right now, that's why we're creating these objectives. You have to take the time to talk about where we are as a laboratory today. And we just want to make it an even better place to be.
It’s important to note that there are few activities that Sandia takes on, as a result of 9/11, that weren’t under way in some shape or form prior to the attacks. It’s in Sandia’s DNA to anticipate worst-case scenarios and map out the best strategies to respond to them.

The rise of terrorist activities in the late 1960s and early 1970s inspired Sandia to explore threats by small groups of non-state actors alongside the traditional, Cold War hazards. This included, of course, the ever-present threat of some evildoers getting their hands on a nuclear bomb. But prior to 9/11, threats were typically framed as more limited in their impact or as accidents, like a nuclear power plant meltdown or a chemical spill, and likely never to happen, or perhaps only to happen in one form or another, and then, of course, to evolve and adapt.

“9/11 changed the perception of terrorist activity,” says John Yoko, who retired in 2007 but played a major role in developing Sandia’s capabilities in homeland security and defense.

Initially, Sandia analysts were asked to examine the security of potential civilian terrorist targets, including major manufacturing facilities like chemical plants, large infrastructure facilities like dams, and even national monuments. Greg Wyss (6612) was looking at the reliability of the national telecommunications networks when the attacks happened. He was drafted for an urgent project for the Nuclear Regulatory Commission (NRC) — a 60-day probe of potential aircraft vulnerabilities of all 106 US nuclear power plants. The NRC then asked for a two-year, in-depth study of the two most common types of nuclear power plants, which was the largest project Sandia had done for the NRC in decades.

“Sandia’s analysis, testing, and modeling and simulation activities for the NRC elevated our credibility dramatically,” Greg says. “Our work supported the NRC’s aircraft security rulemaking, and we continue to assist internationally on the topic.”

Emerging new threats probed in the wake of 9/11 didn’t eliminate the threat of a nuclear disaster. In fact, the events dramatically heightened fears that a nuclear weapon could be detonated on US soil. This drove a major expansion in programs and technologies that could detect or track the movement of nuclear weapons,

By Renee Deger

Less than a day after Sandians evacuated midmorning on Sept. 11, 2001, pockets of professionals throughout the Labs went back to work, considering various US facilities, and asking the same question over and over: “What would happen if an airplane struck?”

The targets they explored in the first days were the most obvious — government buildings, military installations, nuclear power plants. Within weeks, more Sandia teams were asking more complex questions, the “targets” were more diverse, the “weapons” more varied, and the “adversaries” more enigmatic. Within months, whole organizations in Sandia were devoted to constructing a new — and permanent — definition of national security.

Ten years later, what had been the response to 9/11 is now an operational reality for many Sandians. The event brought testing shape, definition, and relevance to a host of specialties, program areas, and even solo projects that actually started and explored a broad range of threats against the US and its allies. National security now explicitly includes homeland security and defense, which have developed into both a collection of dedicated programs and an overarching mission space that draws from expertise and centers across the Labs. The expanded national security mission also has helped Sandia cultivate deeper, more diverse, the “weapons” more varied, and the “adversaries” more enigmatic. Within months, whole organizations in Sandia were devoted to constructing a new — and permanent — definition of national security.

SANDIA LAB NEWS  |  September 9, 2011  |  Page 8

IN THE WAKE of the 9/11 attacks, a broad range of Sandia capabilities, including expertise in materials, sensors, and explosives containment, was brought to bear in the emerging war on terror.

IN THE WAKE of the 9/11 attacks, a broad range of Sandia capabilities, including expertise in materials, sensors, and explosives containment, was brought to bear in the emerging war on terror.

IN THE WAKE of the 9/11 attacks, a broad range of Sandia capabilities, including expertise in materials, sensors, and explosives containment, was brought to bear in the emerging war on terror.
emotions, sometimes even quite raw emotions that linger a decade after the fact.

9/11 changed America; anyone who travels by air directly experiences one of the more obvious changes. But 9/11 changed the society in other ways, some apparent and some less so. The demands were intense and the urgency was high. The way we worked, the way we thought, the way we communicated changed.

Within weeks of that flight to Washington, Ren’s fledgling science, technology, and technical policy solutions to confront on a global scale the entire lifecycle of a biological threat—from awareness to prevention, preparedness to detection, and response to recovery. Some of these programs didn’t exist technology, and technical policy solutions to confront on a global scale the entire lifecycle of a biological threat—from awareness to prevention, preparedness to detection, and response to recovery. Some of these programs didn’t exist.
The lab the nation turned to:
Sandia’s security expertise tapped hours after 9/11 attacks

Story by Heather Clark

Y ears before Osama bin Laden executed the world’s deadliest terrorist attacks, Sandia researchers were studing what made the US vulnerable and where threats to US security in a post-Cold War world were likely to emerge. Among these researchers was Gary Richter (8112), a systems analyst who evaluated the goals and capabilities of terrorist groups. In a 1999 case study, he concluded that bin Laden was a significant threat who “taps a bottomless reservoir of ethnic and religious dis- content and funnels it against the US.” As it turned out, Gary was right.

Paul agreed to send a Sandia-led team to Washington, D.C., as soon as possible. He was unawares at the time that the Federal Aviation Administration already had made the decision to ground civilian air traffic.

Within hours of the attacks, the questions started. People were concerned about the state of Sandians who were working for Dennis Miyoshi, the director of Security Systems. Roger Hagengruber was tapped by the Department of Energy in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia.

American Airlines Flight 11 tore into the World Trade Center at 6:46 a.m. in New York. About five minutes later, then-Lab Director Paul Robinson, who was at home getting ready for work, heard the first televised report of the tragedy.

“Then showed up on the TV that normally held the name of the country where we were going to carry out their work. I’ve never seen anything like this before.”

Wes also organized focus groups of researchers who were on travel and scattered all over the country. The Emergency Operations Center was concerned about the ease with which those folks could enter and exit Sandia’s facilities. Roger had been tapped by DOE in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia. Roger Hagengruber was tapped by the Department of Energy in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia.

By 2 p.m., the base was virtually empty. Wes said Sandia aligned with Kirtland Air Force Base to develop systematic ways to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure. The nation needed a system to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure.

Paul also organized focus groups of researchers who were on travel and scattered all over the country. The Emergency Operations Center was concerned about the ease with which those folks could enter and exit Sandia’s facilities. Roger had been tapped by DOE in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia.

Wes and his team started with a very high priority to an urgency to make sure we had proper tensioning and anchoring to throw back any vehi- cles that attacked areas containing critical buildings and personnel.

Wes Martin, protective force chief of operations, was concerned about the first plane hitting the World Trade Center when he was coming from the office. The group advised using steel cable, properly tensioned and anchored, to throw back any vehi- cles that attacked areas containing critical buildings and personnel.

Wes also organized focus groups of researchers who were on travel and scattered all over the country. The Emergency Operations Center was concerned about the ease with which those folks could enter and exit Sandia’s facilities. Roger had been tapped by DOE in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia.

Wes said Sandia aligned with Kirtland Air Force Base to develop systematic ways to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure. The nation needed a system to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure.

