

# MITRE MATTERS

MITRE RESPONDS  
TO SEPTEMBER 11

Special Issue, May 2002

Serving the MITRE Community



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John Gratz

**THE TRAGIC EVENTS OF SEPT. 11  
HAD PROFOUND IMPLICATIONS,  
BOTH PERSONAL AND PROFESSIONAL,  
FOR MITRE AND ITS SPONSORS.**

**N**ONE OF US WILL EVER FORGET that beautiful fall day when vicious terrorist attacks on New York City and Washington, D.C., abruptly halted our normal activities, stunned the nation, and forever changed our world.

The attacks on America affected MITRE at many levels. Horror and shock were followed by grief and sadness when employees learned of the death of a colleague, Dr. Carl M. "Max" Hammond, who was aboard United Airlines Flight 175, which crashed into the South Tower of New York's World Trade Center.

In the immediate hours that followed, threat conditions and security measures were heightened. Many employees who were traveling on business were stranded when airports closed and ground-based transportation systems were overwhelmed.

Despite the chaos and uncertainty, MITRE's employees rose to the challenge. Embracing our mission to serve the public interest in its most fundamental form, they raced to lend their knowledge and expertise wherever it might be needed.

At the Pentagon, MITRE was able to pitch in to help rebuild the Defense Department's information infrastructure. At the World Trade Center, MITRE contributed advanced technology to rescue workers in New York City, where employees also put in long hours aiding the search for survivors. MITRE staff discuss their experiences at the crash sites and the lessons learned starting on page 1.

Many individual employees helped in various ways after the attacks, donating computer supplies or assisting at the scene. One employee volunteers for a canine rescue unit that was called to the Pentagon; others had experience as emergency rescue workers, experience they were able to put to work in New York City and at the Pentagon. Their stories begin on page 4.

MITRE also quickly formed a team to coordinate MITRE's Homeland Security efforts. In this issue of *MITRE Matters*, Bob Mikelskas, vice president in the Center for Integrated Intelligence Systems, and Agam Sinha, vice president in the Center for Advanced Aviation System Development, who are coordinating this effort, discuss how MITRE can support our sponsors in the area of Homeland Security on pages 6 and 7.

Two weeks after the tragedy, MITRE President and CEO Marty Faga called upon employees to reunite around the common goals of the company and of the nation, and he reminded them that they have the opportunity to be part of a larger solution in the years ahead.

Said Faga, "These past two weeks have had a sobering effect on all of us. We will never see the world quite the same way again. But if we remain resolved to move forward and continue to work together, we can and will make a difference."

—The Editors

# REBUILDING THE PENTAGON DATA NETWORKS

## COMING THROUGH LOUD AND CLEAR

The Sept. 11 terrorist attack on the Pentagon killed nearly 200 military personnel and civilians and severely damaged parts of the building's communications network.

**S**HORTLY AFTER THE ATTACK, employees of The MITRE Corporation who worked in The Pentagon began the critical task of helping to assess the damage and stabilize the building's communications capacity. More than six months later, they are still there, lending their expertise to a long-term effort aimed at protecting crucial functions from future attacks.

When American Airlines Flight 77 crashed into the Pentagon, it created an explosion that entered one of the building's wedge-shaped sections and spread out at a 45-degree angle damaging three major corridors and a second section. Though no one could have known it would make a difference so soon, work already done under the Pentagon Renovation Program—which MITRE has supported for the past nine years—helped prevent an even greater disaster. The reason: the first section already had blast-resistant windows and structural steel reinforcements, and the second section was largely empty because it was the next area on the renovation list.

After MITRE team members contacted family members and colleagues to tell them they were safe, the next priority was assessing the damage. Overall, the Information Technology (IT) backbone of the Pentagon withstood the attack with minimal interruption of service, but there was still significant damage.

In the hours after the attack, Charlie Richardson, who leads the MITRE team at the Pentagon, stayed in touch with MITRE managers and IT experts to assist in restoring communications. Using their expertise



The Pentagon, headquarters of the United States Department of Defense and the nerve center for command and control, houses approximately 23,000 military and civilian employees and about 3,000 non-defense support personnel dedicated to protecting our national interests.

in telecommunication networking and knowledge of the Pentagon IT backbone, team members began working with contractors and government employees to get affected servers and data files back online and solve the other urgent problems.

Keith Reck, a MITRE project leader, was in his Pentagon office during the attack. "We had been watching the news on the attacks on the towers. I said, 'this is the perfect time to hit the Pentagon' seconds before the plane hit. Several of us were knocked over, but no one in DCSOPS (Deputy Chief of Staff Operations) sustained any serious injuries."

Within minutes, Reck and the DCSOPS staff made it outside to the central courtyard, where burning pieces of the wrecked plane had fallen. Dozens of seriously injured people poured out of the impact area; some whose clothes were burned completely off. Security forced the crowd to leave the courtyard for the South parking lot. Reck worked his way to the impact site and assisted some medics giving first aid to the injured.

