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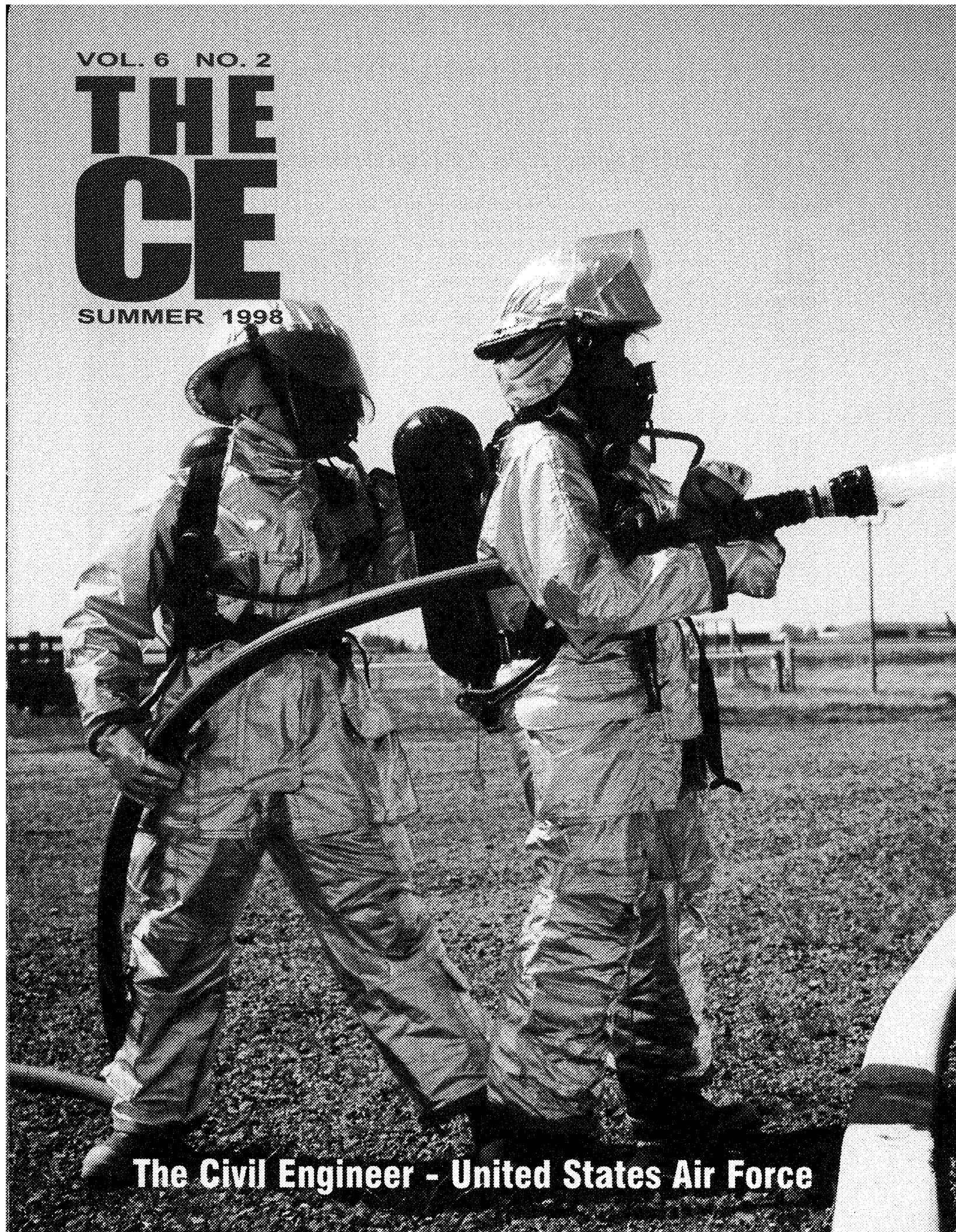
SUMMER 1998

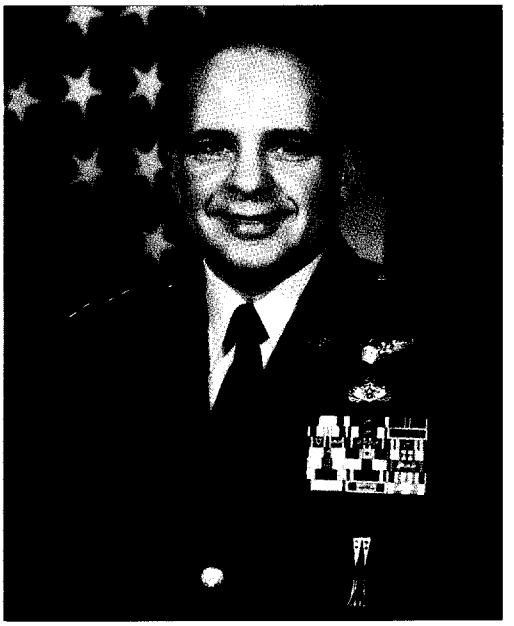


The Civil Engineer - United States Air Force

FROM THE TOP

Civil Engineers In An Expeditionary Aerospace Force

What's in the future of Air Force civil engineers? We've been a critical component of the air power equation for over 50 years and have faced many challenges over those years—today is no exception. The Air Force is undergoing significant changes through competitive sourcing and privatization. Civil Engineering will be heavily involved in this transformation, a transformation that looks at the economic feasibility of privatizing more than 250 of our utility systems and performing A-76 studies for many of our flights and, indeed, entire squadrons. In our preparation for becoming smaller and more efficient, we have been vigilant in protecting our readiness core—the people needed to fulfill our wartime mission. Over the past few years, my staff, the Air Force Civil Engineer Support Agency, and the MAJCOMs have thoroughly examined every wartime requirement and matched a manpower position against each one. We have identified 28,401 blue-suit civil engineers as the number required for war, and we will vigilantly track that number to ensure civil engineers are ready to fight two major theater wars.



Maj. Gen. Eugene A. Lupia
Air Force Civil Engineer

We are becoming an expeditionary aerospace force. The power of this newly designed Air Force will be projected using 10 Air Expeditionary Forces (AEFs). This will be a force that is, in the Air Force Chief of Staff's words, "lighter, leaner, and more lethal."

Where do engineers fit into this concept? They will bed down these AEFs just like they have done for past Air Force missions. Look around the world today and you'll see Air Force engineers performing these bed down functions from Prince Sultan Air Base, Saudi Arabia, to Al Jaber, Kuwait. For example, during a recent deployment to Southwest Asia, Air Force engineers moved enough earth to cover two football fields, 9 feet deep, and completely bedded down Air Force personnel in only nine days vice the 21 days it was scheduled to take. Furthermore, they supported an Army contingent of approximately 700 people with electrical power, shower/shave, latrine, recreation, and dining hall support until their contracted facilities were available. The Chief of Staff, General Ryan, recently reaffirmed his strong support for this concept stating military engineers will always lead the way in wartime, bedding down people and aircraft. Also, our Air Reserve Component engineers play a critical role by ensuring we have the manpower and skills available to meet our mobilization needs and our civilians will meet our critical continuity and CONUS support requirements.

The Air Force Contract Augmentation Program (AFCAP) is an important recent addition to civil engineering, and our private sector partners can support sustainment and peacetime disaster response. However, we will always bed down our forces with military engineers—this is an inherently military mission. In this time of multiple threats, the Air Force must be able to deploy anywhere in the world at a moment's notice. Engineers make this possible.

We are becoming an Air Force with a new focus. It is everyone's responsibility to keep current on these concepts and understand where we are headed. The future of Air Force civil engineering rests safely in our hands.

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A member of the Fairchild AFB Fire Department helps a visitor get a feel for fire pit training. Read more about fire pit commissioning in this issue. See page 18.

The Civil Engineer
The U.S. Air Force Civil Engineer

Summer 1998 Volume 6, Number 2

The Civil Engineer
Maj. Gen. Eugene A. Lupia

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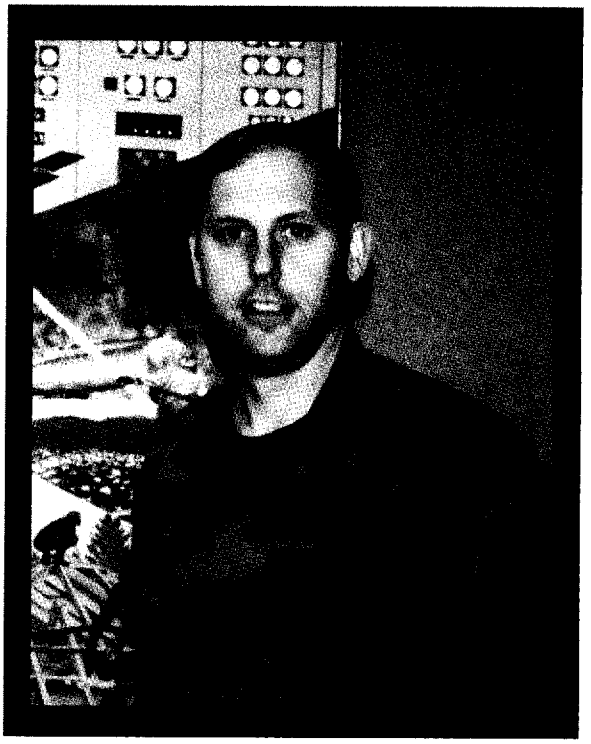
As the Air Force Civil Engineer's new Chief for Enlisted Matters, Chief Master Sgt. Richard D. Park facilitates two-way communication between enlisted and civilian personnel and those at the highest level of Air Force civil engineering. In this interview, Chief Park discusses how he plans to fill his new role.



COMMUNICATION IS AT THE *TOP* OF THE *LIST*

The Civil Engineer magazine: **What is your role as Chief for Enlisted Matters?**

Chief Park: My role as Chief, Enlisted Matters for the Air Force Civil Engineer has been well defined by The Civil Engineer and the first three Chiefs to do this job, CMSgt Larry Daniels, CMSgt Larry Ward, and CMSgt Ken Miller. Basically, the position has a dual role. First, I advise The Civil Engineer on all matters affecting the civil engineer work force – both enlisted and wage grade civilian. In effect, I represent and bring concerns up the chain for 43,000 blue collar workers in CE units worldwide. Secondly, it's my job to communicate to the workforce The Civil Engineer's views and agenda and how current and future programs may affect them. It's astonishing how many rumors and false perceptions are out there and many people make decisions every day based on those rumors. Hopefully, I can help folks better understand the situation.

The Civil Engineer magazine: **Maj Gen Eugene Lupia has identified readiness as our highest priority. What initiatives are underway to enhance CE enlisted readiness and what is your long-range vision to improve the readiness of our enlisted force?**

Chief Park: Readiness is our primary mission and should be the highest priority. That's the reason we have the "blue suit" force and that's the reason the Air Force

exists. To say "improving readiness" kind of sounds like we're not there yet. I think that the CE troops are well prepared for the worldwide mission that we have, especially in beddown of forces anywhere across the world. We've proved it in Bosnia and at other locations around the world, so I think we're fairly well prepared. Improvement in readiness has to do with training issues. If you're going to be ready to perform any mission, you have to be well trained. When I talk training I'm not just talking readiness training, like Prime BEEF training. I'm talking about training across the Air Force Specialty Code spectrum, whether it's readiness training or skills training. Also, for the future, we'll have to stay attuned to Air Expeditionary Force (AEF) concept, planning, and implementation. Are we lighter and faster? Are our Unit Type Codes postured to meet AEF concepts? These are the questions we'll be answering soon.

The Civil Engineer magazine: **How do you see the new Expeditionary Aerospace Force concept affecting today's airmen in civil engineering? What impact do you see it having on OPSTEMPO, re-enlistment, and family issues?**

Chief Park: If the concept is planned and implemented as stated, I see improvements in the OPSTEMPO. To quote from the Chief of Staff's Notice to Airmen (NOTAM) *Evolving to an Expeditionary Aerospace Force*: "Knowing projected deployment dates over a year in advance provides some personal planning room for training, education, and family activities." Also, if the right number of forces are at your location, when someone is deployed, someone else doesn't have to do the work of two people to keep the home base going. These two factors are currently big issues. Improve this and you'll improve retention and provide a better quality of life at home for our troops and their families.

> ***"If you're going to be ready to perform any mission, you have to be well trained."***

One thing that CE troops need to know about AEFs is that the rank and file could be affected during the implementation phase. Details of the implementation plan are not out yet, but we need a heads-up to the troops that using current programs, such as competitive sourcing and privatization, to get the right number of forces in the right places might affect them depending where they are. We're evolving from the Cold War Air Force to an Expeditionary Aerospace Force and to get there, there will be some change.

The Civil Engineer magazine: **Please describe the CE Airmen's Council and how its feedback to General Lupia can affect other civil engineer airmen.**

Chief Park: The CE Airmen's Council was created by General Lupia and my predecessor Chief Ken Miller. It serves as a conduit for gathering thoughts and concerns, and for recommending solutions to issues. I don't see the purpose or direction of the council changing for the near future. The council members, unlike other airmen in CE units, have direct access to the AF Civil Engineer and the MAJCOM Civil Engineers. They represent their counterparts' opinions and outlook on civil engineer matters. Their thoughts are provided unfiltered to our senior leaders and serve as an important source of information in senior-level decision making.

The Civil Engineer magazine: **Give us an example of a success story with the CE Airmen's Council.**

Chief Park: One of the things that we look at as a success story had to do with training issues. When we implemented ITRO (Interservice Training Review Organization) training at bases other than Air Force bases, such as Fort Leonard Wood for the Engineering Assistants and the Pavements and Equipment folks, and at Gulfport, Mississippi, for the Structures folks, one of the bubbles that we lost was Community College of the Air Force (CCAF) college credit. The CE Airmen's Council brought further attention to the matter. In fact, one of our meetings was at Maxwell, where we were briefed by the CCAF folks. At that meeting CCAF broke the news that they finally had solved the issue, within their guidelines. So, our folks attending these ITRO schools that are owned by the Army and the Navy will now get CCAF credit for going there. It's delayed credit—they won't get credit immediately upon graduation with their certificate, but they'll get the life experience credit when they're awarded their 5-level, which is equivalent to what they would have received had it been actual certificate credit.

The Civil Engineer magazine: **The CE Chiefs' Council performs the same type of role, but with the perspective only years of experience can provide. What initiatives are council members currently working?**

Chief Park: We just finished a meeting in July. The purpose of that meeting was to get the Chiefs up to speed on the latest programs being worked by the CE Air Staff folks.

Again, competitive sourcing and privatization seemed to be the "hot" issues affecting units across the country. Many are asking why this is such an issue. The blue suiters will still have a job in CE – somewhere – as long as we have the current wartime requirement. However, the affect is more than just the studies, the assignment freeze, and reassignment actions. Our blue suiters work side by side every day with their wage grade counterparts. The wage grade employee has a tougher time in these processes. His or her concerns and fears during the process are much more than "getting an assignment to another base." Our leaders must be aware of this affect on the squadron and CE community.

My first goal is "to keep all of the CE community in the loop, in the know of what's going on, what's happening, and how it can affect them."

The Civil Engineer magazine: **How do you plan to interact with the Air Reserve Component in your new job?**

Chief Park: On the CE Chiefs' Council, we have both Guard and Reserve representatives. We're in the communication loop and work with them very closely. Some of the issues that we're working right now have to do with the lengthy tech schools for the Guard and Reserve and trying to get legislative relief for PCS waivers so Guard and Reserve troops won't have to be in PCS status when they go to a longer school.

