Air Force
CIVIL ENGINEER
Volume 13 • No. 2 • 2005

Robots on the job

photo by Mr. Keith Fred

From the Top

As I Hang Up My Uniform...

By the time you read this great publication, I will have retired from the Air Force, closing this chapter of my life. It has been my honor to serve you as the Chief of Enlisted Matters for Civil Engineering; you've made this job so easy for me. I want to take this opportunity to thank each and every one of you: active duty, Guard, Reserve, civilian, and contractor alike.

For over thirty years, I've been part of the CE Family. I continue to be amazed by the drive, determination and dedication of our civil engineers as they go about meeting the demands of the mission, whether at home station or deployed. I've been privileged to observe much of this firsthand during my tenure, and often felt that you sometimes didn't get the credit that you so richly deserve; so please, pat yourselves on the back, and know that our senior leadership does recognize your many contributions.

Our Air Force has evolved considerably since I reported to Lackland AFB in 1975. The education and training available is second to none. My first assignment was direct duty with no tech school and, were it not for a couple of fantastic civilian employees and an NCO who took me under their wings, I would have been left to fend for myself. As I progressed in rank and moved through various assignments, there were few opportunities available for increased education and training. Today, all of our career fields have excellent schools, both for apprentice and advanced levels. The contributions of the staffs and cadres at our technical schools, AFIT, Silver Flag sites, Contingency Training locations and REOTS often go unrecognized. I've been impressed with the quality curriculum that they provide to our Airmen, NCOs, officers, and civilians. They, too, deserve my gratitude. The fact of the matter is, our education and training is so effective, even the United States Army recognizes how good you are.

During my recent visit to Southwest Asia with Maj Gen L. Dean Fox, The Air Force Civil Engineer (who graciously agreed to give me this space), we were told by countless Army commanders that, when the job was "high vis" or they wanted a job done right, the Army calls upon Air Force civil engineers. That's a wonderful testament to the superior efforts each of you puts forth on a daily basis, and shows why my job representing you was so rewarding. I know that you'll continue on the path of excellence and that my successor, CMSgt Wayne Quattrone, will have an equally gratifying experience.

Chief Quattrone comes to the job with a diversified background as a civil engineer. I am confident that he will represent each of you to the utmost of his abilities, and wish him well as I pass on the mantle.

As I depart from active duty, I pray for your continued safety and well-being as you provide world-class engineering support to the greatest Air and Space Force on the globe!

Michael F. Doris
Chief Master Sergeant, USAF
Chief of Enlisted Matters
Office of The Civil Engineer

Air Force Civil Engineer

Volume 13, No. 2, 2005

Air Force Civil Engineer
Volume 13 • No. 02 • 2005
ISSN 1555-8991

Air Force Civil Engineer is published quarterly as a funded newspaper by the Professional Communications staff at the Air Force Civil Engineer Support Agency, Tyndall AFB, Fla. This publication serves the Office of The Civil Engineer, HQ U.S. Air Force, Washington, D.C. Readers may submit articles, photographs and artwork. Suggestions and criticisms are welcomed. All photos are U.S. Air Force, unless otherwise noted. Contents of *Air Force Civil Engineer* are not necessarily the official views of, or endorsed by, the U.S. government, the Department of Defense or the Department of the Air Force. Editorial office: *Air Force Civil Engineer*, AFCESA/PCT, 139 Barnes Drive, Suite 1, Tyndall AFB FL, 32403-5319, Telephone (850) 283-6242, DSN 523-6242, FAX (850) 283-6499, and e-mail: cemag@tyndall.af.mil. All submissions will be edited to conform to standards set forth in Air Force Instruction 35-301 and The Associated Press Stylebook. *Air Force Civil Engineer* is accessible on the Internet from AFCESA's home page: http://www.afcesa.af.mil.

The Civil Engineer
Maj Gen L. Dean Fox

AFCESA Commander
Col Gus G. Elliott, Jr.

Chief, Professional Communications
Dr. Ronald Hartzer

Chief, Public Affairs
MSgt Michael A. Ward

Editor
Teresa Hood

Graphic Designer
Guy Ivie

On the cover: A1C Ronnie Brickey, an EOD apprentice with the 48th CES, Royal Air Force Lakenheath, U.K, operates the MK VI RONS Robotics system, which is deployed for remote investigation, handling, and disposal of explosive materials. (photo by SSgt Tony R. Tolley)

Command Focus Air Force Space Command

Ms. Teresa Hood
Editor

Air Force Space Command is a study in contrasts: large and small; new and old; typical and unusual. To accomplish their mission while embracing all the differing elements, civil engineers at Headquarters AFSPC have deliberately developed an attitude—a "corporate" attitude.

"We're the fourth largest command in terms of plant replacement value, yet our headquarters staff here is about 25–30% smaller than most any other command," said Col Marvin Fisher, AFSPC's Civil Engineer. "But we've taken a corporate approach to how we do business. We've been able to put together our organization and processes in such a way that we get the biggest bang for our buck."

A few years ago, civil engineering at AFSPC was reorganized as a mission support directorate (HQ AFSPC/MSE) with six divisions: programs, environmental, housing, operations, resources and emergency services/expeditionary engineering. There is no deputy CE and no separate engineering division; planning, programming and construction are integrated into the Programs Division, led by Mr. Bryon Bednar.

"With our divisions we are organized around our core competencies—installation engineering, environmental, housing, emergency services and expeditionary engineering," explained Col Fisher. "But we have also organized ourselves so that across all the divisions we look at our five responsibilities as a headquarters staff: policy and guidance; performance evaluation; planning, programming and budgeting; resource allocation; and direct support."

HQ AFSPC/MSE has established five integrated process teams—one for each responsibility. Each IPT has six members—one from every division. "We make sure everything is covered by having representation from each division on a team," said Mr. Bednar, who heads the planning, programming and budgeting IPT.

Large corporations use teams to create synergy and consensus; the IPTs serve the same purpose for HQ AFSPC/MSE. "The five things AFI 38-2002 says headquarters will do are all process-related, so we just developed process teams that all integrate and make a very powerful overall management tool," said Mr. Gary Maher, chief of the Environmental Division. "It makes all of us more effective decision makers, able to understand the overall mission and make trade-offs, especially with resources."

Dynamic corporations often encourage thinking "outside of the box." A board of directors made up of Col Fisher and his division chiefs and senior enlisted advisor oversee the IPTs. "We look at the forest here," explained Col Fisher. "They report to us weekly or bi-weekly to address issues outside of the day-to-day matters."

Successful corporations diligently measure their success against their goals. Mr. Maher heads the Performance Evaluation IPT for HQ AFSPC/MSE. His team develops the annual Performance Plan that defines the command's mission-essential tasks; goals and objectives; and the tools or metrics to measure their successful performance. "It's the old adage of 'what gets measured, gets done,'" said Mr. Maher. "On a fixed periodic basis—sometimes monthly, sometimes quarterly—we measure the field units and ourselves to see how we're doing."

A corporate approach to doing their job helps the CEs at HQ AFSPC adapt to changing mission needs. "Space Command was established in 1982, primarily for the space operations business," said Col Fisher. "And like other commands, we've evolved

over the years." AFSPC has seen the additions of the Space Warfare Center (after DESERT STORM), the ICBM force (1993), and most recently, the space acquisitions component (2001).

The space acquisition business is housed at Los Angeles AFB, Calif., which is the site of one of AFSPC's newest facilities, the Systems Acquisition Management and Support Complex. A good example of "thinking outside the box," the SAMS Complex will be paid for by a land-trade agreement that required special legislation (see "Let's Make a Deal," p. 6).

AFSPC also contains the oldest active military installation in the Air Force—F.E. Warren AFB in Wyoming, one of the three "Northern-Tier" bases housing ICBM wings. "A lot of people think that because we were created in 1982, most of our facilities are 20 years old or younger and they're not," explained Col Fisher. As a result, the command's CEs have to work a spectrum of "age-related" issues: state-of-the-art, seismically safe construction at L.A. AFB vs. environmental concerns over ancient lead-based paint in houses at F.E. Warren.

AFSPC has one of the oldest facilities, and one of the newest. It also has one of the most unusual: Cheyenne Mountain AFS, a fully operational base located inside a mountain. Cheyenne Mountain is one of the four AFSPC bases in Colorado, along with Peterson, Schriever, and Buckley AFBs. At opposite sides of the United States, AFSPC has two satellite launch facilities: Vandenberg AFB, Calif. (polar orbits) and Patrick AFB, Fla. (equatorial orbits). Most of the command's tracking facilities are housed at locations worldwide along the equator. AFSPC's unique mission means that its CEs have traded one typical concern—flightlines—for a different one—power.

"Our utility systems are our flightlines, and satellites and tracking systems are our aircraft," said Col John Medeiros, chief of AFSPC's Operations Division, who also commands the Civil Engineering Flight (the missile engineering flight) at HQ AFSPC. "Their power requirements are critical so, unlike other commands, we have experts on our staff here to help our bases with their [uninterruptible power supply] systems."

The flight makes sure that the resources and the guidance are there for the missile field. "Space Command is not a legacy command, but I do have one legacy—the missile engineering flight. They were a Strategic Air Command squadron, then in Air Combat Command before they came to us," said Col Medeiros. "Our troops do the typical CE work in the missile fields, which cover a lot of ground; the Malmstrom field covers an area the size of West Virginia. We don't handle any real property directly supporting the weapons system—missile maintenance crews do that—but the flight publishes the manuals and technical orders for all the maintenance and has to test all replacement parts to meet hardness requirements."

Civil engineers at HQ AFSPC are in the mission support business. They're a relatively small force that's learned to work "big" to assist their customers in a leading edge industry that covers a vast amount of territory. "We do have a very lean staff, but we're getting a lot of things done," said Col. Fisher. "It's not only because of the corporate culture we've implemented, but also because of our staff—there's nothing more powerful than a group of talented professionals working together."

Colonel Marvin N. Fisher has been The Civil Engineer for Headquarters Air Force Space Command since August 2003. He was commissioned in 1981 after graduation from the U.S. Air Force Academy with a B.S. in Civil Engineering; he has an M.S. in Engineering Management from the Air Force Institute of Technology. Col Fisher has held a variety of positions at the base, major command and air staff levels. From Peterson AFB, Col Fisher oversees all aspect of civil engineering for AFSPC's CE operations and capital investment programs, policies, budgets and guidance for Air Force Space Command's 39,000 personnel at installations and sites worldwide which are valued at over $17B.

"Let's Make a Deal..."

Ms. Teresa Hood
Editor

"Science fiction yesterday, fact today, obsolete tomorrow" was how Otto Binder described many of the space-related ideas and equipment he wrote about in the Captain Marvel comic books. It's an apt description of the nature of space technology, which makes maintaining up-to-date systems a must for Air Force Space Command (AFSPC).

The organization responsible for acquiring AFSPC's new space systems is the Space and Missile Systems Center at Los Angeles AFB, Calif. The SMC is itself in the process of becoming up-to-date—with new, more modern facilities called the Systems Acquisition Management Support (SAMS) Complex. To acquire the new SAMS facilities, the Air Force used an innovative bartering practice—trading government-owned land to a developer in return for new facilities.

"This is the first time the Air Force has ever traded land for new construction," said Mr. Stephen Brey, director of Los Angeles AFB's redevelopment efforts, which has primary management of the project. "It might also be a first for the Department of Defense."

The developer (a joint venture between Kearny Real Estate Company, Morgan Stanley Real Estate and Catellus) will receive 58.7 acres of land (including outdated facilities), most of it in the heart of "Aerospace Alley," the section of El Segundo, Calif., where much of the aerospace industry is located. In return, the Air Force will receive 560,000 sq. ft. of new, seismically safe and more efficient facilities, designed and built by the developer on the remaining 52 acres of the base.