"There was an Army general giving oxygen to a wounded woman," Reck said. "The evacuees started forming up by service, and leaders canvassed them for medical training experience, and dispatched first aid help where it was most needed."

Reck assisted the DCSOPS staff over the next several days to recover as many servers as possible and to reconstitute

the office space, until he was called to facilitate the Data and Servers Disaster Recovery Working Group. The Pentagon Renovation Program's rapid work allowed the DCSOPS workers to return to their pre-9/11 spaces in February.

MITRE's involvement in the reconstitution effort has won recognition from the Department of Defense. On March 1, MITRE honored its Pentagon team by presenting each employee with a plaque featuring a letter signed by Army Secretary Thomas E. White and Army Chief of Staff Gen. Eric K. Shinseki that thanked the corporation for its efforts. The plaque was provided to the Army Enterprise Department as a token of appreciation for all those who provided post-9/11 support. Additionally, MITRE and the Washington Command, Control, and Communications Center recognized each employee's efforts with the presentation of individual plaques.

But there is still much more to do—and MITRE's expertise remains in demand.

### A backup plan

Beyond the immediate response, MITRE has also become involved in a longer term project: enhancing the communications network to ensure continuity of the Pentagon's communications if something similar were to happen ever again.

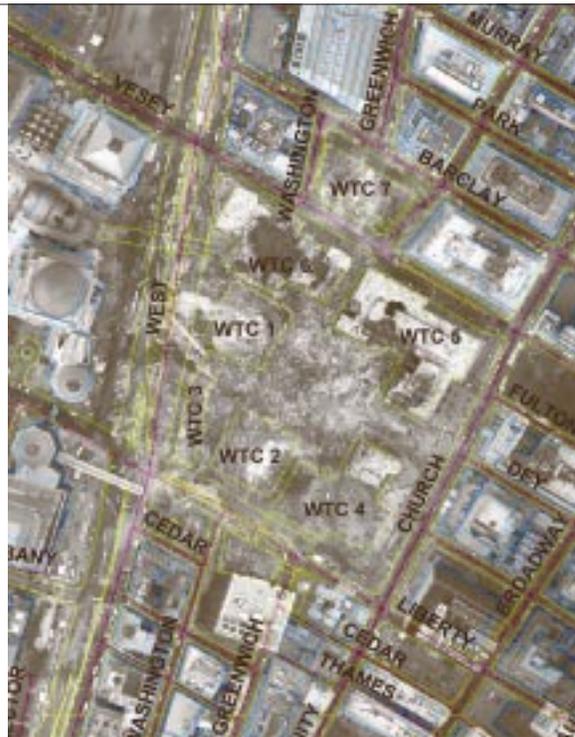
MITRE employees on five different working groups continue to work with

## RESPONDING TO SEPT. 11

RESOURCES DEPLOYED  
TO WORLD TRADE CENTER

*“What can we do?”*

This question crossed the minds of millions of Americans as the horrific images of September’s terrorist attacks flickered on their television screens. Rich Byrne, like millions of others, asked himself the question of the moment...but then Byrne came up with an idea.



**“We are in the business of serving the country, and this**

**W**HILE MONITORING television coverage of the attack in New York and its aftermath, Rich Byrne, the executive director of MITRE’s Center for Air Force Command and Control Systems in Bedford, Mass., heard the urgent call for search and rescue workers at the site where the World Trade Center (WTC) towers once stood. At one point, someone mentioned the possibility of survivors trapped in the rubble who may have had cellular telephones. With the right technology, the cell phones might be found, and with them, possibly, survivors of the attack.

So, at 3:44 p.m. on the day following the attacks, Byrne sent out an e-mail to a core group of MITRE experts in the field of cellular technology. He asked for “low hanging fruit”—technology that could be deployed rapidly to the site to make an impact in the most urgent areas of need. “Search and rescue for victims seemed to be the most important thing at that point,” Byrne said. “So I made a list of people and asked about their capacity to help and to deploy rapidly.”

What followed was a remarkable mobilization of talent that quickly reached beyond MITRE to include government agencies and representatives of private industry, working together to render whatever assistance they could at Ground Zero.

“This really reflects our mission, the reason MITRE exists,” said Byrne. “We are in the business of serving the country.” Added Jason Providakes, one of approximately 20 staff that worked at Ground Zero, “Putting MITRE’s experts at the tip of the spear in this disaster was one of the best examples of how we carry out our mission.”

#### Gathering resources

There were two pressing tasks for the MITRE team: getting authorization to go to Ground Zero and finding the equipment to take with them that would give the best chance of aiding the search and rescue effort. After setting up a command post in Bedford, MITRE’s officers began calling key customer contacts, as well as the New Jersey State Police and New York’s Office of Emergency Management (OEM), to obtain authorization to enter the WTC site.