In my previous job , I did have the opportunity to talk at both the Air National Guard BCE conference and the Air Force Reserve BCE conference. Before that, I worked with the Guard and Reserve on projects when they were deployed for their two weeks of training at overseas locations and at stateside locations. So, I've worked side-by-side with the Guard as an airman, I've worked with them from the CE Schoolhouse, and I've attended their conferences, both Guard and Reserve. With their help, I'm confident I'll stay aware of their issues.

The Civil Engineer magazine: **What are your highest priorities? What do you hope to accomplish during your tour as Chief for Enlisted Matters?**

Chief Park: I have two initial goals setting out. One is to continue the communication efforts that were started by my predecessor, to keep all of the CE community in the loop, in the know of what's going on, what's happening, and how it can affect them. I think that's real important to the troop in the units. Being at the unit level and working with the troops, I know that sometimes you make personal decisions and even professional decisions based on rumor. Getting the word out and having the correct information to make even personal decisions – whether to reenlist or not, what's the outlook for me – those type of things are important for the young troop. So, communication is at the top of the list.

Next, is training. Training is essential to the enlisted person's personal and professional success. Having come to this job by way of the CE Schoolhouse, I have a fairly good understanding of our training system. However, most NCOs and officers don't have that three years of experience directly related to enlisted training. Certification of core tasks as a minimum requirement for upgrade training is one concept many have not grasped yet. That needs to be fixed. Training at the unit level is a commander's program, but it takes leadership at all levels. The senior NCOs, the shop foremen, the supervisors, and the unit training manager all play a role. It's a total team effort within the unit to make sure these requirements are accomplished.

The Civil Engineer magazine: **In your view, how does competition, such as the upcoming Readiness Challenge VII, contribute to civil engineering?**

Chief Park: I was assigned to the 3202nd Civil Engineering Squadron when we won Readiness Challenge II. In one simple sentence, the teamwork and *esprit de corps* has not been surpassed in my career. The unit pride of a 600-person formation, as we presented the trophy to the MAJCOM four-star, could not be matched anywhere. Now, that's the winner's point of view. However, on the basic context of Readiness Challenge, the same holds true for anyone. The unit pride in selecting and preparing a team and the spirit of teamwork and competition brings out the best in a unit and the CE community. With Readiness Challenge VII as with the past competitions, the international flavor has been added. Any time we work with our international counterparts, it brings a new perspective and a new outlook on how things are done around the world. We can see the best ideas and incorporate some of them into the way we do business. Can it get any better?

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Update on the Operations Flight

by Andrew Jackson
HQ AFCESA, Tyndall AFB Fla.

The Air Force Civil Engineer Support Agency (AFCESA) recently conducted an in-depth review of the Operations Flight, one of the cornerstones of civil engineering. The purpose was to make appropriate recommendations for change. Specifically, AFCESA addressed these questions: (1) Should we maintain the current policy of zonal maintenance, go back to centralized shops or make it optional? (2) What are the problems, impacts and actions required to change the current policy?

These difficult questions require complex answers. The following paragraphs detail what has been accomplished on this important and sensitive issue.

AFCESA followed a methodical and coordinated approach in attacking this '97 Worldwide tasker. In January 1998, a fact-based survey of over 200 questions was forwarded to all major installations. The survey contained questions designed to obtain demographics on the operations flight (manning, number of work orders, etc.) and facts on how the bases are currently operating the five elements (maintenance engineering, logistics, facility maintenance, infrastructure and heavy repair).

One question sought the opinion of survey respondents: "If you could select any organizational structure, which one and why?"

Sixty-five bases (55 CONUS and 10 overseas) responded. Organizationally, 59 of the bases were squadrons while the remaining six were groups. Additionally, 63 were traditional military and civilian organizations, with one "most efficient organization" and one contractor. Out of the 65 bases, their organizational structure is configured in the following manner: 25 percent zones, 25 percent shops and 50 percent hybrid.

While it may appear there are a wide range of organizational configurations, the majority of the variations were below the "element" level. This degree of variation is consistent with the organizational flexibility allowed by current Air Force policy.

Air Force policy dictates the structure to the flight level. The policy allows for flexibility in setting the number of zones, creating single craft centers like HVAC/R and centralized customer service centers and moving functions from one element to another within the operations flight.

The survey results indicated the existing five element model, defined by AFI 32-1031 operations management, is the backbone of operations flight organization Air Force wide. Thus, from an organizational management perspective, operations flights are fundamentally more alike than different.

Other key survey findings include:

- Bases that preferred the zone structure did so because of superior customer service, ownership and proactive maintenance management.
- Bases that preferred the shop structure did so for its superior training opportunities, ability to adapt the skill level of the craftsman to the specific job and better suitability for accomplishing single craft recurring work programs.
- Bases that preferred a "hybrid" structure did so because it affords them the ability to combine the best attributes of zones and shops.
- When asked for their opinion on flight structure, respondents indicated a desire to operate in a hybrid structure.

In May 1998, AFCESA hosted a workshop to assess the operations flight survey results, gather ideas and make recommendations. The workshop used small groups to tackle the issues and address the questions. The main themes from the group sessions were:

- The current multiskilled Air Force Skills environment will not support the concept of centralized shops in the pre-objective squadron sense.
- One size does not fit all. No single organization is clearly superior for all situations. Flexibility is needed to handle the full range of missions.
- Base civil engineers are constrained by manning reductions, O&M funding reductions and ops tempo, all of which are beyond their control. Organizational flexibility is one of the last effective tools available to deal with these constraints, still meet mission requirements and provide the best level of service to the customer.

Based on group consensus, the attendees drafted a rewrite to AFI 32-1031 (soon to be renumbered to AFI 32-1004) to update the operations flight objectives consistent with today's environment. It proposes retaining the five element structure as the recommended corporate cornerstone of the operations flight. It allows for flexibility below the element level to accommodate different missions, base geography, ops tempo and changing circumstances such as competitive sourcing and privatization. It also establishes roles and responsibilities (especially concerning training) for operations flight commanders, improves the maintenance engineering element description; better defines the workflow and requirements procedures. Finally, it improves the readability and logical flow of the AFI itself.

In June 1998, major command civil engineers met at Scott Air Force Base, Ill., to review the workshop findings and recommendations. Their staffs are currently reviewing the facts and assessing the draft AFI to ensure it provides a model that allows civil engineers to best meet the many challenges of today.

Air Force Firefighters won't give up the fight

by Tech. Sgt. Ginger Schreitmueller
Patrick Air Force Base, Fla.

Airman 1st Class Gerard Reheiser Jr. takes aim at an encroaching line of flame, seeing this threat to a stranger's home as a personal affront. This is one building the fire won't claim, not if this Patrick Air Force Base firefighter has anything to do with it.

Reheiser is among the 45th Space Wing firefighters who helped defeat the wildfires searing scars across Florida's Brevard County. He, like the entire Air Force fire fighting force who supported the efforts, didn't intend to give up.

"I was two days away from graduating high school when a fire destroyed my home," said the Florida native. "What the flames didn't destroy, the heat from the fire did. I can't describe the feeling of loss; it was the worst feeling in the world. Walking around looking at what happened, I knew right then and there I wanted to be a fireman. If I could just keep someone else from ever having to feel that way, from losing everything they had, then it would be worth it," he said.

According to Patrick's fire chief, firefighters from Patrick and Cape Canaveral Air Station were called in by the Brevard County Fire Department when flames erupted in the northern section of the county June 27.

"Since Patrick sits in the center of Brevard, the station is often called on to lend a hand to county firefighters," said Patrick's fire chief Wayne Dukes. "With hundreds of fires scorching the state, and county firefighters already battling flames in other areas, the sparks in northern Brevard stretched local firefighters thin," he added.

Firefighters from the two installations supported the mutual-aid request on a non-stop basis until the fires were extinguished July 5. Despite the intense flames, volatile embers and uncontrollable firestorms raging in northern Brevard County, the wing's firefighters weren't going to quit.

All photos by John Reed, Patrick AFB Firefighter

Keeping fire engines filled was an important part of the mission for firefighters from Patrick AFB, Fla., who helped defeat wild land fires consuming Brevard County.

After three days of fighting the fire war in Mims, the crews were focused on winning.

"We haven't won the war — yet — but we've won a few battles," said Jim Mial, a driver/operator from Patrick's fire station. "We saved some homes from going up. We knew we couldn't knock down all the fires, so we tried to keep it from taking as many homes as we could."

Mial describes one battle he and fellow Patrick firefighter, John Reed, won in a wooded area of Mims June 30. The duo was dispatched by the county task force "...to an area where the road ends and a dirt trail begins." With flames less than 100 feet from a home, the two set in and began the fight.

"We put ourselves between the fire and the house, and took aim with the hoses to force the fire around the building," said Mial. "I'm standing in front of the house and the flames finally go around. It was pretty close there for a while, but we saved the home."

Close is an underestimation of the inches between the flames and the home. Walking around to the backyard, the firefighters find the remnants of two boats the owner had parked only a few feet from the home.

Being in the middle of a firestorm is a new experience for most of Patrick's

An emergency medical technician from Brevard County monitors blood pressure levels on Airman 1st Class Allen Justice. Justice, a firefighter from Patrick AFB, Fla., went through "rehab" at the county's staging area after pulling an eight-hour shift battling the fires.

48 firefighters. The first-hand experience they gained from this fire fighting effort will make them all better firefighters, according to the station's training chief.

"Fire fighting is 25 percent academic and 75 percent practical," said Joseph A. Gianantonio, Patrick's assistant fire chief for training. "We're getting a chance to give back to the community and help protect lives and property, while gaining excellent training and readiness experience, too."

Though the fire station holds periodic exercises and drills so that members can hone their fire fighting techniques and skills, first-hand exposure is invaluable, said the firefighters.

"Most of these guys have only seen pictures of fires like these in their training manuals," said Reed. "Now they'll be able to tell 'war stories' with the best of us. They'll have learned more in one day out on the fire line than they ever did in five days of exercises and drills."

Despite the devastation and losses, the lessons learned are proving a powerful experience, said Gianantonio.

"These guys were exposed to things they only heard about. This will give them a greater range of experience and knowledge than most Air Force firefighters will ever know. This is reinforcing all they've learned. Ultimately, it will make them better firefighters for the Air Force," he said.

For many, this experience made a lasting impression about how swift and unforgiving a fire can be.

"We were in the middle of a hot spot, with helicopters dropping water all around us, working hard to keep the fire from jumping across (U.S. Highway 1)," said Jose A. Fernandez, a lieutenant with the Patrick station. "We had our backs to the highway and were doing what we could to protect the homes. Looking around you could see how fast it's moving. One structure is completely untouched, while another home right next door is gutted. Yet, in the front yard of that home there's a Mercedes-Benz untouched."

The Air Force crews worked as part of a county task force, side-by-side with fellow firefighters from across the county, state and the nation. Reporting in to a staging area, crews began their eight-hour shifts receiving taskings for different areas along the fire's path. Sometimes they were given street directions, but since the majority of the homes were in secluded areas it was often a case of following the flames.

"You get an area to cover and you start by driving down the paved road until it ends. Then you hang a right on a dirt road and keep going until you see the fire," said Reed. "You stop, put it out and move on to the next one. When you run out of water you go back to the resupply area, fill up and head back in."

After pushing the flames back for eight hours, the crew waited for the next Patrick team. Once their fellow wing firefighters arrived, the tired crew didn't head home right away. They had just spent hours breathing in near-toxic levels of smoke and ash. When you combine the air quality with temperatures boiling around the mid- to upper-90's in central Florida, crews need some quality "rehab" time.

*See **Florida Fires**, page 23*

A Patrick AFB, Fla., firefighter takes aim at wild lands burning near homes in Mims, Fla. Nearly every firefighter from the base's station worked to support the county's emergency response to wild land fires in Brevard.

Happy 50th Anniversary, CESS!

by Major Bryan K. Neuhaus
Wright-Patterson AFB, Ohio

On May 7, 1998, the Air Force Institute of Technology (AFIT) Civil Engineer and Services School (CESS) celebrated fifty years of providing professional continuing education (PCE) to the Air Force Civil Engineer and Services communities. Maj. Gen. Eugene A. Lupia, The Air Force Civil Engineer, spoke at the ceremony, emphasizing the need for professional continuing education for both Air Force civilian and military professionals.

According to Lupia, the vast availability of information makes it imperative to stay current in one's field of expertise in order to be effective. CESS helps civil engineer and services professionals meet this need year after year. Lupia also recalled completing the basic civil engineer course for new accessions 30 years ago and the impact it had on his career.

"CESS impacted tens of thousands of Air Force civil engineer and services professionals during its 50 years of educational service," said Lupia.

Col. Joseph H. Amend III, Dean of CESS, made Lupia an honorary CESS faculty member in appreciation of the support Lupia has given the school over the years. Lupia often speaks at CESS classes, showing by example the importance of PCE.

Col. John H. Russell, commandant, AFIT, spoke about the impact CESS is having on today's Air Force.

"CESS's alternative delivery methods, like satellite hookups, web pages and development of 'just in time' courses like contingency education, are examples of the innovation the CESS team uses to meet today's challenges," said Russell.

The celebration included dedicating the CESS auditorium in honor of one of its finest instructors, Professor Emeritus J. Richardson Johnson. Professor Johnson instructed at CESS for 22 years. Maj. Gen. Robert J. Courter Jr., a former CESS faculty member, took part in the celebration along with dozens of other current and former CESS faculty, staff and other guests.

CESS is located at Wright-Patterson Air Force Base, along with AFIT where it functions under Air Education and Training Command. CESS provides engineering, environmental, and services management courses to customers throughout DOD, other federal agencies and foreign military personnel. Over the past few years, CESS has increased the scope of its educational services. Resident, on-site, satellite and computer based learning mediums provide high quality PCE courses at less cost and greater accessibility to Air Force civil engineer and services personnel worldwide.

AFIT began back 79 years ago in 1919, when it was an educational program in the Army Air Service. Col. Thurman Bane and other notable figures in the history of flight were instrumental in the early success of AFIT and CESS. Lt. Gen. Nathan F. Twining rededicated the modern AFIT on September 3, 1946. CESS was formally established two years later under its original name of Air Installations Engineering Special Staff Officer Course. In May 1948, the course's four-person faculty graduated its first class of 31 students.

Over the decades, the school evolved to meet the needs of units in the field. In 1960, the school started *The Air Force Civil Engineer* magazine, known today as *The CE* magazine. In the 1960s, faculty members deployed to Southeast Asia to expedite construction methods and work with newly-formed Air Force Base Engineering Emergency Forces in Vietnam. Training was initiated at Eglin Air Force Base, Fla., to prepare

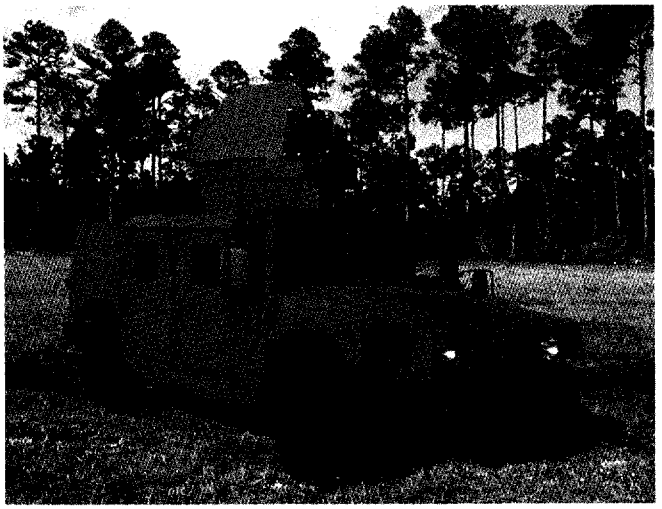
lieutenants for assignments in Air Force RED HORSE units. The 1970s saw CESS venture into teleteaching and audio tapes to reach more students. CESS faculty also served as advisors to graduate students in the Schools of Engineering and Logistics. WIMS classes were introduced in the 1980s, and other areas such as Military Family Housing and Services Officer Education were incorporated. Today, over 5,000 Air Force civil engineer and services personnel take professional continuing education from CESS each year in over 40 different classes.