The project was so unique that it required special legislation: FY01 DoD Authorization Act Section 2861, which

Artist's rendering of the SAMS Complex in Area B.
(courtesy Nadel Architects)

was passed in September 2000. "The agreement between the Air Force and the developer was signed on January 23, 2004 by Mr. Nelson Gibbs [Assistant Secretary of the Air Force for Installations, Environment and Logistics], who then delegated authority to manage the project," explained Mr. Bryon Bednar, head of HQ AFSPC's programs division. Because the SAMS project is not funded by military construction, it is being managed by the Air Force, rather than the U.S. Navy or Army Corps of Engineers, who typically manage all MILCON projects.

"This is the first time the Air Force has ever traded land for new construction"

"I think this is one of the most unusual projects in the Air Force—it certainly has been for me, during my career," stated Mr. Pete Cramer, HQ AFSPC's MILCON program manager. "Lt Col Aaron Bridgewater—who has now retired—was assigned as the special projects officer for SAMS in 2000 and he put together a unique team, which included specialists in engineering, legal, contracting, real estate, and environmental, among others," stated Mr. Cramer, who was one of the original team members. "It took all kinds of people to get the project through all the different phases—it's a unique success story."

The land-for-construction deal involved four parcels of land:

Area A of Los Angeles AFB—almost 42 acres in El Segundo, which contained seven buildings (835,000 sq. ft.) in a landscaped setting. (El Segundo has now ceded the land to the city of Hawthorne, Calif. to catalyze residential development in the area.)

Lawndale Annex 3—almost 13 acres in Hawthorne, Calif., which contained one building (30,000 sq. ft.), an RV parking lot, and a softball field.

Sun Valley Property—almost 4 acres in Sun Valley, Calif., which contained a 59,600 sq. ft. industrial facility (former home to the Armed Forces Radio and Television Service).

Area B of Los Angeles AFB—almost 52 acres in El Segundo, which contained base- and SMC-support facilities.

The Air Force will trade the developer the first three parcels of land, which are non-contiguous, for design and construction of three facilities—the two SAMS office buildings and a child development center—on the last parcel, Area B of the base, which the Air Force retained. These two SAMS office buildings, along with a recently built, MILCON-funded 147,000 sq. ft. facility, the Consolidated Base Support Complex, will be sited around a central courtyard and complete the campus. The developer's design for the SAMS Complex won the Honor Award for Concept Design in the 2004 Air Force Design Awards competition.

"The original design has only been tweaked, to include additional security features that became necessary. Construction has already begun on the SAMS Complex, Consolidated Base Support Complex, new entry gates and a new base exchange," said Mr. Brey. Most of the base support facilities were originally on Area A of Los Angeles AFB. "We're essentially moving all base facilities to a reconfigured Area B on the base. The developer also designed and built us a 17,000 sq. ft. child development center in Area B, which we've already opened—groundbreaking to occupancy only took 140 days."

When all construction is finished, the Air Force-developer partnership deal will allow Los Angeles AFB to replace 865,000 sq. ft. of outdated facilities at Area A and Annex 3 with 560,000 sq. ft. of modern, seismically safe facilities at Area B. "In addition to getting more efficient buildings, they're also safer," said Mr. Brey. "Most of our buildings dated to about 1956 on Area A and 1941 on Area B and did not meet current seismic standards, which is important because we're located in what's called 'The Red Zone' for seismic activity."

The land-trade deal has had other benefits as well. "Besides allowing us to dispose of close to 900,000 sq. ft. of substandard buildings, it has allowed us to 'right-size' the base," said Lt Col Sherry Bunch, commander of the 61st Civil Engineering and Logistics Squadron at Los Angeles AFB. "We anticipate saving over $3M a year in [operations and maintenance] costs and we've been able to eliminate requirements for more than $100M in MILCON projects."

Construction on all buildings in the SAMS Complex is expected to be finished by January 2006. Very soon after that, the experts who acquire up-to-date space systems for the Air Force will be accomplishing their mission from their own up-to-date facilities, acquired through a remarkable process. As Donald Trump stated in his book, *The Art of the Deal*, "If you're going to be thinking, you may as well think big."

Above: Layout of Area B after construction. Above right: Artist's rendering of a building in the SAMS Complex. (courtesy Nadel Architects)

RED HORSE Meets Prime BEEF

In early 2005, civil engineers from Air National Guard RED HORSE and active duty Prime BEEF units came together to form an uncommon organization, the 557th Expeditionary RED HORSE Squadron.

Maj Hector Jamili
557th ERHS/DOA

The Guard personnel are members of the 200th RHS, Camp Perry, Ohio, and the 201st RHS, Fort Indiantown Gap, Pa.; both units were activated in late 2004. The active duty personnel are from CE units at eight locations: Beale, Whiteman, Nellis, Davis-Monthan, Hill, Shriever, Vandenberg, and Holloman AFBs.

Combining RED HORSE and Prime BEEF produced a very cohesive team of CEs, with a higher level of skills and greater range of core competencies. Together, we provide a self-sufficient heavy construction capability with assets worth over $27M and several hundred personnel strong.

"We can build, repair, maintain, and at the same time…provide morale, welfare, and recreation activities for our troops," says SMSgt George Flick, Lead Airfields Flight Project Manager, a member of the 201st RHS.

After completing stateside Power Projection Platform training, our newly formed squadron deployed to Southwest Asia. After additional in-theater infantry and convoy protection training was completed, the 557th ERHS left in staggered groups for their ultimate destination.

Despite the arduous travel, we all arrived eager to start our mission. We transitioned with the outgoing unit, the Army's 980th Engineering Battalion, and began work on one of the major construction projects in the AOR: building a heliport to support army helicopters.

The magnitude of the project was 1.7 million sq. ft. of apron worth about $2.8 million. The 980th Engineering Battalion had completed about 60% of the project and the 557th ERHS had responsibility for the final 600K sq. ft.

Our heavy equipment package was delayed for four weeks, so we started the project with what was on-hand when we arrived: two front-end loaders, one excavator, two graders, and a couple of dump trucks. The arrival of our heavy equipment, combined with the squadron's high speed crew members, catapulted our productivity.

We had four skill-specific crews working in unison on the ramp, each deftly completing their task at hand. In total, they set-up 30,000 linear feet of forms, poured 14,000 cubic yards of concrete, installed 1.1M linear feet of reinforcement bars, moved 20,000 cubic yards of earth, and placed 12,000 cubic yards of base materials. "It's awesome to see young Airmen accomplish a project of that magnitude," says TSgt Christopher Pollack, 557th ERHS mat team chief, from Beale AFB, Calif.

SrA Terrell Jackson (left) and SrA Andrew Hikes, 557th ERHS, direct a high-reach concrete pump during the heliport construction project in Southwest Asia. (U.S. Air Force photo)

The 557th ERHS worked amid occasional enemy rocket and mortar attacks. When our supply route was closed because of a car bomb explosion crater, we dispatched our crater repair team and quickly fixed the crater to get our supplies back on track.

Some of our major difficulties concerned cement. At the batch plant we used, operations were out-of-date. Several components at the plant went down a number of times: the aggregate conveying system; the mixer; the hopper chutes; and the electronic console, just to name a few. Aggregates were too

Army's 70th Engineering Battalion launches a bridge to support heavy equipment and concrete trucks. (U.S. Air Force photo)

large and had to be picked by hand. The water system was unreliable. Doing it ourselves became the best solution. We dedicated two people to oversee batch plant operations and closely monitored mix proportions of aggregates and cement; we manually transported thousands of liters of water to the plant.

Our deliveries—of aggregates and cement—were often interrupted or slowed down. The drivers were occasionally attacked and the commercial gates were sometimes closed for security. We coordinated with base defense to take over security at the commercial vehicle search area, and directed the delivery of thousands of truckloads of sand, course aggregates, and cement to the construction site. Needless to say, our infantry and convoy training came in handy.

To add insult to injury, a two-day downpour during the fourth week of the project saturated the soil to a semi-liquid state in some areas, stopping our work in its tracks for four days. Our crews pumped out and diverted 500,000 gallons of rain water. We excavated areas that had already been prepared and filled them with ballast rocks, 7,400 cubic yards altogether. Working with the Army's 70th Engineering Battalion, we launched a 55-ton, 70´ bridge over a rapidly excavated drainage culvert for concrete transit trucks and heavy equipment to drive on. To meet our deadline we added another shift, working days and nights during the last week of the project.

"All in all, the team defeated the odds against them, and finished the project in only seven weeks, two days ahead of schedule and within budget," says 200th RHS member Col H. Dewey Perkins, Commander of the 557th ERHS.

With one major project complete, the 557th ERHS continues their mission as a seamless unit of active duty and Guard CEs. On a recent visit to the AOR, Maj Gen L. Dean Fox, The Air Force Civil Engineer, commented on the unit's work. "I'm extremely impressed with how this squadron blended, Guard and active units combined."

(Editor's note: The 557th ERHS was activated on April 22, 2005, and brought together members of the 200/201 ERHS—see box.)

Maj Jamili, deployed from Beale AFB, Calif., is the Airfields Flight Commander for the 557th ERHS.

On April 22, 2005, the Air Force activated the 557th Expeditionary RED HORSE Squadron, renewing a unit designation from the 1960s. The original 557th RED HORSE Squadron was activated on Feb. 10, 1968, at Eglin AFB, Fla., and sent to Korea later that year. The squadron performed construction work to assist in the American buildup resulting from seizure of the *USS Pueblo*. The 557th was based at Osan, but had active detachments at Kwang-ju, Taegu, Kunsan, Suwon, and Kimpo. During its 18-month stay in Korea, the 557th built aircraft shelters, modular facilities, revetments, and other mission-essential facilities to support the additional U.S. Air Force flying units in country. The 557th left Korea in 1969 and was stationed at Eglin AFB, Fla., until its inactivation on June 1, 1972.

Measuring the Savings

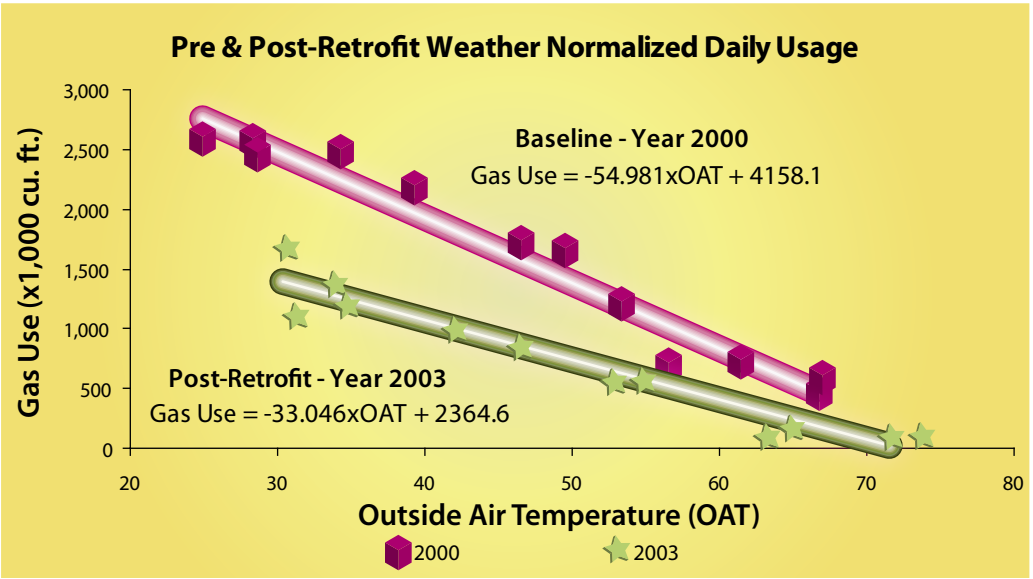
Dr. Charles Culp, P.E.
Texas A&M University

The Air Force has many projects underway that are aimed at meeting one of the goals of Executive Order 13123: to reduce energy use 35% by the year 2010. Fairchild AFB, Wash., contributed to that effort with an Energy Savings Performance Contract (ESPC) project that decentralized their central heating plant (CHP) system.