While that was taking place, others across the corporation began searching for the right combination of equipment to take to Ground Zero. Working quickly before stores closed, Jerry Michael, the site leader of the MITRE Picatinny, N.J., site along with Yosry Barsoum of MITRE-NJ identified and secured equipment that might be of use. Kim Rothfuchs and Bob Guardino came back to work in Bedford to prepare the proper purchase order authorization

numbers. Meanwhile, several MITRE employees turned parking lots into impromptu laboratories, conducting experiments with any equipment they hoped might help.

“It was mostly equipment geared to directionally locating radios,” said David Kaplan, a member of the first MITRE team to arrive at Ground Zero. “Some was purchased, some was borrowed, some was MITRE equipment from prior projects, and other equipment was brought in from our sponsors. We hoped it would be of great help, but none of us had ever used it in such an environment.”

#### Searching the ruins

Less than 15 hours after Byrne sent out his initial e-mail, a caravan carrying five MITRE Bedford employees and vans full of equipment arrived at MITRE-NJ. There, the team met up with other MITRE employees, who had unique relationships within New York’s OEM, and members of the U.S. Army Communications-Electronic Command (CECOM), who had similar cellular expertise. About two hours later, the MITRE-CECOM team, escorted by New Jersey State police officers, set off for New York City.

For the next 48 hours, the team worked side by side with police, firefighters, and emergency personnel to try to locate

## LESSONS LEARNED

**T**rying to make sense of the World Trade Center attacks is impossible, but if anything good can be taken away from these tragedies, it is the knowledge of how to better respond in the future if a disaster of this magnitude should ever happen again.

For MITRE, the conditions at the site seemed to indicate that precision geolocation equipment would be a valuable addition to a rescue worker's arsenal. Unfortunately, this equipment is not currently located where rescue personnel can access and deploy it quickly. MITRE WTC team members, in a report to the Board of Trustees, suggested the creation of storage depots throughout the country for rapid deployment in emergencies.

MITRE also recognized that during a disaster of such magnitude establishing a clear line of command and control is important for a complex rescue and recovery effort. In the case of Sept. 11, the destruction of New York's OEM Emergency Operations Center along with the WTC towers made this task even more of a challenge. MITRE helped by setting up a coordination cell to provide technical advice to rescue workers.

was a way that we were able to bring our mission to bear.”

survivors. However, conditions proved difficult. In a desperate attempt to find survivors, first responders on the scene were working around the clock in the debris pile using a variety of radio frequencies to communicate with one another. Moreover, large amounts of metal sheets in the debris were interfering with radio signals.

“In addition, there was a high degree of stress related to the hazards of the environment,” said James Providakes of MITRE-NJ, who became the on-site leader of the Ground Zero team. “There were concerns that additional buildings would come down. The environment made it difficult for the team to establish itself for one period of time in the same location.”

Sadly, despite everyone's best efforts, the emphasis at Ground Zero would soon shift from rescue to recovery—and, as the police, firefighters, and emergency workers shifted gears, so did MITRE.

### Coordinating on the ground

The recovery effort had the potential for real danger. Many hazardous materials, such as the Freon™ tanks for the air conditioning units, were stored in the six underground levels of the WTC. If the fires burning underneath the rubble reached these substances, larger fires or toxic emissions might result. Clearing away the

rubble was also hazardous because moving debris might free oxygen to float into the air, mixing with combustible dust and vapors and creating a mini-volcanic effect. Thus, pinpointing the sources of the danger became vital to ensuring the safety of the rescue personnel.

“Initially, we had a great sense of optimism that we were going to save the day,” said Steve Hansen, chief architect in the

*“I have seen fire chiefs, during their daily planning meetings, use the maps we created.”*

—David Kaplan

Geospatial, Visualization, and Fusion Technologies Department. “After about five or six days, everybody realized that nobody was coming out alive. Then it came down to being logical and making sure we didn't put anyone in harm's way.”

That scenario led to one of MITRE's most important contributions to the recovery effort—the deployment of mapping support. Hansen led a team from Bedford to Ground Zero to set up a Rapid Mapping Information Analysis Cell (RMIAC). The RMIAC's mission was to create a clearinghouse for establishing

Essential Elements of Information (EIs) and providing a collection management process for gathering information and using it to solve problems.

MITRE called on many clients and businesses to bring technology to the scene. MITRE-NJ assisted the New York City Fire Department and the Army CECOM/RDEC Night Vision personnel in using infrared imaging technology to help firefighters identify and address any hot spots in the debris.

MITRE also worked with the Director's Office CECOM and CECOM's Night Vision and Electronic Sensors Directorate to collect data from flights over the WTC in planes equipped with multiple sensors.

