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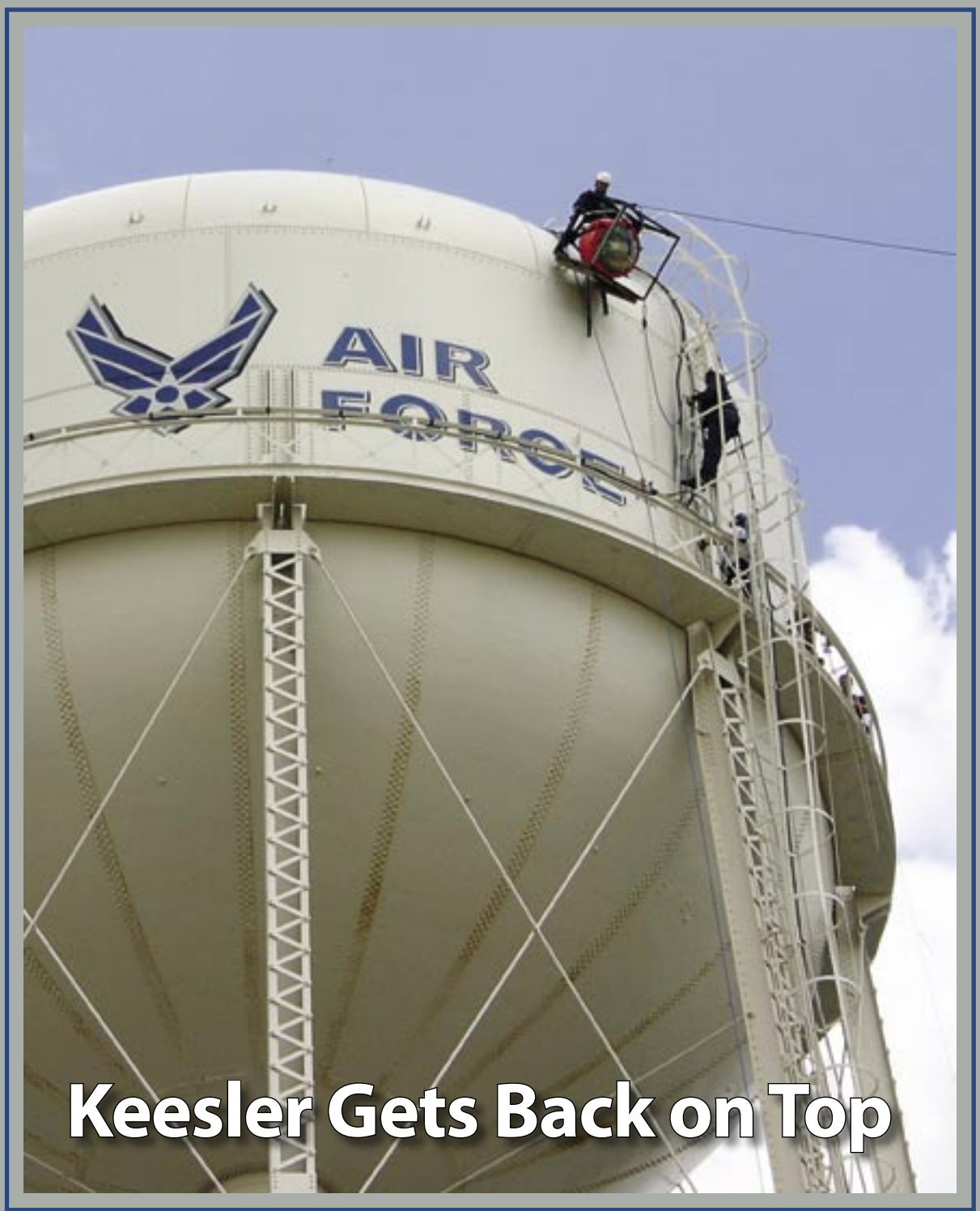

Keesler Gets Back on Top

From the Top

Leadership in Support of the Joint Warfighter

What a humbling and exhilarating experience! To be entrusted with the leadership of this incredible team is a tremendous honor, and Karen and I are very grateful for the opportunity. For 28 years I have been honored to serve in our great Air Force, and I have watched our men and women continue to produce miracles, tackling every challenge with pride, enthusiasm, and ingenuity. The challenges before us today will call upon these traits, both as we continue to support the joint warfighter in prosecuting the Global War on Terror, in vital Air Force Transformation, and in our own internal civil engineering transformation to meet the changing needs. My travels during the past few months have already shown me that, across the force, you are aware of and are meeting these challenges head-on.

Leadership and a clear focus on support to the warfighter will be our continuing themes, as Air Force involvement in joint operations continues to evolve. To be successful, we must ensure that our Airmen are organized, trained, and equipped to sustain the Global War on Terror. In many cases, this requires skills that take us beyond our traditional training regimen. We need to develop a continuum of training from accession to the battle line. Before they deploy forward, our expeditionary combat support troops currently are provided just-in-time training, a process that only minimally meets our warfighter's needs. Ground combat tactics and capabilities must become second nature to our Airmen, just as their wartime engineer skills are now. This not only relates to Air Force engineers, but to the joint team as well. I'm confident that our interoperatibility will continue to improve through the Joint Operations Engineer Board in coming sessions.

Focused leadership at every level is essential to meet the challenges of Air Force Transformation. As we invest to modernize our weapons systems over the coming years, we will consciously increase our risk in installation support. The core installation mission has not changed—fewer resources do not mean fewer requirements. We cannot ask our people to "do more with less." It is incumbent upon our leaders at every level to come up with ways to do their jobs more effectively and efficiently. We must remain focused on those requirements that directly impact mission capability, and stop performing functions that do not. We must also pursue greater reliance and interaction between the Services as we jointly go forward, and re-look at how we leverage the capabilities of the private sector as well.

When I look out my office window, I see the Pentagon and the Washington Monument, both powerful symbols of our American values and the tremendous traditions forged by the men and women who fought for those values. On my travels to your installations, I meet the patriots of today who continue those traditions. Again, I am honored to lead this proud Air Force engineer team.

Del Eulberg
Major General, USAF
The Air Force Civil Engineer

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The Civil Engineer
Maj Gen Del Eulberg

AFCESA Commander
Col Richard A. Fryer, Jr.

Chief, Professional Communications
Dr. Ronald Hartzer

Chief, Public Affairs
MSgt Paula Allen-Gibbs

Editor
Teresa Hood

Graphic Designer
Guy Ivie

On the cover:
On the first anniversary of Hurricane Katrina, members of the 81st CES, Keesler AFB, Miss., hoist the new beacon to the top of one of the base's water towers. Hurricane damage caused the original beacon to intermittently malfunction.
(photo by Ms. Teresa Hood)

Listen, Learn and Lead

An Interview with Major General Del Eulberg, The Air Force Civil Engineer

Maj Gen Eulberg: I'd like to start by saying that I'm honored by being given this opportunity to continue to serve the United States Air Force as The Air Force Civil Engineer. We have a proud history to build upon as we face the many challenges ahead. However, no matter what the challenge, I know that the great men and women in Air Force civil engineering have the skill sets and commitment to excel in all the missions we support.

AFCE: As the new Air Force Civil Engineer, what are your priorities and biggest challenges?

Maj Gen Eulberg: The challenges we face today come from many directions. We are a nation at war, facing a new enemy, in a resource-constrained environment. We have to reduce the size of the Air Force by 40,000 personnel to help the Air Force modernize our weapon systems to stay relevant for the future. Civil engineering is a cornerstone on the combat support team, and we have to do our part in meeting these demands through transformation.

Therefore, our highest priority must remain our warfighting capability and winning the Global War on Terror. We must make sure that our men and women serving today are organized, trained and equipped properly to support the joint warfighter. We have just completed a CE Blue Suit Review to ensure that we have the right unit type codes, the right number of personnel and the right skill sets to execute this long war as well as meet the challenges of the future. We will continue to work to ensure that our entire training pipeline is relevant to what our men and women are asked to do. That includes training at home station, Silver Flag and Eagle Flag. We must ensure that lessons learned in the field are formally captured and reflected in our training as well as in our doctrine. We must develop codified tactics, techniques and procedures on how we fight as a part of the combat support team and the joint team. This is a major focus area for combat support and I believe civil engineering can pave the way in this area.

We also have to make sure that we're equipped with the right assets. This is an area that is full of promise in the joint arena. For example, we have recently had very promising discussions with the other Engineering Service Chiefs and the Joint Chiefs of Staff's office about expeditionary construction equipment: how we determine the requirement and our acquisition strategy, as well as how we deploy this capability to any given combat theater. Our graders, dump trucks, etc., should be the same across all three Service's and as we rotate our engineers, we should fall on joint equipment in theater. This reduces duplication, emphasizes joint training, reduces sea and airlift, and provides the combatant commander with capabilities a lot faster. We are involved in a long war in which our success or failure will heavily depend upon our ability to sustain the fight from joint installations in theater. Civil Engineering will play a key role in that critical warfighting capability. We must be organized, trained and equip to meet that critical need.

The second major priority or challenge facing us today is maintaining our warfighting capability as well as operating our installations around the world in a resource-constrained environment. We must find ways to do our mission more efficiently and effectively. The Air Force Chief of Staff has clear priorities: win the Global War on Terror, take care of

On June 23, Maj Gen Eulberg became The Air Force Civil Engineer. He brings to the job a profound respect for both the position and the men and women he leads. In this interview, Maj Gen Eulberg discusses how, together, they will all meet the challenges ahead.

our people, and modernize our weapon systems. To do this, we must lower the cost—in dollars and manpower—of our "support tail." To do this, we will downsize our active duty end strength in the next three years by 40,000.

Civil engineering will have to transform in a number of areas if we are to be successful. We have been working this hard with the major commands and have a detailed plan on how we'll move forward. The CE Transformation Plan will lay the foundation for the future. We will use the military reductions and the Blue Suit Review as the impetus to make risk-based decisions on how we will perform our expeditionary and peacetime missions. Key elements of the plan will be a new organizational construct at the headquarters, MAJCOM and wing levels (with emphasis on planning and asset management); a new CONOPs for fire protection that is risk based; centralization of our capital improvement execution at AFCEE (military construction, environmental restoration, and family housing privatization/construction); "civilianization" of some of our CE units and Groups; and realignment of military and civilian positions across MAJCOMs to ensure that we can meet our commitments. We will also use this opportunity to increase the size of our three active duty RED HORSE Squadrons and increase the number of EOD forces we have. The CE Transformation Plan is comprehensive, aggressive and essential. If we fail to take advantage of this opportunity to truly transform how we do business, we will end up asking our great professionals to "do more with less." In my mind, that is unacceptable.