Because Fairchild AFB is located in the high desert where the climate is much colder than on the desert floor, heating, rather than cooling, consumes the bulk of the energy for climate control. In 2001, an energy services company (ESCO) decommissioned Fairchild's CHP and deactivated the base-wide steam piping and distribution system under a fixed-price ESPC (see *AFCE* Vol. 12, No. 2, p. 16). In its place, the company installed individual boilers in 79 buildings containing a total area of more than 3.2 million sq. ft. Other than gas and electricity costs, the ESCO shouldered all expenses for the boilers, including operations and maintenance, and guaranteed an annual savings of 193,000 MMBtu.

Based on 2000's gas price of $4/MMBtu, Fairchild's gas cost dropped from a baseline of more than $2.1M to just over $1.2M in 2003, a savings of more than $895K. This is almost $125K more than the ESCO guaranteed. With gas prices up to $6/MMBtu in 2004, and expected to continue rising for at least the next ten years, the annual savings will only be greater over time.

Thanks to the guaranteed energy savings, plus the operations and maintenance savings, the total debt for the project will be retired during the term of the task order. Any additional savings due to better-than-guaranteed performance or increases in the cost of energy stay with the US Air Force. And this project doesn't just lower expenses; it also helps to reduce air-polluting emissions. No matter how you look at it, Fairchild AFB made a wise investment.



Daily gas consumption data for the years 1997–2000 provided a baseline for the measurement and verification process. Gas meters installed during the retrofit were read on a monthly basis during 2003 to establish the new consumption levels. The chart shows that Fairchild's gas consumption for heating following the retrofit is nearly half its prior level. (This analysis method inherently corrected for above-normal temperatures in 2003 vs. 2000 so as not to show artificially higher savings.)

Dr. Culp is an associate professor in the Department of Architecture and the associate director of the Energy Systems Laboratory at Texas A&M University, College Station, Texas.

Challenging and Changing

Ms. Linda Geissinger
AFRPA/PA

The Air Force Real Property Agency acquires, manages and disposes of Air Force-controlled property worldwide. Overseeing the agency's 150 personnel and an annual combined environmental and operations budget of $150M is a considerable challenge. The challenge was recently given to Ms. Kathryn "Katie" Halvorson, when she was named AFRPA's director in December 2004.

The civil engineering community has been central to Ms. Halvorson's career—from building comprehensive plans to executing billion-dollar Air Force dormitory and housing programs, all working through multi-skilled teams of civil engineers and housing and resource professionals.

"Before moving to AFRPA as the Deputy Director in 2003, I worked in civil engineering for many years and at many levels," stated Ms. Halvorson. "My connection to the civil engineering community remains strong."

Ms. Halvorson worked at Headquarters United States Air Forces Europe Housing Division at Ramstein AB, Germany and HQ Air Force Civil Engineering Support Agency at Tyndall AFB, Fla. before moving to the HQ United States Air Force Civil Engineer, Housing Division, Pentagon, Washington, D.C. She served in different housing jobs and as Deputy Director before going to AFRPA. The housing programs Ms. Halvorson led touched nearly every member of the Air Force.

Over the past three decades with the Air Force as an airman, reservist and civilian, Ms. Halvorson's career path has put her in challenging and changing situations. In 1974, she started with the Air Force as a Services officer at Malmstrom AFB, Mont., and later at Strategic Air Command headquarters. In 1982, she transferred to Air Force Reserve status, and entered civil service a year later at Ramstein AB, Germany. She retired as a colonel and the top Reserve Individual Mobilization Augmentee to the Director, Air Force Services in 2002.

Her current focus is the transformation of AFRPA to handle a changing mission.

"Since its beginnings in 1991, this agency has taken on new missions and honed the capabilities required to meet the needs of the Air Force," said Ms. Halvorson. "The years ahead will be no different. We are transforming our business processes, investing in our workforce, and reorganizing to meet our mission to maximize return on value of Air Force infrastructure assets, including natural infrastructure and real property."

In 2005, the agency has aggressive goals: to deed to communities or requesting federal agencies more than 10,000 acres and 14 entire bases, as well as standing up a program to help major commands execute enhanced-use leases—a new, innovative tool for underused assets.

"When I came to AFRPA as deputy director, Mr. Al Lowas, former AFRPA director, told me to not worry as much about the technical complexity of real estate transfers and environmental cleanup, but to focus on taking care of the people who are my experts," she said.

It's wise advice for anyone leading a transformational organization like AFRPA.

The Passing of the Torch

compiled by *AFCE* staff

In June 2005, CMSgt Wayne E. Quattrone II became the Chief for Enlisted Matters, Office of The Civil Engineer, Headquarters Air Force. CMSgt Quattrone comes to the position from Headquarters Pacific Air Forces (PACAF), where he was the Civil Engineer Chief Enlisted Manager. He succeeds CMSgt Michael F. Doris, who recently retired from the Air Force after 30 years of service.

From his office at the Pentagon in Washington, D.C., CMSgt Quattrone will advise The Civil Engineer, Maj Gen L. Dean Fox, on matters affecting the civil engineering workforce.

"Like my predecessors, the safety and readiness of our troops will be my most important objectives," said CMSgt Quattrone. "Making combat skills second nature for our troops is crucial in today's turbulent environment. There has been a great initiative to get Combat Skills Training to our deploying troops but it is still a new concept for many. Although we've made incredible advances in training, in some areas we need to go back to the basics. When we make these skills a way of life, we'll no longer have to modify 'Airmen' with adjectives such as 'Battlefield' Airmen or 'Expeditionary Combat' Airmen."

CMSgt Quattrone, who calls Jamestown, N.Y. home, entered the Air Force in 1979 as a Carpenter Specialist; his first unit was the 380th Civil Engineer Squadron, Plattsburgh AFB, N.Y. CMSgt Quattrone has a B.S. in business and management from Maryland University and an M.A. in diplomacy from Norwich University. He is a distinguished graduate of the U.S. Navy's Senior Enlisted Academy, Newport, R.I.

CMSgt Quattrone brings with him a depth and breadth of military and civil engineering experience. "I worked with Chiefs Ken Miller and Rich Park, and for the last two years with Chief Doris, which has given me a good insight into the job," stated CMSgt Quattrone. "I've been fortunate to have held most of the duty positions on the operations side of CE and I've had a good balance of assignments overseas and stateside. That helps me with almost all of our AFSCs."

CMSgt Quattrone has also served as the CE Chief Enlisted Manager (CEM) at the U.S. Air Force Academy and at PACAF, assignments that have augmented his squadron-level CEM experience. "Both were crucial to understanding the corporate Air Force and the education and training process," he said. "Working in-garrison and deployed as a squadron chief gave me a better understanding of the fire, [explosive ordnance disposal] and readiness side of CE and will ultimately be my best guide for the new job. Having been deployed several times over the past 25 years, I understand that each time we go we face different challenges. I won't forget that the Airman that deploys next week may have a better sight picture than someone that deployed two years ago."

CE's new Chief for Enlisted Matters is looking forward to the challenges that come with the job. "I have a great support network and I plan to capitalize on the leadership of the CE community to keep me current on issues as they arise," stated CMSgt Quattrone. "What chief wouldn't want to represent the hardest working group of men and women in the world's greatest Air Force? I've spent my career living by the mantra of 'work hard, play hard.' No one does that better than the Civil Engineers."

Six Months on a Tropical Island

1Lt Megan Poyant
554th RHS/DEE
CMSgt Michael Drumming
778th CES/CEM

Six months on a tropical island… average temperature 85 degrees with 85% humidity, crystal clear water, beautiful reefs and locals eating turtles and fruitbat…sound like a vacation or the next episode of "Survivor"? Actually, it's the Air Force Civic Action Team (CAT) 05-01 deployment to Camp Katuu; this is a PACOM tasking to fulfill U.S. Compact Treaty obligations with the Republic of Palau. Located roughly 900 miles southwest of Guam, with a population of 20,000, this small island chain is known for its warm hospitality, enchanting beaches, breathtaking dive sites and inspiring Rock Islands.

With the 2003 closure of CAT sites in the Federated States of Micronesia, the Republic of Palau has recently become a multi-service operation; the Air Force is currently fulfilling the tasking. The 13-person CAT started their six-month deployment in October 2004, becoming the first Air Force team to set foot in Palau since the conception of CATs over 30 years ago. The mission for this team is far greater than construction alone. It consists of community projects, medical assistance, apprenticeship training, and community relations. The team consists of nine civil engineers, two vehicle mechanics, one supply technician, and one physician assistant. All members were chosen from different bases around the Air Force, coming from as far as Elmendorf Air Force Base, Alaska and Hurlburt Field, Florida.

The team is currently constructing a $300,000, 40´ by 60´ pre-engineered building in the village of Melekeok, 20 miles away from base camp, through dense jungle over poor roads. Funded through a U.S. Pacific Command grant, this is the largest single civic action project to be taken on by a CAT team. Upon completion, it will serve as the only Police and Fire Emergency Substation within 20 miles until the capital is moved to Melekeok.

Apprentice Faz edges the concrete pad around the anchor bolts. (photo by 1Lt Megan Poyant)

Captain Bert Bonner and his replacement, Captain Cameron Clement, both from Misawa AB, Japan, provide routine medical assistance to the local population through the Medical Civic Action Program. Bonner conducts a daily open clinic in the camp and travels to remote locations around Palau, some which can only be reached by boat, to dispense medical care to civilians. The medical program remains a challenge because typical home-base patients are usually fit and have a basic knowledge of proper health care. "The best impact I've had on

Palau during my time here would have [to be] patient education. Almost no one that I've seen has previously been given much information on how to care for himself or herself and to prevent continuation or recurrence of their problems. It has been very rewarding for me to explain to them what is happening and what they can do about it," said Bonner.

Almost every team member has at least one local apprentice to mentor for the deployment. The apprentice program is for one year and allows Palauans to learn a specific trade and become marketable in the local economy. "The difference in language and customs makes working with the apprentices both challenging and rewarding," says TSgt James Pope, lead pavement and equipment specialist from Davis-Monthan AFB, Ariz. "It's frustrating at times, but once you see the look on their faces when they finally grasp what you are trying to explain to them, it makes it all worthwhile."

TSgt Rick Hiltman from Buckley AFB, Colorado, the lone utilities technician, finds the community construction projects very rewarding. "To receive a high five and a simple 'thank you' from a nine-year-old after our team just repaired her school building is a priceless experience," he said.

The CAT has also participated in many community events on the island, including Halloween and Thanksgiving events, triathlons, parades, Santa Claus visits, the Palauan Presidential Inauguration and lots of movies shown with a transportable projector and screen. Some of the events wouldn't have happened if not for the support and generosity of other organizations like the Guam Naval Station Spouses' Club, team members' churches, and members of the 15th Aircraft Maintenance Squadron from Hickam AFB who donated Christmas toys.

These team members are not only skilled technicians, they also represent the only United States military presence on the island, becoming ambassadors to this young nation. The CAT is making a huge impact on the public's perception of the United States from daily interactions with the Palauans, from meetings with the Presidential Chief of Staff to business owners and school children. Ms. Debbie Kingsland, Charge d'Affaires at the U.S. Embassy, said, "The U.S. is truly fortunate to have the Civic Action Teams in Palau. The teams truly act as goodwill ambassadors for the United States. Palauan officials have often expressed their thanks for the important contribution the CAT is making here, a sentiment I share wholeheartedly."