The airborne sensors provided high resolution, infrared, and hyperspectral images and data of Ground Zero. MITRE's Exploitation Systems Laboratory helped analyze the data to provide temperature estimates of the fires still burning under the towers, and to map and track the debris, although much of the debris had become too pulverized to identify.

And MITRE brought several satellite communication (SATCOM) telephones to New York's OEM to support urgent calls when normal phone lines were out of order or overloaded, which happened often at Ground Zero.

CONTINUES ON PAGE 8

## RESPONDING TO SEPT. 11

## INDIVIDUALS TELL THEIR STORIES

*“I did what I could.”*

They helped in ways large and small, on the scenes and behind them. Sometimes, they still wonder whether they could have done more. But employees of The MITRE Corporation who lent their time and talents to the recovery from the Sept. 11 attacks can take satisfaction in being able to do what millions of others only wished they could—to help directly and tangibly in the face of unprecedented tragedy.

**T**HAT WAS THE PART THAT KEPT you going down there,” said Dave Kaplan, an engineer with MITRE-NJ and a member of a MITRE-led team that aided recovery efforts at the World Trade Center (WTC). “A lot of people didn’t get to help, and it was good that we could.”

MITRE responded to Sept. 11 by assembling and dispatching a team of employees, of which Kaplan was part, to help in the rescue and recovery efforts in New York.



Patrick Amato

Many other employees also helped, finding ways to use their knowledge and training at the Pentagon. Their memories of the tragedy and its aftermath are personal and vivid; they can remember the conditions under which they worked and their emotions as they carried out their roles in the rescue and recovery efforts.

#### “TV doesn’t compare”

Many of the MITRE employees who responded to Sept. 11 have skills that they have used before in other emergencies. Patrick Amato, a software systems engineer in the Center for Advanced Aviation System Development who spent several days at the Pentagon, often responds to fires and crashes as a Red Cross volunteer. William Birch, a systems programmer and analyst with Information Systems, Infrastructure, and Services in Bedford, Mass., has put his ham radio to good use over the last two decades assisting emergency personnel with communications during several tornadoes and hurricanes. Lisa Harper, lead artificial intelligence engineer with the Washington Command, Control, and Communications Center in Reston, Va., volunteers with Mid-Atlantic



DOGS, a canine search-and-rescue unit that handles about 50 calls a year.

Nothing in their previous experience, however, quite prepared these MITRE employees for the devastation the terrorists wrought. Birch had only a brief look at the WTC ruins during his volunteer assignment, but what he saw made a lasting impression.

Birch said, “TV doesn’t compare to the actual scope of the pile down there. When we went to Ground Zero, it burned your sinuses and throat. That’s probably the thing I’ll remember most.”

For others, some of the most vivid memories were of things they didn’t see, which, in many cases, made it harder to do their jobs. Brendan Smith, a software systems engineer at MITRE-NJ who spent two weeks with the MITRE-led Ground Zero team, remembers how hard it was to find the fires that had broken out in the WTC rubble.

“We didn’t know what was burning,” Smith said. “We were digging out CAD drawings from the original builders. And there was only limited access to the bottom levels, and we couldn’t easily find where the hazards were.”

**“When we went to Ground Zero, it burned your sinuses**

Another lingering memory was the feeling of uncertainty at the sites, and a fear, especially at the Pentagon, that their efforts might be interrupted by a fresh batch of terrorists.

“There was a clear, huge difference between this job and others,” said Amato, who helped at the Red Cross supply tent at the Pentagon. “Job A is: you have to be helpful. Job B is: somebody’s trying to kill us. Who? We don’t know. We’ll find out after the fact.”

While on the scene at the Pentagon, Amato was surrounded by reminders that reinforced the feeling of danger lurking around the corner. Snipers patrolled the parking lots of the Pentagon in the days following the attack, guarding against another assault, just in case one was coming.

One day, a U-Haul truck with donated supplies rolled in, and Amato and a few other volunteers were asked to unload it. With the driver in custody, a police officer asked the volunteers to get the truck back to them as soon as possible and to let him know if they found anything suspicious.

At the WTC, possibly because the

MITRE team arrived two days after the attack, Kaplan wasn’t plagued with a feeling of imminent personal danger. However, a photo of him with the WTC ruins in the background triggered a feeling “of how stupid I was, in a sense, for standing there.” Nonetheless, Kaplan never felt harm would come to him, until the anthrax scare hit.

“That scared me more because of the fear of what you can’t see,” Kaplan said. “At the site, you could see the smoke, you could see the glass, so that helped me know how to get around it. Maybe it was because I was blissfully ignorant of the other dangers around there.”

Smith, who spent most of his time at the makeshift headquarters of New York’s Office of Emergency Management at Pier 92, also felt a sense of danger. But much of it was mitigated by the presence of public safety officials on the scene.

“I sat there at Pier 92, looking out the window, and I could see machine gun turrets and gunboats patrolling the Hudson,” Smith said. “You realize there are risks, but you have confidence in the people protecting you. You definitely felt a sense of danger, but the work had to get done.”