Wes and his team started with a very high priority to an urgency to make sure we had proper tensioning and anchoring to throw back any vehi- cles that attacked areas containing critical buildings and personnel.

Wes Martin, protective force chief of operations, was concerned about the first plane hitting the World Trade Center when he was coming from the office. The group advised using steel cable, properly tensioned and anchored, to throw back any vehi- cles that attacked areas containing critical buildings and personnel.

Wes said Sandia aligned with Kirtland Air Force Base to develop systematic ways to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure. The nation needed a system to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure.

Wes also organized focus groups of researchers who were on travel and scattered all over the country. The Emergency Operations Center was concerned about the ease with which those folks could enter and exit Sandia’s facilities. Roger had been tapped by DOE in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia.

Wes said Sandia aligned with Kirtland Air Force Base to develop systematic ways to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure. The nation needed a system to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure.

Wes also organized focus groups of researchers who were on travel and scattered all over the country. The Emergency Operations Center was concerned about the ease with which those folks could enter and exit Sandia’s facilities. Roger had been tapped by DOE in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia.

Wes said Sandia aligned with Kirtland Air Force Base to develop systematic ways to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure. The nation needed a system to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure.

Wes also organized focus groups of researchers who were on travel and scattered all over the country. The Emergency Operations Center was concerned about the ease with which those folks could enter and exit Sandia’s facilities. Roger had been tapped by DOE in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia.

Wes said Sandia aligned with Kirtland Air Force Base to develop systematic ways to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure. The nation needed a system to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure.

Wes also organized focus groups of researchers who were on travel and scattered all over the country. The Emergency Operations Center was concerned about the ease with which those folks could enter and exit Sandia’s facilities. Roger had been tapped by DOE in 1996 to conduct a study on the possibility of a terrorist attack to steal nuclear material from Sandia.

Wes said Sandia aligned with Kirtland Air Force Base to develop systematic ways to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure. The nation needed a system to identify security weaknesses of buildings, dams, drinking water supplies, and other critical infrastructure.
EXTENSIVE DAMAGE to a building near Ground Zero after the towers collapsed.

By Thursday afternoon, Paul had worked two-and-a-half days straight and took his first break, like many other employees who worked long hours during the crisis.

At 7:30 a.m. Friday, Sept. 14, Roger and his team were taken to a high-security vault at DOE and began calling NNSA facilities, talking to security managers, making sure contingency plans for an aircraft attack and a release of materials were in place.

“We went to work every day in an environment that was the aftermath of a war zone,” Roger says.

Tom recalls: “It was very chaotic.”

They looked for vulnerabilities as they worked, particularly at critical facilities. “These types of attacks not only would create a nuclear incident, but they could also damage our nuclear program,” Roger says. “We looked at events that would cause death or exposure to significant amounts of radiation, that would cost a permanent or decades-long loss of a permanent facility or would cost billions of dollars to replace. Finally, we looked at things that could create an irretrievable loss of public confidence.”

Working 12 hours-plus a day through the weekend, the team created a matrix based on high, medium, and low risk and a list of recommendations for the facilities in what was later dubbed The 72-hour Report.

While some callers found sleepy or grumpy employees on the other end of the line, once they knew why the calls were coming, they helped. Team members say everyone pitched in during the crisis.

“They were fantastic. . . . Whether it was Lawrence Livermore, Los Alamos, V-12, or Pantex, or any of the other DOE/NNSA facilities, I saw them all come together and really, really focus. They were able to overcome any differences and everybody just focused on trying to help,” Jim says.

For the next few days, the mood at the Labs was one of nervousness, as it was across America, particularly when airlines returned to the skies. Wes says he helped respond to numerous false reports from employees. “It was jumpiness,” he says.

On Sunday, Sept. 16, 2001, Richard Sparks, now retired from Sandia, but still serving as a consultant, arrived at Ground Zero with 650 pounds of equipment to outfit the normally bustling hotel deserted.

But his feelings are mixed when it comes to security actions taken since 9/11.

9/11 was a wakeup call for the country and those of us at the Labs who had responsibilities in security to say that events that we had deemed relatively unlikely needed to be more seriously evaluated in terms of finding the balance of money and security,” Roger says. “As a nation we still haven’t adequately dealt with that.”

As a new week dawned, the calls for help from around the nation continued. Betty Biringer (5942) recalls Org. 6400 being “bombarded” with calls for their security risk methodology for federal dams, which had been completed that August. They started applying the methodology to other facilities, particularly for large metropolitan governments that called to say they had hundreds of critical structures they needed to protect.

“It was pretty sobering: the realization that it was no longer a technical problem or a paper exercise; it had really happened,” Betty says. “We’ve got to protect the nation from this. There was a feeling of nationalism among us. We all knew why we went to work every day.”

Sandians also helped outside the workplace. Bruce Berry (6833), who was then a Sandia emergency planner, Troy Hamby (4116-1), Lloyd Rantanen (3333), Mike Herzheimer (1534), and Gerald Wellman (1532) were on the New Mexico Urban Search and Rescue Task Force that traveled to the Pentagon to help recovery efforts. Working 18-hour days, they shored up damaged parts of the five-story structure, searching for survivors and recovering airplane parts along the way.

“You can’t help feeling anger or hate that this act was done. Of course, you can’t dwell on that because you are there to do a job. But you come across remnants and you wonder, whose mother was this? Whose son?” Berry said at the time.

Across town, Roger and his teammates provided a classified briefing to Gordon on their findings.

“There were a number of important things that were done because of the report,” Roger says, explaining that he cannot provide details.

After the briefing, the team flew home. “For those of us who had spent those five days in Washington it was such a relief to get home because it had been so intense,” Roger says.

A decade later, Roger remains proud about what he, Tom, Jim, and the others accomplished.

“It was the ability of this laboratory to contribute to this was a reflection of 30 years of capabilities and development of our understanding of how security and technology come together,” he says.
We felt the entire building shudder heavily

Sandians stationed at Pentagon on /11 recall deadly attack

Steve Rinaldi (5643)

I was a US Air Force officer on the Air Staff, stationed in the Pentagon on 9/11. By sheer luck, we had had a “dry run” evacuation of the Pentagon about five weeks earlier. A fire broke out in one of the kitchen areas, filling the building with smoke. The alarm went off, and the building was evacuated— but not smoothly at all. Many offices didn’t have evacuation routes or marshalling areas, others didn’t have recall rosters or procedures, and some evacuation doors were chained shut! Many of these problems were corrected over the next several weeks, to our great benefit during the 9/11 attack.

On 9/11, my office followed the events in New York City very closely. Although we were about one-third of the way around the Pentagon from the point of impact, we felt the entire building shudder heavily at the instant of the attack; we knew we were in a new kind of war. This time, the evacuation was very smooth, orderly, and quick. We were able to rapidly account for the 50 or so persons in our office, none of whom were casualties of the attack.