When they first arrived, the Air Force had a hard time accepting being called "Seabees" everywhere they went, but it was understandable since the Navy had served here for so many years. A few months on the island changed that, though. Now when team members travel on the island, they get "Air Force is #1" from passersby.

As a first lieutenant, Capt Poyant, now a project manager with the 31st CES at Aviano AB, Italy, deployed as OIC for CAT–Palau from the 554th RHS at Osan AB, Korea. CMSgt Drumming is the Chief Enlisted Manager, 778th CES, Robins AFB, Ga. He deployed as Assistant OIC for CAT–Palau.

SSgt Johnson secures a mezzanine floor beam for the Police and Fire Emergency Substation. (photo by 1Lt Megan Poyant)

Avoid "Shock-Value" Situations

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

One million joules of energy is released, rocketing the air temperature past 30,000°F, splattering vaporized metal through the air like shrapnel, and emitting high-intensity UV and X-ray radiation. It isn't a nuclear blast; it's an electrical arc flash, created when conductive objects such as wires or tools get too close to a high-amperage source. The associated pressure wave can damage hearing and knock workers off ladders. The flash can damage eyesight.

In 2004, the electrical career field experienced nine on-duty mishaps. Two military electricians died, and seven others, both military and civilian, were injured while working on energized equipment. A subsequent IPT revealed six common causes (see sidebar).

Top Six Causes of Last Year's Mishaps

- **Failure to test for voltage**
- **Failure to ground circuits/equipment**
- **Failure to follow lock-out/tag-out procedures**
- **Failure to use appropriate technical orders (T.O.s)**
- **Failure to wear proper personal protective equipment (PPE)**
- **Failure to seek supervisory assistance when performing tasks above expertise level**

Establishing an electrically safe work environment is imperative, and it's simple: ensure that work is accomplished only on de-energized conductors or circuit parts that have been properly and safely isolated. Unfortunately, many electricians believe that de-energizing circuits isn't necessary, is too difficult to coordinate, or will jeopardize the mission. Many also believe that low-voltage circuits don't need to be de-energized, but exposure to as little as 50 volts could be fatal; exposure to anything over 240 volts has a high probability of being fatal.

Crew leaders and supervisors at all levels must ensure that all personnel adhere to these basic procedures:

1. Determine all possible sources of electrical supply. Don't look only at the obvious incoming feeders, but also at alternate sources of supply to the circuit, i.e. generators, tie breakers or other circuit switches.
2. Properly open all disconnecting means for each source. Operate disconnects, turn off switches or circuit breakers, or remove components from the circuit.
3 Apply lock-out/tag-out devices and keep the keys. Make sure that no one can bypass the locking devices and energize the circuit.
4. Verify that all circuit parts are de-energized; visually ensure that blades of disconnecting devices are not making contact. Ensure that circuits are "dead" by testing them with a working, adequately rated voltage meter. Check all meters and testing devices before and after each use to make sure they work correctly.
5. Ground all isolated and de-energized phase conductors or circuit parts before touching them. Don't ignore this step! It's the only way to make sure any stray voltages or currents are passed to ground.
6. Follow established procedures outlined in any equipment T.O.s. Do not take shortcuts or second guess procedural guidance.

Although it may be necessary to troubleshoot and/or test energized equipment, performing any work on energized conductors or circuit parts is *prohibited* except in rare circumstances. Even then, it should be accomplished with extreme caution. These basic energized work procedures must be reviewed with and followed by all personnel:

1. The base civil engineer must approve live work in advance. Justification is required for any work performed on energized equipment or conductors.
2. Two-person teams must be used for all work.
3. A qualified supervisor must be consulted and must approve any plan to work on energized equipment, as well as ensure that all workers use proper PPE.

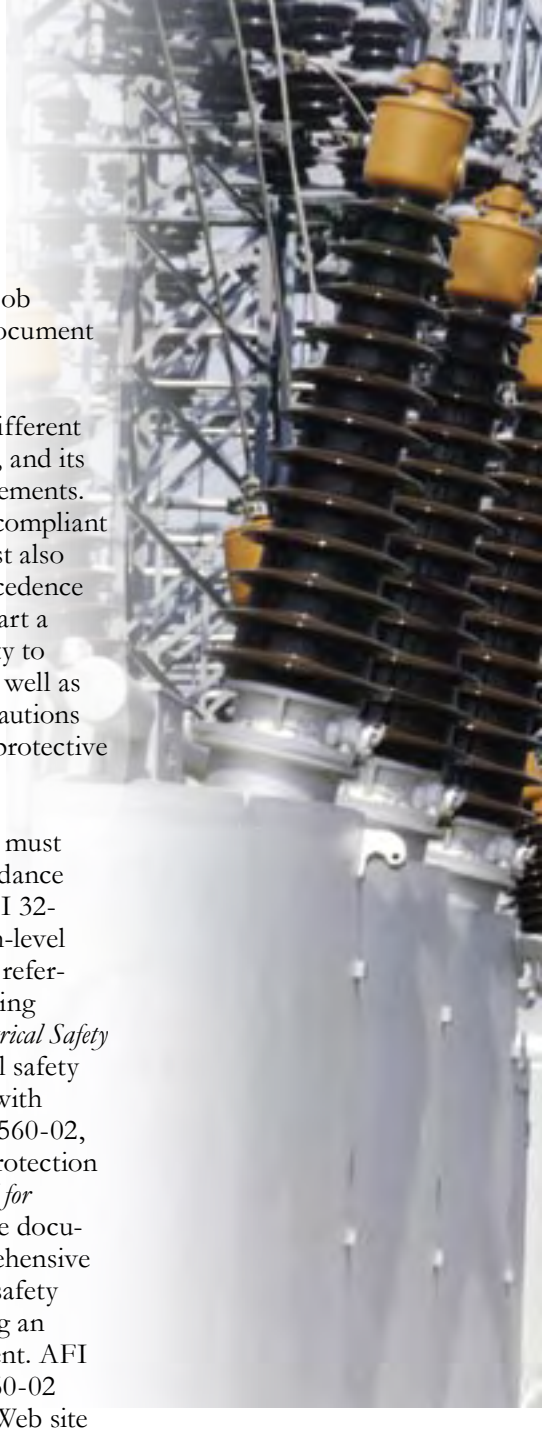
4. An Energized Work Permit or authorization must be prepared in advance and, as a minimum, include the following:
    a. Description of work and location. Workers should know where they're working and what they have to do.
    b. Description of work practices to be followed. A qualified supervisor must discuss with each worker all aspects of the task to be performed. An open and clear dialogue between supervisors and workers will help eliminate ambiguities while covering most contingencies.
    c. Electrical shock hazard analysis and working boundary determination. This analysis shall determine the voltage to which workers will be exposed, safe boundary distances, and the PPE necessary to minimize the possibility of electrical shock.
    d. Arc flash hazard analysis and flash boundary determination. This analysis shall be done to protect workers from the possibility of being injured by an arcing flash. This analysis determines the flash protection boundary, which is the approach limit distance from exposed live parts from which a worker could receive a second-degree burn if an electrical arc flash occurred, and the PPE that workers should wear when working within this boundary.
    e. Necessary PPE to safely perform the task. Supervisors must determine the task hazard/risk category and appropriate level of PPE that the workers must use, and then ensure that workers use it.
    f. Means to restrict access of unqualified persons in the work area. Barriers, marking tapes, or other means must be used to keep unqualified personnel from entering limited, restricted, and prohibited approach boundaries.
    g. Evidence of completing the job briefing. Supervisors must document all energized work briefings.

Supervisors must be aware of the different types of PPE for all electrical work, and its inspection and serviceability requirements. They must promote a positive and compliant attitude regarding its use. They must also emphasize that job safety takes precedence and workers cannot be rushed to start a task. Workers have the responsibility to know how and when to use PPE as well as its limitations and other safety precautions associated with each piece of their protective equipment.

Both supervisors and workers alike must be aware of the regulations and guidance associated with electrical safety. AFI 32-1064, *Electrical Safe Practices*, is a high-level document providing standards and references for electrical safety. Engineering Technical Letter (ETL) 04-15, *Electrical Safety Guidance*, provides detailed electrical safety guidance and requires compliance with Unified Facilities Criteria (UFC) 3-560-02, *Electrical Safety*, and National Fire Protection Association (NFPA) 70-E, *Standard for Electrical Safety in the Workplace*. These documents collectively provide a comprehensive knowledge source for all electrical safety issues, and guidance for establishing an electrically safe working environment. AFI 32-1064, ETL 04-15, and UFC 3-560-02 are available on the HQ AFCESA Web site (http://www.afcesa.af.mil) and HQ AFCESA is available to interpret.

Electrical safety requires both a positive and safety compliant attitude. It's not always about being easy, fast or embarrassed about wearing PPE or following T.O.s; it's about doing the right thing while complying with all equipment and safety guidance to keep yourself and fellow workers from getting injured or killed. Be safe to stay alive!

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



Transformers in Jamesboro, Ark., switchyard. (photo courtesy DOE)

"Mechanical" Engineers

They're never in uniform, and they can't pass a physical fitness test, but no one's complaining. Quite the opposite; they're a welcome part of the team.

Robots are becoming more and more commonplace in the military, from unmanned aircraft to "Bombots." Although they're not cheap, robots are less expensive than human lives. These two pages show just a few of the robots used by Air Force engineers; the front cover displays the MK VI Remote Ordnance Neutralization System (RONS) robot used by EOD technicians.

Size does matter; and sometimes smaller is better. Although these photos are not to scale, the Bombot (left) is a lot smaller than the ARTS robot (right). EOD technicians use the Bombot to countercharge improvised explosive devices; when possible, it drops off the charge, but sometimes the Bombot is 'sacrificed.' ARTS stands for All-Purpose Remote Transport System. Depending on the attachments, it can be used for everything from clearing buried ordnance and minefields to disrupting munitions at a distance. *(U.S. Air Force photos)*

The R-Max. The R-Max is a small, rotary-wing, unmanned aerial vehicle (UAV) that is part of both the UAV-UGV Cooperative Development program and the Remote-Controlled Aerial Vehicle for Application of Pesticides program. It's used for such tasks as aerial imagery, communication relay, and aerial spraying. *(U.S. Air Force photo)*

The Pacbot. This joint service-developed Pacbot is on the job in Iraq, returning to its operators after placing a block of C4 on top of an improvised explosive device found by the Iraqi police. The operators use the onboard cameras to get the Pacbot to its target and position its mechanical arm. *(photo by JO1 Jeremy L. Wood)*

The MACV. The Danish-built Hydrema is a robotized mine area clearance vehicle that uses flailing chains to set off subsurface mines or UXO. Air Force CEs use it to safely and rapidly clear beddown and airfield operations areas. *(U.S. Air Force photo)*

The Talon. Like the Pacbot shown above, the Talon is a man-transportable robotic system (MTRS). Its smaller size means it's easier to load and deploy than the larger robotic systems. The antenna on the tripod behind the Talon provides the communication link between the robot and the operator, SrA Chris Johnson. He's preparing to deploy the robot with an explosive charge carried in its gripper claw. *(photo by SrA Colleen Wronek)*

The Air Force Civil Engineer Tours SWA

SrA Karah Manning
379 AEW/PA

After viewing construction sites around Southwest Asia in late March, the Air Force's top civil engineer had one message to tell the civil engineering Airmen deployed here: "The quality of what [you Airmen] are doing is off the charts."

During his AOR-wide tour, Maj Gen L. Dean Fox assessed the morale and capabilities of the Airmen deployed theater-wide in the 14 different specialties inside the CE career field. He also toured various construction sites here at the Air Force CE hub.