Lisa Harper is training her dog, Oberon, for search, rescue, and recovery missions.

### Could we have done more?

There is, among MITRE’s volunteers, a reluctance to talk about their contributions. They know that other volunteers were more directly involved in the recovery efforts.

“We didn’t do much...We’re just one of a number of people who helped out,” said Louise Lighthart, an office coordinator in the Defense Intelligence Information Systems Department. Lighthart, along with four other colleagues, organized a donation of computer equipment after her daughter, a graphic/web designer at the Pentagon, mentioned that equipment wasn’t available from normal sources.

Moreover, MITRE volunteers still, at times, wonder if they could have done more. “There was probably a feeling, mostly in the first two days, that we would have liked to have gone sooner,” said Kaplan. “But I’m not sure, in retrospect, that it would have made a difference. I don’t know if we could have done anything any faster.”

Smith also wishes he could have done more. But his training as a firefighter, while not directly put to use at the site, turned out to be useful to emergency personnel on the scene. He and his colleagues back at Pier 92 provided maps using thermal and

CONTINUES ON PAGE 8



Dr. David Kaplan, looking north, stands on the West Side Highway at Vesey Street on Sept. 13, 2001—the day the MITRE-CECOM team arrived at the WTC.

and throat. That’s probably the thing I’ll remember most.”

## HOMELAND SECURITY

**BOB MIKELSKAS**  
and **AGAM SINHA**

COORDINATORS OF  
MITRE'S HOMELAND  
SECURITY INITIATIVES



Homeland Security has always been a part of MITRE's mission. But since the tragic events of Sept. 11, the pace of activities has increased. As a result, the need to exchange information and ideas across MITRE is more critical than ever.

**S**HORTLY AFTER THE SEPT. 11 tragedies, MITRE President and CEO Marty Faça appointed Bob Mikelskas, vice president in the Center for Integrated Intelligence Systems (CIIS), and Agam Sinha, vice president in the Center for Advanced Aviation System Development (CAASD), to coordinate MITRE's Homeland Security efforts. Recently MITRE Matters interviewed Mikelskas and Sinha to better understand their role and MITRE's current and future efforts in support of Homeland Security.

### What do you see as your role, and as MITRE's role, in Homeland Security?

**SINHA:** One of the continuing goals of MITRE is what we call leveraging the company. MITRE has been involved with Homeland Security activities for individual sponsors in different ways. After Sept. 11, the pace of these activities has increased, the need for exchange of information and exchange of ideas has grown, and the connections between what we have done for individual sponsors have become more complex. The job of the Homeland Security coordinators is to be the conduit, to make sure the whole company is being leveraged, that people are aware of what's going on with our sponsors so we can help each other. That's the mission.

**MIKELSKAS:** We are the coordinators, not the czars, of Homeland Security. We understand that most of the activities associated

with Homeland Security are going to occur in the individual operating centers or in the support organizations. Our role is to coordinate those activities and to develop an overall strategy for implementation.

Homeland Security, as a theme, crosses the operating centers more than any area has before.

### How are you encouraging that kind of coordination?

**MIKELSKAS:** As a first step, we have set up a coordinating group with representatives from each center, John Woodward from CIIS, Claudia Ward from the Center for Air Force Command and Control Systems, Stu Starr representing the Washington Command, Control, and Communications Center, David Hubley from the Center for Enterprise Modernization, and Steve McBrien from CAASD. The purpose of the team is to promote an understanding across MITRE of the Homeland Security initiatives and projects within each operating center, to coordinate these activities across the centers as needed, to help shape and implement the overall corporate strategy, and to identify areas where MITRE can contribute. We intend for them to be the catalysts for the sharing of information across centers.

### Where can MITRE contribute to the Homeland Security effort?

**MIKELSKAS:** There are three basic types of Homeland Security related activities that we need to present as a coordinated

**“MITRE is totally committed to making sure that the nation**



Bob Mikelskas (LEFT) and Agam Sinha (RIGHT) have been tasked by MITRE President and CEO Marty Faga to head the coordinating group of center representatives to focus on MITRE's changing priorities and initiatives generated in the aftermath of Sept. 11. By ensuring that MITRE's work is coordinated across centers and clients, they both intend to leverage the talents and abilities of the corporation to maximize MITRE's contributions to the vital Homeland Security mission.

MITRE front: ongoing tasks for our current sponsors, new tasks for our current sponsors that are ideally suited to MITRE's capabilities, and developing roles with new sponsors. These challenges require us to have a multi-level approach to strategy.

**SINHA:** MITRE has some capabilities and unique attributes that make us well positioned to contribute to this effort. As a not-for-profit company that doesn't compete or sell products, we can be an objective voice. Our role is to work in the public interest, and the breadth of our sponsors allows us to bring expertise from a number of areas to bear on the problem.