AFCE: Your career has encompassed a very broad scope of responsibilities, commands and locations. Which of your positions best prepared you for your current position as The Air Force Civil Engineer?

Maj Gen Eulberg: One of the great things about the Air Force is that we rotate our officer, enlisted and civilian leaders through various jobs throughout their careers. Every job or challenge we take on prepares us for the next and gives us an experience base that prepares us for future leadership challenges. Every job I've had has given me "lessons learned." More important than the positions I've had are the people I've served with over the years who have taken the time to teach me and correct my homework. So looking back on my career as well as the people that I've "grown up with," every job I've had has helped me. The key here is that all of us have a lot to learn. I like to say that we must rely on our experience, but as leaders we must listen, learn and then lead. Listen, learn and lead again and again everyday. As we work the challenges mentioned earlier—Transformation and the Global War on Terror—our entire team of Air Force civil engineers, myself included, must remain focused on our priorities as we lead in this time of rapid change. I'm confident—based on the great men and women I see every day, as well as our proud history—that we will continue to grow future leaders that will make us all proud.

AFCE: Air Mobility Command was one of the first major commands to undergo an A7 reorganization, and you were AMC's

Maj Gen Del Eulberg is The Air Force Civil Engineer, Headquarters U.S. Air Force, Washington, D.C. He is responsible for organizing, training and equipping the 60,000-person civil engineer force, and for planning, development, construction, maintenance, utilities and environmental quality on Air Force bases worldwide. He also oversees the Air Force Civil Engineer Support Agency at Tyndall Air Force Base, Florida, and the Air Force Center for Environmental Excellence at Brooks City-Base, Texas.

Maj Gen Eulberg was an honor graduate at the U.S. Air Force Academy. He is a registered professional engineer in the commonwealth of Virginia and has been recognized as a Fellow of the Society of American Military Engineers. He has commanded two civil engineer squadrons, a support group and an air base wing.

first Director of Installations & Mission Support. How will your experience at AMC influence your direction of HQ USAF/A7C?

Maj Gen Eulberg: One of the most powerful aspects about leading in the Air Force is our history and shared culture of "leading change." As an institution, we have always understood the need to adapt and take on new ideas. It is how we became a separate service. We understand change, we embrace it, we lead it, we're not afraid of it. When you look at combat support and the AMC A7 structure that was developed three years ago, it essentially changed how we look at combat support. It was no longer 23 separate functional stovepipes. MAJCOMs and combatant commanders had someone they could turn to that looked at combat support as an essential, integrated warfighting capability. Taken in its entirety, combat support becomes a weapons system.

I'm proud of what [our deployed CEs have] done and their commanders are proud of what they bring to the fight.

For example, critical to the Navy in projecting power across the globe is an aircraft carrier battle group. The carrier is their launch platform. They have doctrine and tactics, techniques and procedures for supporting that platform under the surface, on the sea or in the air. In the Air Force, our launch platform is the air base. It's a three-dimensional weapons system that provides not only a platform for aircraft, but also a platform for helicopters, special ops forces and tanks, as well as deployed joint forces.

As we take these 23 functional communities and bring them together, we become a more efficient combat support team. We have to be organized, trained and equipped as a team. We need to continue evolving combat support so that we train and work together, and the A7 construct is the first step. The A7 organizational construct allows MAJCOM senior leaders to focus on combat support cross-functionally and as a distinct Air Force capability. As a result, you will train differently as well as deploy differently. This operational necessity, driven by the 36 contingency bases we opened in Operation Iraqi Freedom and Operation Enduring Freedom, spurred Eagle Flag. This Air-Force–level training venue brings key combat support leaders together to train as an integrated team in our most challenging task: opening an air base. This is similar to what the rated force does at Red Flag at Nellis. The challenge in any integration is the need to balance the benefits of integration, while maintaining the core competencies within each functional area to make sure that you don't lose that edge as well.

AFCE: How will Air Force civil engineering be affected by AFSO21? What successes have you seen within civil engineering?

Maj Gen Eulberg: AFSO21 is nothing more than a set of tools to help us become a more efficient and effective warfighting force. Our current downsizing, as well as the constrained resources, are presenting the impetus for us to really open the books and learn from the private sector as well as from our experiences with Total Quality Management in the early nineties. We're going to use a lot of the tools that AFSO21 gives us—Lean, Six Sigma—to become more efficient. We've successfully used Lean principles as we've looked at transforming civil engineering and delivering military construction, family housing and environmental restoration. We can use Lean principles in almost everything we do to become more effective and efficient. Air Force senior leaders are committed to this and are working this hard in a number of areas across the Air Force. It's not a "nice to do," it's an "imperative to do."

AFCE: The Air Force continues to be heavily tasked with deployments in support of the Global War on Terror. How well is Air Force civil engineering fulfilling its role in the theater?

Maj Gen Eulberg: I had the opportunity to travel throughout the AOR a couple times. I witnessed our great men and women performing brilliantly as part of the joint team. Talking to commanders from all the different Services, I found that the Air Force is continuously asked to do more and more because of the talent of our men and women. Right now, we have over 2,800 deployed men and women wearing the CE badge. I'm proud of what they've done and their commanders are proud of what they bring to the fight.

Half of the folks deployed—roughly 1,500—are doing "in-lieu-of" taskings, primarily supporting mission areas that typically reside in other Services, such as the Army, and doing some things that we weren't traditionally organized, trained and equipped to perform. So we've had to jump into the fray and develop pre-deployment training to ensure that our troops are prepared before they are deployed. This has been and will continue to be a priority of the Air Force Chief of Staff.

It's also been a total force effort—Active Duty, Guard and Reserve. We have men and women from across America deployed in this fight. They are doing important work, not unlike the work performed in Europe and the Pacific after hostilities stopped following World War II. It took seven years to rebuild the Japanese and German governments after the war. We are in a similar effort in the current AOR. The men and women who have served, or are serving now, are rightfully proud of what they've contributed. We are bringing freedom to millions of people who have not experienced it. It is never easy to make worthwhile change. Our men and women are making history every day and we are all proud of them.

AFCE: Based on BRAC recommendations, joint basing is the way of the future. What effect will this have on how CEs operate and maintain bases? What other impacts will BRAC have on Air Force civil engineering?

Maj Gen Eulberg: From a strategic point of view, we did not close many bases as part of the BRAC process. That was actually unfortunate. Because we are in a downsizing Air Force, I think we missed an opportunity to further reduce

photo by the author

While visiting HQ AFCESA in August 2006, Maj Gen Eulberg addressed the local chapter of the Society of American Military Engineers. (photo by Mr. Bryan Muller)

our infrastructure and consolidate our weapons systems. Our men and women are stretched thin in the installation support business. As we become smaller, we're still maintaining the same number of bases with fewer resources in terms of both dollars and manpower, which is why we have to become more efficient. Our physical plant hasn't changed: we're responsible for $203 billion of real property. That's a huge responsibility and we have to become more effective at it.

BRAC identified 12 bases where the Army, Navy and Air Force installations are colocated. Under this construct, you have a joint-base commander and installation support falls under the lead service for that joint base. For example, the Air Force has the lead for the joint base created by Ft. Dix, McGuire AFB and Lakehurst Naval Air Station, and will be responsible for installation support on all three installations. We're working with the Secretary of Defense's office and the other Services to come up with common standards and metrics for joint bases, as well as the most efficient organizational structure. We have a lot of work to do but I'm confident we will develop a joint-base construct that will serve all of our mission needs.

AFCE: Housing privatization has experienced tremendous growth in the Air Force. What is the key to its future success?

Maj Gen Eulberg: I was involved in the mid-1990s with the first privatization project at Lackland, and I remember feeling a little unprepared when that initiative was announced. Since then, in the last 10 years, we've come a long way. We've worked with Congress to expand our authorities in this area. We've learned a tremendous amount about how to build deals with the private sector, leveraging their capabilities as well as minimizing government constraints.

I hear from commanders on bases everywhere that have gone to housing privatization, and from the families themselves, that they are thrilled with the homes they're living in today. Airmen living in the homes can't believe that they actually live in a home as good as the folks downtown. That is a direct result of the commitment of the Department of Defense and the support of the executive branch and Congress to give us the resources to buy out all inadequate homes by 2007. Our objective in the next year is to get to the point where we have privatized about 70 percent of the Air Force inventory. We're going to have to work very hard in the next year to execute what's currently entering the acquisition process. This is

an important initiative that will help us retain the great airmen and their families that serve today.

AFCE: The FY06 MILCON program was the largest in 14 years. What do you see in the future for MILCON?

Maj Gen Eulberg: I see some good news as well as some challenges. Last year, FY06, was the largest MILCON we've had in 14 years. The next 5 years will be about the same size as we execute BRAC and Global Defense Reposturing. To be successful with this program as well as continue our support to the warfighter, we will continue to partner with the Navy and Army on how we can effectively deliver quality facilities, on time and within budget. We will need to partner with the private sector in a meaningful way as we work this challenge. This will be a joint effort that will require our best efforts.

AFCE: Do you think involvement with professional societies is important for Air Force civil engineers?

Maj Gen Eulberg: Professional organizations bring great benefit to our nation and our profession. I think that whether you're military, civilian or contractor, these organizations give us the opportunity to come together as professionals, sharing common goals and values. We can come together, cross-feed information amongst ourselves and come up with innovative ways to get our jobs done.

That is one of the strengths of the Society of American Military Engineers. It was founded after World War I, created and chartered because there was a need for the private sector and the government, particularly the military, to come together and figure out a way to deliver what our nation and the warfighters needed. Professional organizations are a great vehicle to improve on these essential engineering capabilities. They're also a great venue to mentor our young engineers, as well as some of us older engineers, in learning new ways to do things.

AFCE: If you had a young Air Force civil engineer sitting across the table from you, what message would you want to convey?

I will guarantee you this: we're going to challenge you, we're going to stretch you, and we're going to use every bit of your talents.

Maj Gen Eulberg: Well, the first thing I would say, whether they were military or civil servant, would be "thank you." Thank you for serving, thank you for raising your hand and committing your talents to the service of your country.