The next morning, before anyone could exit the Metro at the station, a guard entered the train brandishing an assault rifle. I wondered about relevant CPR [Corporate Policy Requirements] as I walked into the burning building. The building was to continue to burn for many more days. It stunk of JP-4 and burnt plastic. Originally, the Pentagon was partitioned by fire doors, but over the decades they had gradually been removed. Now all 17 miles of corridor were open and filled with fumes and soot.

The announcement was made by a museum volunteer, who had been in the evacuation mission. I let Sen. Pete Domenici’s staff know of our plan to find a final, permanent home for the museum. I was on official loan from Sandia to the Pentagon, and so began a three-day transfer, using Sandians inside and outside the building.

At the memorial service a week after the attack, one of my fellow citizens, the two towers collapse in a huge cloud of smoke and debris. I just lost it, right then. I was certain that each tower still held tens of thousands of New Yorkers unable to reach the ground. It was too much, and I was certain that each tower still held tens of thousands of New Yorkers unable to reach the ground. It was too much, and I was certain that each tower still held tens of thousands of New Yorkers unable to reach the ground.

We were in total shock. A vivid memory from the scene is of the hundreds of people standing up on the I-395 expressway embankment all talking on their cell phones!

While being at the Pentagon on 9/11 would never be a distinction I would choose, I can tell you I would never have gotten over it. I was proud to be part of Secretary of Defense Donald Rumsfeld’s “show of resolve” by returning to work that day like normal. It was anything but normal, however, as I stood at the A-Ring window at lunchtime and watched the firefighters work on the roof across the courtyard. Rather, it was a real test to be in a building still on fire and containing bodies yet to be recovered. My family and I returned to Albuquerque in July 2003, having survived the D.C. snipers, the anthrax scare, as well as 9/11.

Bill Rorke (8244)

It was a gorgeous autumn morning just two weeks into my new assignment at the Pentagon. I was sitting at my desk on the A-Ring when suddenly there was a very loud “boom” outside my window. Turning to the person sitting next to me I said “That was a plane crash.” I assumed someone messed up big time either arriving or departing nearby Reagan National Airport. The office hummed on without reaction for several more minutes, until suddenly the lieutenant colonel hung up his phone and announced in his command voice “Everybody out of the building Now!”

Cell phones were jammed. I would drain my battery and connect only two short calls— one to my unsuspecting wife and one to Sandia. “I am alive and unhurt.” I walked a couple miles, then hitchhiked halfway home. The car radio said the World Trade Center towers had fallen. I commented at how rumors can get out of control. My wife got me a shirt and we drove straight to the blood bank. It was closed, but soon there was a line around the block and they opened for donations. Only later would it become certain that each tower still held tens of thousands of New Yorkers unable to reach the ground.

The next morning, before anyone could exit the Metro at the station, a guard entered the train brandishing an assault rifle. I wondered about relevant CPRs [Corporate Policy Requirements] as I walked into the burning building. The building was to continue to burn for many more days. It stunk of JP-4 and burnt plastic. Originally, the Pentagon was partitioned by fire doors, but over the decades they had gradually been removed. Now all 17 miles of corridor were open and filled with fumes and soot.

At the memorial service a week after the attack, one of the guards quoted Psalms 118:24 “This is the day the Lord has made for us. Let us rejoice in it and be glad.” Indeed.

Steve Hatch (241)

I was on official loan from Sandia to the Pentagon, working in the Deputy Assistant Secretary of Defense Office of Nuclear Matters from May 2001 to July 2003. The program managed the national multipurpose nuclear weapons stockpile, the nuclear laminate program, and certain other nuclear projects. On 9/11, I was sitting in 3C125, about a thousand feet from the point of impact on the other side of the building. We had been in a staff meeting when my boss got a call and switched on the TV. We then sat stunned for a while watching the twin towers burn. It is a testament to how big and stout the Pentagons is that I did not hear or feel anything when Flight 77 hit. Ironically, the first we knew of it was when CNN switched over to show smoke billowing from the building. Seconds later, alarms could be heard in the hallway and we figured it was time to leave. On our side of the building, the evacuation was orderly and there was not a smell or sound indicating the nearby carnage. Once outside, I decided that the best thing I could do was to leave the area, so I walked over to the Pentagon City Metro and took the Blue Line to Springfield, Va., where my wife picked me up. A vivid memory from the scene is of the hundreds of people standing up on the I-395 expressway embankment all talking on their cell phones!

Jim Walther, please report to the museum lobby.” That was the announcement that came over the public address system of the National Atomic Museum on the morning of Sept. 11, 2001. It was just before noon and we were all in shock, some in tears as we witnessed, with so many of our fellow citizens, the two towers collapse in a huge cloud of smoke and debris. I just lost it, right then. I was certain that each tower still held tens of thousands of New Yorkers unable to reach the ground. It was too much, and I was in complete shock.

The announcement was made by a museum volunteer, and when I made it to the lobby, four uniformed Kirtland Air Force Base security personnel were there waiting for me. “Mr. Walther?” one asked. “Yes, I am Jim Walther, the museum director.”

“When you will immediately evacuate all of the guests in the museum, we are here to escort each from the installation,” he said. Wow. And so it began. We cleared the museum, then that afternoon, we were all asked to go home. At that time, some of the museum staff were Sandia employees and some worked for the museum foundation. The foundation folks were not allowed to come back to work even after a few days. When I inquired as to when we would be permitted to reopen, I was told by the base commander, “You will not likely ever reopen here.”

So we all met to make a plan to reopen outside the gate. The store manager and I went to Winrock Mall to ask if we could rent a small storefront for the same price. We jumped on it and so began a three-day transfer, using Sandians inside and foundation staff at the mall, moving the entire museum store to the mall. We opened the “U-Pick-U-A-Doom” store five days later. Since Christmas was coming, we had great success.

By October, I was looking at how to move the museum itself; I talked to DOE, reminding officials there of the federal law behind the museum and its important public education mission. I let Sen. Pete Domenici’s staff know of our plight and I called my old friend Ed Able, CEO of the American Association of Museums.

Eight months later, on May 11, 2002, we had completed the transfer. We moved more than 100 tons of nuclear weapons casings right down Central Avenue early every morning, aiming to be off the road by 6 a.m. We opened the museum in temporary quarters in Old Town and began our long campaign to find a final, permanent home for the museum. It was hard to believe that way out in New Mexico, a museum would be so profoundly affected by the events of 9/11. The date is thus knitted deeply into the history of the National Museum of Nuclear Science & History as the date that put us into gear. Even as we remember those who lost their lives that day, and think of the way our nation has been changed, I think of how it affected the museum.

‘You will immediately evacuate all of the guests in the museum’

9/11 put National Museum of Nuclear Science & History on new trajectory

By Jim Walther, museum director

A VINTAGE AIR FORCE B-52 being dismantled for transportation to the museum’s new location on Eubank Boulevard.

A VINTAGE AIR FORCE B-52 being dismantled for transportation to the museum’s new location on Eubank Boulevard.
California site rises to challenges of post-9/11 world

In December 2001, a few days before New Year’s Eve. It suddenly occurred to them to look at Times Square, at the international focus happening there, as a prime opportunity for a joint venture. I remember getting the phone call when I was at a play in San Francisco saying we need you to tell us how to use our detection assets. In a 24-hour period, I put together a report saying this is now you should derelict your assets and this is what you’ll be able to see and what you won’t be able to see.