#### Can you give examples of current work that could be applied to Homeland Security?

**MIKELSKAS:** For many years, MITRE has designed and engineered systems and techniques for information sharing and exchange. Most recently, the corporation has worked with regional emergency management organizations. The government is trying to figure out exactly how to use all the information assets available at the federal, state, and local levels, including information from the Defense Department and the Intelligence Community nationally, in a way that would be helpful to local emergency agencies. There is a need to share information, and that is an area in which MITRE is very strong. There is a natural role for us in this area.

MITRE has been involved for a long time in work in cyber-security and critical infrastructure protection, mostly focused on cyberspace, and that is an element of Homeland Security.

MITRE has provided technical and analytical support to national security agencies, and certainly Homeland Security is an element of national security.

**SINHA:** An example of work we are doing with the Federal Aviation Administration is surveillance—the identification and tracking of aircraft. We look at all types of aircraft, both equipped with transponders and without, and in all types of airspace, whether over the ocean, over land, or on the ground. Another example is how the air traffic management system responds to an unusual event, whether terrorist action or engine failure. What procedures should be in place?

MITRE has been involved in creating the Partnership For Public Warning, a new public-private partnership that is bringing the nation's top emergency warning experts together to resolve national warning message standards, protocols, and priorities. The goal is to ensure that the right information gets out to the public in a time of emergency. These are all traditional roles for MITRE, but areas where our expertise might be useful when applied to Homeland Security.

#### And in the future?

**SINHA:** We must resist rushing into action before we consider the implications of the

various proposals out there. The concept of "do something" has to be tempered by consideration of what is meaningful and useful.

**MIKELSKAS:** The government is trying right now to adjust to this new paradigm and understand how it wants to operate. We don't want to get out ahead of our customers because they need to be able to do the policy-level thinking. The government is not necessarily ready yet for the information-sharing systems engineering that MITRE can bring to bear because they are still trying to figure out these higher level issues.

**SINHA:** Right now, there is a lot of emphasis on 9/11, but we have to look ahead and see what other things we have to protect against. Our customers are doing this now, and we will be ready to help them when they need our support.

#### Will the events of Sept. 11 affect the way MITRE does its business?

**SINHA:** The Homeland Security initiatives are not going to fundamentally change the way we do business. There is some redirection, but the majority of what we have been doing, we will continue to do because we are integral to the missions of our sponsors. And those missions have not changed.

**MIKELSKAS:** MITRE is totally committed to contributing to the nation's solution to this problem. We are totally committed to making sure that the nation has the benefit of our knowledge and that our talents across all operating centers are devoted to this problem.

has the benefit of our knowledge and talents in this area."

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## PENTAGON DATA NETWORKS

FROM PAGE 1

engineers, contractors, and others involved with implementing changes to the Pentagon's IT architecture that will increase mobility of data and enhance security and survivability of key command systems.

"We are actively involved in these problems," said Ron Cossa, an information systems engineer with the Army Enterprise

Department and a member of MITRE's Information Management and Telecommunications (IM&T) team at the Pentagon.

MITRE has also produced a plan to provide alternate-site capability.

"An alternate site must be created where all of the systems have a backup facility in case of another attack," said Susmit Patel, also in the Army Enterprise Department and a member of the IM&T team. "Anything is possible now after 9/11."

In addition, MITRE is working on other pressing issues, including enhancing the security of communications networks and redesigning them to make them easier to implement and reconstruct if needed.

"How do you predict what the impact is going to be? You can't," said Cossa. "But you can make a network more modular, more readily backed up and available, [have] alternate communications and data sources available. That's all being done."

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## MITRE RESPONDS

FROM PAGE 3

The technology helped identify problems and hazardous areas in and around the site—especially in the five or six stories underground. Using data from sensor flights, MITRE team members pinpointed a fire spreading toward the WTC's main Freon tank. Had the fire reached the tank, it would have caused the Freon to boil, resulting in toxic fumes.

"It was a matter of going in, finding the key decision makers, and getting them the tools and resources," said Hansen. "The environment was very dynamic—it changed from hour to hour."

MITRE's experience in command and

control also proved valuable to the recovery effort. In an effort to help coordinate the work at Ground Zero, MITRE set up a coordination cell at the makeshift headquarters of New York's OEM at Pier 92. There, MITRE team members provided technical advice to New York's OEM, police, and firefighters, and a host of other state and federal officials, as they continued searching through the WTC rubble.

Hansen said the military backgrounds of many MITRE team members—gained either through serving in the armed forces or working on projects for military clients—helped the team cope with the unprecedented nature of the emergency.

"These were firefighters and urban search-and-rescue guys," he said. "They

had never dealt with anything of this magnitude. It was a protracted thing, and it was dynamically changing every day. But in the military, that's what we do. We went with people who know how to deal with these things. They were down there doing something they had never done before, but there were great analogies between this and things they had done before."