The next thing I would say is "You are entering a profession that needs you." The work we are doing is important. We are bringing freedom to millions of people who have never experienced it before, no different than our grandparents did in World War II when they brought freedom and democracy to Europe and to the Pacific. We are changing the world for the better and being part of that is very exciting.

My last message, though, would be "Hang on, you're going to take the ride of your life." I will guarantee you this: we're going to challenge you, we're going to stretch you, and we're going to use every bit of your talents. But whether you serve 1 year, 6 years or 30 years, you will leave knowing you made a difference.

Graduate Education and

Maj Frank R. Hughes
HQ ROK/US CFC Engineer
Dr. Alfred E. Thal, Jr.
AFIT/ENV

Many Air Force civil engineer officers find value in post-graduate education, regardless of its importance in gaining promotions. This view, as well as others related to advanced degrees and career development, came to light in a survey of 732 CE officers in early 2006. The survey was conducted by researchers at the Air Force Institute of Technology, following the Air Force Chief of Staff's 2005 policy memorandum that eliminated advanced academic degrees as criteria for officer promotions to the ranks of lieutenant colonel and colonel.

Illustration based on a photo by MSgt Dave Nolan

The survey was part of a research project to assess the attitudes of CE officers toward pursuing graduate degrees following the memorandum. The project was based on concern that the new policy might have the unintended effect of reducing the number of officers seeking advanced degrees. This would in turn reduce the number of officers available to fill critical positions coded for individuals possessing appropriate graduate degrees. Although a recent decision reverses the policy beginning in 2008, the results of the study still offer valuable insight into the views of CE officers toward post-graduate education.

A topic that often arises when discussing the pursuit of advanced education is career intentions: Are officers interested in graduate degrees to become better CE officers or to prepare for a job outside the Air Force? The survey showed that the lower their intentions to leave the Air Force, the more effort they expend researching the pursuit of a graduate degree. The pursuit of graduate degrees doesn't appear to be motivated by promotion opportunities or post-Air Force career plans. In fact, 200 of the officers surveyed indicated that they did not possess a graduate degree and were not currently pursuing one. When these officers were asked the level of importance they associated with graduate degrees, the answers revealed that the majority felt that graduate degrees were very important, whether or not the Air Force used them for promotion criteria. Perhaps the motivation stems from our background as engineers and architects, from the innate personality characteristics that push many of us to be leaders, or from some intrinsic desire to strive for ways to improve ourselves.

The 732 respondents comprised 462 company-grade officers and 270 field-grade officers. A number of interesting statistics came to light when all of the surveys were examined. The top three reasons these officers joined the military were commitment

the CE Officer – A Snapshot

Topics in the Air Force Mentoring Program Guide		
Rank	Most Used	Most Important
1	Professional Military Education	Performance Feedback
2	Assignment Paths	Assignment Paths
3	Performance Feedback	Professional Development Actions
4	Professional Development Actions	Professional Military Education
5	Promotion Selection	Graduate Education
6	Graduate Education	Training Requirements
7	Recognition, Awards, Decorations	Promotion Selection
8	Training Requirements	Recognition, Awards, Decorations
9	Professional Associations	Professional Associations

to country (37%), educational benefits (33%), and job security (12%). Since education was of such high importance, perhaps most CE officers are naturally inclined toward higher education before they enter the service. In terms of the broad type of graduate education they would like to pursue, officers were almost evenly split between engineering and management; the preferences of CGOs and FGOs were not significantly different. In fact, 53% of the officers with a graduate degree have one in a management/business discipline.

However, there was a significant difference between CGOs and FGOs regarding the Air Force's role in determining the type of advanced degree an officer might pursue. FGOs tended to agree that the type of degree pursued should be based on the Force Development process, while CGOs were more neutral on the topic. Interestingly, both CGOs and FGOs preferred the traditional structured classroom environment over online opportunities.

During the survey, FGOs were asked to rank the topics listed in the Air Force's Mentoring Program guide (AFI 36-3401) according to frequency of use and the perceived level of importance when interacting with junior officers (see table). The results suggest that graduate education is receiving the appropriate level of attention, when compared with the other topics, during mentoring sessions. In addition, the higher the rank or education level of the FGO, the more likely they discussed the topic of graduate education with their young officers.

Other findings indicated that many officers with graduate degrees (38%) attained them on their own time, whether they used tuition assistance or not, and many (32%) took one year to complete them. Lastly, membership in professional organizations is considered important and most officers reported that they were current or past members of the Society of American Military Engineers (76%), followed by the American Society of Civil Engineers (34%) and the American Society of Mechanical Engineers (9%).

The complete study may be viewed at http://stinet.dtic.mil/str/guided-tr.html by searching for it under the author's name (Hughes, Frank).

Maj Frank R. Hughes graduated from the Graduate Engineering Management Program, AFIT, Wright-Patterson AFB, Ohio; he is currently stationed in Korea. Dr. Alfred E. Thal, Jr., is an Assistant Professor of Engineering Management in the Department of Systems and Engineering Management, AFIT.

The Air Force Incident Management System

Ms. Sonni Sears
HQ AFCESA/CEXR

On March 29, 2006, Mr. Michael Wynne, the Secretary of the Air Force, issued a memorandum introducing the Air Force Incident Management System, or AFIMS. This action was a direct response to Homeland Security Presidential Directive 5, which called for the establishment of a single, comprehensive national system for managing domestic incidents. Two initiatives created under HSPD-5—the National Response Plan and the National Incident Management System—work together to unify emergency management practices at all governmental levels. NRP and NIMS create a comprehensive approach to incident management that enhances the nation's ability to plan for, prevent, prepare for, respond to, and recover from terrorist attacks, major disasters and other emergencies.

Air Force Civil Engineer Readiness Airmen now have an occupational badge. Throughout history, there has been no way to identify United States Air Force Chemical, Biological, Radiological, and Nuclear defense technicians in a joint, combined or civil environment. The new CE Readiness occupational badge is similar to the badge used by the Army: It contains a retort, an emblem used by the U.S. government since World War I to symbolize chemical readiness. Wearing the chemical retort immediately identifies Readiness personnel as CBRN specialists and bridges the gap between joint, combined and civil operations, to facilitate operational effectiveness in an increasingly interoperable environment.

Mr. Wynne's memorandum outlined an all-hazards approach to organization and integration of emergency responders at Air Force installations throughout the world. Implementing AFIMS will involve the revision of Air Force directives to parallel existing NIMS and NRP policies and procedures and will require close coordination and communication within our responder community to ensure support to civil authorities.

The Air Force will fully implement AFIMS by December 2009. The initial step is application of the Air Force Emergency Management program by Air Force personnel. This newly designated program replaced the Full Spectrum Threat Response program on January 1, 2006; AFEM incorporates and applies key elements of NIMS and NRP across the Air Force.

The present practice of response agencies conducting individual tasks will change. AFIMS employs a unified response between responders at all levels, both civilian and military, and applies to Air Force installations and responders located within and outside the continental United States. Full implementation and sustainment of AFIMS will require a two-phased approach to streamline present practices.

Phase one, scheduled to be completed by December 31, 2007, focuses on installation response procedures. It includes the development of policy, guidance, planning templates, inspection and evaluation criteria, and the fielding of training products, including the AFIMS Implementation Key Leaders Guide, scheduled for publication in fall 2006. Phase two, scheduled to be completed by December 31, 2009, includes follow-on actions to improve and sustain training, expand cross-functional coordination and exercises, identify and resolve capability deficiencies, and incorporate the AFIMS capabilities within the Air Force Master Capabilities Library and the Air Force Chief of Staff concepts of operations.

The complete transition will be lengthy, but will allow the Air Force to better serve its

communities worldwide. Each phase will identify the tasks, timelines and responsibilities necessary to work successfully with the other Services in terms of doctrine, organizations, training and exercises, material, leadership and education, personnel and facilities. Throughout the transition, both organizational structure and Air Force-specific terminology will become NIMS-compliant. For example, the former installation disaster response force organizational structure will undergo several name and role changes. Currently, the disaster response force designates a disaster control group as well as an on-scene commander, usually the installation mission support group commander. An emergency operations center, under the direction of the MSG commander, will replace the disaster control group, along with many of its duties. Many of the disaster control group functions will soon be performed by the AFIMS-designated emergency support organization.

AFIMS implementation will be a complex and challenging endeavor. Effective planning, preparedness, response, and recovery coordination between installation, local, state, host-nation, joint service, and federal response agencies will be required. Air Force planning guidance will be described in AFI 10-2501, Emergency Management (EM) Program Planning and Operations, scheduled for publication later this year.

"I believe that all the changes we are incorporating will bring the Air Force to a higher level of efficiency," said MSgt Douglas Smith, the Air Force Emergency Management publications manager. "We will become more integrated into the broad spectrum of emergency response and recovery."

The Headquarters Air Force Readiness Emergency Services Staff is developing AFIMS policy and guidance with support from Headquarters Air Force Civil Engineer Support Agency. The office of primary responsibility for the AFEM program is the office of The Air Force Civil Engineer; for installations, OPR is the installation's office of emergency management or CE readiness flight.

Updates to AFIMS implementation will be made available on the Air Force Portal and the Emergency Management Community of Practice in the near future. For further guidance, look for the forthcoming AFIMS Implementation Key Leaders Guide and AFI 10-2501. Questions may be directed to the Air Force Emergency Management Helpdesk at afem.helpdesk@tyndall.af.mil.

Ms. Sears is an Applied Research Associates contractor supporting the AFEM program at HQ AFCESA, Tyndall AFB, Fla.

A readiness response team from the 28th CES, Ellsworth AFB, S.D., equipped with handheld chemical and radiation detectors and wearing lightweight chemical/radiation suits, tests simulated radiation levels in a disaster preparedness exercise at Mount Rushmore National Monument. AFIMS will help coordinate disaster response units such as this. (photo by SSgt Jamie Amidon)

Getting Rubber *Off* the Road—or the Runway

SMSgt Kevin Monkman
HQ AFCESA/CEOF
Mr. Preston Benedyk
HQ AFCESA/CEOF

Every time a fighter aircraft or cargo plane lands, its tires deposit rubber onto the runway surface—approximately 1 to 1.5 pounds per tire per landing. These rubber deposits build up and eventually fill in the micro-texture of the pavement, creating a smooth, almost glass-like surface that can make aircraft landing and stopping difficult or even dangerous, particularly in wet conditions. Removing this build-up off of a base's runway surfaces is civil engineering's job.