CESS funds many of the courses it offers. Enrollment is on a first-come, first-served basis through major command training managers. CESS routinely reviews curriculum for its courses with field experts throughout the Air Force to ensure classes are as current and effective as possible. CESS, through AFIT's Civilian Institutions Program, also provides opportunities for individuals to earn a master's degree in engineering management and other specialties at civilian universities, with a follow-on assignment to instruct at CESS as a full-time faculty member. Qualifications to compete for these positions include a 3.0 grade point average or higher, good GRE scores (500 verbal, 600 quantitative), high performance ratings, and good communication abilities. Professional certifications, broad civil engineer or contingency experience and other credentials are also considered during selection.

The AFIT PCE program for Civil Engineers is alive and well, and ready to serve the Air Force Civil Engineer and Services communities for another 50 years. To review the course catalog, find out more about CESS, answer questions, or pursue an interest in joining the CESS faculty team, visit the CESS WEB page at http://cess.afit.af.mil.

Major Bryan Neuhaus is the head of the Engineering Management Department at the Civil Engineer and Services School, Air Force Institute of Technology. For further information concerning this article, Major Neuhaus can be contacted via e-mail at bneuhaus@afit.af.mil.

Engineers Receive First Up-Armored Heavy Highly Maneuverable Multi-Wheeled Vehicles



By Master Sgt. Paul Hicks
HQ AFCESA, Tyndall AFB Fla.

On May 28, 1998, to the theme *"2001,"* representatives from the U.S. Army took possession of their 1000th M1114 Up-Armored Heavy Highly Maneuverable Multi-Wheeled Vehicle (UA-HHMMV), while the Air Force received the first of 449 M1116 Air Force Variant UA-HHMMVs at the vehicle armoring plant in Cincinnati, Ohio. Staff Sgt. Jeff Shuman, 347th CES Explosive Ordnance Disposal Flight, Moody AFB, Ga. and Staff Sgt. Michael Green, 820th Security Forces Group, Lackland AFB, Texas, accepted the ceremonial keys for the first M1116 UA-HHV.

Spec. Douglas Callicotte represented the Army. Callicotte was a front-seat passenger in a M1114 UA-HHV when it was inadvertently driven over a 14-pound anti-tank mine while deployed to Brcko, Bosnia.

During the roll out ceremony, Callicote thanked all of the O'Gara, Hess, and Eisenhardt employees for saving his life. Callicote is a living example of the armor protection provided by these new vehicles.

The difference between the two vehicles is that the M1114 has a slant cargo area, while the M1116 has four additional armoring kits (See AFCESA A-Grams 97-28 for a description of the armoring kits and 98-8 for deployment planning at www.afcesa.af.mil.) and a square cargo area. Otherwise the two vehicles are virtually the same.

The civil engineers will get 108 M1116s, while security forces receive 341. The engineers' deliveries run from July 98 through January 99, with the last six delivered to the three active RED HORSE squadrons in February 99. For additional information, contact Master Sgt. Paul Hicks, HQ AFCESA/CEXD, 139 Barnes Drive Suite 1, Tyndall AFB FL 32403-5319, DSN: 523-6120, Commercial: 850-283-6120, or via E-mail: HicksP@afcesa.af.mil.

En Route Support...A New Mission for Prime BEEF

by Chief Master Sgt. Mike Doris
Scott AFB Ill.

What is En Route Support and what does it have to do with Prime BEEF? Good question. Members of the Travis, McGuire, MacDill and Andrews Air Force Bases' civil engineer squadrons got first-hand experience when they deployed in support of Operations PHOENIX SCORPION I and II. Each unit responded to the recall with a standard Prime BEEF team. However, the standard Prime BEEF team was not being exercised, nor deployed. Instead, a new Prime BEEF force module consisting of three Prime BEEF teams or Unit Type Codes (UTC) was put to the test.

Two of the UTCs within this force module are new to the world of Prime BEEF: the Civil Engineer En Route Support team and the Prime BEEF EOD En Route Support team. The third UTC of the package is an older team known as a Prime BEEF firefighter follow team. Together, this force module represents a full capability for our civil engineer family to support the En Route mission.

The En Route mission or system provides the mainstay of the Air Force vision, "*Global Engagement*" and directly affects the core competency of *Rapid Global Mobility*.

It is how we get to the fight!

The En Route support basing structure consists of three categories. The first category comprises established peacetime en route stations with aerial port capabilities, such as Ramstein Air Base, Germany and Yokota AB, Japan overseas or Dover AFB, Del., and Travis AFB, Calif., in the states.

The second category is established airfields (military and civilian) without a constant aerial port capability. Examples of this category are Moron AB, Spain; Kunsan AB, Republic of Korea; Hunter Army Airfield, Ga. and Mountain Home AFB, Id.

The final category concerns airfields with limited or no support such as a bare base. Each category requires varying degrees of augmentation during contingency operations.

The Air Mobility Command augmentation to conduct this support begins with the Tanker-Airlift Control Element (TALCE.) The core TALCE provides the command and control for AMC aircraft operating at a given location. Further supplemental units such as aircraft maintenance, aircrew stage management, aerial port operations, force protection support, and base operating support are attached to the TALCE as needed. Prime BEEF comes in with Base Operating Support and infrastructure.

During a support operation in Bosnia, AMC, in conjunction with USAFE, established an "airhead" outside of Bosnia-Herzegovina to facilitate the deployment of US and

North Atlantic Treaty Organization (NATO) forces. NATO and the US chose Taszar AB, Hungary to execute this operation. An initial TALCE of 117 personnel went in to provide the necessary aerial port support for this mission. Several problems instantly affected the airlift operation. The Hungarian airfield lighting system was ineffective, snow removal capability was limited to nonexistent, minefields predominated throughout the installation and the US aircraft was not only a challenge to local firefighters, but a spectacle they held in amazement. *Call 911 Prime BEEF!*

The Prime BEEF teams were oversized to support this kind of mission with limited involvement (remember, we were only going there for about a year), to sustain airfield operations and force beddown of less than 200 people. A composite team of civil engineers, firefighters, and EOD personnel went to do the job. Operation JOINT ENDEAVOR taught many lessons on operations in a non-war scenario.

One of the primary lessons AMC civil engineers learned was that our existing Prime BEEF teams were too large for limited military operations other than war.

AMC learned a second critical lesson; because of the large size, a complete CE capability (traditional craftspersons, firefighters, EOD personnel and readiness technicians) would require extensive airlift support itself, not to mention the length of time it took (22 hours) for the Prime BEEF teams to support the TALCE concept of operations.

Those lessons in mind, the beginnings of the new UTCs began to take shape. After a year of planning and analysis, the new UTCs were registered for use and the Air Force postured twenty En Route Support Force modules; six within the active force, ten in Air Force Reserve Command and four in the Air National Guard.

The mission capability statement describes the Civil Engineer En Route Support team as a "20 person multi-disciplined team used to support US Transportation Command and AMC forces maintaining, loading, servicing, refueling and controlling AMC's global strategic tanker and airlift fleet." The UTC deploys during regional conflict missions at strategic airlift en route bases. It supports (TALCE) UTCs 7E1BC, 7E1AD, 7E1AE, and 7E1AF to provide limited initial beddown operations and maintenance support for AMC mission support forces. Combined with EOD, firefighter and associated vehicles, it provides 24-hour resource protection from fire and/or explosive hazards.

It requires individual mobility equipment, consolidated tool kits (CTK), team kit, and other support equipment. Each active duty team has an operational capability response time of only four hours.

A significant challenge arose in adequately equipping the team to meet the mission requirements and the response time.

Led by the pilot unit, the 916th Civil Engineer Squadron, Seymour-Johnson AFB, N.C. and the 932nd CES out of Scott AFB, Ill.; the team kit and CTKs took shape and became a comprehensive package of civil engineering tools and equipment that met the mission requirements *and* fit on one pallet. This successful effort provided the needed flexibility to face each anticipated scenario the En Route Support team is designed to accomplish.

Operation PHOENIX SCORPION, the enforcement of the United Nation's program in Iraq, Weapons of Mass Destruction Inspection Compliance, became the litmus test for this flexibility and a true success story for the Prime BEEF En Route Support Force module.

The team from McGuire AFB, N.J., met not only the four-hour response time, but they were on board the C-5 aircraft, wheels-up, less than nine hours from initial notification.

The Travis team proved the entire force module would effectively fit on one aircraft when they loaded all three UTCs and equipment on their dedicated C-141.

The team from MacDill AFB, Fla., demonstrated the flexibility of the team structure and equipment when it integrated with another civil engineer force to support beddown of over 1200 personnel.

The team from Andrews AFB, Md., showed how to transition to sustainment mode by maintaining a tent city for over 350 personnel during an extended deployment.

The En Route Support force module and its components have proven around the globe that Prime BEEF can and will support the Global Engagement vision of the 21st century Air Force.

International Partners in Environmental Security

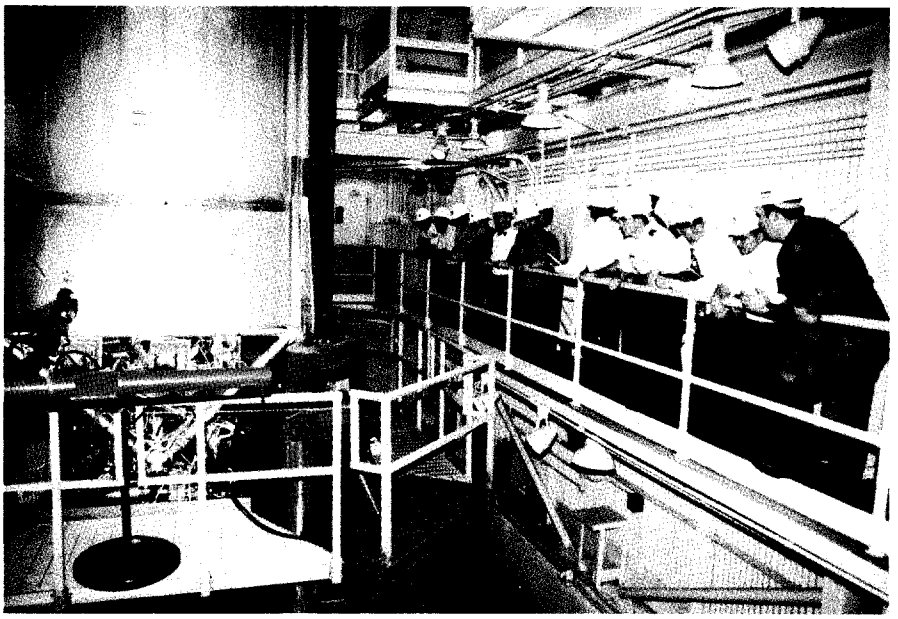


Photo by 30th Space Wing Communications Squadron

Inside the Titan II launch facility. The large silver cylinder is an actual Titan launch vehicle at Vandenberg AFB, Ca. The visitors toured the inside of Space Launch Complex 4 where they learned about the basic differences between US and Russian rocket propellant.

by Maj. John Cawthorne
Pentagon, Washington DC

The world's political structure is in the midst of dramatic change. The former Union of Soviet Socialist Republics is now the Commonwealth of Independent States plus several independent nations and a few small republics. Many nations have reassessed national priorities for their militaries and now require their defense establishments to meet national environmental standards — an area where many militaries were previously exempt. These political changes profoundly affect how U.S. military forces will function in terms of maintaining the peace, as well as how Air Force civil engineers support the Department of Defense in environmental security.

The Air Force Civil Engineer, Maj. Gen. Eugene A. Lupia, plays an important role in the development and execution of three international environmental cooperation efforts: the U.S.-Russia Cooperation in Defense Environmental Protection Issues, the U.S.-Norway Cooperation on Environmental Protection in Defense Matters, and the U.S.-Italy Environmental Cooperation.

Environmental security initiatives in the international arena provide a positive method for cooperation among the Department of Defense and other nations' militaries by focusing on information and technology exchange and joint technology research. These exchanges provide highly leveraged efforts to define the environmental dimensions of military operations and support the Secretary of Defense's Preventive Defense Strategy. This strategy supports positive engagement with former Warsaw Pact nations, and environmental cooperation is a premier way to achieve that goal. The Air Force Civil Engineer supports this important effort by engaging in cooperation with the Russian Federation Ministry of Defense on environmental issues.

In June 1995, Secretary of Defense William Perry signed a Memorandum of Agreement (MOA) initiating environmental cooperation between the United States and Russia. The purpose of the MOA for U.S. Department of Defense-Russia Ministry of Defense Cooperation in Environmental Protection Issues is six-fold: (1) to exchange information on organization of environmental protection activities, (2) education and technology exchange for protecting the environment, (3) waste disposal, (4) environmental aspects of weapons destruction and disposal, (5) cleanup of former military sites, and (6) management of natural and cultural resources. These broad areas have been refined to the current specific efforts: environmental education pertinent to military applications to both countries, environmental solutions for missile and rocket launches and finally, to foster civilian/military cooperation in the management of nature preserves.

In January 1998, Maj. Gen. Lupia

led a delegation that met in Moscow with Lt. Gen. Sergei Grigorov, Chief of Ecological Safety, Russian Federation Ministry of Defense (RF MoD), to discuss environmental topics of mutual interest.

"Environmental security creates the conditions that support the peace, making war less likely and deterrence unnecessary. The meeting was very fruitful, all U.S. meeting objectives were met," said Lupia.

The results of the meeting will shape international relations. One outcome of the meeting was the decision to host 12-15 Russian senior military officers at the Air Force Academy, assisted by the Air Force Institute of Technology, for training in September 1998. The training sessions will include representatives from all services. Subsequent training will be agreed upon later.

In addition, the U.S. DoD and the RF MoD agreed to co-host a joint international armed forces environmental conference in Moscow in the summer of 1999. The conference is expected to attract 1,500 environmental representatives of government and industry from around the world. The RF MoD is specifically interested in the conference highlighting new technology that supports environmental cleanup and may generate business opportunities. To facilitate the planning, the U.S. presented the Russians with an action plan frequently used in the U.S. entitled, "How to Host an Environmental Conference." Subsequently in March 1998, a team led by Vicki Preacher of the Air Force Center for Environmental Excellence, Brooks AFB, Texas, visited counterparts in the RF MoD and started conference planning actions.

In March 1998, Vandenberg and Los Angeles Air Force Bases, Calif., hosted a five-member team of visiting Russian MoD environmental experts for bilateral environmental information exchange on space-related issues.

While at Vandenberg, the Russian delegates toured the Atlas and Titan space launch complex, the base centralized accumulation point, the hazardous materials pharmacy, and the industrial waste water treatment plant. These tours were preceded by briefings from local experts covering the important environmental responsibilities pertaining to their part of the launch mission.

The delegates were then escorted through the actual complexes and given hands-on demonstrations of the safety precautions and procedures followed to ensure the environment and human health is protected.