Maj Gen Fox met with members of the 376th ECES during his tour of Southwest Asia. (photo by 1Lt Edgar Jimenez)

He emphasized the importance of the work his Airmen are doing during a CE troop call March 25.

"What you're doing over here is extremely important," the general said. "What you're doing is not just improving [this base] or supporting the whole AOR by providing equipment and training to others in the AOR; you're helping fight a war for your country and the countries in this region."

Maj Gen Fox also outlined how the CE career field has transitioned since the Global War on Terrorism began. CE Airmen are deploying for six-month rotations outside of the normal Air and Space Expeditionary Force cycles and are also filling 855 positions for the Army.

These Airmen are now receiving combat skills training, as well, to ensure that they can open, sustain and operate a base inside the base limits, but also so they can use those combat skills outside a base's perimeter, the general said. Armed with their new skills, working side-by-side with their Army counterparts, CE Airmen are impressing Army officers around the theater.

"I've met with a number of senior officers in the Army and their comments are that our training programs are extremely effective," Maj Gen Fox said. "Our [Airmen show that] the hustle is there, the dedication is there, the pride is there and the training is there."

The general also painted a picture of the impact civil engineers are having in the region.

"A lot of people don't realize that Air Force engineers have done more than a billion dollars worth of construction in Iraq to rebuild that country," he said. "[Our engineers] have rebuilt schools, clinics, Iraqi military installations to retrain their military and have rebuilt the Iraqi Ministry of Defense from the ground up."

The general also relayed to the Airmen a conversation he had with Col Greg Feest, 379th Air Expeditionary Wing commander.

"Col Feest asked what I'd seen [during the week and half trip through the AOR]. We've seen that our troops are awesome. It makes you proud to be Air Force; it makes you proud to be an American. Our troops are just doing a fantastic job."

Maj Gen Fox reminded the Airmen how important they are to the mission, the country and freedom.

"We don't take the time often enough to tell you that you're heroes," the general said. "You're helping to rebuild the region, build trust in the region and foster democracy in the region."

CEs Ready to Snag an Eagle

SSgt William Farrow
386th AEW/PA

The Airmen of the 386th Expeditionary Civil Engineer Squadron power production flight ensure there is plenty of electricity to power facilities here. However, during emergency landings, they provide the lifeline to help a pilot to walk away from a scary situation.

The mobile aircraft arresting system is a rotary friction energy absorber consisting of two identical 17,700-pound units installed on each side of the runway. The system is designed around a flat, 8½″ wide nylon tape attached to a 1¼″ thick, 185′ long steel cable. It stops an aircraft by engaging the aircraft's arresting hook with a cable stretched across the runway. The nylon tapes and rotary friction brakes absorb the energy of the aircraft.

"To explain the system in nontechnical language, just think of a one-way slingshot. However, when you pull back on the elastic strap of this slingshot, the strap doesn't return until it's reeled in by a gasoline engine," said TSgt Brian Holes, power production flight chief.

TSgt Holes said that since this base is a site for some fighter aircraft to divert to, the base has a requirement to have the system installed on its runway.

Any fighter aircraft with emergency problems such as hydraulic failure or electrical problems will use the system, he said. If a pilot thinks he or she needs it, CEs deploy the system.

According to TSgt Holes, "We are the mechanics of CE; we work on the power production units and as electricians and mechanics, so we are the people seen most fit to maintain and operate [the system]."

With each unit costing more than $480,000, it's relatively inexpensive compared to other military equipment; however, that doesn't prevent the Airmen from treating the system as if it were made of gold.

"The system can save a pilot's life, so we're always inspecting and servicing the unit to make sure it's in top mechanical condition," TSgt Holes said.

Upon notification that the system is needed, the flight's Airmen immediately go to the site and get ready to recover a jet.

"The first 10 minutes of set-up [are] pretty hectic... [T]he adrenaline really flows when the jet comes in to grab the cable, and when the hook grabs the cable and the aircraft comes to a slow stop, there is a big sigh of relief," TSgt Holes said.

After a recent hydraulic pump change, the system needed an aircraft to provide the necessary certification. They were in luck; a visiting F-15 obliged the power-pro flight, dropped its arresting hook and taxied down the runway at 120 mph to engage the cable.

TSgt Brian Holes cranks the engine on a mobile aircraft arresting system in preparation for post-repair certification. (photo by the author)

"[The system] worked great," said SSgt Dewanye Moody, a power-production flight technician who helped change the pump. He said it worked like it was supposed to, but he hopes they will not need it.

After spending an enlistment in the Navy as a medic, SSgt Moody has a great appreciation for the system similar to the one that catches jets on aircraft carriers.

"When I was in the Navy, I was often a passenger on aircraft that depended on an arresting system to stop, so I can especially understand how a pilot experiencing problems with his aircraft feels when our system works and brings him to a slow stop," he said.

Home from the Front

Ask any Airman—or any Airman's family—and they'll probably tell you that the best part of a deployment is coming home again. Clockwise from right: SSgt Litojay Apalisok, 305th CES, kisses his daughter hello. (photo by Ms. Denise Gould) *SrA Harold Muniz-Ruiz, 52nd CES, holds his daughter.* (photo by A1C Joshua Coleman) *A hug from his son is just what TSgt Douglas Hoy, 193rd CES, Pennsylvania Air National Guard, wanted when he got off the plane.* (photo by TSgt Jeffrey P. Snyder) *His wife and daughter welcome SSgt Jerry Roberts, 305th CES.* (photo by Ms. Denise Gould)

Airman Designs New EOD Vehicle

2Lt Ashley Conner
22nd ARW/PA

Not everyone can say that their employer built them a custom vehicle to their own specifications. That makes SSgt Phillip Hauser, an explosive ordnance disposal (EOD) technician with the 22nd Civil Engineer Squadron, McConnell AFB, Kan., somewhat unique.

He sketched his original design for a new kind of EOD vehicle on the back of a napkin. Air Force officials have since purchased more than 30 of the $274,000 vehicles that serve as an Air Force benchmark.

SSgt Hauser worked with the vehicle's manufacturer to ensure the smallest details were in place.

In the old vehicles, "there was never enough room for all the equipment. The new vehicle has much more space for equipment and room to work in," SSgt Hauser said.

"It is more efficient and professional," said SSgt Jeff Schrader, another squadron EOD technician. "In the past we would show up on the scene in a multipurpose van and our gear was held together with bungee cords and rubber bands. It was like a clown car."

The 38,000-pound truck runs on an 8-cylinder Mercedes-Benz engine and is equipped with doors on either side to allow an EOD robot to easily exit. The new design also features closed-in quartz lights strategically placed in the side of the vehicle, four halogen lights atop the truck and a light tower that extends 25´.

"In the past we would be sitting in the dark in the middle of nowhere with a little [flashlight] trying to see what we were doing," SSgt Hauser said. "After 10 years of being an EOD tech, I knew what needed to be changed."

The truck also is equipped with automatic tire chains and a lined explosive compartment, as well as TV and infrared cameras that can project images to screens inside the truck.

SSgt Hauser said he helped with every detail of the vehicle, with insight from the Orlando Bomb Squad. They had a similar vehicle made and "they were able to give us advice and tell us what worked and what didn't."

SSgt Phillip Hauser stands next to the custom EOD vehicle that he designed. The Air Force has purchased 30 of the $274,000 vehicles. (photo by author)

Closing the Gaps at Bagram

Capt Catie Hague
455th AEW/PA

Major repairs to the 9,800-foot runway at Bagram AB began at the end of March to maintain operations in and out of the busiest airfield in Afghanistan.

The runway was built by Soviet workers in the 1950s. Airmen of the 455th Expeditionary Civil Engineer Squadron said they plan to spend 16 weeks replacing 28 shattered slabs of concrete using precast concrete—a runway repair method the CEs believe was last used by the Air Force in Germany in the 1970s.

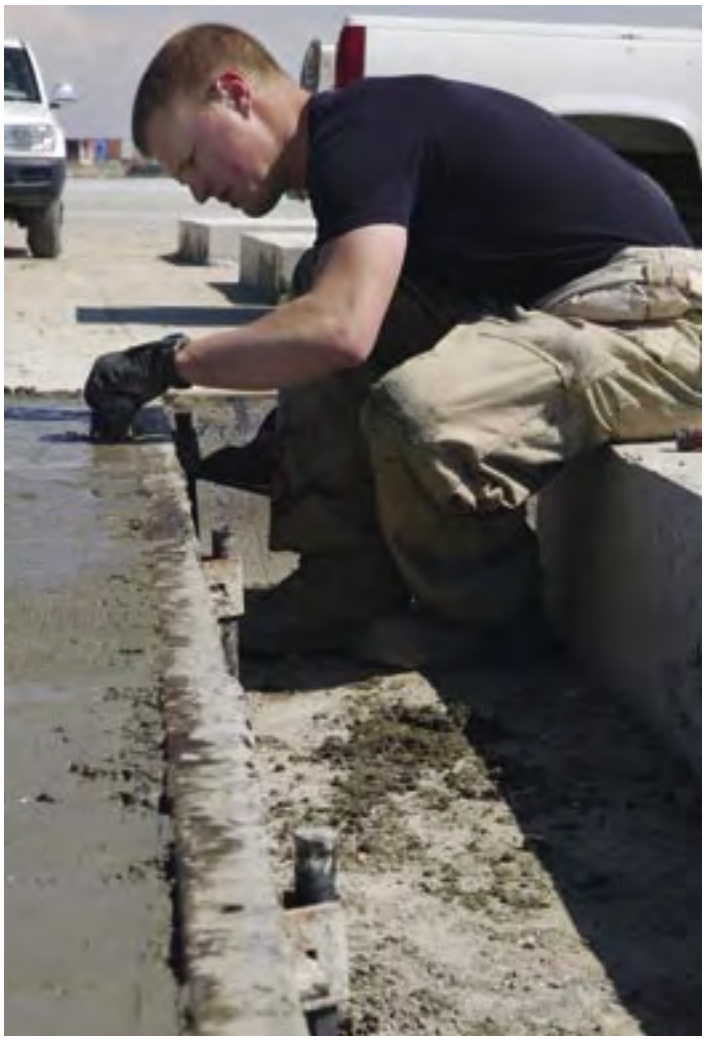
"Severe damage due to airfield operations and limited runway maintenance forced us to look for an immediate solution," said Maj Bobbie Moore, the squadron's commander. The answer was precast concrete—concrete poured and cured in an alternate location, away from the runway, and put into place when ready. Because the concrete takes 21 days to cure, "precasting was the only real option." Mission requirements prevent shutting down the runway for any extended period.

By March 10, all 28 slabs had been poured. They are now in the process of curing. Each slab is 12'x13'x1' and weighs about 23,400 pounds, officials said.

The plan is to remove the damaged concrete on the runway just before placing the new slabs. A flat-bed truck will bring the slabs to the flightline, and a 120-ton crane will lift and position them into place. The runway will be useable as soon as the slabs are sealed and will keep Bagram's flightline operational until a new runway is complete in 2006.

"This is the most critical repair project done on [Bagram] to date," said Col Rita Meyer, 455th Expeditionary Mission Support Group commander. "The current mission can't continue, even in the short-term, without full-slab replacement and extensive [crack] repair. While various repairs have been conducted on the airfield over the past three years, those repairs have not been enough to turn the overall condition of the airfield around. In fact, the structural capacity of the airfield has continued to deteriorate."

"Huge chunks of concrete have come loose and pose a risk to our aircraft and continued operations," said Col Warren Henderson, 455th Expeditionary Group commander. "This situation required immediate attention."



SrA Joel Parney finishes the concrete on one of the 28 precast runway replacement slabs that will be used to repair the 9,800-foot runway at Bagram AB, Afghanistan. (photo by the author)

Keeping It Smooth

Whether from natural disaster or an enemy attack, when a runway is damaged, a dedicated team of civil engineers rapidly spring into action from Eglin AFB, Fla.