"When an aircraft lands, the friction between the tires and the airfield surface creates thousands of pounds of pressure," explained Mr. Rodney Martens, a technician with the 28th CES's Horizontal Section at Ellsworth AFB, S.D. "The heat generated polymerizes the rubber, turning the deposits from the soft, flexible tire into a very hard material spread in thin layers on about 1,000 feet of the runway."

Ellsworth was one of the first bases to try in-house rather than contracted airfield rubber removal. "We've been doing it twice a year, every year, for approximately 16 years," said Mr. Richard Grueschow, Horizontal Superintendent for the 28th CES.

After years of working together, Ellsworth's rubber-removal team has developed the skills and knowledge to make them a valuable training resource. Experts from Headquarters Air Force Civil Engineer Support Agency at Tyndall AFB, Fla., joined with experts from the 28th CES to develop a Web-based training program on airfield rubber removal. The training is for anyone who has the responsibility of ensuring the safe operations of the airfield landing surface—at home station or at locations in the area of responsibility.

Typically, the areas to be cleaned are the touch-down zones on both ends of the runway, each about 50´ wide by 2,000´ long. The primary instrument approach end usually contains the heavier build up of the two. A runway is usually cleaned incrementally, 10,000 sq. ft. at a time, but smaller increments are often used, depending on weather conditions (wind speed, humidity and temperature) or available personnel and equipment. A trained crew can clean 10,000 to 30,000 sq. ft. per hour.

The team uses a biodegradable detergent, Avion 50, to remove the rubber buildup and

Right: Aircraft deposit up to 1.5 pounds of rubber per tire every time they touch down. Far right: At Ellsworth AFB, CEs use snow brooms to scrub away the deposits after water trucks spread water and Avion 50 detergent. (photos by Ms. Sarah Powers)

other contaminants. They've tried other removal products, but have found Avion 50 to be the most effective. The detergent comes in 55-gallon drums and is transferred into a standard water truck, which most equipment shops have. "The detergent causes no damage to the equipment, including rubber tires, hoses, or gaskets," said MSgt Todd Pallas, the Horizontal Sections Non-commissioned Officer-in-Charge. "We make sure that personnel use the proper personal protective equipment, such as rubber gloves, splash-proof eye protection, full-face shields, and plastic aprons."

The application rate ranges from 55 gallons per 10,000 square feet for severe build up to as little as 10 to 20 gallons per 10,000 square feet for maintenance cleaning. "Water is the key element in the cleaning process," said Mr. Martens. "The repetitious process of applying water, detergent, additional water, then scrubbing, applying more water and detergent and then more scrubbing, throughout the cleaning procedure results in a more effective cleaning process. A rich, thick foam should be produced while scrubbing; the lack of this foam usually means that the surface is too dry." It takes about 1,500 gallons of fresh water for every 10,000 square feet of cleaning to flush the surface. Ellsworth uses a water tanker with a 4-inch drain valve for rinsing off the area. Brooms follow closely behind the tanker, moving the residue off the edge of the runway surface. The rinsing continues until the area is clean.

"Since we're a northern tier installation, we use our snow brooms for scrubbing the airfield surface," said Mr. Tim Scott, shop foreman for the Horizontal Section. "Other equipment can be used, such as a front-end loader or skid-steer loader with the optional broom attachment or a tractor with a kick broom, either the front-mounted type or the towed sweeper. With smaller equipment, it's important to ensure that the operator is protected from the splashing of the detergent."

After a final inspection to ensure that all the standing water has been removed and a runway conditions test by base operations, the cleaned area is ready for more landings.

To learn more about the airfield rubber removal procedures Web training course, go to the Air Force Advanced Distributed Learning Systems Web site at https://golearn.csd.disa.mil.

SMSgt Monkman is the 3E2X1 Career Field Manager, HQ AFCESA, Tyndall AFB, Fla. Mr. Benedyk is a Northrop Grumman contractor working with HQ AFCESA to develop training courses for CEs.

CEs Put Keesler Back on Top

Ms. Teresa Hood
Editor

After a long wait atop one of Keesler AFB's two water towers, electricians from the 81st Civil Engineer Squadron assembled and installed a new rotating beacon. Damaged during Hurricane Katrina's 125 mph winds, the old beacon needed replacing. Firefighters, all members of the Mississippi base's search and rescue team, worked the first half of the day moving the beacon up the tower in three pieces.

Not an everyday job, but for the CEs it was a day spent doing what they've done almost every day for the past year—working hard to get their base back to its pre-hurricane condition.

"Katrina did a huge amount of damage to Keesler, almost $950 million worth and most of it to the facilities and grounds," said Lt Col Ray Mottley, 81st CES commander. "We're certainly not done—we're still working on a three-year timeline—but we see progress every day, and in many cases we're way ahead of where we thought we'd be a year ago."

Training, the base's primary mission, returned about 2½ weeks after the storm, well ahead of the initial 6-month estimate, and the current student population is 26% greater than it was before Katrina. "After safety and critical infrastructure, recovering training was our next focus," said Lt Col Mottley. "It helped that our training facilities—many one-of-a-kind—came through the storm in pretty good shape."

Keesler's military family housing was not so lucky: more than 80% of the base's 1,820 housing units were damaged by Katrina; about 25%–30% of the units were flooded during the 20´–25´ storm surge. Keesler will receive $300M in military construction funds to build 1,067 new homes by 2010—the largest housing project in Air Force history.

"We're only repairing 600 of the original homes, interspersed throughout the five housing areas. They'll serve as 'swing space' while the new ones are built," explained Lt Col Eddie Richards, who oversees housing for Keesler's program management office. "We already have 371 occupied and expect to have all 600 finished in a month or so."

Keesler's PMO works closely with the 81st CES and is managed by the squadron's former engineering chief, Mr. Robert Moseley. "We work specifically on hurricane recovery," he said. "It's a huge contracting effort and sometimes it can seem overwhelming, even for the contractors themselves."

Availability and cost of housing, labor and materials in the storm-affected area have increased significantly. Many of the contractors compete for labor with companies working on the hotels and casinos in downtown Biloxi. "It sometimes plays havoc with our costs and schedule," said Mr. Moseley.

On or ahead of schedule is restoration of the base's hospital, which formally marked the return of inpatient services with an August 29th ribbon-cutting ceremony. The hospital, the Air Force's second largest, has also reopened emergency services; others clinics and services will follow as work is completed. It will cost $66.3M to restore the hospital and $25M to rebuild its energy plant. Much of the damage was caused by water surging from the bay behind Keesler.

Keesler AFB Post-Katrina Dollars & Stats *(partial)*

Project	Cost
Military Family Housing (1,067 homes)	$300M
Medical Center (Renovation)	66M
Medical Center (Energy Plant)	25M
BX & Satellite Pharmacy	40M
Commissary	39M
Hangar 5	29M
Multipurpose Services Facility	23M
Fire Station	20M
Training Aids Facility	11M
Sablich Center (HQ MSG; Personnel)	7M

Housing Repair Work ***(as of 08/29)***

- Remediated Mold in 264 houses
- Repaired/Replaced HVAC in 416 houses
- Removed mud & debris in 190 units
- Abated asbestos in 173 units
- Made interior repairs in 143 houses

On August 29, a team of Keesler AFB's civil engineers observed the one-year anniversary of Hurricane Katrina from a pretty high vantage point.

"We're bringing a lot of the hospital infrastructure up 30 feet," said Mr. Wes Toche, chief of engineering for the 81st CES. "We want to protect the hospital's power and critical resources in the future, so we're also installing flood hatches, sump pumps and custom-made flood doors."

"We want to make sure Keesler is ready for the next storm," said Lt Col Mottley, "the shelters, the roofs, the critical infrastructure. The base had never had flooding to this extent, even with Hurricane Camille, so as we recover and as we build new facilities, we're taking into account the storm surge."

The floodplain was altered by Katrina, changing how and where building occurs on Keesler. "As we build, we're increasing the elevation of our buildings," said Lt Col Jeffery Szatanek, chief of Operations for the 81st CES. "In some areas, what we tear down, we can't rebuild. We're getting a new commissary, but not where the old one was. We can put in something like a ballfield, but not a building. We've lost that space."

"We've also lost people space," said Mr. Toche. "We have no vacant square footage anywhere. Anything structurally sound, even if scheduled for demo, is being reused."

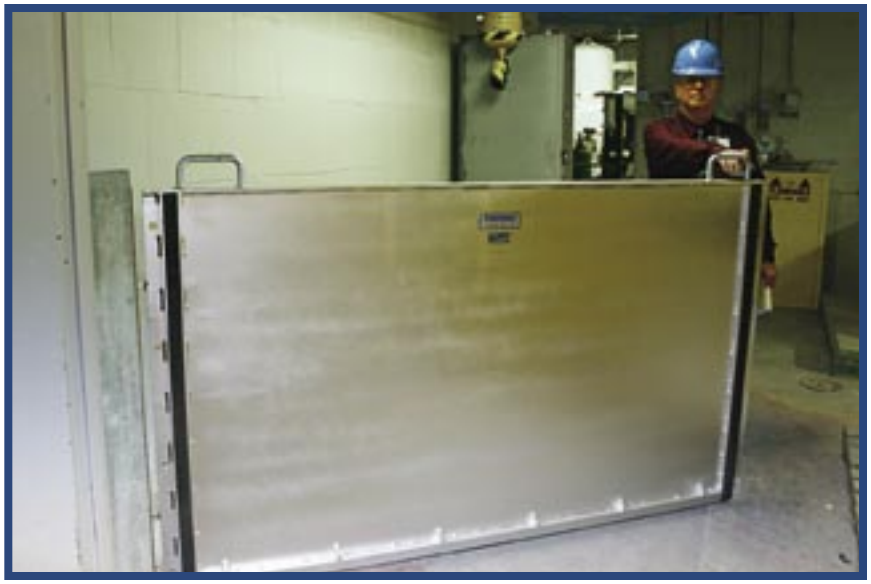
"A good example is our community center, which is now our commissary and will be until the new one is built," said Lt Col Mottley. "But we're making it work, and the people are making it work. Everybody lost so much to Katrina, and everyone is very grateful for what we do. But we're not done. We may look good on the outside, but if you go inside some of the buildings, you'll see how much we still have to do."