"This [meeting] provides an excellent opportunity for good exchange. They are receptive to our programs and we learn from them as well," said Maj. Robin Williams, maintenance supervisor of the 2nd Space Launch Squadron, Vandenberg AFB, Calif. Williams assisted with the Russian visit to Vandenberg.

The main avenue by which the U.S. delegation learned from the Russians was a list of tough questions not previously considered by U.S. environmental managers. Some questions addressed concerned public verification of the environmental impacts disclosed in National Environmental Policy Act documents and how the first stage of a rocket's flight, the booster, is managed with respect to environment and safety.

In the U.S., the booster first stage of a rocket falls into the ocean. Preliminary estimates indicate these are not likely to impact the marine environment. However, in Russia, where there are no coastal launch facilities, the booster first stage of rockets is a serious problem since they fall to the tundra. There is the possibility of pollution of large territories by the components of the missile propellants and metal fragments.

The information exchange between the two parties enables an ecological study of rocket-related on-base daily activities such as pollution reduction and remediation at Vandenberg and Plesetsk Missile Base, Russian Federation.

Answering these questions helps the U.S. members continually improve procedures and processes in the environmental arena. It helps them look at routine processes from an outsider's perspective, draw comparisons and learn.

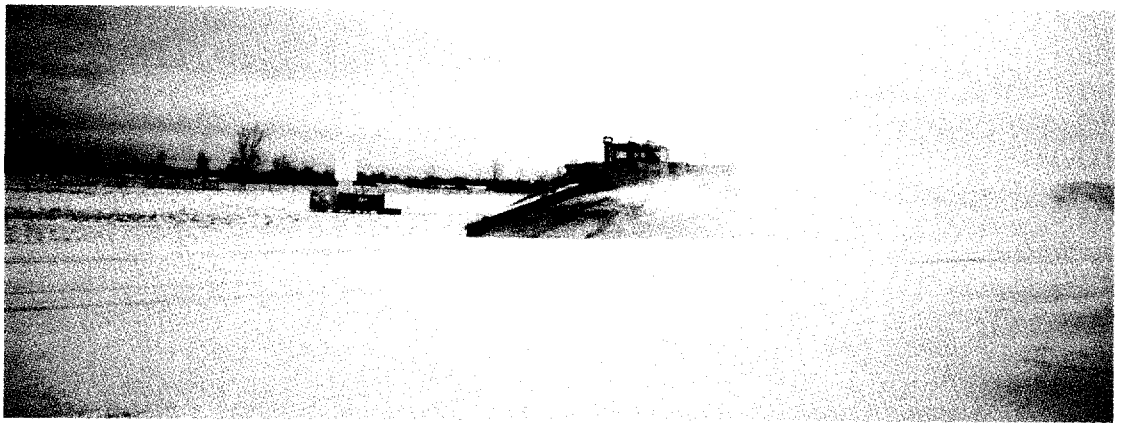
According to the Russians, the U.S. hydrazine transfer areas and procedures are similar to theirs, yet the U.S. sites are much cleaner. Another environmental practice followed in the U.S. but not in Russia is the hazardous materials pharmacy (HAZMART). The idea of HAZMART fascinated the foreign dignitaries due to its control features and the potential reduction in hazardous material usage.

At Los Angeles AFB, Calif., the Russian delegation was given a mission briefing that delineated the role played by the Space and Missile Systems Center in the acquisition of space systems from that played by AF Space Command in day-to-day operation of space systems. There were many briefings, laboratory tours relating to global environmental impacts from space-related activities, and a demonstration of the High Resolution Ozone Imager, an instrument that measures ozone concentration in the stratosphere.

The Russian delegation head, Col. Alexander Bahl, vice commander of Plesetsk Rocket Base, remarked to an interpreter that this was the best visit on both a personal and professional level. The U.S. Air Force team shared the sentiment and now looks forward to reviewing the way Russians handle their systems later this summer when a team of U.S. environmental experts will visit the Moscow Ecological Center and Plesetsk Missile Base.

John Edwards, chief, Environmental Management for the Space and Missile Systems Center (SMC), Los Angeles AFB, Calif., and Thomas Hunyh, environmental engineer for Environmental Management at SMC contributed to this report.

Air Force Civil Engineer Initiative to Modernize the Airfield Pavement Deicing Process



(All photos by Lt. Col. Brian McCarty)

A rollover plow is used to remove snow at Niagara Falls Air Reserve Station, N.Y.

by Maj. John Coho
Pentagon, Washington DC

Effective aircraft and airfield deicing and anti-icing, by both mechanical and chemical means, are essential to ensure safe flight operations during winter weather. Maintaining the ability to fly safely under winter weather conditions is crucial to readiness and execution of the Air Force mission. Effective deicing and anti-icing activities require carefully planned and coordinated efforts from a cross-functional team of engineers, logisticians, flight operations personnel, safety professionals and many others. Recognizing the importance of planning and coordination to successful deicing/anti-icing activities and to address growing environmental concerns, the Air Force Environmental Protection Committee in 1996 established the Air Force Deicing/Anti-icing Stakeholders Group.

The Air Force Civil Engineer Environmental Division (HQ USAF/ILEV) leads the Air Force Deicing/Anti-icing Stakeholders Group (the Group). The Group consists of HQ USAF, Air Force Secretariat, and major command representatives from the civil engineering, operations, logistics, safety, health, acquisition, and legal communities, as well as consulting members from the civilian aviation community, the Federal Aviation Administration, and the Canadian Air Force. The Group focuses on planning, streamlining and improving deicing processes across the Air Force by identifying aircraft and airfield pavement deicing requirements, developing pertinent policy and guidance, and overseeing implementation of deicing policy.

Several initiatives focusing on deicing and anti-icing operations are currently underway in various Air Force organizations. Examples range from university-level research into the environmental impacts of deicing chemicals, to field testing of aircraft anti-icing chemicals. This article focuses on an important effort recently initiated by HQ USAF/ILE involving airfield pavement deicing – one of the key responsibilities of the Air Force Civil Engineer Operations Flight.

After consulting with airfield deicing experts and practitioners throughout North America, The Air Force Civil Engineer, Maj. Gen. Eugene A. Lupia, established an initiative to modernize the airfield deicing process in response to increasingly stringent environmental regulations on the release of deicing chemicals to the environment. The proposed "new" deicing process embraces the most recent airfield deicing technology by coupling non-urea deicing chemicals with precision chemical application equipment. With this process, the Air Force expects to expand its capability to operate safely under severe winter conditions while protecting the environment, aircraft and weapons systems from potential negative impacts of deicing chemicals. Before going into more detail on the Civil Engineer's initiative, it is helpful to explain briefly the background of airfield deicing, pertinent regulatory issues and deicing policy in the Air Force.

Air Force Policy and the Deicing Process

Mechanical removal of snow and ice using plows, brooms and under-body scrapers is the first course of action to maintain safe runway conditions. Long-standing Air Force policy (AFI 32-1045, Snow and Ice Control) calls for use of airfield deicing chemicals, such as urea, as a last resort. This policy emphasizes the need to start runway snow and ice control operations with the onset of snowfall or icing conditions to provide

continuous bare pavement. However, weather conditions and mission requirements sometimes mandate chemical use to keep runways safe for flying operations.

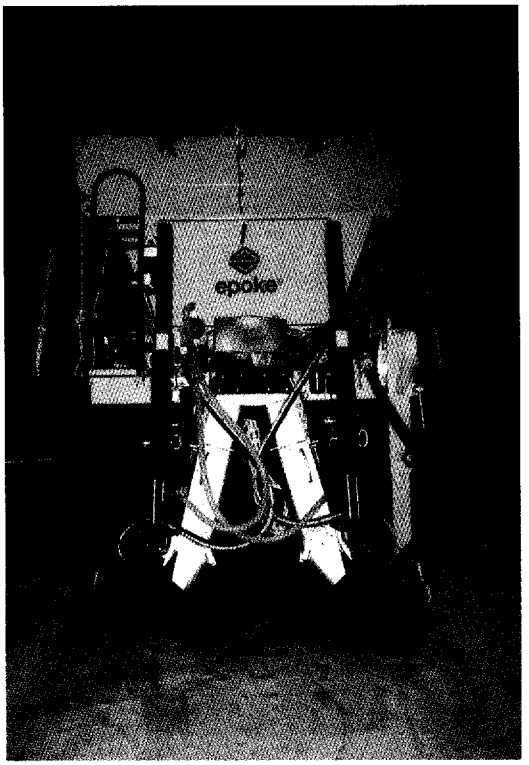
When required, chemicals are used both as "anti-icing" and "deicing" agents. Anti-icing involves the chemical application to prevent ice formation. Deicing involves the application of a liquid or solid agent on formed ice and collected snow to facilitate mechanical removal.

Minimizing chemical usage is important to control costs of deicing operations and avoid or reduce potential "side-effects" of deicing chemicals. In general, when a chemical is released to the environment for any purpose, unintended impacts may occur. For example, urea has long been the chemical of choice for airfield deicing, but when introduced to surface water bodies through run-off, it depletes dissolved oxygen and may cause fish kills. These and other potential impacts such as corrosion of aircraft components and airfield infrastructure may be exacerbated by old, poorly maintained or inappropriate application equipment and procedures, because such equipment may apply chemicals unevenly or in excessive quantities.

Environmental Regulatory Driver and Policy Response

The Environmental Protection Agency's storm water regulations under the Clean Water Act call for industrial activities, including airfields, to implement storm water pollution prevention measures and "best management practices" to reduce the amount of chemicals reaching surface water bodies through run-off. The Air Force policy of minimal use of deicing chemicals is an example of a "best management practice." To go a step further toward protecting the environment, the Civil Engineer, in 1996, issued a policy letter advising Air Force installations to begin using environmentally friendly, non-urea deicing chemicals in lieu of urea.

Non-urea chemicals such as potassium acetate (KAc), sodium formate (NaF) and sodium acetate (NaAc) melt ice effectively at substantially lower temperatures than urea, and they are far more environmentally friendly. It is precisely these attributes that enable airfield deicing crews to clear icy runways under conditions not possible with urea and without the water pollution caused by urea. The initiative recently directed by HQ USAF/ILE is designed to take full advantage of these attributes.



The Epoke Spreader is the latest new generation of chemical deicing equipment.

Implementing the Civil Engineer's Airfield Deicing Modernization Initiative

The first steps of the initiative are already underway. Airfield deicing activities across the Air Force are changing from urea to KAc, NaF, NaAc or similar, non-urea deicing chemicals. In fact, since 1990, Air Force use of KAc has increased from virtually zero to about 500,000 gallons during the winter of 1996 and 1997. The chemical transition began in 1996, largely to achieve the environmental goal of compliance with Clean Water Act storm water pollution prevention standards.

When this transition began, The Civil Engineer was aware of the potential for increased costs to conduct airfield pavement deicing, as non-urea chemicals (per unit mass) were known to range from two to four times the price of urea.

In early 1997, the Air Force Deicing/Anti-icing Stakeholders Group in coordination with the Canadian Air Force recognized the potential to reduce the costs of airfield deicing with non-urea chemicals. Although these chemicals are generally more effective and efficient than urea, requiring less chemical to achieve the same deicing/anti-icing task, they can be more expensive to use than urea because of substantially higher unit cost. Using precision chemical spreaders and sprayers, the Canadian Air Force demonstrated the ability to keep non-urea airfield deicing chemical costs at roughly the cost of urea-based deicing operations. They also demonstrated the utility of Remote Global Positioning System (GPS) thermal and friction mapping of runway surfaces in providing information to enhance deicing operations and flight safety. Furthermore, they reported that one of the greatest benefits of the new deicing process was increased operational flexibility during severe winter weather. By combining the non-urea chemicals with modern application equipment, they were able to maintain safe flying operations under weather conditions not possible with urea.

*See **Deice**, page 29*

Air Force Fire Training Pit Commissioning Program Gains Ground at Fairchild

(All photos by Sue Alexander)

Dean Hostetter, a civilian with Fairchild's Fire Department since 1986, drives the truck during a training drill.

by Sue Alexander
Editor

Firefighters need at least three things to fight fires: courage, the right equipment and the knowledge to use it. Courage depends on the heart and mind of the firefighter. Having the proper equipment is a matter of supply. However, knowing how to use that equipment depends on the quality, comprehensiveness and consistency of training.

Live fire training is more valuable than simulated drills. To ensure Air Force firefighters are experiencing the real thing, crash fire rescue training facilities, or "fire pits," as they are more commonly referred to, are undergoing an Air Force-wide modernization and standardization program. Under this program, almost every Air Force flying installation will receive a new training facility using environmentally responsible propane gas fires.

The quest to standardize crash fire rescue training facilities (CFRTF) in the Air Force began more than 10 years ago. Successful commission of the Fairchild AFB Fire Department in Washington was a recent milestone on that journey.

A two-person team from the Air Force Civil Engineer Support Agency at Tyndall Air Force Base, Fla., consisting of Jerry H. Garrett, a Fire Protection Specialist with TRW Systems and Information Technology Group, and James "Mike" Boley, a Fire Engineering

Assistant with Applied Research Associates, visited Fairchild in early May to perform a test and commissioning of the CFRTF system.

"This program makes sure firefighters, firefighter instructors, curriculum and training environments provide consistent, comprehensive training on how to operate a Crash Fire Rescue Training Facility," said Boley. Boley served 25 years with the Air Force as a military Fire Protection Specialist.

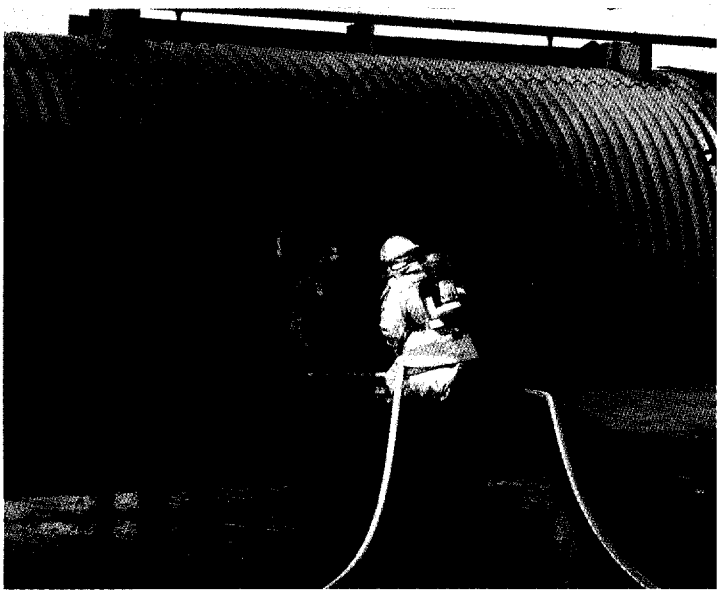
Before the introduction of standardized clean-burning liquid propane gas to fire training, fire pits used JP-4 and JP-8. These hydrocarbon jet fuels are more expensive than propane (up to $1.25 per gallon as opposed to propane's cost of $0.50-$1 per gallon). They are more damaging to the environment and they allow for only one or two fires per day.

Additionally, Aqueous Film-Forming Foam (AFFF) is used to extinguish jet propulsion (JP) fires. AFFF has a very slow biodegradability and is apt to contaminate the groundwater. This double-threat to the environment lead to increasingly strict laws regulating its usage. As a result, Air Force and other services' CFRTFs were required to inactivate.