In. We probably got three dozen something everyone was interested in. We were fairly interested academic study to study was about spent fuel. We shouldn’t get products out right away. But the job was done once the decision is made to establish a new business unit, recognize that you’ve got to invest some money and that the new kids will not be able to carry their weight for a while. That’s not to say you don’t as something necessary to get going, a level of understanding to really sort through it all.

Carolyn Pura: The need for upfront R&D wasn’t recognized as something necessary to get the job done right. There was a desire to skip over R&D to get products out right away. But in many areas, the technology wasn’t mature enough.

LN: Why did you feel it was still critical to have a Homeland Security SMU at Sandia?

Carolyn Pura: It still demonstrated Sandia’s ability to innovatively design and develop tools to counter the terrorist threat. That was already a natural fit for the infrastructure protection program. Our biggest influence was our ability to screen cargo. We can also look at any potential threat and quickly determine the right way to protect it.

Rick Stulen: Another success is how we’ve evolved as a laboratory. I think we’ve really strengthened our systems analysis capability. You see this play out all over the place; NISAC [the National Infrastructure Simulation and Analysis Center] is an example.

LN: Are there any enduring lessons we’ve learned post-9/11?

Carolyn Pura: In the rad/nuc area, a major accomplishment is our ability to screen cargo. We also have the ability for rapid decontamination. We also have demonstrated that it works and we have plans and the know-how to do it.

Rick Stulen: We’re in a similar position to where we were before 9/11, with a few caveats. We have lessons learned, particularly in the biofield. We never could have done it without the experience and investments that went into it.

RN: In regards to cyber, there has been a 9/11-like cyber attack, per se, although there have been multiple hits. In regards to cyber, there has not been a 9/11-like cyber attack, per se, although there have been multiple hits.

Carolyn Pura: On the rad/nuc side, we are beginning to see there were threats around particular venues at key events. The first one I was, 1 believe, in the 1980s or 1990s — much significant engagement with those constituents.

Carolyn Pura: On the rad/nuc side, we were looking at the beginning of FY2002 and were facing huge budget cuts to biodefense. That changed. A lot of additional money began coming in. We saw a big ramp-up of funding directed at measures to detect and mitigate bio-agents, and then things really began to happen. Congress began to appropriate additional funds. The PROTECT system, for instance, was in operation in one subway system in Washington, D.C., and Congress was demanding that it be fully deployed throughout the Metro system. We got heavily involved in that deployment and in others around the country.

Rick Stulen: It did accelerate our hiring of the biological community.

Duane Lindner: Then we saw an acceleration of other investments. We were forewarned that there was going to be a “dirty bomb” concept, which was considered a much larger threat.

Carolyn Pura: There are lessons to be learned from standing up the Homeland Security SMU. I have observed a common theme when there are huge political pressures to open up the ecosystem. There was a view that the federal labs, not just weapons labs, were another joint contractor. It became a tougher environment for the program and also a great opportunity for innovation.

Rick Stulen: That was a heavy burden for a small SMU. Much more careful business analysis would have helped tremendously. It’s common sense in retrospect, but in the moment we were just trying to make things happen.

Carolyn Pura: In particular, one way we used our LRDR resources to position the Laboratory in biology is a very strong and positive story we learned. We never could have gotten where we are today without that foundation, that infrastructure.

Carolyn Pura: I think we underestimated dramatically how difficult it would be to interact with a range of community stakeholders. We also underestimated how long it takes to stand up a new organization — it’s still happening today.

Carolyn Pura: In a similar position to where we were before 9/11 in regards to cyber. There has been a 9/11-like cyber attack, per se, although there have been multiple hits. Many entities in the country have a piece of it (cybersecurity) and there is no one central authority. What’s the role of the laboratories? Are we the threat to the cybersecurity? We’re starting to build up the capabilities, we’re hiring people. It’s closely aligned with our computer science capabilities, which are strongly funded.

Duane Lindner: We have been building detectors, which requires an understanding of the nuclear weapons.

Carolyn Pura: That capability strengthens our core set of capabilities in nuclear weapons.

Duane Lindner: We have been building detectors, which requires an understanding of the nuclear weapons. That capability strengthens our core set of capabilities in nuclear weapons.

Duane Lindner: We have been building detectors, which requires an understanding of the nuclear weapons. That capability strengthens our core set of capabilities in nuclear weapons.
Responding to the needs of our time
A Q&A with Div. 6000 VP Jill Hruby, head of Sandia’s International, Homeland, and Nuclear Security SMU

Ten years ago, Jill Hruby was a senior manager in Microsystems and Engineering Sciences. She went on to become the first female director of a national laboratory’s national security programs as director of a new organization established to support the nation’s international, homeland, and nuclear security challenges that emerged following the 9/11 attacks. Now, as VP of the International, Homeland, and Nuclear Strategy National Security Management Unit (NISAC) and director of Sandia’s International, Homeland, and Nuclear Security SMU, she is dedicated to homeland security and a range of national security objectives. She sat down recently with Lab News writer Renee Deger to discuss how Sandia has evolved as a result of demands following the attacks.

...[continued]

Lab News: What were the immediate demands you faced in the days, weeks, and months after the 9/11 attacks?
Jill Hruby: At the time, we had a steady focus on counter-WMD [weapons of mass destruction], in particular bio- and nuclear, and also on infrastructure protection because of the National Infrastructure Simulation and Analysis Center (NISAC). We had been established ten years earlier. There were many other small efforts under way, but the bulk of our program was in these areas.

JH: What did it mean to begin working with a broader range of stakeholders, and why was this such a new experience for you at Sandia?
LN: There are currently 5,500 VPN accounts, with an additional 4,000 accounts able to use Juniper’s remote desktops.  This meant that the demand from home far exceeded capacity, so that we realized our full potential. Today, the idea that your career at Sandia might include work in all or any of these areas and still be equally a part of our mainstream mission. We now support lots of government agencies on national security issues and that’s a fundamental change.

JH: Did you feel a renewed sense of mission or urgency in your work?
LN: Yes, there is no question about that. Everybody at the labs knew that the world had fundamentally changed with respect to national security. Many had thought about these possible new threats, many had not. The biggest challenge early on, and still is, is to shift gears without losing or quite specific successes, regardless of their likely contribution to risk. This dynamic persisted for several years, and our folks involved in this mission had to adjust to this kind of political environment.

JH: When did you feel a renewed sense of mission or urgency in your work?
LN: When DHS was established, NISAC was moved to DHS and it quickly became clear that this program was going to be in importance to the resilience of the mission.

JH: And we had always had radiation detection for response missions and for NSNA, but the idea of radiation detection in the private sector—at ports, at borders, and so forth became much more important to DOE, DHS, DoD, and the White House.