Still, on the first anniversary of Katrina, Keesler's CEs seem pretty amazed at how much they've all accomplished in a year. "The only way I can describe it is '20 years of base-level civil engineering in one year with a handful of people,'" said Mr. Moseley. "I've never experienced anything like this and, to tell the truth, I hope I never do again."

Keesler AFB: Before & After

Like many buildings in Hurricane Katrina's path, the 403rd Wing headquarters building's flat roof suffered severe damage. (below, U.S. Air Force photo). Rather than just repair the existing flat roof, engineers decided to install a standing-seam metal roof, which will be much stronger. It's engineered to withstand winds of up to 140 mph. (right, photo by Ms. Teresa Hood).

When the storm surge flooded the hospital's basement (below, U.S. Air Force photo), the electrical infrastructure was destroyed and much high-value equipment was lost. Although some medical equipment is being relocated to higher ground, electrical substations and switching gear that remains in the basement is being protected by specially made flood doors (right, photo by Ms. Teresa Hood) as well as sump pumps to keep potential flood waters out of these rooms.



The storm surge sent flood waters through the base hospital's basement, damaging equipment and fixtures (below, photo by TSgt Jennifer Wallis). On August 29, 2006, officials held a formal reopening ceremony to mark the return of inpatient services to Keesler Medical Center. The cleaned and repaired primary care clinics (left, photo by Ms. Teresa Hood) reopened in their pre-Katrina locations on September 5, 2006.

Keesler's housing areas were hard hit by the storm, leaving debris everywhere and damaging many homes (below, U.S. Air Force photo). After clearing the debris—a total of 103,000 cu. yds.—the 81st CES began the process of demolishing and removing the worst-damaged homes in order to restore morale (left, photo by Ms. Teresa Hood). Because the storm shifted the flood plain, some of the replacement homes will be built in different areas.

The commissary also suffered heavy flooding (below, photo by TSgt Jennifer Wallis), ruining the stock and damaging the building. Until a new one can be built, customers are happy to use the smaller, temporary commissary housed in the former community center (left, photo by Ms. Teresa Hood).

Lessons Learned from a First Deployment

SrA Jin U. Lee
314th CES/CEOE

On January 24th, the reality of getting deployed set in as I stood in front of the gate terminal at Little Rock Municipal Airport with a few of my team members. In Baltimore, Md., we joined the rest of our team, all filled with excitement and uncertainty. It was the first deployment for five of the nine team members. We knew what base we were going to, but not what type of combat situation we'd be doing our jobs in.

My path to deployment started a few weeks earlier at Little Rock AFB, Ark. It was a typical day in my life. I was working with the base honor guard when my supervisor called to say he needed to talk to me. He told me that I was going to deploy, but not with the rest of my squadron as planned. Instead, I was deploying as one member of a small team supporting the Army for six months.

I had already received pre-deployment training on-station, but I was required to take extra training because this was not the regular Air Force deployment. Within two weeks, I was on a plane to an Army base where I would get three weeks of extensive combat skills training, including combat life saver, land navigation, crew serve weapons qualification, and convoy procedures. When training was over, our team had a short break for individual preparation and family visits, and then we were on our way to the AOR for more training before going to our station.

During the first week at our deployed location, we found out what our role was going to be for next several months: We were to be a detachment of the 732nd Expeditionary Civil Engineer Squadron—an Air Force engineer unit providing direct support to the Army Area Support Group. We would be working with many different units on base, as well as civilian contractors. Our unique mission was due in large part to the advanced technology that the Air Force provides with global positioning system surveying capabilities that are linked to a geographical information system and an AutoCAD mapping system.

The other two engineering technicians (AFSC 3E5X1) and I were put into a challenging situation. Our primary task was to build a single-source base map, combining existing survey data with our own. In less

Then-A1C Jin Lee makes the final connections on a Trimble GPS receiver/radio in preparation for another topographic survey at Al Asad AB.
(U.S. Air Force photo)

SrA Jeremiah Celis, TSgt Harold Ackett and then-A1C Lee set up the Trimble 5700 Base Station and Trimble Trimark III Radio receiver for a survey of the perimeter area at Al Asad AB, Iraq. (U.S. Air Force photo)

than a month, we were able to build a base map that everybody on the base could use. We worked with the civilian contractors to construct a geospatially referenced map using GIS technology and then matched their survey data with our own GPS survey data. By incorporating GPS with traditional surveying methods, we significantly improved survey data accuracy.

Because we weren't the only surveying crew on base using GPS, we had to bring in data from other teams. We used shared data not only to reach the Air Force goal of "One Base, One Map," but also because there wasn't enough manpower to cover the number of square miles the base encompassed. Working on a fast-growing base where the Marines, the Army, the Navy, and civilian construction companies were all working on many projects, it was often difficult to keep track of new facilities being built and new sites being graded.

My experience from this unique deployment taught me several lessons. The first lesson I learned is that, while other military branches' mission might be to fight a war outside the wire every day, 732nd ECES, Det 14, had a battle of its own: maintaining and updating the utilities and facilities information in the base mapping system. I never knew how important my job was until I deployed to the AOR.

The second lesson I learned is how to be flexible in a war-time environment. It's important to learn how to adapt to different situational changes. Even though we had a schedule to follow every day, it might change due to unexpected weather or a mortar attack.

The last lesson I learned from this deployment is to take very seriously any and all training provided by the Air Force. If I hadn't taken seriously the training provided to me in tech school and back at home station, I wouldn't have been able to do my job while deployed. It gave me a great sense of accomplishment to see the construction work underway on a project that I supported with surveying and drafting work.

Now that I'm back, I realize that I couldn't have asked for a better first deployment. Working with all the service branches gave me a greater appreciation for the troops that are fighting for another nation's freedom.

SrA Jin U. Lee was an engineering assistant with Det 14, 732nd ECES. He is now attending the U.S. Air Force Academy Preparatory School.

Virtual Chiller Plant Helps Cool School at Goodfellow AFB

Mr. Ron Trepanier, P.E.
17th CES/CEC

Goodfellow AFB took advantage of the Energy Savings Performance Contract program to solve a cooling problem at one of its specialized campuses. Rather than build a $10M central chiller plant, partners Air Education and Training Command, the 17th Civil Engineer and Contracting Squadrons, and Siemens Building Technologies Corporation created a "virtual chiller plant" for a tenth of the cost.

Fifteen existing chillers in nine training facilities were linked via an underground chilled-water distribution loop—one mile long and 8 inches in diameter—controlled by the base's existing civil engineer energy management control system, a centrally controlled computer system that monitors and controls all of a base's facility heating and air conditioning equipment. Completed in August 2006, the virtual chiller plant services over 500,000 square feet of classroom and office space.

Chillers are a major component of air conditioning systems, circulating chilled water to facility cooling systems. Their efficiency typically suffers when they're loaded below 75%. When students shifted from using light tables to computers to view imagery, the amount of heat generated dropped and so did facility cooling loads.

With the reduced cooling loads, base CEs installed variable speed drives on primary chilled water pumps in some of the facilities to reduce run times and save electrical costs. However, converting constant flow systems to variable flow primary systems was not as straightforward as anticipated. Because all chillers require a minimum flow to remain online, a variable flow system did not compensate for poor loading. Over time, the variable flow systems reverted to constant flow operation.

In 2004, Siemens recommended a virtual chiller plant as the most economical and energy efficient option, as well as the best solution to the aforementioned problems. The engineering design concept is to harness the total maximum cooling capacities of all existing chillers to meet the total cooling demand for each of the facilities while minimizing infrastructure costs. Linking existing chillers under the control of the CE EMCS to create a virtual chiller plant provides the flexibility of running each facility separately, as originally intended, or running all facilities from the new loop with only a minimum number of chillers operating to handle the combined loads to all of the facilities.

Creating the virtual chiller plant included converting the facilities from constant flow to variable flow, installing new underground water distribution system piping (supply and return) and new chilled water pumps with variable frequency drives, and reconfiguring/upgrading the CE EMCS. When the virtual chiller plant became fully operational, the CE EMCS synchronized all of the chillers and their associated valves and pumps for maximum efficiency, allowing the base to realize significant energy savings.

Water flows were initially balanced using automated valves, with each building tested for the designed flow with all control valves open to ensure that the system is always capable of addressing the maximum design load. After the initial flow balancing, the automated valves reverted to variable-flow operation, creating a self-balancing system for any period when flow falls below the maximum identified in the design.

"The cost of the virtual chiller plant is $1M, and the savings from the plant are estimated

at $117K per year from the baseline taken before the work started," said Mr. Mark Krog, the Siemens ESPC project manager. "Siemens will meter regularly to ensure the savings and, over the 18-year span of the contract, will maintain the equipment using local subcontractors."

the savings garnered from each of the improvements; the Air Force retains any additional resulting savings.

"We're trying to bring private-sector solutions to support our mission and people," said Mr. Mike Noret, the deputy base civil engineer. "ESPCs are a non-conventional yet cost-effective financing vehicle that allows us to make much-needed facility repairs with modern, energy-efficient upgrades in an austere funding environment."

This GeoBase-generated site plan shows the nine buildings that have been linked together into a virtual chiller plant. (image courtesy Goodfellow AFB)

In addition to the virtual chiller plant, other energy savings measures implemented at Goodfellow AFB through the ESPC include upgrading to more energy efficient lighting in 44 buildings, replacing all street lighting (150W to 100W lamps), and installing a new synthetic turf system. In all, over $2.7M was spent to replace aging, energy inefficient equipment/facilities with new state-of-art technology, but all of the new work occurred with no up-front payments by the Air Force. Under the terms of the ESPC, the total costs of the energy project will be paid back to Siemens from

Mr. Trepanier is the Engineering Flight Chief, 17th CES, Goodfellow AFB, Texas.

Expanding the Envelope on Electrical Safety

Dr. Daryl I. Hammond, P.E.
HQ AFCESA/CESM

Engineering Technical Letter 06-09, "Arc Flash Personal Protective Equipment (PPE) Requirements for High-Voltage Overhead Line Work at 69 kV (nominal) or Less," provides for the first time extensive guidance on flame-resistant personal protective equipment for electricians working on high voltage overhead distribution and transmission lines. For electricians working on Air Force installations, this ETL bridges a significant gap between existing safety guidance for the two types of work they do: utility-type and non-utility-type work.

Why is it important?