The response to the WTC rescue and recovery, MITRE officials believe, showed the company's knowledge and public service commitment at their best.

Said Jason Providakes, "To be part of such a cross-organizational team so dedicated toward contributing to this most critical of national needs, it makes me proud."

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## INDIVIDUALS RESPOND

FROM PAGE 5

electro-optical imagery to help firefighters find the blazes and the best techniques for putting them out. The maps became valued tools in the recovery; Smith remembers working to finish one with a New York state trooper waiting nearby to take the map to New York Gov. George Pataki to use in a press briefing.

"As a firefighter, I don't think there was anyone who didn't want to strap on his gear and go there to help," Smith said. "I was thankful that I was at least helpful in this way."

For many MITRE volunteers, this translates into a renewed resolve to be even better prepared next time. Harper, for example, was still in training with her German Shepherd, Oberon, and was not deployed with the rest of her search-and-rescue team to the

**“**ONE OF THE MOST SATISFYING aspects of working for MITRE is being associated with a group of world-class experts devoted to making a difference to our nation. A number of dedicated and skilled MITRE employees, too numerous to mention individually, gave a human face to our mission of public service in the shadows of one of the darkest days in American history. They can take great pride in all they have done, and continue to do, as the nation recovers and rejuvenates.”  
*—Ray Shulstad, senior vice president and general manager*

Pentagon. Instead, she stayed behind to cover the office and give her support to the recovery efforts from there.

Harper says, "There is a sense of urgency about becoming qualified and becoming very good. I've got to be really good at it because it means life or death for someone else." William Birch shares her feelings, "I've got my emergency radio equipment in better order so that if it happens again, I will be ready to go."

Responding to the attacks has instilled

in many MITRE employees a greater sense of their company's public-service mission. For MITRE's volunteers, the chance to help in whatever way they could reinforced their sense of working for the public good—and increased their respect for those who make a living placing themselves in harm's way.

"I had a pretty easy role compared to a lot of people there," Amato said. "There were jobs that were a lot tougher." Amato added, "I have greater respect for the people who give their time, that's for sure."

## HEROES WANTED

MITRE RESERVISTS  
REPORT FOR DUTY

When President Bush ordered a partial mobilization of the Ready Reserves on Sept. 14, Michael Minter didn't hesitate.

“IMMEDIATELY VOLUNTEERED, and they asked me ‘how fast can you get here?’” said Michael Minter, who works in Field Intelligence Systems at MITRE's San Antonio, Texas, site. A major with the Air Force Reserves, Minter is working with the U.S. Central Command (CENTCOM) in Tampa, Fla., as an air intelligence officer, work similar to what he does for MITRE. “That's why they wanted me so fast,” he said. “I am a better Reservist because of the work I've done at MITRE, and I'll make a much better contribution to our MITRE work when I get back.”

The separation from family has been hard, but, because Minter is stateside, he was able to see his children during their Spring break. “Be sure and mention how great the people both in San Antonio and at the site here in Tampa have been to me!” he said. “Our client in San Antonio was very understanding about MITRE's commitment to supporting the Reserves, and the MITRE office here has been very gracious, letting me use the fax and their computers to check my e-mail and get to the MII. It's like having a bit of home away-from-home.”

Minter is one of more than 30 MITRE Reservists who, after Sept. 11, put aside their civilian clothes and donned their uniforms to join the fight against terrorism.

Joe Morrissey, a captain with the Massachusetts Air National Guard, was called up to active duty in February, about eight months after his youngest child was born. He is now working 12- to 14-hour days, six days a week, on an island off the coast of Oman in Southwest Asia. His office mates, both Air Force and MITRE-ites, in Global Air Traffic Mobile Command and Control at Hanscom Air Force Base in Massachusetts sent him cards, jokes, notes, baked goods, and assorted candies. Jelly beans for Easter, along with lots of Snickers. “They're his favorite. I bet he

has trouble getting them where he is,” said coworker Carol Morris.

“Since the terrorist attacks and the mobilization, there has been a tremendous outpouring of employer support to the National Guard and Reserves,” said Maj. Hunt Kerrigan of the Employer Support of the Guard and Reserves in Arlington, Va. “Many of the Fortune 500 companies, in particular, have been very generous in supporting their activated employees.”

In February, MITRE and employee Steve Wagner were presented with the Department of Reserve Affairs “My Boss Is A Patriot” award for exemplary support of the National Guard and Reserves, in particular for the sacrifice made in assisting Joel Reed, a member of Wagner's staff, in his extended deployment supporting Operations Noble Eagle and Enduring Freedom.

Said Reed, “Steve was absolutely super. His only words to me when I explained that I was being recalled to active duty were ‘Just go and do your duty; don't worry for a moment about what we need or how we'll cope without you.’ It makes my military duties so much easier with this kind of support from my employer.”