A long period of inactivity followed, during which there was little if any fire pit training other than simulation. Air Force firefighters were unable to meet their hot fire training and certification requirements (not less than twice each year). Base fire protection departments requested waivers from their major commands. The major commands had no recourse other than to grant the waivers.

"Without the hot fire training we just didn't have the realism. We're anxious to bring the pit on-line because a lot of young firefighters need training. With the turnover in the Air Force, you get a lot of very young, inexperienced firefighters who need to experience hot fire training," said Thomas C. Boyce, chief, Fairchild AFB Fire Department. Boyce has served with the Fairchild Fire Department since 1971.

"All we could do was turret practice. We would simulate putting out a fire by approaching with the trucks and discharging water but there was no fire. The mock-up we have now provides us with the engine fires, cockpit, cargo, ground fires – everything that might happen from a crash. This is much more realistic," said Boyce of the CFRTF.



The aircraft mock-up allows firefighters to experience the hazards and challenges of interior fires.

Fighting ground fires is an important part of the training.

Although individual site configurations vary depending on geography and climate, the CFRTF is based on a singular generic design. It consists of an aircraft mock-up (an amalgam of various Air Force aircraft), a burn area, control stand, liquid propane fuel system, cathodic protection system and water conservation pond.

The 72-foot long, carbon-steel aircraft mock-up is located in the burn area. It has three simulated aircraft engines and each engine has one burner assembly and two ignitors. The wing engines have dams installed to simulate a flowing fuel type fire. The aircraft mock-up has an accordion design on the fuselage. This allows it to expand during the intense heat of a burn. A sprinkler system cools and washes out the mock-up after each burn.

The circular design of the CFRTF allows the team to attack the fire from different angles and do target practice with the truck.

The standard burn area is 80-100 feet in diameter. It is recessed and lined with two 80-mil thick high-density polyethylene liners. The liners themselves are sandwiched between six-inch layers of sand and covered by an 18-inch layer of rock. The purpose of all these layers is to protect the surrounding area from seepage. Once constructed and properly maintained, the integrity of the surrounding area is guaranteed by the system. Leaks just do not happen.

"The most positive aspect to these facilities, in addition to the training they provide, is that they are very low maintenance, very reliable and economical to operate. It's all self-contained and environmentally safe," says Boley.

According to Boley, in the days when JP fuel-use reigned, the training was limited to one good fire per day, as cleanup from each fire took at least two hours. By no longer using JP fuel or AFFF, trainers can have numerous fires without having to clean up after each one or running the risk of contaminating groundwater.

There are six ignitors and burners around the aircraft mock-up that simulate exterior ground fires. The entire area is flooded with water before a burn. Once complete, a drain valve allows all the water in the burn area to drain back into the water conservation pond. Fairchild's pond is covered with netting to protect the local wildlife.

The liquid propane system supplies fuel for training exercises. Propane is stored in a 10,000- or 12,000-gallon tank, and connected to the various burners in the burn area through a series of pipes and valves. The tank is maintained at 80-85 percent capacity. The CFRTF tower, through an elaborate system of master switches, controls the entire system. An electric generator supplies power to Fairchild's system.

Before commissioning a CFRTF, civil engineers perform an evaluation on the facility and recommend any needed repairs.

"We have two checklists engineers can use to bring a system on-line for commissioning. One is the design checklist. That's where the engineers make a visual inspection of the entire system from one end to the other. After that, engineers can use the operational checklist to 'light the fires and kick the tires,' or make sure it's ready. Sometimes they run into the unexpected and we help them with that," said William Edwards. Edwards, a System Engineer with TRW Systems & Information Technology Group, has worked on fire protection and other engineering programs since 1989. He participates in the commissioning program by pre-checking CFRTF systems.

At this time, 89 installations require a Fire Training Facility (FTF) Program. Approximately 12 FTFs are operational LPG facilities. The goal is to complete the funding program by fiscal year 2002.

"There really is no set problem you're going to encounter in a fire pit.

However, between the propane, the generator, the tower and the burn units, something is going to need tweaking, especially when the pit hasn't been used for a long time," says Boley.

Boley explained that climatic conditions could also affect the readiness of a CFRTF. Despite the warmer-than-usual winter at Fairchild, one of the underground pipes burst during a cold snap. Engineers replaced the weather-damaged part, enabling Boley and Garrett to rapidly bring the system to operational status.

"We had a couple of ignitors that failed and two valves that had frozen and burst due to cold. We took the Fairchild system out of its winterized state and with the assistance of Civil Engineer shops, made it ready for training," says Jerry Garrett. Garrett has been involved with fire protection "for a couple of years."

After the CFRTF system is tested and deemed operational, Boley and Garrett begin the "train the trainer" process.

"We teach the fire department training chief how the fire pit works and how to use it. We also explain the different scenarios that can be used in their training. Fire fighting tactics and strategy training is up to the training chief," says Garrett.

The scenarios trainers can use include exterior fires, as may occur after a fighter jet crashes, or interior fires, as may happen when a larger plane crashes.

The commissioning team will also walk the trainers through the entire system and provide a two-day training seminar to the fire team.

"We train both shifts on alternate days to make sure everyone is familiar with how the fire pit works, whether they are doing the training or getting certified," explained Garrett.

The Fairchild fire teams responded very enthusiastically to the commissioning team's visit and the training.

"This is the kind of realism we need to be prepared for a crash scenario," said Master Sgt. Christopher Kunicki, Assistant Chief of Training, Fairchild AFB Fire Department. "We've gone through all kinds of fire fighting tactics and strategies but we didn't have the realism until now."

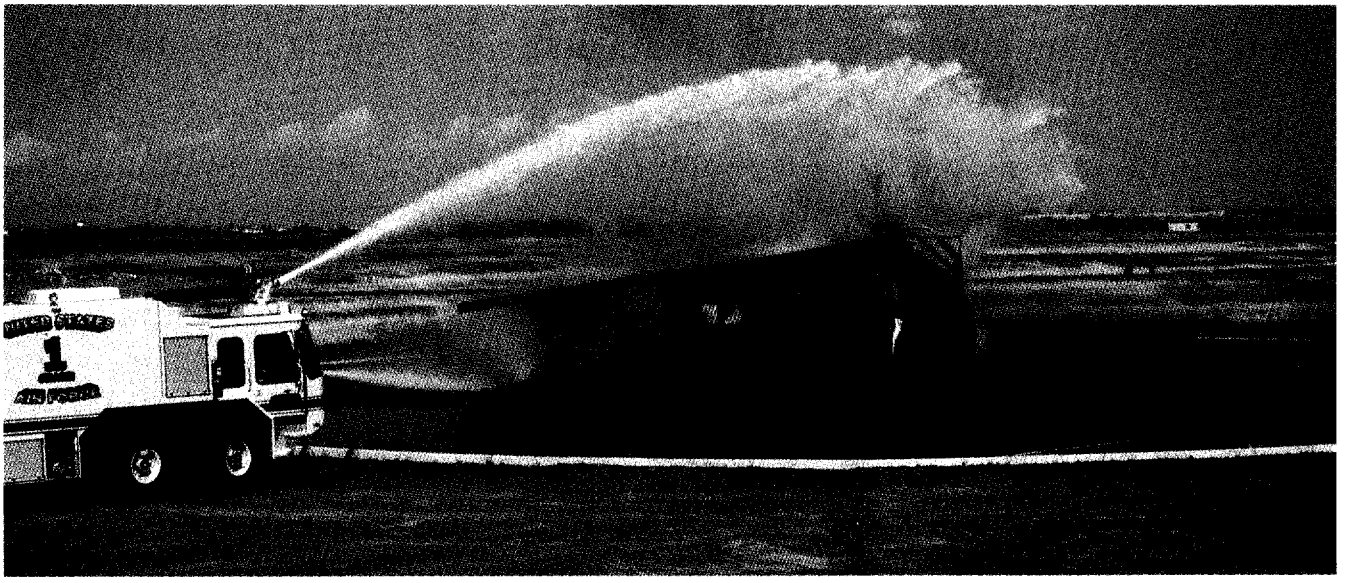
The Fairchild Fire Department also serves the City of Spokane. "We depend on the support of Spokane's EMS (emergency service) just as they depend on us. We're going to share this facility with them," said Kunicki.

The commissioning team activates and deactivates the CFRTF repeatedly throughout the commissioning visit to ensure the system is fully functional. According to Boley, the more actively the system is used, the better it performs. The same is true for the fire fighters. During the next two days of their visit to Fairchild, Kunicki (with Boley's and Garrett's participation), trained the teams on fire fighting operations. They practiced positioning the trucks and extinguishing ground, engine and interior fires repeatedly throughout the day and night.

It is grueling work, involving no small amount of potential danger to the Air Force professionals who fight the flames. In the event of a safety situation, the entire system can be shut down via a master control switch within five to eight seconds.

"You can watch all the video tape you want and simulate all the drills you want, but nothing is going to prepare you for the heat and the flames except facing them," said Jeffery Sanborn, a Driver/Operator with the Fairchild AFB Fire Department.

For more information on the CFRTF program, contact Bill Edwards (Engineering/Validation) at (850) 283-6118; DSN 523-6118, or Jerry Garrett (Commissioning/Training) at (850) 283-6155; DSN 523-6155.



Propane gas is a clean-burning fuel that allows the CRFTF to offer better training with reduced risk to the environment.

Recognizing DOD's Best Firefighters

by Chief Master Sgt. James E. Podolske Jr.
HQ AFCESA, Tyndall AFB, Fla.

The DOD Fire and Emergency Awards Program is a two-year-old program that recognizes DOD's best Fire Department, DOD's Military and Civilian Firefighters of the Year and recipients of a newly created Firefighter Heroism Award.

Fire Department of the Year Award. The DOD Fire Department of the Year Award is an annual team award that recognizes DOD's most outstanding fire department for achieving the highest degree of excellence in mission support and fire protection management.

The annual award winners from the Army, Navy, Air Force, Marine Corps, Defense Logistics Agency and Coast Guard recognition programs for best fire department are eligible and encouraged to compete for this DOD-level award.

To be nominated, they must be selected as their service's "Fire Department of the Year." In the Air Force, the annual Sanborn award winner earns the right to represent the Air Force at the DOD-level competition. Anderson Air Base, Guam won the Sanborn award this year and will represent the Air Force during this year's "DOD Fire Department of the Year" competition. The nomination criteria are based on the following:

★ Saved lives and property

★ Innovative solutions

★ Implementation of quality management principles and initiatives

★ Quality of life initiatives

★ Other (This allows competitors to address anything not covered under the other four headings)

Military and Civilian Firefighter of the Year Awards. The DOD Military and Civilian Firefighter of the Year awards recognize individuals who demonstrate superior job performance and outstanding contributions to the fire service.

All members of the fire department, from firefighter to the fire chief, including fire prevention and public education employees, are eligible to compete for these awards. Annually, the services select a military and civilian "Firefighter of the Year." Each winner is automatically eligible to compete for the honor of DOD "Firefighter of the Year." award. Nominees for these awards are judged on their accomplishments, job performance, technical competence, leadership ability, initiative and resourcefulness.

New Firefighter Heroism Award. The DOD Firefighter Heroism Award is a new award that was created this year to recognize an individual person or a group of individuals (team) for acts of heroism above and beyond the call of duty. The nomination package must address the following questions:

★ What was the act of heroism?

★ What was the risk to the rescuer?

★ What was the approach, method, technique, etc.?

★ What was the outcome?

★ Other (Addresses anything not covered under the other four headings)

The Selection Process. Here's how it works! Each major command submits one nominee for each award category with the exception of the "Fire Department of the Year" category, since Andersen Air Base, Guam is this year's automatic nominee. Each nomination package is forwarded to Headquarters, Air Force Civil Engineer Support Agency, Tyndall AFB, Fla. There, a selection panel selects the Air Force award nominees and forwards recommendations to the Air Force Civil Engineer, Maj. Gen. Eugene A. Lupia. General Lupia approves the award nominees and forwards their packages to the Office of the Under Secretary of Defense for Environmental Security.

At DOD level, a panel of five fire service professionals, all appointed by the executive director of the International Association of Fire Chiefs, rates the service nominees. The final authority is the Deputy Under Secretary of Defense, who announces the winners during the annual DOD Fire and Emergency Services Conference.

...and the Air Force Nominees for this Year's DOD Awards are: Master Sgt. Todd W. Nielsen from the 18th Civil Engineer Group, Kadena AB, Okinawa, for Military Firefighter of the Year; Thomas J. Ryan from the 96th Civil Engineer Group, Eglin AFB, Florida, for Civilian Firefighter of the Year; and Mark Smith from the 48th Civil Engineer Squadron, RAF Lakenheath, United Kingdom, for the Heroism award. The 36th Civil Engineer Squadron Fire Protection Flight, Anderson AB, Guam, won the Fire Department of the Year award.

Awards Banquet. The winner of each DOD category will be announced during the 1998 DOD Fire and Emergency Services training conference awards banquet, September 16, 1998, at the Galt House Hotel in Louisville, Kentucky. Each Air Force nominee also will receive an award for being nominated for the DOD competition. *Congratulations to all the winners and good luck at the DOD-level competition!*

For further information about the DOD awards program, nomination procedures, format and criteria, contact Chief Master Sgt. Jim Podolske at DSN 523-6321, commercial (850) 283-6321.

Youngstown opens Reserve's first fire-training facility

Certification of a full-scale aircraft fire training facility at Youngstown Air Reserve Station, Ohio, July 9 makes it the first of its kind at an installation operated by Air Force Reserve Command.

When set ablaze, the aircraft mock-up gives firefighters realistic aircraft fire training.

The prime contractor, Kirila Construction from Brookfield, Ohio, conducted test burns at the facility as part of the construction, but the airplane was officially "fired up" for the first time July 9 to pass inspections.

"The tests went well," said Russell Rowley, fire department training officer for Youngstown's 910th Airlift Wing.

"We went through each test phase, and the inspectors were happy," he said.

Located in a remote corner of the installation, the facility is situated in the middle of a gravel-covered clear zone. The aircraft mock-up is made of steel and plumbed with propane gas lines used to simulate fires. Fire department officials safely control the action from a large metal tower nearby.

Air Force firefighters from Youngstown Air Reserve Station's 910th Airlift Wing battle flames during certification of their new fire training facility.

Although the 910th AW flies the Hercules C-130 aircraft, the aircraft mock-up doesn't look like the transport aircraft.

"The mock-up was designed with elements of nine different types of aircraft — C-5, C-141, C-17, KC-10, C-9 and others," Rowley said. The mock-up has elements or features of different types of aircraft to provide a variety of training and authenticity.

Land for the project was cleared in February, and construction began in June. Total cost of the project was about $1.5 million. The contract was administered by the Army Corps of Engineers, Louisville District.

"This facility is another exclusive for the base," said Ralph Stewart, Corps of Engineers quality assurance inspector for the project, referring to unique facilities at Youngstown, such as its short-field runway. Youngstown is the only installation in the Reserve to own and operate its own short-field runway. (*Courtesy of AFRC News Service*)

Florida Fires

Continued from page 9

Pararescue workers at the staging area kept an eye on firefighters coming off the line to watch for signs of heat exhaustion and dehydration. Crews got out of their gear, cooled down and unwound, while pararescuers monitored their blood pressure and ensured the sweat-soaked firefighters drank plenty of fluids.

When you tag an hour of rehab on to their day, and an additional 30 minutes drive to and from base, Patrick's firefighters pulled 10-plus hours each shift of the fire war.