JL: What did it mean to begin working with a broader range of stakeholders, and why was this such a new experience for you at Sandia?
LN: That is why, ten years later, where do you see the biggest difference at Sandia?
JL: Our identity as a national security lab is pretty firm. Today, the idea that your career at Sandia might include nuclear weapons or homeland security or defense systems or combinations of all of these is a change. It’s a change because we had not thought about work in all of or any of these areas and are still equally a part of Sandia’s mainstream mission.

JL: What did it mean to begin working with a broader range of stakeholders, and why was this such a new experience for you at Sandia?
LN: That is why, ten years later, where do you see the biggest difference at Sandia?
JL: Our identity as a national security lab is pretty firm. Today, the idea that your career at Sandia might include nuclear weapons or homeland security or defense systems or combinations of all of these is a change. It’s a change because we had not thought about work in all of or any of these areas and are still equally a part of Sandia’s mainstream mission.

JL: What did it mean to begin working with a broader range of stakeholders, and why was this such a new experience for you at Sandia?
LN: That is why, ten years later, where do you see the biggest difference at Sandia?
JL: Our identity as a national security lab is pretty firm. Today, the idea that your career at Sandia might include nuclear weapons or homeland security or defense systems or combinations of all of these is a change. It’s a change because we had not thought about work in all of or any of these areas and are still equally a part of Sandia’s mainstream mission.

JL: What did it mean to begin working with a broader range of stakeholders, and why was this such a new experience for you at Sandia?
LN: That is why, ten years later, where do you see the biggest difference at Sandia?
JL: Our identity as a national security lab is pretty firm. Today, the idea that your career at Sandia might include nuclear weapons or homeland security or defense systems or combinations of all of these is a change. It’s a change because we had not thought about work in all of or any of these areas and are still equally a part of Sandia’s mainstream mission.

JL: What did it mean to begin working with a broader range of stakeholders, and why was this such a new experience for you at Sandia?
LN: That is why, ten years later, where do you see the biggest difference at Sandia?
JL: Our identity as a national security lab is pretty firm. Today, the idea that your career at Sandia might include nuclear weapons or homeland security or defense systems or combinations of all of these is a change. It’s a change because we had not thought about work in all of or any of these areas and are still equally a part of Sandia’s mainstream mission.
Sandia Labs’ Advanced Concepts Group conceptualized new approaches to addressing terrorist threats

By Neal Singer

Sandia’s Advanced Concepts Group (ACG), a technical think tank formed in 1999 to scope out long-range national and global security problems that Sandia might help solve, found an immediate focus for its concern with the events of 9/11.

But, says Gerry Yonas, now retired VP, principal scientist, and ACG director, the group’s concerns with what it termed “ulterterrorism” predicted the fatal air crashes. "One of our problem areas from the get-go was ‘ulterterrorism through asymmetric warfare—UTAW.’ It proved pretty close to what happened overall," says Gerry. "We held several workshops before 9/11 on UTAW. People like Jim Woolsey [former CIA director and noted terrorism expert] and Steve Emerson were involved in helping us identify threats to the nation. We proceeded to turn around our ourselves, using guns, gates, and we would go from there."

In our predictions, we were pretty well ahead of our time.

Tommy Woodall (now 0430), Dennis Engi (retired), and Gerry went to Washington during both the Clinton and Bush administrations to interest government leaders in facing what they saw as an incoming threat. "But at the time, leaders believed they had other fish to fry," says Gerry.

Tommy, The problem was, people just didn’t believe it could happen until it. Until it happened, it was hard to imagine that it could happen.

“...was that for the most part, the more senior the people, the less they could see that the openness of our society could be used against us. And it wasn’t just us. Probably 99 percent of the people in the country just didn’t think it could happen. Try to imagine anything as wild and spectacular, in a bad way, as we experienced on 9/11, before it happened. Some leaders ‘got it’ early but we didn’t have a critical mass soon enough. Among the leaders, the one thing we wanted leaders to consider was how to make our society more robust and resilient so we could keep an open society without abandon after a terrorist attack, also, how do we persuade people who might attack us, not to do that. Gerry says he blamed himself for “not being aggressive enough to warn people about what we thought was going to happen.” As ACG director, he felt that part of Sandia’s job was to provide the technology and insights to head off such events, and he set the group to work to come up with a Labs wide strategic approach to thwart terrorist intents. The fire metaphor: terrorism as a manageable threat

One immediate response was the so-called fire metaphor, developed with former ACG member John Whitney (now 2P196), that offered a useful mental approach to the emotional event of 9/11. The paper, written by John, compared the danger of terrorism in 2001 to the danger posed by fire 100 years earlier.

The fire paper’s analysis pointed out that at the end of the 19th century, people ruthlessly destroyed fire. It killed people and destroyed homes, businesses, and neighborhoods. But by making investments in technology—fire alarms, hoses, extinguishers, heat detection sensors, water sprinkler systems, firehouses with advanced communication systems, and social tools like fire codes and fire insur ance—the threat became manageable.

“The metaphor helped by letting people get mental arms around an analogous case during the national event of 9/11,” says John. “Because it was calming, not crisis-driven, it was hard for the idea to gain traction with policymakers. But Gerry talked about it everywhere, and it helped people see how society might accept some infringements on personal liberties to deal with terrorism, much as society accepted in some dealings with fire.”

Says Curtis Johnson (5635), another former ACGer, “I think the world is playing out like the metaphor suggested. We haven’t been able to eliminate terrorism, but we know a lot about minimizing and managing its influence so that people can go on with their lives.” He mentions the airport imaging capability of the Department of Homeland Security’s control of luggage loss and the addition of x-ray bollards so that a vehicle can’t accelerate into a critical building.

“We deal with the danger of fire all the time, but we don’t overreact,” says Gerry. “We wanted to create a similar mindset about terrorism. Osama bin Laden had said that what would cause the downfall of the United States wasn’t terrorism itself but US overreaction, which would bankrupt its economy. We wanted moderation in response.”

The group also considered ways to aid intelligence analysts, decision makers, and soldiers through better understanding of brain function. The focus was on understanding how the enemy thinks guided Gerry into neuroscience research at the Mind Research Network, based in Albuquerque, and most recently, into a keen interest in the well-being of returning troops. He hopes Sandra takes seriously enough the problems that face returning servicemen and women. “Former service people kill themselves every day,” he says, referring to information released by several armed forces magazines.

National security problems are often ‘people problems’

Gerry’s intense concern for humanity, sometimes masked by his sense of humor, is one reason the ACG was ahead of its time in understanding that national security problems are often “people problems,” and technology is only one element to their solutions, says Curtis. “Gerry was advocating a focus on general populations when the DoD was still very much committed to ‘shock and awe,’” he says. “I think Gerry and the ACG made important contributions to turning the DoD ship toward an approach that appropriately balances addressing current security threats with finding ways to encourage general populations not to provide the support insurgents and ter rorists need. Convincing the adversary to quit or surrender is almost always more desirable than extended fighting.”

“...is perhaps the best example so far of how how certain populations and social movements are in today’s national security environment.”

To Gerry, the other most important component of the ACG was its determination of what it called “gezer threat— the aging of Western Europe and Japan’s population—with the resultant, possibly crippling strain on the economies of countries whose smaller younger population must support a large retired population.