Air Force electricians have been trained and are responsible for both utility-type and non-utility-type electrical work. Utility-type electrical work is done on the lines or equipment that supply and distribute high-voltage electricity. Non-utility-type work typically includes distribution of electricity from pole or ground mounted transformers to every receptacle within a building.

Air Force electricians have always used safety equipment when working on high-voltage lines (below). However, the new requirements specifically address the potential for burns from short circuits and arc flash (far right; equipment worn by SrA Justin Johansen and SrA Francisco Magana). (U.S. Air Force photos)

The National Electrical Safety Code, published and updated by the Institute of Electrical and Electronics Engineers, Inc., has traditionally been used to provide safety guidance for utility-type work. However, the NESC offers no detailed requirements for flame-resistant PPE to protect electricians from arc flash burns. For non-utility-type work, the National Fire Protection Association provides clear and unambiguous safety requirements, including special permitting, electrical hazard analysis and wear of flame-resistant clothing and other PPE for burn protection from possible short circuits and arc flash. The Air Force made NFPA 70E, Standard for Electrical Safety in the Workplace, a mandatory compliance document with ETL 04-15, Electrical Safety Guidance, and AFI 32-1064, Electrical Safe Practices.

Because Air Force electricians do both types of work, confusion or uncertainty sometimes occurs when they must choose the level and type of PPE to wear on the job: should they follow NFPA 70E or the NESC? Eliminating confusion, providing consistency and maintaining a safe work environment were the primary reasons that experts at Headquarters Air Force Civil Engineer Support Agency, Tyndall AFB, Fla., developed the new arc-flash hazard PPE requirements for high-voltage overhead utility-type work. Hopefully, this pioneering effort will drive similar changes in commercial and residential electrical business.

What's the difference between the old way and the new one?

Developing the new requirements wasn't an easy task: Air Force engineers had to ensure that the additional high-voltage PPE requirements were compatible with existing ones, and wouldn't create more of a hazard for electricians working near high-voltage energized conductors.

Before ETL 06-09, PPE for high-voltage electrical work essentially consisted of rubber gloves rated for the voltage being worked and a hard hat. Although safety harnesses, belts, and other accessories were required, they needed no special flame-resistant characteristics or certification.

Depending on equipment voltage, required PPE under ETL 06-09 includes the following:

- Flame-resistant coveralls over flame-resistant shirt and pants
- Flame-resistant sock-type hood
- Arc-flash–rated face shield properly attached to a hard hat designed to accept a face shield

Recent Air Force guidance takes electrical safety to a level unsurpassed by any other DoD component or major utility.

- Voltage-rated rubber gloves with leather protectors
- Leather electrical-hazard–rated safety boots/shoes
- Arc-flash–rated safety harness

The photo below shows the required types of PPE. For specific guidance in each voltage range, see ETL 06-09.

The new PPE works well together and doesn't hamper an electrician accomplishing a task. The layered clothing—flame-resistant shirt and pants with flame-resistant coveralls—gives the utmost protection should a short circuit shower of sparks occur. The flame-resistant sock-type hood protects a worker's ears and the sides and back of the neck from flames, and the hard hat/flame-resistant face shield combination protects the head, face and front of the neck. Hand and foot protection is assured by having rubber gloves with leather protectors and leather electrical-hazard–rated safety boots. Finally, the safety harness used to protect the workers from falls is flame-resistant to prevent degradation of strength from heat or flame exposure.

Feedback from the field is positive, and electricians are getting the word out to their counterparts in industry that the Air Force takes electrical safety seriously. Proper PPE is required during switching operations to turn-off/turn-on circuits and on the rare occasions that work on energized circuits is authorized. *(Working on energized circuits is prohibited in the Air Force, unless specifically authorized by the Base Civil Engineer, or equivalent, to support a critical mission.)*

Other new guidance

Electrical safety continues to be a top priority in the Air Force. The Air Force has issued a revision to AFI 32-1064, Electrical Safety, dated May 25, 2006, which not only incorporates ETL 06-09, but also mandates additional electrical safety requirements for work in electrical manholes. Electrical safety guidance, including ETL 06-09, is available on AFCESA's Web site (http://www.afcesa.af.mil), and AFCESA personnel are available to interpret.

Dr. Hammond is The Air Force Electrical Engineer. He works at HQ AFCESA, Tyndall AFB, Fla.

Porous Pavements

Capt Christopher D. Bulson
380th ECES/CEC
Lt Col Ellen England, Ph.D.
72nd AMDS/SGPB

Porous or permeable pavements are one sustainable best management practice that may help CEs who manage Air Force facilities significantly reduce impervious surface areas, storm water runoff, and the associated monitoring requirements and costs.

The expansion of urban impervious surfaces and the associated removal of natural and wetland areas disrupts the normal hydrologic cycle, increasing storm water volume and decreasing storm water quality. According to Environmental Protection Agency estimates, impervious surface area in the United States increases at a rate of 250 square miles per year, most of it from roads and parking spaces.

Incorporating porous pavements into construction designs could help Air Force civil engineers deal with storm water management, while complying with federal, state and local requirements that address sustainable design and water management.

Impervious hot mix asphalt and concrete are conventionally used to construct today's roads and parking areas. Both materials block surface water from infiltrating the soil, diverting rainfall to storm water outfalls and preventing groundwater recharge. Estimated costs for conventional asphalt range from $0.50 to $1 per square foot. Low initial cost accounts for the choice of asphalt for up to 75% of all of the paved surfaces in this country. Concrete is made of fine and coarse aggregates and a "paste" of Portland cement and water. Concrete can initially cost 25% more than asphalt, depending on the design, but is substantially stronger; fully hardened concretes usually have strengths of approximately 3,500 lbs/in^2.

Porous pavements typically consist of a pervious surface layer, a reservoir structure (base course), a filter fabric (geotextile membrane), and a level sub-base (subgrade). Porous pavements allow water to infiltrate and can mean a significant reduction of an area's runoff. When properly designed and installed, porous pavements have strengths, durability, and maintenance needs similar to conventional pavements and can mimic the natural hydrologic functions of the site. Although sometimes initially more expensive to install, porous pavements may be more cost effective when the costs of curbs, gutters, and downstream collection and treatment facilities associated with conventional pavements are considered. Depending on location, life-cycle costs for porous pavements can be less than those of conventional pavements. Porous pavements are best applied where high soil permeability, relatively flat grades on site, and low water tables or deep bedrock formations exist.

Structural turf, usually a plastic grid containing soils and grass, has the appearance of a grass field but the structural integrity to support vehicular traffic in parking areas and along areas such as fire lanes. Many structural turf products offer 88-98% pervious area, closely replicating natural infiltration rates. They're fairly flexible; easy to install and maintain; relatively unaffected by freeze-thaw and wetting cycles; and remain relatively cool in the sun. Watering and mowing requirements are the main drawbacks. Costs range from $1–$2 per square foot.

Right: In the Morris Arboretum, Philadelphia, Pa., rain runs off the conventional asphalt in the driveway, but passes through the porous asphalt in the parking slots. (image courtesy Cahill Associates, Inc.) *Two in center: GeoBlock* (image courtesy Presto Products–Geosystems) *and Netpave 50* (image courtesy ADP Associates, Netlon Turf Systems) *are two alternatives for structural turf installations. Both can be filled with turf or gravel. Far right: Paving blocks offer infiltration rates of 10–20 in./hr. of rainfall.* (image courtesy Systems

Permeable surfaces help control stormwater runoff and avoid disrupting the normal hydrologic cycle

Block pavers, or permeable pavers, are manufactured paving stones (normally constructed on a crushed stone base) that contain spaces where water can penetrate into a porous media placed underneath. The increased infiltration can result in reduced runoff volumes and improved pollutant removal; infiltration rates range from 10-20 in/hr of precipitation while conventional pavements offer near zero. Block pavers offer unique design opportunities and are fairly easy to maintain and repair without disturbing the entire system, but they can settle unevenly. Costs range from $2–$4 per square foot.

Permeable pavement is asphalt or concrete rendered porous by the aggregate structure. The fine aggregates normally found in asphalt or concrete are left out, allowing water to flow between the larger pieces of aggregate. These pavements still have considerable strength and durability, offering 73–79% of the strength of conventional asphalt. Porous asphalt parking areas can also last longer than conventional asphalt due to the deeper base course offered by the reservoir structure. Porous asphalt systems cost approximately 25% more than conventional asphalt pavements; aging rates are similar to conventional asphalt.

Porous concrete is very similar in functionality and design to porous asphalt. Again, the fines are removed from the mix, leaving Portland cement (18-21% of the mix) and uniform-sized aggregate to bind together, to be laid over a gravel sub-base. A highly experienced crew is required for installation to achieve the desired permeability—working time is limited and it's essential to maintain proper water content during installation. Currently, porous concrete is most widely used in southern states with costs roughly 18% and 50% greater than those of conventional concrete and asphalt, respectively.

Overall, porous pavements are highly valuable for their ability to divert storm water run-off; their major drawback is the higher up-front installation costs. Structural turf appears to be the best option for parking areas at northern tier bases, primarily because of resistance to frost heave. Currently, conventional asphalt is still the preferred choice for central and southern locations. However, porous pavements may become more competitive as familiarity and experience with the systems increase, and a possible decrease in installation costs results.

For more detailed resources on porous pavement, please contact the author at ellen.england@tinker.af.mil.

Lt Col England was an assistant professor in the Department of Systems and Engineering Management, AFIT, Wright-Patterson AFB, Ohio. Capt Bulson is a recently graduated civil engineering student serving in Southwest Asia.

Authors' note: For an in-depth discussion of the VFT methodology used to compare the various paving systems, see Value Focused Thinking, a Path to Creative Decision Making *by R. Keeney, and* Strategic Decision Making: Multiobjective Decision Analysis with Spreadsheets *by C. Kirkwood.*

Ramstein Airstrip Makeover

MSgt John Lasky
Air Force Print News

The north runway at Ramstein AB, Germany, is under a €16M (≈ $20M), three-phase construction plan that will extend it 1,000 feet to allow heavier air transports to take off fully loaded. Part of the Rhein-Main Transition Program, funding for the project is provided by the United States, NATO and Germany.

Ramstein's original single runway was built for jet fighters that don't need as much room to get airborne. Today, the C-17 Globemaster and C-5 Galaxy aircrews are collecting their frequent flyer miles via this landing strip flying support missions for Operations Enduring Freedom and Iraqi Freedom. The length of the runway has prohibited the full use of the heavy air transports, making it necessary to fly more aircraft to fulfill mission requirements.