"Everyone from the senior management to the first-term airmen at the station got a chance to go out to the fire sites," said Staff Sgt. Deyon James. "You couldn't stop them from volunteering to go next. We're a pretty dedicated bunch."

Despite a look of physical exhaustion, a certain enthusiasm filled the station's break room like the smell of the fire circling around the returning crew. The firefighters staffing the station house compared notes with those just back from the fire site.

Though the fires in Mims are out, Patrick's crews are ready if called upon again, said Dukes.

"Florida and Brevard County aren't out of the fire danger zone, yet," said Patrick's Fire Chief. "There are still 'hot spots' in some of the wooded areas which could flare back up without notice. Until we get a few days of good rain the dry conditions will continue and it will only take one spark to ignite more fires."

Whether in northern Brevard, the southern section of the county or Patrick's backyard, the wing firefighters are ready to answer the call. Every hour someone checks the news reports to see if there's potential fire trouble somewhere in the county. No one wants to miss the chance to get out on the line, one more time.

It's that certain something that makes a firefighter a unique breed, said Gianantonio.

"There's a camaraderie most people will never experience," he said. "Even on a good day, it's a tough job."

Historical Outtakes

by Dr. Ronald B. Hartzer
AFCESA Historian

As I do research for history articles, I often come across interesting stories and incidents from the past. Unfortunately, these are often too short to develop into a full article, so I just set them aside for later use. In this article, I have pulled together a few of them. As you read through the stories, you will laugh, be astonished and most importantly, learn more about civil engineering's fascinating history.

Engineer support to the Berlin Airlift

1998 celebrates the 50th anniversary of the Berlin Airlift. This one event helped firmly establish the newly formed Air Force as a critical component of the United States defense team. In the midst of this massive effort that airlifted more than 2.3 million tons of supplies to Berlin in 277,569 flights, was an important role played by an engineer. After only a few weeks of operations into Tempelhof Airport, the continuous pounding began to take its toll on the runways. A temporary pierced steel plank (PSP) runway had been constructed to handle the increasing number of aircraft carrying their vital cargo to the isolated city. But this began to disintegrate because of the relentless pounding.

"[General Curtis] LeMay sent Lieutenant Colonel Maceo Falco to the base with orders to keep the runway open even if it meant putting 'German workers one yard apart on both sides of it.' That's about what Falco had to do. He organized work crews of 225 men who swarmed out onto the runway after a plane touched down, beating the mats back into place, filling holes with gravel, then scrambling out of the way as the next plane roared in. While C-54s banged down on the fragile PSP, engineers laid out two sod runways for C-47s, one for take-offs and one for landings. They held up 'fairly well' once dry weather set in late in July, until a torrential storm closed them 13 August. Falco recommended construction of a second PSP runway, 5,500 feet long. Work began 8 July and continued 16 hours a day, with women working alongside men. All materials, except brick rubble from Berlin, came from the US and had to be flown in, adding 75-80 tons to the daily tonnage targets. The new runway was ready 12 September. Then work began on a third strip, which opened in late November." (Quoted from *"The Air Force Can Deliver Anything!" : A History of the Berlin Airlift*, by Dr. Daniel F. Harrington.)

An Early Multiskilling Endeavor

A 29-man Prime BEEF team from Air Training Command deployed to Nha Trang Air Base, Vietnam, for 75 days in 1966. The team, headed by Capt. Demetrios Armenakis, built six new dorms, a 9,300 square foot office building and the beginnings of a utility building for the fire department.

"When I was given this team," the 30-year captain from Shreveport, Louisiana, said, "I took inventory, and I had what looked like a well-balanced team—three electricians, three plumbers, 12 carpenters and 10 concrete men.

"As soon as we started working, it was obvious that this wouldn't work for several reasons. We didn't need plumbers because we weren't installing any plumbing and I didn't have enough men to let the electricians sit around and wait until the frame was up."

"That's where we worked out our problems," he said. "Everybody pitched in and somehow we managed to get the first building up. I had a talk with my NCOs and they began watching everybody to see what each man did best. When we started the second building up there, we formed three crews, each with a tech sergeant in charge."

First on the job was the site preparation crew headed by Technical Sergeant Willie Walker of Lackland AFB, Texas, a heavy equipment operator. This crew prepared the surface, built and set forms and poured the concrete slab on which each Prime BEEF building was constructed. In the meantime, the other two crews were pre-cutting studs and joists for their part of the job.

Following site preparation, the "first framing crew" set the base plates, wall studs, flooring for the second story and all framing below the roof. Finishing work, including roofing, electric wiring, roof trusses and outer walls were the responsibility of the "second framing crew." "We found that journeymen in the building trades can usually do an acceptable job in just about any type of construction work," the captain said. "One crew foreman was a plumber and another was an electrician, yet both swung a pretty mean hammer."

Proactive Engineers

In June 1943, Brigadier General Donald A. Davison, Aviation Engineer

for the Mediterranean Theater of Operations, gave an interview in regards to the engineers' experience in North Africa. One of his stories included the following example of engineers' proactive behavior.

"I recall that 'B' company which constructed the most easterly of the fields, moved out in front of the outposts of the 1st Armored Division. The first night in checking up on the location of the companies, when I went through the lines of the 1st Armored Division, they stopped me and asked me if I knew I was going out in front of their patrols. I said, no, that I didn't know that but I wanted to ask them one question – Had a certain engineer company gone through and were they out in front? They said, 'Yes, if you mean those damn fools who wouldn't pay any attention to us and took those big machines out, we think they are about 10 or 15 miles down the road' and I said that was what I wanted to know. I found 'B' company dug in with its defensive weapons in place, fully cognizant of the fact that they were out in no-man's land and already at work. We were able to do this because in conversations with General Williams some days before, he asked for the fields we knew he was going to want to go forward, we knew about where he was going to want to go and when he said the Sbeitla area we shot our reconnaissance out and shot our troops out immediately behind them. They worked three days on these fields, and finished them. It was by keeping in touch with the planning and keeping in touch between the Air Force and the engineers that we were able to do this."

Expedient Runway Treatment in the Philippines

During the desperate early days of World War II, Aviation Engineers in the Philippine Islands used every available method to keep runways open. Company B of the 803d Aviation Engineer Battalion was assigned to work on Del Carmen airfield, and succeeded in constructing a landing strip by the time the war began. When construction supplies began to run short, the engineers used ***molasses***, transported in tank cars, for treatment of the runway. Japanese planes attacked these tank cars for a long time with tracer bullets and could not understand why they did not catch fire. It made a mess with molasses oozing out all over the ground, but there was no fire.

Mine Clearance, British Style

During World War II, the monthly publication *Aviation Engineer Notes* shared insights and lessons learned from engineers throughout all theaters of the war. Sometimes, the information was a little tongue-in-cheek, such as this article from the March 1944 issue:

"The British First Army has reported a novel method of crossing a known minefield liberally sprinkled with 'S' mines. A battalion formed in a line and sprinted across. These tactics were apparently a complete success as there is a delay of 3 or 4 seconds between activation and detonation of the 'S' mine, and although fragments will kill up to 80 yards, the lethal range is very much less than this. In this particular instance not one casualty occurred. The method is not recommended however, since many 'S' mines now contain a detonator instead of the 4 second delay pellet at the bottom of the center tube, thus making the mine practically instantaneous."

"The Last Hold-outs"

The soldiers of Japan were not supposed to surrender under any circumstances. To surrender was a disgrace and, if they could not go down fighting, the only alternative was hari-kari. In spite of this custom, the last three surviving Japanese soldiers on Ie Shima did surrender, but under circumstances which would have deterred the most hardened of samurai warriors from suicide.

A few days after the 77th Infantry Division had completed their gory task and the island was declared secure, a detail of engineers was assigned to dig a hole for a deep pit latrine and struck it lucky. They had no more than started to dig when they broke through into a cavern of great size and depth. The roof of this cave was rock so the opening was enlarged to the required dimensions and the 14-hole latrine set up over it. Detail finished—and a chance for some sack time for the lucky crew!

Three days later, voices were heard coming out of the latrine pit. Investigation resulted in the discovery of three disconsolate Japanese soldiers who meekly and gratefully surrendered. They had hidden in the cave when the 77th overran the island. The entrance to their hide-out had been in a ravine and was buried by our engineers when making a road. But the three were well supplied with food and water so they settled down to wait for eventual rescue by their comrades.

There was plenty of air in the cave also, but it turned bad after the engineers set their latrine over what had been a small air vent concealed in some brush. About 200 men used that latrine for three days in the subtropical heat before the odor finally prompted the trio of hold-outs to risk surrender.

They were rescued, given a most welcome shower, clean clothes, interrogated, and shipped to the Okinawa POW camp. After an ordeal like theirs, probably even the Mikado would have chosen surrender." (Quoted from "Bulldozers and Bombers: The 805th Engineer Aviation Battalion in World War II.")

The Continuing Saga of Privatizing Air Force Family Housing

by Binks Franklin
Pentagon, Washington DC

Editor's Note: "Holy cow! More than two years into privatization and still no award on the first housing privatization project?!"

Such are the sentiments of those who look at the privatization process and say the concept is broken down. Others look at the privatization process and say that it is close to completion after having blazed a trail through a jungle to execute military housing privatization. One thing is for certain – many people do not understand the process or the philosophy behind Air Force military family housing privatization. The following will help explain the background and the purpose of this emerging program.

The Defense Planning Guidance (DPG) of fiscal year 1999 (resulting from the Quadrennial Defense Review) established the goal of revitalizing category 1 and 2 family houses by 2010. To the non-housing folks, these are the houses in the Air Force inventory that are in poor-to-adequate condition and require revitalization, if not total replacement. With the current level of funding in the family housing military construction (MILCON) program, however, it will be difficult to achieve the DPG goal. There is not enough money at the rate of $250 million a year to revitalize 61,000 units by the year 2010.

To aid in this effort, privatization is a tool to help accomplish some part of the inventory. In privatization, private funding will revitalize a greater number of units than could be achieved with MILCON funding alone. It is not expected to result in significant savings. Over the life of one privatization initiative, the total costs to the government will be about the same. However, with privatization, the revitalization happens a lot faster than could be achieved by MILCON at its current rate of financing. To understand how privatization works, it helps to understand some history of housing privatization.

There are several older privatization efforts still around. One of the most widely known efforts is 801 housing, better known as build-lease housing. In this effort, the armed services used congressional legislation from Section 801, Title 10 of the US Code. In 801 housing, the Air Force told a contractor what to build and arranged for the funding to construct the housing units. Following construction, a contractor managed the units on a daily basis. After 10 years of paying for the units, they became the property of the Air Force.

One of the major drawbacks to this program was that the contractor was not vested in the project. Contractors had nothing to lose by not maintaining the units since they did not belong to them. Therefore, there was no real incentive to build to the highest standards or to keep units in the best possible condition. The Air Force paid for the units and gave an occupancy guarantee to the contractor. The Air Force had to keep the units occupied. Without occupants, the Air Force would lose money, as it would have vacant units while at the same time paying service members housing allowances.

Under the current privatization initiative, the developer obtains his or her own construction financing, arranges for the construction or revitalization of the housing units, and then owns, operates, manages, maintains, and repairs the units for some 30 to 50 years. In exchange, the Air Force refers its members to the privatized housing developer for adequate, safe and affordable housing within the limits of their Basic Allowance for Housing (BAH).

Unlike the 801 housing program, service members are not required to live in these units. They get BAH to cover the rent and reasonable utility cost. If the privatized units are not up to their standards, service members can "vote with their feet" and seek housing elsewhere. When the average service member is expected to pay 20 percent of housing out of pocket, this privatization thing may not be such a bad deal after all.

How does the Air Force accomplish this? Congress passed the 1996 National Defense Authorization Act with certain provisions allowing the services to negotiate agreements with developers. The developer constructs, owns, operates and maintains 2-, 3- and 4-bedroom housing units for the military members and gives them the first right of occupancy for the units. New units are built to the same standards that one would find in the local area.

In exchange, the service member will pay rent to the developer and the developer will cover operating costs, pay back the mortgages to the lending institutions, cover the equity invested in the program and make a reasonable profit for the investors. One might suppose, however, that the income stream generated from the lower enlisted ranks might not be enough to cover all these costs. To cover potential shortfalls, the federal government proposed second mortgages or other arrangements, such as differential lease payments, to the developer. Another source of potential

funding could come from conveyed or leased units that do not require revitalization and adjacent land. This would provide an income stream to the developer to cover their operating expenses and mortgage payments.

If buying a house is financially complicated, then consider the financial analyses involved in the study of a privatization initiative. The bottom line is a matter of examining and analyzing life cycle costs, benefit analyses and risk analyses – nothing that a short financing course could not provide.

Thankfully, legal and financial experts both within and outside the Air Force provide guidance in the world of housing financing. The result must be a win-win-win situation. The privatization initiative must be good for the developer(s) so they can make a return on their investment.

It must also be good for the Air Force such that it makes economic sense over the term of the contract and provides revitalized housing sooner than MILCON could provide. Finally, it must be a winning situation for the service member so they can have adequate and safe housing without incurring out-of-pocket expense.

Privatization also revitalizes a much greater number of housing units in a much shorter time; thus helping the Air Force achieve its 2010 housing revitalization goal. Without housing privatization, revitalization could continue for a minimum of 26 years.

Each privatization initiative is closely scrutinized to ensure that it will be good for all three parties, as previously mentioned. The first review is at the installation level, followed by the major command (MAJCOM), then the Air Staff and, finally, the OSD Housing Revitalization Support Staff.

At each of these reviews, the integrated process teams representing various functional elements of the Air Force work towards providing the best privatization initiative possible.

Once the project passes these gates, it receives the next level of oversight at the executive level, composed of Jimmy Dishner, Deputy Assistant Secretary for Installations, Ron Speer, Secretary of the Air Force (SAF) Financial Management Deputy, Brig. Gen. Frank Anderson, SAF Acquisition, Dorothy Loeb, SAF General Counsel, and The Air Force Civil Engineer, Maj. Gen. Eugene A. Lupia.

For those unfamiliar with the Washington scene, this is a pretty high review for a privatization project. Once the project passes that hurdle, it must gain the approval of the Deputy Undersecretary of Defense (Industrial Affairs and Installations), John Goodman, and his staff and advisors. Following these approvals, the business plan must be developed, evaluated, approved, solicited and awarded.

As previously mentioned, the Air Force is trying to meet the DPG guidance to have all poor quality housing revitalized by 2010 and is looking to use privatization as a tool to achieve this goal.

The logical question then is, where are the best housing privatization candidates? For the past three years, privatization contract candidates have been based on which upcoming MILCON projects would make good privatization candidates.

Financial analyses will determine which projects are viable for privatization and which should remain in the MILCON program. It is not acceptable to "cook the books" to arrive at a pre-determined conclusion, and that is not happening.

The future looks different, though. Rather than analyze on a yearly basis which MILCON projects are prime candidates for privatization, the housing staff in Air Force Installations and Logistics, Housing Division is developing the Family Housing Master Plan. This will establish which installations are prime candidates for privatization and which should remain as MILCON bases. Once the study is complete, the path to follow in for a particular installation and the funding needed for the privatization effort will be clear.

Lackland AFB, Texas is the lead privatization project. The Air Staff program manager, Lt. Col. David Williams, and the Headquarters Air Force Integrated Process Team, have worked closely with Col. David Cannan and his team at Headquarters Air Education and Training Command to bring this project to fruition. The 50-year lease agreement was signed on August 4, 1998, with Landmark Organization of Austin, Texas.