Known as an airfield damage repair team, the group comprises a crater team, a mat team, an airfield lighting team and a mobile aircraft arresting system (MAAS) team.

SSgt Charles Cahoon is a pavement and construction equipment operator with the 796th Civil Engineer Squadron. He said the 15-person crater team works mainly with heavy equipment.

MSgt Kevin Donovan, team chief, said his team uses a combined day and night shift to get the job done. They can get the craters filled in one hour and 58 minutes, 10 minutes off the Air Force record. "One hour [and] 47 minutes is our goal," MSgt Donovan said.

SSgt William Cross, a 796th CES heating and air conditioning craftsman, is part of the nine-person mat team that lays out a protective cover once the craters are filled. The mat is carried on a tractor-trailer, and the Airmen use a forklift to unload it and drag it into place. "[It] is folded fiberglass, 60-by-45 feet," SSgt Cross said. "It comes in two pieces and is anchored into the runway with bushings."

MSgt Kevin Hedman, a 796th CES electrical section chief with 18 years experience in high voltage, heads the airfield lighting team. The lighting system uses six trailers with 30-kilowatt generators, enough to light a 10,000´ runway with a strobe and approach lights.

It takes 20,000´ of cable to get the job done; the Airmen finished in one hour and 15 minutes while wearing their chemical-protective gear. "Without it, we could do it in 27 minutes," MSgt Hedman said.

SSgt Joseph Rogers, an electric power production craftsman, works on the six-man MAAS team. They install aircraft barriers that allow battle-damaged planes to land safely. "[The aircraft] drop the tailhook, and it slows them down," SSgt Rogers said. The most difficult part of his job: the physical demand of using a jackhammer to install 19 4-foot stakes into each side to anchor the system.

According to MSgt Donovan, the engineer assistants are critical to getting the job done. "They plot what part of the runway we use... what craters to fill," he said. "They determine the minimum operating strip needed for planes to land."

"This team has made great strides to show their determination in getting the job done," said Col Tim Gaffney, 96th CEG commander. "They demonstrate amazing teamwork, which is critical to ensuring a safe runway environment for the pilots."

Ms. Lois Walsh
96th ABW/PA

SSgt Charles Cahoon (left) and MSgt Kevin Donovan, both with the 796th CES, remove debris from a damaged runway before making repairs during an exercise. SSgt Cahoon is a pavement and construction equipment operator, and MSgt Donovan is the ADR team chief. (photo by Ms. Michelle Williams)

Air Force Reaches Privatization Milestone

SSgt C. Todd Lopez
Air Force Print News

In February, the Air Force surpassed the 10,000-home milestone in its military family housing privatization program when Air Force officials closed a deal privatizing more than 1,300 homes at Hickam AFB, Hawaii.

The privatization deal at Hickam is the 13th the Air Force has entered into. The first was at Lackland AFB, Texas, in August 1998, for about 420 homes. Today, those homes have a 96.6 percent occupancy rate.

Following Lackland, deals closed at Robins AFB, Ga.; Dyess AFB, Texas; and Elmendorf AFB, Alaska. Construction at all four of the bases is now complete, creating more than 2,300 new or renovated homes for Air Force families. Families living in those homes appear to like where they live, according to Col Bob Griffin, Air Force housing division chief. "We survey our customers on a quarterly basis," he said. "For Lackland, Robins, Dyess and Elmendorf, we see very good customer satisfaction."

Before the Air Force privatizes any housing, it first calculates needs based on mission requirements and manning projections. Over the next four years, service officials plan to reduce the Air Force's worldwide housing inventory of more than 107,000 to about 86,000, about 60,000 of them in the United States. The homes will be a mix of local community housing, privatized houses and traditional military construction. Officials expect that nearly three-quarters of stateside homes—about 45,500 units—will be privatized by the end of 2009.

Privatization means the Air Force lets private developers take ownership of military family housing on installations. The Air Force owns the land, but developers will own the homes, maintaining and upgrading them. Airmen who live in privatized base homes will collect basic allowance for housing, the same as those who live off base. They'll pay the allowance to the developer in the form of rent, which pays for the developers' costs. The rent will be set so that, along with average utility costs, the Airman's allowance will safely cover it.

"Privatization will allow us to leverage dollars we have in the program in order to provide more quality housing faster," Col Griffin said. "If we were trying to fix our inventory through traditional military construction and maintenance, we would need about $5.6 billion to achieve our goals."

While each deal is unique, across the program the developers have provided $9 for every Air Force dollar spent, providing Airmen with newer, better homes. When developers submit proposals on the project, they let Air Force officials know what upgrades will cost. Oftentimes, the contractor offers more than what the Air Force is asking for, but at a lower price.

Some of those enhancements include new homes versus renovations, lawn care at no charge to the resident, community centers, swimming pools, basketball courts, walking trails and parks. Col Griffin said, "[Developers] provide the house we ask for, or more, and also add in more things because they are trying to build a community and get people to move in."

Because developers enter into 50-year privatization deals with their own money, the best way for them to recoup their investment is to ensure the homes remain attractive to military families. "We do not guarantee the property manager a tenant," Col Griffin said. "It is up to them to [market] their houses alongside any other commercially available house out there to Airmen and their families."

If a developer is not attracting tenants into housing for other reasons, such as a change in mission at a particular base, Air Force officials will allow them to broaden the pool of potential tenants. Col Griffin explained, "The Air Force allows developers to rent to other groups through a process called a 'waterfall.' When there is a shortage of active-duty Airmen to rent the homes, developers may fill empty housing units with reservists, Air National Guardsmen, government civilians or military retirees."

Native Americans Receive More Houses from Air Force

Capt Michael Meridith
319th ARW/PA

Base officials at Grand Forks AFB, N.D. plan to donate more than 20 housing units to Native Americans in North Dakota this summer as part of the decade-old Operation Walking Shield program.

So far, more than 460 excess housing units at Grand Forks AFB have been donated to 11 tribes in North Dakota, South Dakota and Minnesota.

Current plans call for the donation of eight duplexes and four single-family homes to North Dakota's Turtle Mountain and Fort Berthold reservations between early June and mid-July. The houses average 1,300 square feet and have three or four bedrooms. Base officials said they plan to donate more houses in the near future.

Mr. Chris Powell, Housing Flight Chief for the 319 Civil Engineer Squadron, who leads the base's Walking Shield efforts, said the introduction of new Air Force size standards would have meant costly upgrades to existing housing. He said it became more economical to build new homes. This provided the opportunity to offer existing ones to Walking Shield.

"We're able to help the Native American community with houses that are in very good condition, while at the same time saving taxpayer money," Mr. Powell said. "And avoiding demolition means we don't add to area landfills."

Operation Walking Shield, established in 1994, is a collaborative effort between 35 tribes and seven government agencies, including the Department of Defense. Its primary aim is to improve the quality of life for American Indian tribes through infrastructure development, community development, medical and dental care, and humanitarian aid.

"We're grateful to have an opportunity to help improve the quality of life of the Native American community, while at the same time maintain a history of good stewardship of the environment and tax dollars," said Mr. Powell.

Upper left: One of the houses donated to Native Americans. Left: A tract of simlar housing units at Grand Forks AFB, N.D. (U.S. Air Force photos)

RED HORSE 40th Anniversary

The RED HORSE Association will commemorate the 40th anniversary of RED HORSE with a gathering from October 16–19, 2005, at the Ramada Plaza Beach Resort in Fort Walton Beach, Fla. Maj Gen L. Dean Fox, The Air Force Civil Engineer, will be the guest speaker. The association is open to all active duty, Guard, Reserve, retired and veteran RED HORSE or Prime BEEF members. For more information, send a message to: editor@redhorseassociation.org

Brig Gen Eulberg Nominated for 2nd Star

As announced on May 1, 2005, Brig Gen Delwyn R. Eulberg has been nominated by President George W. Bush to the U.S. Senate for appointment to the grade of major general, U.S. Air Force. Brig Gen Eulberg is the Director of Installations and Mission Support, Headquarters Air Mobility Command, Scott AFB, Ill.

CE Wins GEICO Award

A CE was one of six recipients of the annual Government Employees Insurance Company (GEICO) Military Service Awards.

SMSgt Charles Funkhouser of the 374th Fire Protection Squadron, Yokata AB, Japan, won the award for his efforts related to fire prevention and safety. While stationed at Beale AFB, Calif., he installed more than 200 smoke detectors in one day. He also trained hundred of local firefighters and is credited with developing a sophisticated fire and rescue training simulator.

Moore Wins 2004 Orr Award

photo by Mr. Keith Fred

Mr. Robert M. Moore recently won the 2004 Ronald L. Orr Award, which honors a civilian who improves business processes and organizational efficiency for Headquarters Air Force. As the Program Management Branch Chief, Housing Division, The Office of the Civil Engineer, Washington, D.C., Mr. Moore oversees construction and privatization efforts worth more than $9.2B.

Key Personnel Changes

Brig Gen Patrick A. Burns, The Civil Engineer, Headquarters Air Combat Command, Langley AFB, Va., will retire, effective October 1, 2005, completing a 30-year career in the Air Force. Before becoming ACC's Civil Engineer in February 2001, Brig Gen Burns was The Civil Engineer for Pacific Air Forces.

Col Hal Tinsley is the new chief of the Readiness and Installation Support Division, Office of the Civil Engineer, Headquarters United States Air Force, Washington, D.C., replacing Col Neil Kanno, who retired in July.

Col Leonard A. Patrick is now The Civil Engineer, Headquarters Air Education and Training Command, Randolph AFB, Texas, replacing Col David F. Bird, Jr. who is the new Director of Staff for HQ AETC. Col Patrick was previously Deputy Director of Operations for Technical Training, HQ AETC.

Mr. Brian J. Lally, currently Executive Director, Headquarters Air Force Civil Engineer Support Agency, Tyndall AFB, Fla., will leave that position in July 2005 to attend the Harvard University John F. Kennedy School of Government, Cambridge, Mass., as part of the Master in Publica Administration program.

Also at HQ AFCESA…

Col Thomas D. Quasney is the new Director, Contingency Support, replacing Col Jeffrey L. Leptrone, who has retired. Col Quasney moves to Tyndall from Nellis AFB, Nev., where he was the commander of the 820th RED HORSE Squadron.

Col Paul W. (Wes) Somers is now the Director, Operations Support, replacing Col York D. Thorpe, who recently retired. Col Somers was formerly the Deputy Command Civil Engineer, HQ Air Force Materiel Command, Wright-Patterson AFB, Ohio.

Col Leslie C. (Les) Martin will become the Director, Engineering Support, replacing Col Josuelito Worrell, who is Director, Construction Management Office, at a U.S. Central Command forward location.

Mr. Gary Tyree, formerly the Director, Field Support, is now the CEMIRT Regional Manager, Travis AFB, Calif.

A Reader Offers Clarification

Col Chuck Smiley, an 823rd RED HORSE alumnus (DE and DO, 1989–1993) sent us a letter, praising an article in the last issue, "RED HORSE Rides 'Round the Horn," written by Capt Scott Stanford. Col Smiley pointed out that Capt Stanford's list of 'firsts' for the 823rd RHS wasn't quite correct. That list included being in Djibouti, Ethiopia or Kenya for the first time.

According to Col Smiley, "the 823rd's first time in Kenya actually occurred in the Fall of 1992 during Operation PROVIDE RELIEF. Maj Ed Henson, then the DE, led a small team to Mombassa, Kenya, and equipped with three pieces of C-130 transportable equipment (water truck, roller, and a grader), kept a number of dirt strips in Kenya and Somalia open for humanitarian relief missions. This team even surveyed Mogadishu (Somalia) airport in the days before Operation RESTORE HOPE landed US Marines there under the glare of CNN's cameras. (Yes, RED HORSE guys were there before the Marines.)"