Such a situation in the US would play into the late bin Laden’s ideas of wrecking the US economy by combining the expense of a continual mobilization of a war against terrorism with declining revenues to pay for it. Against this, says Gerry, is the continued immigration into the US of younger people, and the efforts by groups like the ACG to use technology to keep seniors productive rather than on social security. Online “grandparents” could comfort and educate the children of working couples after school. They could be online teachers and also monitor computers from home. The ACG envisioned jetty buses continually available in sense centers to transport the willing to jobs, and medical stimulation both conventional and through electronic wiring to keep aging brains primed and alive.

All the ACG’s top objectives, in fact, became aimed in part to aid the war on terror: to deter adversaries from developing nuclear weapons; to use technology to provide direct and tacit support to terrorist and insurg ent groups; and encourage governments and populations to build stronger societies and economies. Mixed in with these objectives were support for development of hardware and sensors for distribution where they would be useful.

The ACG was closed in 2007, according to its dynamic director, because it was “ahead of its time in understanding that national security problems are often ‘people problems’,” and technology is only one element to their solutions, says Curtis. "...is perhaps the best example so far of how how certain populations and social movements are in today’s national security environment.”

Gerry’s intense concern for humanity, sometimes masked by his sense of humor, is one reason the ACG was ahead of its time in understanding that national security problems are often “people problems,” and technology is only one element to their solutions, says Curtis. “Gerry was advocating a focus on general populations when the DoD was still very much committed to ‘shock and awe,’” he says. “I think Gerry and the ACG made important contributions to turning the DoD ship toward an approach that appropriately balances addressing current security threats with finding ways to encourage general populations not to provide the support insurgents and ter rorists need. Convincing the adversary to quit or surrender is almost always more desirable than extended fighting.”

"...is perhaps the best example so far of how how certain populations and social movements are in today’s national security environment.”

To Gerry, the other most important component of the ACG was its determination of what it called “...is perhaps the best example so far of how how certain populations and social movements are in today’s national security environment.”
Diane Mendiola (1522)

On Sept. 11, 2001, I was working as an administrative assistant for the firm of Stripe, Conyers, and Conyers, in Stamford, Conn. I'd started the day with my typical long commute from Monsey, N.Y., over the Pale Horse. It was a beautiful morning, the sky was unblemished and the morning air was cool. I pulled up to the office, which was a new office that we had just moved into. It was peaceful, and my thoughts were on the day ahead. Then I saw on television something that made my heart sink on the spot. It was pretty much a blur but somehow I knew what had happened.

Tragically, not all of our colleagues returned home safely that day. Mercer's parent company, Marsh & McLennan, had offices in the twin towers, and 295 employees lost their lives in the attacks. (A tribute can be found at http://memorial.mmc.com.)

Brian Nelson (6523)

It was as if so many other Americans, 9/11 changed my perspective on life. I was a young 28-year-old guy, just starting my second year of undergraduate education — with a brand new job at Sandia, the most coveted place to intern in all of New Mexico. Like many college freshmen, I was contemplating future career options, having fun with friends, and starting a relationship with my future bride. I was finally within striking distance of a perfect life — happily married with 2.5 kids, a steady job, a dog, and a white picket fence to surround it all. Ahh... I was ready to enjoy my slice of Americana!

But, then the twin towers came crashing down, the Pentagon burned, and our lives were shattered — and so was my life. I was shaken to the core. It felt as though the world was never the same. But, that's what a beautiful morning is. And, yet, Americans everywhere stood up to face the challenge. My colleagues, my mentors at Sandia, nay our entire country, were given a very real lesson about the fragility of life and the importance of family, friendship and community. All were impacted, and somehow we all were somehow been shaken. Humanity is represented by the spectrum of colors, and the rippling of the paper represent the feel of that day, that will never forget.

Peter Merkle (6831)

On Sept. 11, 2001, I was working in the Defense Threat Reduction Agency (DTRA) Advanced Systems and Concepts Office at the Pentagon and then DTRA, where my primary duties were leading and contributing to projects for characterizing terrorism threat assessment, counterterrorism mission planning and training, and technical policy support in the chem/bio/nuclear threat space. Since March 1998, my work had focused on analysis of asymmetric threats posed by Al Qaeda, a threat that was not widely taken seriously.

Once the alarm sounded on 9/11, we were evacuated to the basement of the DTRA headquarters. It was identified as a possible target for a plane still in the air, and we were able to evacuate quickly. There was no way to contact Sandia to let them know I was OK, since all communications were down. We stubbornly suspected there would be multiple attack locations, and perhaps different types of attacks combined. In the days after the attack, we were very much occupied with policy support and briefings to leadership on the nature of the threat and possible next steps. For the next several years, I continued working in the same area for DTRA and at Sandia, focusing on technology for improving group decision-making under stress, red teaming, and infrastructure vulnerabilities assessments. It wasn't until 2007 that I moved completely away from that sort of work.

A friend of mine and relative by marriage, Andrew Fisher, died at the World Trade Center on 9/11, the wounds of that day will be a long time healing.

Ann Barr (9751)

On Sept. 11, 2001, I woke up in my Pagosa Springs, Colo., timeshare, ready for a week of vacation. When I went into the living area, my trip companions were watching the coverage of the first airplane flying into the World Trade Center. As I looked at the horrific event, another plane flew into the second tower. I couldn't believe I was seeing something I had never seen before, the loss of life of those buildings.

We went about our planned excursions for the day — a trip to Mesa Verde National Park. It is one of the most beautiful places I have ever seen in my city-born-and-bred existence — dwellings of thousands of years. The 24 hour flight was set to depart the next day and we were off the terrible news and focused on the things humans do to preserve their livelihoods rather than what we lost.

When I returned home to my verbally abusive work environment, I began sifting through my memories. I scribbled out a hand-written resignation, gave it to her, and walked out. As I move away that day, I realized that life for me had changed forever. I was no longer going to put up with negativity and soul-sucking environments or people. I was only going to contribute my energies to organizations that celebrate life and encourage the human spirit. I drew a line in the sand on that day that has made all of my life decisions much easier, and led me down the path to Sandia National Laboratories. I love working in a place where the human spirit and all life is respected and encouraged to “exceptional service in the national interest.”

Robert Virden (9535)

On the morning of 9/11, I had just arrived in Boston Harbor on a brand new cruise ship. I had just completed a two-week trans-Atlantic crossing on the Celebrity Summit, on which I was assigned to the entertainment interactive system. Being brand new, the ship had no paying passengers, only craftsmen who had sailed with the ship from France to finish up the interior finishing. The crew was scheduled to fly out of Logan airport that morning back to France, and then they were going to New York for a grand welcoming ceremony. The Immigration and Naturalization Service and Customs officials were clearing the first of us for debarkation, their radios and cell phones started ringing. Without explanation they closed their books, said “nobody gets off the ship,” and then kicked us out of port. I brought up my passport and then started broadcasting live footage over the ship’s TV systems at that point, and we all watched in horror as events unfolded. Eventually, we ended up in the Bahamas for a couple weeks, as that was the only place that would allow us to dock.