Next on the horizon is a privatization initiative for Robins AFB, Ga. Maj. Andy Knapp, the Headquarters Air Force Materiel Command privatization staff (led by Col. Jim Kennedy) and the Robins staff (led by Col. John Mogge) are pushing for a March 1999 award.

The next initiative being developed is with Pacific Air Forces' Elmendorf AFB in Alaska. Maj. Steve Shea is leading this effort at the Air Staff and coordinating with Col. Frank J. Destadio's folks to work a deal privatizing more than 800 housing units. Other projects coming along include Dyess AFB, Texas; Mountain Home AFB, Idaho; Kirtland AFB, N.M.; and Peterson AFB, Colo. Studies and site visits are being scheduled for Dover AFB, Del.; Patrick AFB, Fla.; Wright-Patterson AFB, Ohio; Hanscom AFB, Mass. and Hurlburt Field, Fla.

There has been some concern expressed that once base housing is privatized, service members will be paying out of pocket for the rent. This will not be the case even with the introduction of the new BAH.

According to former-Secretary of the Air Force, Sheila Widnall, and former-Air Force Chief of Staff, Gen. Ronald R. Fogelman, the service member will not pay out of pocket for privatized housing as this would be seen as an erosion of military benefits. Air Force Chief of Staff Gen. Michael E. Ryan publicly reinforced this position.

Therefore, the Air Force goal in developing privatization initiatives is to have no out-of-pocket expenses for the service member. The rent that a service member pays (plus a reasonable amount

for utilities) will equal the BAH. Rent increases will only occur when a member's BAH increases. Should a military member choose not to conserve utilities, thus causing the utility bill to be higher than the reasonable allowance, then the member could expect to pay out of pocket.

The road to privatization for Air Force housing is a long one — currently about 30 months to obtain an award — but ways to accelerate this process are being considered. Additionally, a few issues are being reviewed to ensure that the service member comes first. Lastly, the purpose of housing privatization is to help the Air Force achieve its goal of revitalizing deteriorated units by the year 2010 and provide quality housing for service members.

George "Binks" Franklin, is chief, Facility Privatization, Competitive Sourcing and Privatization Division, for the Air Staff. His background includes Air Force base and major command experience, experience with the US Army Corps of Engineers and active duty service with the US Air Force.

Rightsourcing Tips from the Field

By Lt. Col. Kathy Ward

(Ed.'s note: This article was originally published in the May-June 1998 issue of "TIG," The Inspector General of the Air Force, pps. 8-9.)

Air Force commanders, managers and leaders at all levels are setting out to capture the efficiencies of the commercial world – harnessing its strengths to improve operations. This is not the newest management fad, it is a practical and necessary effort to make operations more efficient and to generate savings for vital force modernization. It is referred to as outsourcing, competitive sourcing or even "rightsourcing." The bottom line is that the Air Force needs to improve performance and efficiency wherever possible, contracting out what are not inherently governmental functions and keeping warfighting capabilities and core competencies dynamic and strong.

Rightsourcing uses competition with private industry to encourage both military and commercial work forces to evolve into "most efficient organizations" that cost less to operate. The Air Force expects these competitions to generate a 34 percent savings across the board. The challenge, however, is to determine "what" and "how much" to compete.

Decision makers must select candidates that offer potential savings but will not impact the Air Force's warfighting capabilities or hamper its peacetime mission. Candidates must produce real savings, with all cost and work force aspects included in competition comparisons. The following tips are derived from an Air Force Inspector General review of 19 bases involved in rightsourcing competitions:

1. Use the team approach.

Include all base organizations involved in selecting, competing and transitioning a function from the very beginning, including functional managers, contracting, civilian and military personnel and facilities management. This gets their expertise to make the project a success.

2. Develop a detailed plan.

A good road map ensures all organizations know what is expected and when it is due.

3. Keep commanders informed.

Brief the installation, group and squadron commanders at key milestones such as planning completion, candidate selection, beginning of competitions, competition results and transition plans to ensure agreement and eliminate surprises.

4. Evaluate the labor market.

Ensure there is a sufficiently trained civilian labor force available to perform the functions.

5. Consolidate functions when possible.

Efficiencies usually result from competing larger functions. Group like functions across the installation or even between installations. For example, several bases in Colorado Springs consolidated requirements and competed one waste management contract. Additional savings also result from reducing the number of competitions performed.

6. Use performance based work statements.

This approach encourages creativity and allows competitors to utilize the most cost-effective methods to meet functional requirements.

7. Pay special attention to transition plans.

Transition plans should be phased whenever possible and include sufficient overlap to handle contingencies. Consider unique equipment or software that may require detailed instruction or training before transition.

8. Remember the support agencies.

Personnel, transportation management, family support and housing may experience increased workloads during transitions. Their needs should be addressed during planning and emphasized during transition. These tips should add to the success of the Air Force rightsourcing effort; however, one more challenge remains. Share success stories with other installations. This is new ground for the Air Force and its people, and everyone must share the best practices and lessons learned. Seek ideas from others and offer them the best and worst experiences. Rightsourcing will save the Air Force money, but it is not free. In the words of the Air Force Vice Chief of Staff Gen. Ralph E. Eberhart, "Outsourcing will be the challenge of the 21st Century. We've got to do this right."

For more information, contact the author, DSN: 246-2394.

Ramstein CE Troops help Incirlik recover

by 1st Lt. Todd Fleming
86th Airlift Wing Public Affairs

Late on a Saturday evening, 30 airmen stood outside their commander's office. Their expertise was needed, and they volunteered. They wanted to be chosen as part of a 786th Civil Engineer Squadron team to help Incirlik Air Base get back on its feet following an earthquake that struck earlier in the day.

The earthquake measured 6.3 on the Richter scale and devastated southern Turkey on June 27. The quake killed at least 144 Turkish citizens and injured more than 15,000 people. Among the injured were 23 Americans at Incirlik.

That evening, the 786th CES put together a team to assess earthquake damage at Incirlik. On June 28, only one day after the earthquake struck, a Ramstein C-130 landed at Incirlik and the team was ready to go to work.

"The team assessed damage at the base," said Maj. David Mitchell, 786th CES commander, and started bringing facilities up to standards. "They've been working 12-16 hour days since arrival, visiting facilities for earthquake damage and won't return until every building at Incirlik is inspected for safety and structural soundness," said Mitchell.

"We physically went in and inspected all buildings on the base, in excess of 1,500 facilities," said Master Sgt. Charles Daniels III, NCO in charge of electrical power production. "We also inspected many off-base housing facilities for Americans."

The team found damage throughout the base ranging from minor cosmetic damage to more serious damage such as broken windows and damaged walls, said Daniels. "The base exchange sustained some of the worst damage, he said. "Nobody is allowed in there except workers in hard hats. I've been told they will need to relocate the facility somewhere else."

The team worked alongside the civil engineering civilians at Incirlik to repair quake-damaged buildings, said Daniels.

The 786th CES sent additional support the next week, which brought the number of Ramstein civil engineer troops at Incirlik up to 47.

"With so much of the squadron deployed, the remaining squadron members have been working extra hard to pick up the slack and continue to provide excellent customer service here for the entire KMC," said Mitchell. "My squadron went above and beyond the call of duty on this one. It made me proud."

Deicing Process

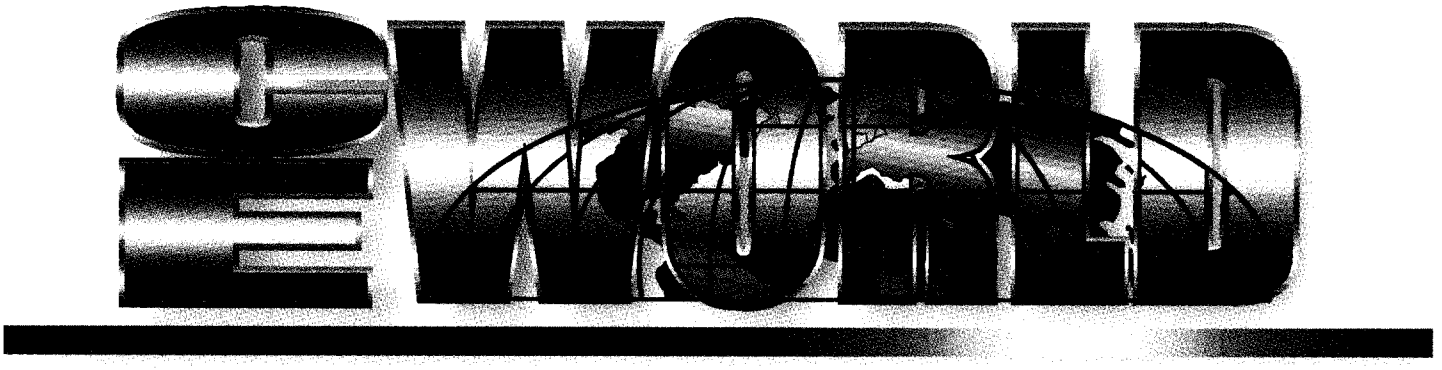
Continued from page 17

Air Force Reserve Command's Case Study: Niagara Falls Air Reserve Station, NY

Following on the Canadian success story, Air Force Reserve Command's Niagara Falls Air Reserve Station (NFARS) volunteered to host a case study to develop US Air Force, in-house, hands-on experience for using non-urea chemicals with precision application equipment. Planning for the case study was a cross-functional team effort undertaken by the Air Force Civil Engineer Support Agency at Tyndall AFB, Fla., and the Air Force Center for Environmental Excellence and the Human System Center at Brooks AFB, Texas. The NFARS case study was conducted through the winters of 1997 and 1998. HSC/XRE is consolidating the results for presentation at the next Air Force Deicing/Anti-icing Stakeholders Group meeting. Preliminary comments from the case study are positive. Aside from some "lessons learned" on airfield deicing crew training and familiarization with the non-urea chemicals and precision application equipment, the preliminary results of the NFARS case study support a managed transition toward the "new" deicing process.

Looking Ahead

The next step of the Air Force Civil Engineer airfield deicing modernization initiative is to take advantage of the Canadian Air Force experience and the positive initial reports from the NFARS case study. HQ USAF/ILEV and ILEO in conjunction with the major commands, AFCESA, AFCEE, and HSC are currently evaluating a systematic procurement of precision chemical application equipment and development of a new training program for airfield deicing crews and managers. In addition, HQ USAF/ILEV will continue working with the Canadian Air Force in tracking the development and potential benefits of remote GPS thermal and friction mapping of runway surfaces for possible future enhancements of the airfield deicing/anti-icing process. Planning and programming activities over the coming months are targeting efforts to ensure airfield deicing managers and crews are trained and equipped to efficiently and effectively execute their mission. Successful implementation of the new deicing process at appropriate installations will help the Air Force simultaneously enhance operational flexibility, reduce costs, protect the environment, and protect aircraft and airfield infrastructure from potential corrosive impacts of deicing chemicals.



Power production team pushes juice

by Tech. Sgt. George Hayward
4406th Operations Group (Provisional) Public Affairs

They push enough juice to power three city blocks. But there's no master "on/off" switch controlling the flow of electricity at Ahmed Al Jaber Air Base, Kuwait. Just 13 people running nearly 60 generators.

The 4406th Civil Engineer Squadron's power production team holds the reins on more than 3 million watts of power that run nearly the entire compound. The only area they don't "light" is the dorms and other buildings of Coalition Village, which run off commercial power.

The bulk of the electricity comes from their main "power plant" inside the U.S. compound. To see it, though, one wouldn't realize it's the "juice factory" for an air base. Four 1-megawatt generators – three primaries and one backup — sit outdoors, sheltered from the elements only by a metal sunshade.

But even that much electricity isn't enough to handle the needs of a small air base. The power pros also maintain 54 mobile generators that produce 60 to 100 kilowatts each. Those smaller units provide primary power for 10 scattered locations on the base, including Tent City and Pilot Town.

"This power system we've got here is unique to the Air Force," said Tech. Sgt. Jimmy Virden, the power pro team's noncommissioned officer in charge.

Virden said one of the unique aspects of their system is that the generators run on a variety of voltages and frequencies (called "hertz") because of the differences in host country and U.S. electrical systems.

Those differences, as well as the desert heat, bring many challenges to what is a vital but potentially dangerous job.

For instance, most foreign-made equipment and facilities run at 50 hertz.

To keep their generators from overloading, the power pros must "de-rate" their output by 20 percent. They must also bring them down another 20 percent so the extreme temperatures of the desert climate don't overheat them.

"The heat is really hard on the generators," said Virden.

Sometimes, though, even those precautions are not enough to prevent overloads or surges that shut down entire areas of the base. Because of that, the power pros work 12-hour days, six days a week; however, they are always on call.

"We're all on standby because if anything goes down, we have to respond right away," said Staff Sgt. James Herd, a power pro.

That means many of the power pros spend an average of 12 hours a week on "off-duty" responses. The calls come at all hours of the day and night. "Your job is never through. Something is bound to happen – always," said Airman Steve McQueen, a power pro. (*Courtesy of Air Combat Command News Service*)

Eielson machine turns trash into fuel

by Tech. Sgt. Tammy Cournoyer
Air Force News Service

Eielson Air Force Base, Alaska, residents are throwing away tons of fuel every day — on purpose — and base officials and environmentalists think it's great!

No, base residents aren't shameless "wasteoids," but environmentally-wise people who rely on wood, paper, cardboard and plastic to keep the base's power plant running. Using special recycling bins, residents gather "food" for a beast known as the Refuse Derived Fuel (RDF) pelletizing machine.

Forced by federal mandate to come up with ways to reduce their solid waste by 30 percent, Eielson officials had no other choice than to look for a unique recycling process. Because Eielson is so far inside interior Alaska, there are few commercial outlets for recyclable materials, and hauling it to the "lower 48" is too expensive. But base officials came up with an idea of producing RDF by converting their own trash into fuel using the pelletizing machine. In operation since 1995, it is the only in-house program of its kind in the Department of Defense.

Recyclables are gathered from central collection points around base, sorted by hand, then fed into the machine using a small tractor. The RDF machine gobbles up solid waste, chews it into fine little pieces, then forms pellets. The pellets are carried by conveyor belt to a dump truck which hauls them to the power plant where they are mixed with coal in "grizzlies," or large pits. More conveyors carry the mixture

— normally 10 percent pellets to 90 percent coal — into boilers to produce pressurized steam that is sent to a turbine to produce the base's heat and electricity.

Not only does this process help ease the burden on the area landfill, it also helps save taxpayer money, said Senior Master Sgt. Myrl Kibbe, the environmental operations superintendent for the 354th Civil Engineer Squadron.

The base produces an average of 75 tons of pellets a month. Not only is this garbage kept from filling up the landfill, but the base is spared thousands of dollars a month in landfill "tipping" fees.

"We collect an average of about 220 tons of trash a month that goes to the local landfill," said Kibbe. "For every ton of trash, we have to pay $50 to dump."

Trash not sent to the landfill saves money. The pellets then supplement costly coal in the base power plant.

"Last year we saved $40,425 using pellets instead of coal, and $48,125 in tipping costs," said Kibbe.

The coal-burning power plant is the sole heating source for base work areas, support facilities and base housing. It provides almost all the electricity for the base. During the coldest months, December through February, the base can burn up to 750 tons of coal a day, at nearly $50 per ton. Power is vital in the winter when temperatures plunge far below zero.

Twenty-four hours without power in midwinter could ruin the base, said Kibbe. Besides broken pipes and the resulting damage, human safety is a factor and people would have to be evacuated.