"The runway is being extended 1,000´, which will allow the heavier aircraft to take off with more cargo," said Capt David Vanderburg, Chief of Construction Management with Ramstein's 435th Civil Engineering Squadron.

Two phases of the construction are simultaneously working on opposite ends of the runway, leaving a taxiway open in the middle to grant the air traffic access to the recently constructed south runway. NATO provided a good-sized percentage of the €23M (≈ $29M) spent transforming a taxiway into what is now the south landing strip. The host 86th Airlift Wing and the 723rd Air Mobility Squadron will be the primary users of the runway, which will stretch nearly 3,000 meters (10,000´).

The project started on April 18 2006; completion is expected by mid-December of this year. The overall scope of work included emplacement of 53,000 cu. yds. of select fill for the west extension, more than 1,160,00 sq. ft. of asphalt and 305,000 sq. ft. of concrete. The runway will also be equipped with centerline lights, new approach lighting and an instrument landing system, and will be fully functional by May 2007.

The project is currently three weeks behind schedule due to construction deficiencies that needed to be corrected. With the help of the German Federal Ministry of Finance and Construction Agency, Headquarters U.S. Air Forces in Europe is working diligently to ensure that all civil works are completed on time.

A C-17 cargo aircraft takes off from the south runway at Ramstein AB as construction continues to lengthen the north runway.
(photo by the author)

Running with the 'Big Dogs'

Damage Assessment Team Values Its Youngest Member

TSgt Chris Vadnais
Air Force Print News

Super Typhoon Ioke left Wake Island in shambles. The Category 5 storm raged through the atoll Aug. 31, demolishing buildings and tossing around anything that wasn't bolted down—and many things that were.

Assessing the damage includes some repair work, and it's a mission that calls for the most experienced of civil engineers. But don't tell that to A1C Alex Jaime.

At 22 years old, with just two years in service, A1C Jaime is the youngest person on the Wake Island damage assessment team, which deployed from Hickam AFB, Hawaii, on September 13. "At first I was a little worried because it was such a big job," he said. "But my bosses reassured me, told me 'Hey, we've seen you work. We know you can do it,' so I came, and I'm glad I came."

The team consists of mostly technical sergeants and senior NCOs, seasoned civil engineers who have assessed and repaired damage like this many times. A1C Jaime is the only non-NCO on the team.

"I deployed with A1C Jaime to (Southwest Asia) for four months, and he did an outstanding job for me over there," said team leader SMSgt Thomas Yereance. "I had no worries in picking him for this...operation."

Airman Jaime's hard work—and small stature—have proven extremely valuable to the team. At 5′ 2″, he was the only member of the team who could squeeze himself into a tight spot behind one of the island's transformers to repair it.

"Without him out here today," said SMSgt Yereance, "we would have had to take turns trying to squeeze in there. We would have been out here for about two days to do what took us a half hour with him in there."

It's smart working like this that makes the damage assessment team so efficient. Pacific Air Forces officials are eager to know the cost of the damage on Wake Island, and every team member must use his unique qualities to get that information as quickly and safely as possible.

But as valuable as it turned out to be, his size wasn't the reason for A1C Jaime's inclusion on the team. He was picked for his attitude and work ethic.

"I wish all Airmen were like him," said SMSgt Yereance. "He's always ready to go in the morning, he'll do any job, and he's always motivated."

A1C Jaime said he feels his hard work is being rewarded on this trip. He said it's showing him a side of civil engineering he hasn't ever seen. He loves being a civil engineer, and he plans to make a career out of it. This trip will give him an idea of what to expect in the future.

"This is a big learning experience for me," said A1C Jaime. "I'm seeing a lot of what management does, assessing stuff," he said. "I never knew how much responsibility goes with the higher ranks."

A1C Alex Jaime wrestles an electrical cable into place in a de-energized transformer on Wake Island. He's part of the damage assessment team sent to inspect the island following Super Typhoon Ioke. (photo by the author)

Helicopter Crash Claims Life of Civil Engineer

compiled from various sources

Capt Kermit O. Evans, 31, an explosive ordnance disposal officer, was killed Dec. 3 in Iraq when a helicopter he was riding in made an emergency water landing in western Al Anbar Province. He was one of four servicemen who died in the accident.

Capt Evans deployed in July from the 27th Civil Engineer Squadron, Cannon AFB, N.M., to the 332nd Air Expeditionary Wing, Balad AB, Iraq. It was his second deployment.

Memorial services for Capt Evans have been held in his hometown of Hollandale, Miss, at Camp Victory and Balad AB in Iraq, and at Nellis AFB, Nev.; one is planned at Cannon AFB. The burial was at Arlington National Cemetery.

Maj Gen Del Eulberg presents a flag to the parents of Capt Evans during his funeral Dec. 12 at Arlington National Cemetery. More than 200 friends and reletatives gathered to pay their respects to Capt Evans. (Photo by TSgt Cohen Young)

At the service in Hollandale, Lt Col Steve Woods, 27th CES Commander, posthumously presented a Bronze Star to Captain Evans' family: his wife, Perneatha and 13-month-old son, Kermit Evans, Jr.; his parents, Charles and Margaret Evans of Hollandale; and his brother, Kervin Evans of Dunlap, Ill.

During this deployment Capt Evans "led the ground-breaking, first of its kind implementation of conceptual...counter-improvised explosive weapons intelligence capability into a battlefield reality," said Lt Col Woods. "He organized and certified 15 special weapons intelligence teams into a cohesive combat-ready unit of airmen and soldiers. His teams collected, analyzed and exploited weapons intelligence on enemy-improvised explosive devices on the battlefield, operating many times under hostile fire. Under his leadership, weapons intelligence teams conducted over 4,000 combat tactical intelligence missions to contribute to saving many coalition forces and Iraqi civilians."

Capt Evans had a B.S. in chemical engineering and was commissioned in 2001; his first assignment was with the 99th CES at Nellis AFB. In November 2003, he deployed to the 321st ECES, Masirah Island AB, Oman. In September 2005, he graduated from the Naval School Explosive Ordnance Disposal, Eglin AFB, Fla. As the EOD Flight Commander for the 27th CES, he led 21 personnel; the flight won the 2005 Senior Master Sergeant Stryzak Award as the "Best Explosives Ordnance Disposal Flight in Air Combat Command."

"The Cannon EOD flight and EOD career field are going to miss a great leader, mentor and friend," said MSgt Harold Hailer, 27th FW EOD Flight Chief. "Capt Evans' comrades will always remember the big smile he had on his face since setting off his first detonation. It never wore off."

Compiled from news stories by Ms. Terri Ferguson, Delta Democrat Times, Hollandale, Miss. and Ms. Janet Taylor-Birkey, 27th FW/PA, Cannon AFB, N.M.

A Final Farewell

compiled from various sources

On August 24, at two bases thousands of miles apart, memorial services honored MSgt Brad A. Clemmons, 37, a civil engineer who died August 21 in support of Operation Iraqi Freedom.

MSgt Clemmons, an explosive ordnance disposal craftsman from the 354th Civil Engineer Squadron, Eielson AFB, Alaska, was deployed to Balad AB, Iraq. According to a citation read at one of the services, he was on a mission to perform forensic analysis and intelligence collection on two reported improvised explosive devices when his vehicle struck an IED hidden in the road.

Airmen and Soldiers at Balad gathered to remember MSgt Clemmons as a hero, leader and friend. During the service, Lt Col Stan Giles, the 732nd Expeditionary Mission Support Group chaplain, asked the standing-room-only crowd of about 400 to pray for MSgt Clemmons' family and the families of all EOD technicians who serve in harm's way.

On the same day, nearly 6,000 miles away in Alaska, friends, family and fellow Airmen gathered for a service at MSgt Clemmons' home base, Eielson AFB, to mourn him and celebrate his life.

TSgt Steve Hallenbeck, a 354th CES EOD specialist and hunting buddy of MSgt Clemmons, talked about their next big hunt: "Save a place for me," he said. "Scope out the trails and light a fire...I'll see you when I get there, brother."

The funeral service for MSgt Clemmons was held in his hometown, Chillicothe, Ohio, on August 31. "I want everyone to know that he died doing what he loved," said his mother, Ms. Pamela Clemmons. "And he'd go back and do it all over again because that's how much he believed in it." When she finished speaking, Ms. Clemmons turned and saluted the servicemembers in the room.

MSgt Clemmons leaves behind his wife, Rebecca, who is pregnant with their second child; a daughter, Isabelle; and two sons, Nicholas and Zachary. He was buried at Arlington National Cemetery in Virginia on September 5. He was posthumously awarded the Bronze Star and the Purple Heart.

Compiled from news stories by Lt Col Bob Thompson, 332nd AEW/PA and 2Lt Bryon McGarry, 354th FW/PA, and from personal accounts of friends who attended the funeral.

In a formal salute to MSgt Brad A. Clemmons, the 332nd Air Expeditionary Wing honor guard performs a flag-folding ceremony during a memorial service at Balad AB, Iraq (photo by SrA Andrew Oquendo)

USAF Young Members Attend SAME Conference in "The Big Easy"

Capt Ben Matthews
AFIT/CEM

The 2006 Society of American Military Engineers Joint Engineer Education and Training Conference & Expo was held in New Orleans, La., from May 30 through June 2. More than fifty Air Force members attended the conference; for those who were Young Members, the conference was an opportunity to network and learn.

"Meeting other new Young Members across all branches of the service was very valuable in providing a greater perspective of military engineers and their varying roles," said 2Lt Scott Thomas, a member of the 56th Civil Engineer Squadron at Luke AFB, Ariz.

"The exhibits and technical sessions [on June 1] were great because I got the chance to talk to people from the private sector and get an idea of how that world operates," said 2Lt Tim Scheffler, 43rd CES, Pope AFB, N.C. "It was nice to get such a broad glimpse of new alternatives, practices and innovative technologies that I can take back to my unit and apply on future projects or even in the expeditionary environment—it puts more tools in my toolbox."