9/11 had a direct impact on my career in that the cruise industry, and tourists in general, came to a screeching halt, so I was out of work for many months after that. Being unemployed for so long provided seven years’ worth of motivation for me to go back to school, finish my bachelor’s, get an MBA, and obtain professional certifications, without which I wouldn’t be here at Sandia.

Chris Miller (10680)

On my way into work the morning of 9/11, I remember the concerned and then frantic reports on the radio about the first and then second plane hitting the World Trade Center. As I drove to work on I-70 on my way to New York for a grand welcoming ceremony, the wing on my cruise ship hit a headwind. Nobody stopped and there were no ID checks. I thought, “This is going to change.”

When I reached the office in Media Relations, my first impulse was to turn on the radio and check the online news.

And then the Emergency Operations Center, located underground between Bldgs. 800 and 802, was activated. John German and I were the first of many in Media Relations who would spend countless hours in the EOC during the next couple of months. Sandia needed to ensure its facilities were secure and its people were safe from possible further terrorist attacks. An immediate task was to locate all Sanidians on transit to ensure they were accounted for and safe, and not among the casualties on the four crashed passenger airliners, at the World Trade Center, or in the Pentagon.

A decision was made to release Sandians early. A release schedule was formulated and then sent to employees. Meanwhile, we were still focused on the EOC and finally late in the day, I went to an adjoining room and saw local television and live-time video showing the collapse of the twin towers. I was mesmerized and still incredulous of what I saw. Finally, around dinner time, I exited the EOC. It was then I heard the second plane hit the pentagon about 8:30 am that morning. Sandia was quiet. The parking lot was empty, and I knew, my thoughts focused on my family. I wanted to hug my wife and three children and thank God we were OK.

(Continued on next page)
By Stephanie Holinka

happened, and that yes, I would have to eventually leave. I was heavy on how to explain to my young daughter what just lies that would be affected that one evening alone for a... that network technology evolves rapidly. I could say, “Oh Holy Lord, please help us!”

David Chacon (9329)

I'm not sure what exactly happened in our building, but I remember people leaving their offices to get off base before management had even declared it official to go home. Later as the other jets crashed, I knew then it would only be a matter of days before.. They were..

Rochelle Lari (3502)

I was at home sick in bed and my husband, Mohammad (Moe), had just dropped off my youngest son and his friend at school, but had not wanted to turn on the TV because one of the twin towers in New York had just been hit by a plane. I was trained about the Pentagon, not the twin towers. I walked into my office and found a... the Pentagon at the time had been... They were all safe. I debated heavily on how to explain to my young daughter what just happened, and that yes, I would have to eventually leave. I was... and gave... who worked in these buildings. To this day, I'm not sure what exactly happened in our building, but I remember people leaving their offices to get off base before management had even declared it official to go home. Later as the other jets crashed, I knew then it would only be a matter of days before military retaliation would be used. I grab...

I was at home sick in bed and my husband, Mohammad (Moe), had just dropped off my youngest son and his friend at school, but had not wanted to turn on the TV because one of the twin towers in New York had just been hit by a plane. I was trained about the Pentagon, not the twin towers. I walked into my office and found a... the Pentagon at the time had been... They were all safe. I debated heavily on how to explain to my young daughter what just happened, and that yes, I would have to eventually leave. I was... and gave... who worked in these buildings. To this day, I'm not sure what exactly happened in our building, but I remember people leaving their offices to get off base before management had even declared it official to go home. Later as the other jets crashed, I knew then it would only be a matter of days before military retaliation would be used. I grab...
Energy as national security: Sandia's role since 9/11

By Stephanie Hobby

Ten years ago, national security became household reality for the first time. National security beliefs about their meaning. As families and businesses began to adapt to a new world of terrorism, Sandia, along with many other national labs, began to make the transition from a focus on arms control to a new focus on homeland security.

Today, Sandia's emergency response capabilities are crucial to the nation's security. Sandia is a national security laboratory, and we're built on the heritage of our nuclear history. From that, we have developed a unique expertise in looking at national security in terms of surety, risk, and how one can plan for and prepare to reduce the risk.

The day of the attacks, Sandia was on high alert. We were part of the National Response System, which included the U.S. Department of Homeland Security, the Federal Bureau of Investigation, and over 100 other federal, state, and local agencies.

Sandia's role in the response to 9/11 was to provide technical assistance to the field. We helped design the Emergency Operations Center (EOC) and developed procedures for incident command. We also provided technical support for the use of nuclear detection equipment.

Since 9/11, Sandia has continued to work on national security issues. We have developed new technologies to help protect the nation from terrorism. Our research and development efforts have led to the development of new tools and technologies that can help protect the nation from future threats.

For example, during the COVID-19 pandemic, Sandia helped develop a new test for COVID-19 that is faster and more sensitive than existing tests. This technology can help us quickly identify new cases of COVID-19 and help prevent the spread of the virus.

But Sandia's work is not just about technology. We also work on national security issues such as nuclear non-proliferation, maritime security, and cyber security. We are committed to helping protect the nation from all threats, no matter how they are changing.

Sandia's role in national security is crucial. We are working to ensure that the nation is prepared for any threat and can respond quickly and effectively.

Energy as national security: Sandia's role since 9/11

By Stephanie Hobby

Ten years ago, national security became household reality for the first time. National security beliefs about their meaning. As families and businesses began to adapt to a new world of terrorism, Sandia, along with many other national labs, began to make the transition from a focus on arms control to a new focus on homeland security.

Today, Sandia's emergency response capabilities are crucial to the nation's security. Sandia is a national security laboratory, and we're built on the heritage of our nuclear history. From that, we have developed a unique expertise in looking at national security in terms of surety, risk, and how one can plan for and prepare to reduce the risk.

The day of the attacks, Sandia was on high alert. We were part of the National Response System, which included the U.S. Department of Homeland Security, the Federal Bureau of Investigation, and over 100 other federal, state, and local agencies.

Sandia's role in the response to 9/11 was to provide technical assistance to the field. We helped design the Emergency Operations Center (EOC) and developed procedures for incident command. We also provided technical support for the use of nuclear detection equipment.

Since 9/11, Sandia has continued to work on national security issues. We have developed new technologies to help protect the nation from terrorism. Our research and development efforts have led to the development of new tools and technologies that can help protect the nation from future threats.

For example, during the COVID-19 pandemic, Sandia helped develop a new test for COVID-19 that is faster and more sensitive than existing tests. This technology can help us quickly identify new cases of COVID-19 and help prevent the spread of the virus.

But Sandia's work is not just about technology. We also work on national security issues such as nuclear non-proliferation, maritime security, and cyber security. We are committed to helping protect the nation from all threats, no matter how they are changing.

Sandia's role in national security is crucial. We are working to ensure that the nation is prepared for any threat and can respond quickly and effectively.

Energy as national security: Sandia's role since 9/11

By Stephanie Hobby

Ten years ago, national security became household reality for the first time. National security beliefs about their meaning. As families and businesses began to adapt to a new world of terrorism, Sandia, along with many other national labs, began to make the transition from a focus on arms control to a new focus on homeland security.