Capt Stanford responded with thanks to the colonel for filling in a bit of unit history that he hadn't known.

Out with the Old, In with the New

MSgt Michael A. Ward
380th AEW/PA

Remember the Air Force Disaster Preparedness Program? That was sooo 90s, but apparently some people are still living in the past.

Times have changed, and members of the 380th Expeditionary Civil Engineer Squadron Readiness Flight are trying to get people to move into the 21st century. Disaster Preparedness is out of vogue. FSTR, the Full Spectrum Threat Response program, is what's happening now.

"People are still calling it Disaster Preparedness," said SMSgt Doug Senters, 380th ECES readiness supervisor. "When I start talking about FSTR here, I'm surprised at the number of people who are hearing of it for the first time."

TSgt Ivan Candelario, 380th Expeditionary Readiness Flight Logistics Section, holds a chemical testing kit. The Readiness Flight is responsible for managing the FSTR program for the 380th Air Expeditionary Wing. (photo by the author)

FSTR replaced the Disaster Preparedness program after the 2001 terrorist attacks in New York and Washington. The Air Force readiness community, which had been poised for more than 50 years to deal primarily with Cold War threats, found it needed to deal with a wider variety of potential problems.

"FSTR teams are still trained and equipped to respond to commonly known physical threats such as major accidents; hazardous material incidents; natural disasters; and nuclear, biological, chemical and conventional weapons incidents," said Lt Col Jeffrey Pitchford, 380th ECES commander. "But, after 9-11, we expanded our training to better respond to a newer and broader range of threats including acts of terrorism, weapons of mass destruction incidents and threats from improvised explosive devices."

SMSgt Senters said the goal of the FSTR program is to help commanders and first-responders protect personnel, facilities and resources by minimizing damage and recover base operations after a natural disaster, hostile attack or major accident or incident.

The FSTR program is designed primarily to support response activities on installations in the United States and overseas; however, FSTR assets can be extended into U.S. civilian communities at the request of civilian authorities if there is an imminent and potentially grave concern, SMSgt Senters said.

The FSTR program also supports the emergency management programs of the Department of Defense, Department of Energy, Department of Transportation, Department of Homeland Security, Defense Threat Reduction Agency, Nuclear Regulatory Commission and Federal Emergency Management Agency. FSTR teams also work closely with state, local and civilian emergency response agencies.

Selected for Promotion

Colonel

Judith D. Bittick
John K. Borland
Karl S. Bosworth
Rodney L. Croslen
Claude V. Fuller, Jr.
Bryan J. Gallagher
Liesel A. Golden
Steven E. Hammock
William S. Harris
Michael R. Hass
Bart H. Hedley
Kyle E. Hicks
Kurt J. Kaisler
James R. Kasmer
William A. Kolakowski
Thomas M. Laffey
John R. Lohr*
Leslie C. Martin
David B. McCormick
Gregory L. Melton
Gregory M. Perkinson
Mark A. Pohlmeier
David L. Reynolds
Norman P. Schaefer
Stephen E. Shea*
Patrick J. Smith
James T. Sohan
Richard B. Stonestreet
Dennis D. Yates
Brian D. Yolitz

*BPZ

Senior Master Sergeant

Leroy D. Ainsworth
Roderick Baltazar
Stephen Batherson
Karen J. Beers
David J. Blaine
David W. Blais
Kevin D. Bouillon
David A. Bryan
Robert L. Burrell
Carey W. Casey
Patrick G. Christie
Michael G. Clayton
Dennis K. Cook
Freddie G. Davis
Randall L. Davis
John R. Dick, Jr.
Jeffery C. Douglas
Andrew K. Drummond
Darryl D. Duffy
Eric A. Edwards
Charles D. Faust, Jr.
Jeffrey D. Felty
Robert B. Forgette
Lorenzo D. Fulmore
Terry K. Gray
Thomas M. Grman
Robert M. Hague
George K. Hamilton
William L. Haney
Dale E. Hankins
Will H. Hardin, Jr.
Rodney O. Hicks
Vincent D. Hoffman
Rodney D. Huckabee
Harry L. Hutchinson
Timothy Jankowski
Derrick Joe
Dennis J. Lee
James M. Lee, Jr.
Robert E. Lee, Jr.
Paul L. Legg
Jesus Longoria, Jr.
Terrance Mack
Jeffery J. Malherek
Robert M. Martinez
Craig L. Mason, Jr.
Christopher R. May
Kenneth Meierhofer
Michael Messersmith
Kevin L. Monkman
Anthony M. Morikawa
Cecil S. Nichols
Gil M. Olay
Mark H. Onken
Fred L. Owens
Jerry R. Parrish
Shepherd M. Pinney
Garrett L. Raeford
Robert W. Rodewald
Michael L. Rosser
Robert A. Rucinski
Larry E. Senst
Jerry S. Shelton, Jr.
Roger A. Smith II
Scottie G. Spradlin
Randall R. Stutzman
Christopher V. Thai
Dean T. Turner
Kevin J. Vanisko
Tod E. Vanscoy
Paul M. Walker
Robert D. Wenner
Gregory Westbrook
Thomas M. Westort
John A. Wilde
Brian L. Wilkinson
Jerry L. J. Williams
Gregory P. Zsedenny

AFCESA Engineer Receives Award

The Society of Military Engineers (SAME) selected Col Josuelito (Joe) Worrell, former director of Engineering Support at Air Force Civil Engineer Support Agency, to receive the society's President's Medal.

The medal is presented to a SAME member for outstanding leadership and accomplishment in support of the society's programs. A maximum of three people are chosen each year. This is the first time a member of the Panama City Post of SAME has been chosen since the award's inception in 1992. The medal was presented May 19, 2005 at SAME's National Education and Training Conference in Louisville, Ky.

A SAME Life member since 1986, Col Worrell served as the president of the Panama City Post from 2003 to 2004. He was a director of the Panama City Post as well as the South Central Regional Vice President, overseeing nine SAME posts in the region. His most notable contribution to the Society was the planning and execution of SAME's inaugural Joint Senior NCO Symposium on Engineers in Contingency Operations April 20-22, 2004, at Tyndall AFB, Florida. The symposium was sponsored by SAME and the Air Force Civil Engineer Support Agency. Col Worrell has been selected for investiture into the Society's Academy of Fellows for 2005.

Air Force Energy, Water Managers Earn DOE Awards

Kevin Wahlstrom
HQ AFCESA/CESM

Saving energy and money while helping the environment earned the Air Force several Federal Energy and Water Management Awards this year. The awards, sponsored by the U.S. Department of Energy's (DOE) Federal Energy Management Program (FEMP), are given annually to recognize outstanding contributions toward increased energy efficiency, renewable energy and water conservation within the federal sector. The Air Force winners in each category are listed below.

2004 Federal Energy and Water Management Awards (three winners)

Energy Efficiency/Energy Management, Individual

Mr. Rex Pickett, Base Energy Manager from the 735th CES, Ramstein AB, Germany.·

Energy Efficiency/Energy Management, Small Group

The Medical Efficient Controls Team, Seymour Johnson AFB, N.C. Group members include Mr. Gary Emery, Mr. Kerry d'Hemecourt, and Mr. Christopher Wheeler.·

Exceptional Service, Individual

Mr. Michael J. Santoro, Utility Rates Management Team at HQ AFCESA, Tyndall AFB, Fla.

2004 Presidential Award For Leadership In Federal Energy Management

The Air Force winner of this DOE award is the Renewable Energy Project Team from the 7th BW, Dyess AFB, Texas; 95th CEG, Edwards AFB, Calif.; HQ ACC, Langley AFB, Va.; HQ AETC, Randolph AFB, Texas; HQ AFSPC, Peterson AFB, Colo.; AF/ILEXO, Arlington, Va.; PNL, Portland, Ore.; INEEL, Idaho Falls, Idaho; and HQ AFCESA, Tyndall AFB, Fla. They were chosen from nominees using the criteria of implementation, institutionalization, outreach and results. Team members include Mr. Tom Denslow from Dyess; Mr. Paul Weaver from Edwards; Mr. Willis Barrow from HQ ACC; Mr. Garland Scott from HQ AETC; Mr. Craig Miller from HQ AFSPC; Ms. Gueta Mezzetti from AF/ILEXO; Mr. Michael Warwick from PNL; Mr. Gary Seifert from INEEL; and Mr. Mike Santoro, Maj Allen Erickson, and Mr. Al Day from HQ AFCESA. The awardees were honored in a ceremony at Washington, D.C. on July 15, 2004.

This award was established to recognize outstanding energy management for contributions to successful federal energy management. Section 306(2) of Executive Order 13123 states, "The Deputy Director for Management of OMB shall also select outstanding agency energy management team(s), from among candidates nominated by DOE, for a new annual Presidential award for Energy efficiency." The Administration grants the award to agency team(s) that have excelled in the use of the energy efficiency and management tools specified in the Executive Order.

USAF Fall 2004 "You Have The Power" Energy Champion Project

The Air Force selected Travis AFB, Calif., as their awardee/nominee. DOE FEMP recognizes the "You Have the Power" Energy Champion Awardees from Federal agencies and DOD branches for their outstanding achievements in the conservation/efficient use of energy. A poster of the USAF Energy Champion Project was published and distributed by DOE FEMP to Major Commands and Bases for October's "Energy Awareness Month."

USAF Spring 2005 "You Have The Power" Energy Champion

The Air Force selected Mr. Garland Scott from HQ AETC, Randolph AFB, Texas, as their awardee/nominee. DOE FEMP recognizes the "You Have the Power" Energy Champion Awardees from Federal agencies and DOD branches for their outstanding achievements in the conservation/efficient use of energy. A poster of the USAF Energy Champion was published and distributed by DOE FEMP to major commands and bases for April 2005's "Earth Day" and will be posted on the FEMP Web site.

For more information on the DOE FEMP awards program, contact Mr. Kevin Wahlstrom by e-mail (Kevin.Wahlstrom@tyndall.af.mil) or telephone (DSN 523-6302 or commercial 850-283-6302).

Mr. Wahlstrom is part of the Energy Awareness team at HQ AFCESA, Tyndall AFB, Fla.

Connecting the CE Community

Mr. Brian Poyant
Mr. Kurt Bergmann
HQ AFCESA/CEOK

The Air Force Civil Engineer Support Agency, Tyndall AFB, Fla., has established a new knowledge management program to provide customer support across the AF Civil Engineering Career Field. This program includes several iniatives: Communities of Practice (CoPs), the AFCESA Reach-Back Center, a subject matter expertise locator, and an organized, searchable data library.

This knowledge management program will help AFCESA meet its commitment of providing our customers with the assistance they need. In the words of Col Gus G. Elliott, Jr., the AFCESA commander, "If you have a question … We have the answer. If you have a problem … We have the solution." The program was launched last year when AFCESA stood up several CE CoPs. The Reach-Back Center (see sidebar) came on line in April 2005. The AFCESA subject matter expertise locator will be available in July 2005, followed by the centralized data library in late 2006.

What exactly is a community of practice? It is nothing more than a group of people who get together—in this case via the Web—to share information and knowledge about a particular subject. AFCESA's CoPs are served on the Air Force Knowledge Now (AFKN) framework, a collaborative Web-based system managed by Air Force Materiel Command at Wright-Patterson AFB, Ohio. Members can be experts or novices, military or civilian. More than 3,000 registered members participate in 18 CE-specific CoPs, sharing information in many areas—the two largest of these involve Full Spectrum Threat Response and contingency engineering.