At the Honors Ceremony Luncheon several Young Members were presented with awards. Maj Jarrett Purdue, 820th RED HORSE Squadron, won the Sverdup Medal for outstanding contributions to engineering, design and construction by a uniformed service member age 35 or younger. Capt Rick Martin, a U.S. Air Force Academy instructor, won the Bliss Medal for excellence in educating, mentoring and motivating students in architecture, engineering and related disciplines. Capt Pat Miller, an instructor at the Air Force Institute of Technology's Civil Engineer and Services School, received special mention for this award. Capt Tracy Spielmann, a CE with Air Force Space Command, won the Goethals medal for notable contributions in engineering and design in the past five years. Capt Karen Watson from Headquarters United States Air Forces in Europe won the Toulmin Medal for best article in *The Military Engineer* magazine. Air Force Reserve Capt Paul Sutto won the Young Member Medal for outstanding leadership and accomplishments in support of the society.

Maj Gen L. Dean Fox, The Air Force Civil Engineer, gave updates on proposed manning cuts and the potential reorganization of the objective civil engineer squadron at the Air Force "All Hands" meeting. The good news is that Air Force engineers are recognized as a critical element to winning the War on Terror, and proposed enlisted and officer cuts were significantly reduced in recent months. Following that meeting, Young Members attended a mentoring event with SAME Fellows, which gave them an invaluable opportunity to access senior leaders in an informal venue to get advice and discuss topics such as professional development and the CE career field.

The conference culminated with a "Hurricane Katrina" tour of the city—a first-hand technical account of the storm's damage and how the U.S. Army Corps of Engineers responded to the June 1st deadline to prepare for the 2006 Hurricane season. Those on the sold-out tour seemed in complete agreement with the society's president, Rear Admiral Mike Loose, who had opened the conference with the comment, "There isn't a more fitting place to hold our national conference than here in New Orleans."

Capt Ben Matthews is an instructor in the Civil Engineer and Services School, Air Force Institute of Technology, Wright-Patterson AFB, Ohio. He serves as Secretary of SAME's Young Member Council. For more information on becoming a SAME Young Member please contact the author at benjamin.matthews@afit.edu *or DSN 785-5654 x3557.*

Getting "Hooked" on Engineering

Capt Sang Lee
15th CES/CECD
Capt Nadja Turek
AFIT CEV

Seven days to inform, seven days to motivate, and seven days to inspire—60 students, 12 mentors, seven cadets, and a handful of staff members all converged on the grounds of the United States Air Force Academy for an annual experiment called the Society of American Military Engineers engineering and construction camp. High school students and volunteer mentors came from 29 states (including Hawaii) and as far away as Germany, Italy, Korea, and Japan. U.S. Coast Guard Academy and USAFA cadets served as flight leaders.

The camp commenced its seventh class on July 6th in Colorado Springs, Colo., once again challenging young men and women with the camp motto "Build then Design." That may sound backward, but the camp's organizers recognize that, for many people—and especially students—getting practical experience before learning theory provides the best learning experience. All the activities were structured so that attendees built first; for example, they were handed concrete, rebar and forms to construct a concrete beam. Afterward, the beams were tested to failure and the students learned design by discussing with design engineers why the beams held up or failed early.

The students had to work cohesively with peers to creatively solve complex engineering problems as a team; they not only met but often surpassed the camp staff's expectations with their abilities. The winning design for the 17″ balsa wood I-beam held an amazing 126 lbs. of central point load. "That's how much I weigh!" one student exclaimed from the awe-struck crowd.

A student group's wastewater filter design yielded a water sample cleaner than any previously designed by USAFA civil engineering students. The students listened to high-caliber guest speakers and experienced a GPS scavenger hunt, a USAFA tour with a live in-class rocket demonstration, visits to prominent local Architect-Engineering firms, and a tour of Cheyenne Mountain. In addition to the balsa wood beam, student teams constructed and tested a catapult and the now-famous reinforced concrete beam.

The students, many of whom will apply to college this fall, now have a tangible and realistic experience upon which to anchor their decisions about "career" and "field of study." They also gained an accurate portrayal of service academy life from the cadet flight leaders. One of the campers said in a recent e-mail, "Before the camp, I had no idea where I wanted to take my life. Now I am certain where I want to go. I am hooked on engineering!"

Capt Sang Lee is chief of Base Development, Hickam AFB, Hawaii, and Capt Nadja Turek is an instructor of Environmental Management, Air Force Institute of Technology, Wright-Patterson AFB, Ohio. Both served as engineering and construction camp mentors.

Each student flight designed a reinforced concrete beam. Here, Alpha Flight completes the concrete pour for their winning beam, which withstood over 22,000 lbs of loading. (photo by Capt Hans Anker)

Selected for Promotion

Colonel

Lonny P. Baker
Gary D. Chesley
Darren R. Daniels
Lance C. Hafeli
Jeffrey A. Jackson
Richard S. Jarvis
Raymond A. Sable
Terry Watkins
Jerry K. Weldon II
Calvin Williams

Lieutenant Colonel

James R. Beam, Jr.
Aaron K. Benson
Ann M. Birchard
Lamberto M. Braza
Wanda V. Broussard
Paul Cotellesso
Thomas J. Davison
Anthony J. Davit
Daniel J. Gerdes
Monte S. Harner
Dean H. Hartman
Jeffrey L. Heiderscheidt
Hector E. Jamili
Andrew C. Johns
David J. Lawrence
David W. Lawrence
Shawn D. Moore
Christopher A. Pleiman
Michael T. Roth
Mark A. Sloan
John D. Thomas
Marc R. Vandeveer
Christopher J. West
Ida Lee Widmann
Garrick T. Williams
Thomas N. Williams
Stephanie P. Wilson
Aaron A.C. Young

Rufus "Davy" Crockett Passes

Dr. Ronald B. Hartzer
HQ AFCESA/CEBH

Mr. Rufus L. "Davy" Crockett, long-time Air Force civil engineer leader, passed away on August 8, 2006. Following a 34-year career in civil service, he retired in 1975 as Deputy Assistant Secretary of the Air Force for Installations. His federal service began in 1940 with the Corps of Engineers and he transferred to the Air Force in 1954, serving on the Air Staff until 1959. He then made what he considered to be one of his best decisions by leaving the headquarters and going to work at command level with Aerospace Defense Command and Air Force Systems Command. Mr Crockett was deeply involved in the design and construction operations of the Semi-Automatic Ground Environment System, the Distant Early Warning System, and Aircraft Control and Warning Stations across North America as well as the construction of Atlas, Titan and Minuteman missile facilities. In 1962, he returned to the Air Staff to become the Associate Deputy Director for Civil Engineering Operations, Air Force Directorate of Civil Engineering. Mr. Crockett became one of the first civilians in Air Force civil engineering to attend Air War College in residence. In 1969, he was named Associate Director of Civil Engineering, replacing Mr. John Gibbens, and served in that capacity for three years. He then moved up as the Deputy for Installations Management, Office of the Deputy Assistant Secretary of the Air Force (Installations). He culminated his career by serving as Deputy Assistant Secretary of the Air Force for Installations from 1973 to 1975. Following his retirement from civil service, Mr. Crockett worked for a division of Northrop Corporation working on Saudi air base construction.

AFIT

Wright-Patterson AFB OH

Course No.	*Title*	*Start Dates*	*End Dates*	*Reg. Deadline/Comments*
WMGT 101	Introduction to the BCE Organization	22-Jan	09-Feb	Civilians only
WMGT 102	Intro to BCE Organization for Reserve Forces	04-Dec	15-Dec	
WMGT 421 (S)	Contracting for CE	22-Jan	02-Feb	28-Dec
WMGT 423 (S)	Project Programming	04-Dec	15-Dec	09-Nov
WMGT 433	EOD Flight Commanders	26-Feb	02-Mar	
WMGT 484	Reserve Forces Air Base Combat Engineering	04-Dec	15-Dec	
WMGT 570	CE Superintendent	04-Dec	15-Dec	
WMGT 585	Contingency Engineer Command	26-Feb	02-Mar	
WENV 022(S)	Pollution Prevention Program Ops & Mgmt*	04-Dec	07-Dec	09-Nov
WENV 175 (S)	Environmental Mgmt in Deployed Locations	12-Dec	12-Dec	17-Nov
WENV 220 (S)	Unit Environmental Coordinator (S)	22-Jan	26-Jan	28-Dec
WENV 222	Hazardous Materials Management Process		04-Dec	08-Dec
WENV 419	Envir. Planning, Programming and Budgeting	28-Nov	30-Nov	
WENV 521 (S)	Hazardous Waste Management	12-Feb	16-Feb	18-Jan
WENV 531	Air Quality Management*	13-Nov	17-Nov	
WENV 541	Water Quality Management*	22-Jan	26-Jan	
WESS 030 (W)	Industrial Stormwater Management	08-Jan	12-Jan	25-Dec

**ISEERB-approved for all DoD components*

Resident courses are offered at Wright-Patterson AFB, Ohio. Registration begins approximately 90 days in advance. Students should register for CESS courses through the online registration process. Visit the CESS Web site at http://www.afit.edu (under Continuing Education) for satellite (S) and Web (W) classes.

The Air Force Training Record

MSgt Darin J. Yates
HQ AFCESA/CEOI

Over the past several months, many of you have heard and asked about a new program called the Air Force Training Record (AFTR) that will replace the COVER Train system, a client/server application installed at every CE unit. AFTR started last year as an initiative to move from the COVER Train application to a Web-enabled, single-database system that would also incorporate training currently tracked in ACES and other local databases. Initial development and testing for AFTR is complete; data migration from all CE units' COVER Train databases is in process. AFTR launched in October 2006.

Civil engineers will not be the only functional community "going live" with AFTR. We've entered into a partnering agreement with HQ AETC, Security Forces, Weather, and Medical to develop a solution that will support not only Air Force civil engineers but all enlisted AFSCs. These communities, as well as Services, Personnel, and Finance, have seen the potential of AFTR and will mandate its use for their enlisted personnel in the near future. For more information on AFTR, please visit the COVER Train / AFTR Community of Practice at https://afkm.wpafb.af.mil/ASPs/CoP/OpenCoP.asp?Filter=OO-EN-CE-22.

To his dog, every man is Napoleon…

~Aldous Huxley

Lt Col David Piech, 92nd Civil Engineer Squadron Commander, gets a big kiss from his yellow Labrador Retriever, Ming, as he returns from a 4-month deployment to Iraq. Piech came home on May 16, 2006, along with 89 other members of the 92nd Air Refueling Wing. At any time, more than 450 members of Fairchild AFB, Wash., are deployed in support of operations around the world.
(photo by SSgt Laura K. Smith)