Today, Sandia's emergency response capabilities are crucial to the nation's security. Sandia is a national security laboratory, and we're built on the heritage of our nuclear history. From that, we have developed a unique expertise in looking at national security in terms of surety, risk, and how one can plan for and prepare to reduce the risk.

The day of the attacks, Sandia was on high alert. We were part of the National Response System, which included the U.S. Department of Homeland Security, the Federal Bureau of Investigation, and over 100 other federal, state, and local agencies.

Sandia's role in the response to 9/11 was to provide technical assistance to the field. We helped design the Emergency Operations Center (EOC) and developed procedures for incident command. We also provided technical support for the use of nuclear detection equipment.

Since 9/11, Sandia has continued to work on national security issues. We have developed new technologies to help protect the nation from terrorism. Our research and development efforts have led to the development of new tools and technologies that can help protect the nation from future threats.

For example, during the COVID-19 pandemic, Sandia helped develop a new test for COVID-19 that is faster and more sensitive than existing tests. This technology can help us quickly identify new cases of COVID-19 and help prevent the spread of the virus.

But Sandia's work is not just about technology. We also work on national security issues such as nuclear non-proliferation, maritime security, and cyber security. We are committed to helping protect the nation from all threats, no matter how they are changing.

Sandia's role in national security is crucial. We are working to ensure that the nation is prepared for any threat and can respond quickly and effectively.
Strong and resilient

Does the Star Spangled Banner yet wave?

By Iris Aboytes

I
t was about 2 o’clock in the afternoon. Through my window I saw no cars on the street, no people walking through the parking lot. It was still and quiet except for the news on the radio and the vivid pictures on television. It was Sept. 11, a day when the heart of America was severely ripped.

The crisp morning air brought shock to most Americans. The most powerful nation on Earth experienced vulnerability in its homeland.

Sandia dismissed all nonessential personnel about mid-morning. I work with the internal and external communicators, so our personnel all stayed behind. Once I knew my family was safe, I began to try to deal with the shock and fear that we were all experiencing.

Four planes crashed that morning. The first could have been an accident, but when multiple planes crashed, even the most trusting of us knew it was intentional. Each plane was intent on causing harm to our people.

Questions and more questions flooded my mind as I tried to understand, first, what was happening, then, what has happened?

In my comatose-like state-of-mind, afraid to breathe, I tried to grasp the reality of it all. Was I sure this was not a nightmare? Was I going to wake up any minute and everything and everyone would be all right? Even Steven Spielberg could not have conceived such a nightmare. But it wasn’t a nightmare, and I did not wake up. This was today’s reality.

Most of us are not world travelers. I certainly was not familiar with the twin towers. I had never been in or seen a building 110 stories high. It was more than I could hope to comprehend. Thinking about it only made me feel anxious.

I became a TV watcher that day. The last time I had experienced that kind of obsession was when as a kid I watched the TV coverage about President Kennedy’s assassination.

The visual impact — the planes hitting, the fires, the people jumping, the firefighters with their hoses, the people running in the streets, dust and debris everywhere — then as if more was needed — the buildings imploded. It was as if they got tired of holding on and just gave up.

Eyes closed. Eyes opened. The images remained the same. I could visualize the third plane hitting the Pentagon. I had worked in D.C. To me, the five-sided building, is a symbol of our country’s defenses against all enemies, its armor impenetrable. Yet on this day a plane came to rest on its mighty walls. How could this have happened?

The last plane, in my opinion, was full of heroes. Each passenger had the presence of mind to save the lives of Americans and together they became a legion of freedom fighters. Knowing what was happening, instead of just sitting back, they became a powerful weapon. To them, go heroic honors from a grateful nation.

American heroes were not in short supply that day or for days thereafter. The fires still burned. The piles of steel were still visible. There in the middle of the destruction a flag waved over its mournful nation. Its colors were still visible. There in the middle of the destruction a flag waved over its mournful nation. Its colors were still bright and, if possible, its resolve even stronger.

I was happy to find my family well that evening. Their hugs were especially tight. Grateful as I was that we were all safe, I almost felt guilty because I knew there were thousands of families whose lives would never be the same.

For me, as for many other Americans, our national anthem became my prayer. Radio stations played it continuously. No longer were they just memorized words all grouped together. Those words had come to life, their meaning clear and reassuring. In the midst of all the craziness, those words brought me peace.

I was happy to find my family well that evening. Their hugs were especially tight. Grateful as I was that we were all safe, I almost felt guilty because I knew there were thousands of families whose lives would never be the same.

For me, as for many other Americans, our national anthem became my prayer. Radio stations played it continuously. No longer were they just memorized words all grouped together. Those words had come to life, their meaning clear and reassuring. In the midst of all the craziness, those words brought me peace.

America is strong and its people resilient. Oh say, does the Star Spangled Banner yet wave, o’er the land of the free and the home of the brave?

YES IT DOES!

Shock and disbelief

The day we rediscovered our national pride

A
t the time of the attack, like everyone else, I was in shock and disbelief. Until that day it was unfathomable to suffer an attack of that magnitude on our own soil. (Especially for those of us who don’t remember Pearl Harbor first-hand, or at least since then, we have developed a false sense of security.) We all grieved for those who lost their lives and for their families, but what I remember most is the brief solidarity the attacks brought to the whole country and even the world.

For a short time afterward, we actually put aside our own personal troubles and discontent. We rediscovered our national pride. We were willing to focus on a united goal to recover from the attacks.

“United we Stand” and “We will never forget” were seen on TV, posted outside houses, and plastered on cars — along with the American flag.

I thought it was amazing that the slogans and the common outpouring of solidarity actually translated into a greater level of civility and cooperation. I noticed while driving in jammed rush-hour traffic in the following days, people weren’t aggressively trying to cut everyone else off. They were more willing to let others move in front them, which allowed traffic to move much more smoothly than was the case prior to the attacks.

At work, individuals were more willing to cooperate and compromise during decision-making and performing tasks. We realized at that moment in time that our smaller problems and difficulties were insignificant in the grand scheme of things. As Sandians, we have worked tirelessly since then to help contribute to the protection of the country and our soldiers and we are proud of that fact.

I personally do not have a problem with the resulting restrictions and redactions of freedoms we’ve had to absorb to attempt to make the country safer from additional attacks. (Although those restrictions are very inconvenient and I wonder how effective they are in preventing future attacks.) I keep a reminder of what we endured by continuing to wear on my badge an American flag pin we were given after the attack.

I feel that I have “not forgotten” and I will continue to “stand united” to try to preserve what this country stands for. I worry that, generally speaking, this country has lost sight of how tragic, but important the September 11th attacks were for the continued development and future of our nation.

— Mark Olona

Photo by James Tonnellotte, U.S. Customs and Border Protection, courtesy of Wikimedia.

A firefighter takes a break from the massive recovery effort at Ground Zero in the aftermath of the Sept. 11, 2001, terrorist attacks. (Photo by Michael Rieger, courtesy of FEMA)