“We owe an obligation to all of our mobilized employees,” said Bill Albright, director of Quality of Work Life & Benefits for MITRE. “By law, their jobs are protected while on active duty. But MITRE promises all those who are called into a crisis their usual salary, offset by their military pay, for the equivalent of eight weeks (320 hours), after which they are placed on Part-Time-On-Call.”

Albright reports that many Reservists and Guardmembers who are deployed still have managed to log in MITRE hours “telecommuting” from their work sites around the world during their free time.

“I was surprised when my manager called me to notify me of my MITRE promotion, 11 days after I left,” said Minter.



Since September, more than 81,000 Reservists have been called to full-time active duty, including MITRE employee Joe Morrissey (LEFT) who provided communications system support for Vice President Dick Cheney's recent visit to Oman. Also pictured: Maj. Art Wunder and Lt. Andrew Mason.

“But we may all be here for the long term. We are doing a job that needs to be done—both those of us in uniform, and those of us who are serving in our contracting roles. I can see every day how important this is, and how MITRE is doing great things for our country.”

Robert Boston is an Air Force Reserve major who left his MITRE position in the Center for Integrated Intelligence Systems to serve for 179 days in Southwest Asia working for CENTCOM Air Forces as chief of Intelligence Support and Special Projects. He returned to MITRE in January and worked for the Air Force Directorate of Operations in the Pentagon until March when he returned to Southwest Asia as a MITRE engineer.

“Most of my friends are what we call Combat MITRE. Folks who get out with the customer and sweat, strain, and live with them while we do system implementations and integration work,” said Boston. But although MITRE people are on the scene during military exercises, it is still abstract. “Deep down they want to be with the team when they go into the real game,” he said.

Boston reminds all of his MITRE coworkers, “Keep focus; we are not done yet. We need strong minds and applied experience from you to do this.”

Joe Morrissey added, “And I ask that all keep in mind the men and women of the U.S. military serving around the world every day. Pray for those who are placed in harm's way, and God bless America!”

## World Trade Center

**On Dec. 12, MITRE recognized 45 of its employees for their contributions to the World Trade Center rescue and recovery effort. Each team member was presented with a crystal flame award symbolizing courage in the face of adversity.**



- Dave Kaplan, WC3
- John M. Kreger, WC3
- Paul MacLear, WC3
- Stan Manoski, WC3
- Kevin Mauck, AFC
- Mark Maybury, CIIS
- Joe Mullins, WC3
- Glen Nakamoto, CIIS
- Sherry Olson, CIIS
- George Providakes, AFC
- James Providakes, WC3
- Jason Providakes, AFC
- Mike Ricard, CIIS
- Mark Rosenthal, CIIS
- Jeff Ross, AFC
- Kim Rothfuchs, Purchasing
- Frank J. Ruscil, WC3
- Skip Saunders, AFC
- George Shuttic, WC3
- David Simmons, WC3
- Bill Skidmore, WC3
- Brendan Smith, WC3
- Barbara Solomon, AFC
- Charles Suprin, AFC
- Naimish Thakkar, WC3
- Jose Torres, AFC
- Mike Vismeg, AFC
- Mike West, CIIS
- Jeff Wynn, WC3

- Yosry Barsoum, WC3
- John Besse, WC3
- John Betz, AFC
- George Bevis, AFC
- Mike Butler, AFC
- Rich Byrne, AFC
- Erik Cooke, WC3
- John Delmore, CIIS
- Danny DeMarinis, WC3
- James A. Dimarogonas, WC3
- John Durand, WC3
- Marie Erie, CIIS
- Bob Ewing, WC3
- Steve Hansen, CIIS
- James Hughes, WC3
- Paul Jacyk, WC3

## Pentagon

**On March 1, MITRE recognized 14 of its employees for their efforts rebuilding the Pentagon Information Technology infrastructure following the attack of Sept. 11. Each team member was presented with a copy of a plaque signed by the chief of staff of the Army and the secretary of the Army.**



- Paul Bonnewitz, WC3
- Peter Carrigan, WC3
- Ron Cossa, WC3
- Jack Faherty, CIIS
- Ron Giusti, WC3
- Frank Javar, WC3
- Robert McKee, WC3
- Susmit Patel, WC3
- Dan Pedro, WC3
- Keith Reck, WC3
- Charlie Richardson, WC3
- Mark Rickert, WC3
- Stuart Simpson, WC3
- Harry Titus, WC3

**On Jan. 10, the Pentagon recognized five MITRE employees for donating keyboards, mice, and printers to the U.S. Army's Deputy Chief of Staff for Logistics after the Sept. 11 attack. The employees were presented with commemorative coins as a "thank you." The coins feature emblems for each of the four services.**



- Kevin DeFord, CIIS
- Louise Lighthart, CIIS
- Jim Phillips, CIIS
- Howard Respass, CIIS
- Harry VanEvery, CIIS

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