CoP members can query others for advice, input, benchmarking and best practice sharing. Membership is represented from every major command, and includes in-garrison and deployed personnel. Among other things, CEs use the CoPs to share design templates, get feedback on contingency construction contractors, and get information on building emergency plans, sourcing equipment, and planning deployments (what to pack, what to avoid, training). Using the CoPs facilitates rapid development and dissemination of information to the widest audience, ensuring that active members stay up-to-speed on the latest and greatest ideas in the CE world.

Air Force engineers will soon be able to collaborate via CoPs with engineers throughout the Department of Defense. AFCESA's knowledge management team is working with AFKN experts on a CoP concept that will bring in engineers from other services, beginning with the Army. AFCESA's team has met with the U.S. Army Corps of Engineers to benchmark and explore partnering opportunities with the Corps' Knowledge Management Environment and their CoPs.

Today's joint environment requires collaboration across the DoD engineering spectrum. The Corps is interested in our approach and excited to begin investigating ways to create Army and Air Force engineering communities of practice.

Visit the AFCESA CoPs at the following link: https://afkm.wpafb.af.mil/ASPs/CoP/OpenCoP.asp?Filter=OO-EN-CE-01.

Reaching Back

AFCESA's Reach-Back Center just came online in April. This operation is an expertise-based call center that captures your request for information and tracks it to successful resolution. To date, the Reach-Back Center has fielded over 800 requests for support from CONUS and deployed engineers looking for everything from access to the right subject matter expert to specific design guidance and assistance.

These services are here for your use. If you have technical questions or need program support give the AFCESA Reach-Back Center a call at 1-888-AFCESA1 or DSN 523-6995 or email AFCESAReachBackCenter@tyndall.af.mil.

CE Training Goes Online

"Anywhere, Anytime" is now true for training

by Mr. Ralph Gruber
HQ AFCESA/CEOF

Although the skills and knowledge needed for Civil Engineering have not gotten any easier, the access to the training sure has. For the first time, CE training courses are available online, accessible "24/7" from any location with an internet connection. Courses

are available through Headquarters Air Education and Training Command's Learning Management System (LMS), which services the entire Air Force.

"This is a major step forward for our training," said CMSgt Garrick Burney, the Civil Engineer Career Field Manager. "We partnered with Headquarters AETC to provide CEs with online, dynamic interactive learning with no loss of quality from the [Air Force Qualification Training Packages] currently in use."

Training courses currently available include those in Force Development and Contingency Requirements, but more courses are added to the site as they are produced or revised. Existing CD-ROM-based AFQTPs will eventually be converted for online use. A CE-centric LMS, developed in conjunction with AETC, will be launched in late 2005.

The LMS serves as a training "portal," not only delivering training to students, but tracking, managing and reporting their progress through established Web-based or traditional classroom curriculums. Information can be added or accessed by both Airmen and training managers.

The LMS has other functions, as well. It can act as a knowledge management system providing a forum for discussion groups or a repository for frequently asked questions or resource libraries. It can serve as a learning content management system—a "one-stop shop" for training items and training-related information. Instructors can use the LMS to create tests or survey Airmen.

The Air Force Training Record (AFTR) will also be linked to the LMS in the future. The first career fields to be operational—CE, weather, medical and financial management—will link to AFTR sometime late in the summer of 2005. Other career fields will soon follow.

For civil engineering, the LMS-linked AFTR will eventually duplicate all functions of the CD-ROM-based COVERTrain, which is currently used to track CE enlisted training electronically. Eventually the CE LMS/AFTR will be tied to the Air Force Portal, giving supervisors and managers "single sign-on" access to training information from all pertinent databases. Most importantly, data will become standardized and information will reside in a centralized repository.

To access classes, visit https://golearn.csd.disa.mil. Once at the site, choose "New User Registration" to establish an account. The CE courses can be selected from the list of available classes.

For more information, see the AFCESA *Training Trends* newsletter at https://wwwmil.afcesa.af.mil/Publications/Training_trends_final.pdf or contact Mr. Gruber, ADL Program Manager at HQ AFCESA, Tyndall AFB, Fla., at 850-283-6181 or DSN 523-6181.

AFIT

Wright-Patterson AFB OH

Course No.	Title	Off.	Start Dates	Grad Dates
ENG 520 (W)	Comprehensive Planning Dev.	05A	11-Jul	31-Jul
ENV 521 (S)	Hazardous Waste Mgmt.	05B	18-Jul	22-Jul
ENV 541	Water Quality Mgmt.	05B	25-Jul	29-Jul
MGT 421 (S)	Contracting for CE	05B	25-Jul	05-Aug
MGT 424 (S)	Real Property Mgmt.	05A	25-Jul	29-Jul
ENG 520	Comprehensive Planning Dev.	05B	08-Aug	12-Aug
ENV 021	Intro. to Installation Restoration Prog (IRP)	05A	15-Aug	19-Aug
ENG 440 (S)	Roofing Design & Mgmt.	05A	22-Aug	26-Aug
ENV 417	Environ. Restoration Project Mgmt.	05A	22-Aug	26-Aug
MGT 102	Intro to BCE Organ. for Reserves	05B	22-Aug	02-Sep
MGT 570	CE Superintendent	05D	22-Aug	02-Sep
ESS 010 (W)	Hazardous Waste Accumulation	05C	22-Aug	26-Aug
ENV 222 (S)	Hazardous Material Mgmt. Process (HMMP)	05C	23-Aug	25-Aug
ESS 070 (S)	Hazardous Material Mgmt.	05C	23-Aug	23-Aug
ENG 555 (S)	Airfield Pavement Construction Inspection	05B	29-Aug	02-Sep
ENV 220 (S)	Unit Environ. Coordinator	05C	12-Sep	16-Sep

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 and Web classes.

366th Training Squadron

Eglin AFB FL

Course No.	Title	Start Dates	End Dates
J3ACP3E871 - 000	EOD Craftsman	01-Aug/22-Aug/12-Sep	12-Aug/02-Sep/23-Sep

Sheppard AFB TX

J3ARR3E453 – 002	Pest Management Recertification	25-Jul/15-Aug	29-Jul/19-Aug
J3AZR3E472 – 000	Liquid Fuels Storage Tank Supervision	12-Sep/20-Sep	22-Sep/30-Sep
J3AZR3E051 – 008	Electronic Distribution System Maint.	27-Jul/24-Aug/22-Sep	23-Aug/21-Sep/20-Oct
J3AZR3E051 – 010	BARE Base Electrical Systems	18-Jul/08-Aug/29-Aug	29-Jul/19-Aug/12-Sep
J3AZR3E051 – 012	Fire Alarm Systems Maintenance	02-Aug/26-Aug/22-Sep	25-Aug/21-Sep/18-Oct
J3AZR3E051 – 013	IDS Installment and Maintenance	11-Jul/08-Aug	28-Jul/25-Aug
J3AZR3E052 – 013	Civil Engineer Advanced Electronics	22-Jul/19-Aug/19-Sep	18-Aug/16-Sep/17-Oct
J3AZR3E071 – 001	CE Adv Electrical Troubleshooting	27-Jul/24-Aug/22-Sep	23-Aug/21-Sep/20-Oct
J3AZR3E072 – 002	Troubleshooting Elec. Power Gen. Equip.	27-Jul/18-Aug/12-Sep	17-Aug/09-Sep/03-Oct
J3AZR3E072 – 113	BARE Base Power Generation (Diesel)	18-Jul/12-Aug/09-Sep	11-Aug/07-Sep/05-Oct
J3AZR3E151 – 013	HVAC/R Control Systems	06-Jul/15-Aug/26-Sep	09-Aug/19-Sep/31-Oct
J3AZR3E151 – 014	HVAC/R Direct Expansion System	29-Aug	29-Sep
J3AZR3E151 – 015	HAVC/R Indirect Expansion Systems	01-Aug	18-Aug
J3AZR3E451 – 004	Fire Suppression Systems Maintenance	14-Jul/08-Aug/30-Aug/22-Sep	03-Aug/26-Aug/20-Sep/13-Oct
J3AZR3E471 – 101	BARE Base Water Purification & Distr. Sys.	06-Jul/19-Jul/02-Aug/16-Aug	15-Jul/28-Jul/11-Aug/25-Aug
J3AZR3E472 – 001	Liquid Fuels Systems Maint. Technicians	11-Jul	22-Jul
J3AZR3E051 – 007	Airfield Appr., Lighting, Condenser Disch.	11-Jul/01-Aug/22-Aug	20-Jul/10-Aug/31-Aug
J3AZR3E050 – 001	Civil Engineering Work Estimates	12-Sep	30-Sep

Gulfport MS

J3AZP3E351 – 001	Low Slope Roofing Maint. and Repair	12-Sep	22-Sep
J3AZP3E351 – 002	Fabricating Welded Pipe Joints	11-Jul/07-Sep	22-Jul/20-Sep
J3AZP3E351 – 003	Metals Layout, Fabrication and Welding	25-Jul/15-Aug/13-Sep	11-Aug/01-Sep/30-Sep

Ft. Leonard Wood MO

J3AZP3E571 – 003	Engineering Design	08-Aug	19-Aug
J3AZP3E571 – 005	Construction Materials Testing	05-Jul/06-Sep	15-Jul/16-Sep
J3AZP3E971 – 003	Advanced Readings	25-Jul/22-Aug	29-Jul/26-Aug
J3AZP3E971 – 005	Nuclear, Biological, Chemical Cell Ops	25-Jul/22-Aug/29-Aug/19-Sep	29-Jul/26-Aug/02-Sep/23-Sep
J3AZP3E571 – 004	Construction Surveying	18-Jul/22-Aug/19-Sep	29-Jul/02-Sep/30-Sep
J4OST32E3D – 000	FSTR Mobile Training Team (MTT)	18-Jul	22-Jul

Indian Head MD

J5AZN3E871 – 001	Advanced Access and Disablement	11-Jul/01-Aug/22-Aug/12-Sep	22-Jul/12-Aug/02-Sep/23-Sep

Additional course information is available at https://webm.sheppard.af.mil/366trs/default.htm or https://etca.randolph.af.mil. Students may enroll on a space-available basis up until a class start date by contacting their unit training manager.

"CE" Stands for "Camouflaged Engineer"

For most folks in the civil engineer career field, the morning's get-ready checklist usually goes something like this: "BDU trousers? Check. BDU shirt? Check. Boots? Check. Hat? Check." But some days you have to add a few items: "Palm fronds? Check. Face paint? Check."

Earlier this year, Andersen AFB, Guam, held its first Enlisted Combat Dining In to celebrate more than 50 years of enlisted heritage at the base. A1C Nathan Fitzwater, a Fire and Emergency Services member from the 36th Civil Engineer Squadron, 36th Air Expeditionary Wing, was one of the many participants.

All branches of the American military hold some sort of traditional formal dinner. The Air Force and the Navy call it the Dining-In. The Army holds a Regimental Dinner. The Marine Corps and Coast Guard have Mess Night. Although the exact origin of the dining-in tradition isn't clear, some trace it back to old English monasteries and early universities. It's believed that the Air Force's dining-in custom started with General Hap Arnold in the '30s. The dining-in helps build *esprit de corps* by bringing unit members together in an atmosphere of camaraderie and good fellowship. "Hail and farewell" ceremonies are frequently part of the evening.

A more recent offshoot, the Combat Dining-In is certainly no formal occasion, but it's a lot of fun. Working uniforms (missile crew suits, flight suits, BDUs, etc.) and camouflage are the "uniform of the day" rather than mess dress. Participants often have to run some sort of gauntlet; at Andersen, they ran an obstacle course to drink from a grog bowl while squadron mates on the sidelines hosed them down with high-pressure squirt guns. Well, that's one way to remove the face paint.

(original photo by SSgt Bennie J. Davis III; special effects & text by Mr. Guy Ivie)