But pulverizing trash isn't always a smooth process. The three-person crew must sort through the waste looking for items that don't belong, such as car parts and small appliances. A stray piece of metal can seriously damage the equipment.

"Overall, people do a pretty good job out here, but sometimes they just get careless," said Kibbe.

The crew has a display showing some of the items people have carelessly tossed in the recyclable bins. Fortunately, a life-size toy skeleton from Halloween is the only "body" found so far.

"We have found VCRs, TVs, computers and all sorts of car parts," said crew member Frank Baxter.

The machine eats about three and a half tons of waste an hour, and no matter how hard they try, they can't catch everything.

One item that slipped through in 1997, a lighter, started a fire. The fire was then carried down the conveyor belt. No one was injured, but there was some structure damage. Two other fires have occurred. The building now has a fire suppression system in strategic locations.

When the equipment is running, the crew stays in contact using voice headsets. Experience has taught them what to listen for that could mean trouble.

Another challenge facing the crew is space.

"One problem we have is a lack of covered storage space," said Kibbe. "The pellets have to stay dry or they'll fall apart. Once we make them, we have to burn them."

The crew also gathers glass and feeds it into a separate pulverizing machine. Unlike crushed glass, the product comes out smooth with no sharp edges. It can be used to fill pot holes, for road base, and as "non-skid" in the winter.

Although recycling isn't mandatory, housing residents are issued three recycling bins to use. Duty sections have them as well. But with only a limited number of people on base and living in the local area, there's only so much recyclable material to gather.

The sergeant believes education is the key to keeping the program successful, and even hosts tours through the facility to various base and civic groups, agencies, and school children.

"We try to spread the word, show people what it (the RDF machine) is, and I'm hoping that everyone that sees it is one more person who will put some paper in a recycling bin."

Photos by Staff Sgt. Andrew N. Dunaway

Paul Mickelson shows what happens to solid waste after being fed into the Refuse Derived Fuel pelletizing machine. Behind him is a mountain of recyclable material that must be sorted by hand before being fed into the machine.

PEOPLE

Lt. Gen. Handy to replace retiring Lt. Gen. Hallin

Lt. Gen. William P. Hallin retires November 1, 1998, from his position as Deputy Chief of Staff, Installations & Logistics, Headquarters United States Air Force, Pentagon, Washington, DC.

Lt. Gen. John W. Handy has been selected to replace Hallin, moving from his assignment as Commander, Twenty-First Air Force, Air Mobility Command, McGuire AFB, N.J.

Hail to the new chief

Chief Master Sgt. Kenneth E. Miller, Chief, Enlisted Matters for the Civil Engineer (HQ USAF/ILEM) retired September 1, 1998. Miller vacated his position July 1 after a ceremony commemorating the occasion. Chief Master Sgt. Richard D. Park, most recently assigned to the 366th Training Squadron, Sheppard AFB, Texas assumed his new duties as Chief, Enlisted Matters for the Civil Engineer in August.

Air Force names 12 Outstanding Airmen of the Year

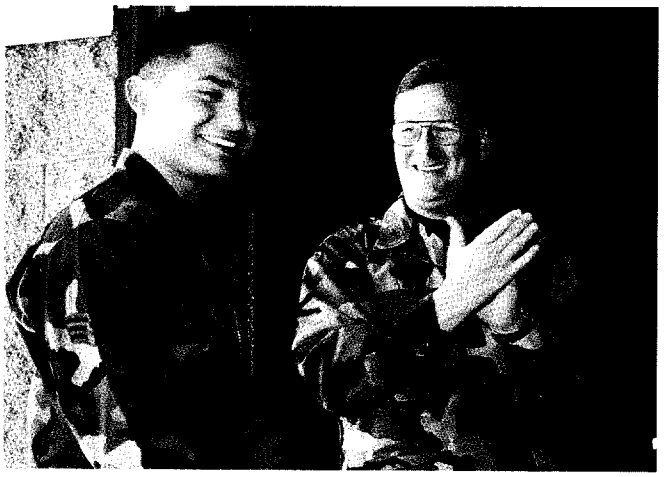
The Air Force selected the service's top enlisted members, naming 12 airmen and noncommissioned officers as the Outstanding Airmen of the Year for 1998.

Forty-eight people representing all of the major commands and a number of the direct reporting units, field operating agencies and Air Staff agencies competed for the prestigious award. All nominees are eligible to wear the service-unique Outstanding Airman of the Year ribbon while the 12 selectees will wear the bronze service star device on the ribbon.

The selectees will be honored during the Air Force Association National Convention set for September in Washington, and will serve as members of the AFA's Enlisted Council. The civil engineer winners, and a brief look at their accomplishments, are:

Senior Airman Homero H. Ruiz Perez, 341st Civil Engineer Squadron, Malmstrom AFB, Mont. An engineering assistant apprentice, Ruiz Perez was noted for his flawless performance as lead draftsman on 18 project designs during the year, the highest design output in 15 years. He also completed design drawings to renovate six missile alert facilities, enhancing the wing's operational readiness. A native of Matamoros, Mexico, Ruiz Perez deployed in support of the U.S. Border Patrol's tactical unit and its counter-drug mission. Ruiz Perez earned 41 semester hours during 1997 toward a bachelor's degree, maintaining a 3.50 grade-point average.

Tech. Sgt. Quinton K. Yoakum, 65th Civil Engineer Squadron, Lajes Field, Azores. A native of Boron, Calif., Yoakum successfully managed the application of pesticides and herbicides to more than 1,000 acres of base grounds, 852 industrial and housing facilities and almost 2 million square yards of airfield pavement. The environmental technician was noted for being a driving force behind Team Lajes receiving the 1997 Air Combat Command Overseas Environmental Quality Award. He also received the Navy Achievement Medal for his efforts with the Cuban and Haitian refugee beddown and as a customs agent for Operation Sea Signal at Guantanamo Bay, Cuba. *(Courtesy of Air Force Personnel Center News Service)*



"If you can't be there on time, be there early," SrA Homero Ruiz Perex, 341st Civil Engineer Squadron engineering assistant apprentice, philosophically spoke of his career motto. Photo provided by The High Plains Warrior.

Key personnel changes within the CE community:

At the Air Staff in Washington DC, the following personnel changes are taking place:

Col. David W. Defoliart replaced Col. Thomas J. McDonald as chief, Programs Division (ILEP);

Col. Carey Baldwin replaced Col. Thomas M. Griffith as chief, Operations Division (ILEO);

Col. Emmitt J. Smith replaced Col. Donald E. Murphy as chief, Housing Division (ILEH);

Col. (sel) David A. Sweat replaced Col. Joseph C. Munter as chief, Competitive Sourcing and Privatization Division.

At the major command level, the following personnel changes are happening:

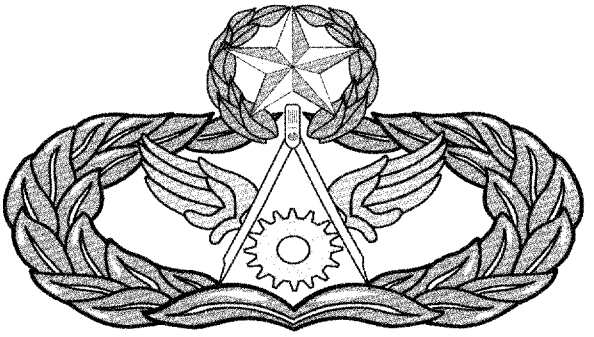
Col. Thomas M. Griffith replaced Col. Richard M. Hanes as HQ Air Force Materiel Command chief of the Operations Division (HQ AFMC/CEO);

Col. Thomas J. McDonald replaced Col. Emmitt J. Smith as HQ AFMC chief of the Environmental Division (HQ AFMC/CEV);

Col. Glenn D. Haggstrom replaced Brig. Gen. (Sel) Dean Fox as the civil engineer, Headquarters, U.S. Air Forces in Europe.

At the Air Force Civil Engineer Support Agency, (AFCESA) Tyndall AFB, Fla.:

Col. Bruce F. McConnell, previously of Holloman AFB, N.M., is the new director of Contingency Support (CEX), replacing Col. Randall L. Turner, the new Operations Division chief at Headquarters, Air Education and Training Command at Randolph AFB, Texas (HQ AETC/CEO).



Col. Lance C. Brendel is the director of Technical Support (CES). Brendel is most recently of Pope AFB, N.C.

The Air Force Center for Environmental Excellence (AFCEE) says farewell to the following individuals:

Col. Steven C. Boyce, the former director of Environmental Conservation and Planning, has moved to Vandenberg AFB, Calif. as commander of the 30th Civil Engineer Squadron.

Col. Patrick T. Fink, director of Environmental Quality, is leaving AFCEE to be the chief of the Environmental Division, HQ Air Education and Training Command, Randolph AFB, Texas.

1998 Civil Engineer Major-Selects

The following captains have been selected for promotion to the rank of major. Congratulations to everyone on their achievement!

Michael A. Addison, Jr.
James T. Allen
Timothy C. Anderson
William M. Barrett
Mark Bednar
Sandra J. Beneway
Alvin L. Boone
Elizabeth A. Brown
Sherry M. Bunch
David A. Caffee
James A. Cherrey
Daniel S.J. Costello, Jr.
James D. Eaton III
Christopher E. Findall
John D. Flint
Darren P. Gibbs
Robert J. Gingell II
Mitchell R. Gordon
Fusan S.K. Grumbach
Timothy P. Haynie
Clark D. Hinga
Richard H. Houghton
Russell R. Hula
Derek A. Jeffries
Jeffry D. Knipple
Robert A. Langhill
David A. Martinson
Jani L. McCreary
Thomas L. Mitchell, Jr.
Phillip M. Moessner
Pamela A. Moxley
David W. Myhre, Jr.
Lowell A. Nelson
Lucian L. Niemeyer II
Salman M. Nodjomian (BTZ)
Brian A. Ouellette
William B. Owens, Jr.
Daniel B. Phillips
John C. Prater
Kenneth H. Rogers
Jeffrey N. Rumrill
Mark A. Ruse
Derrek D. Sanks
Richard E. Sloop, Jr.
Kenneth P. Smith
Robert E. Thompson
Curt A. Van De Walle
William D. Wilkie
Eva C. Wilson
Ronald J. Wortman
Robert E. Yates

Patrick CE Team Waging War Against Pesky Enemies

by Tech. Sgt. Ginger Schreitmueller
Patrick Air Force Base, Fla.

A silent war rages across Patrick Air Force Base. The enemy lurks amid the canals that snake around the base. He hides beneath the ornate bushes that camouflage the very office buildings where you work.

He has found safe haven among the rafters inside hangars. You can even find him clustered in your yard — waiting, watching, growing stronger in numbers.

It's not an easy war to win, but a team from the 45th Civil Engineer Squadron has identified and targeted the enemy for eradication.

The Environmental Pest Management crew is a four-man team taking on the seemingly endless battle against things that creep, crawl, slither, sneak and annoy most of us.

According to the noncommissioned officer in charge of Pest Management, the battlefield covers every nook and cranny in the base's industrial areas.

"We're responsible for controlling every weed, insect, stray animal, bird and rodent that's trying to invade these areas," said Staff Sgt. Bill King. "Our job is to help keep the pests from taking over."

The crew's primary attack plan revolves around defeating the pests through pro-active measures — keeping the enemy on the defense.

"We try to find the conditions that allow bugs and insects to get out of control," said Staff Sgt. Jayson Thomas. "We'll go into a facility and point out unsanitary conditions that invite pests in. No amount of chemical is going to get rid of roaches if there's food all over an office break room, or grease and dirt piled thick in a cooking area."

Pointing out holes in walls, dirty floors and that stash of cookies hidden in a desk is only a fraction of the crew's pro-active measures. They also conduct fogging operations during rainy season to thwart any ambushes by invading mosquitoes.

Another "beat-the-bugs-where-they-live" measure takes the crew into the miles of canals circling base.

"We kill off the above-ground and aquatic weeds growing in the canals. This allows the water to keep moving and avoid stagnant ponds which are a prime breeding ground for insects," said King. "It also serves as an aesthetic measure to help the areas look cleaner and more attractive."

Though the Pest Management crew has a variety of chemical defenses at its disposal, they're not a trigger-happy bunch. According to King, the Air Force mandated chemical use be cut to 25 percent by the year 2000. Patrick's Pest Management crew exceeded the standard by already cutting its use by 80 percent.

"Sometimes people get mad at us for not just showing up and spraying a chemical around their work area. But, environmental safety is a priority for us," said Mr. Mike Randone. "We're not only governed by what the Air Force mandates, we're also bound by federal, state and local laws. We aren't about to use a chemical when a non-chemical alternative will work as well — if not better," he added.

Being environmentally conscious is important, said King, especially when you take into consideration the "positive" wildlife that calls Patrick home.

"There are birds, frogs, lizards, snakes and insects that have a role in keeping the pest population down," he said. "Nothing we spray on base is harmful to these creatures or to people. All the chemicals we use are designed for use in places such as hospitals, child care centers and offices. We don't want anything getting into the ground water and contaminating the rivers or harming any endangered species," said King.

Despite their best offensive techniques, the crew knows they can only hope to control the pest population and not achieve complete elimination.

"You're never going to get rid of all the pests, no matter what you do," said Airman 1st Class Allan Britten. "We try to work with people and educate them on how to control the pest population and keep the numbers down to a manageable level."

The Pest Management crew also use baits, traps and insect-larvae growth retardants to keep the critter population from exceeding the base population.

The crew has an open-door policy — for people only, no pests allowed – and will do what they can to help find an answer to a pest problem. They can identify just about every creature, critter, creepy-crawly and tuft of crab grass around.

"We usually know what pest it is and how to beat it. If we don't, we have an extensive library on pest management. We also work with our counterparts in the county agricultural office to find an answer and solution," said King.

Since it's only a four-man shop, the responsibility for critters in the housing area is handled by the housing maintenance office.

If you're tired of smashing, swatting, shooing and pulling them out by their roots, the Pest Management crew offers some simple counter-attack measures for pest control.

If you don't want spiders hanging around, sweep down their webs. Eventually, spiders will tire of being bothered and look for somewhere else to hang around.

Keep the base of your home free from mulch, grass, trees and bushes. If debris goes over the metal termite strip, termites can use it as a ladder up and into your home.

Keep bushes trimmed off the ground. Low-lying ornamental shrubs and mulch offer creepy crawlies a premium hiding place.

Use liquid dishwashing soap to repel insects. Mix it with water in a spray bottle and take aim at aphids on bushes.

Plant marigolds in your flower bed as a natural insect repellent.

Boric acid is a safe, multi-purpose insect killer. Most stores carry boric acid, which is a mineral. Mixed with water, it is safe to use on walls, cupboards and countertops to keep fleas, ants and other creepy-crawlies away. As a dry powder you can sprinkle it on carpets, under beds and beneath couch cushions.

Diazine granulars sprinkled around your yard offer a solid defense against turf insects such as roaches and ants. Follow the label instructions!

When using a chemical treatment, don't forget to cover the perimeter of your home, as well as window sills and bushes.

Bugs don't like clean spaces. Ensure food is stored in air-tight containers. Wipe up spills immediately. Vacuum or sweep up crumbs before critters have a chance to find them.

When watering your yard, don't flood it. Standing water is an insect breeding ground.

The only way to get rid of "stickers" in your yard is to pull up the weed's roots. Most weed killers are a temporary fix against this hardy pest.

Keep your grass cut, fertilized and watered. Pests don't like healthy yards.

Toss out cardboard boxes and papers stowed in your garage. They are a favorite snack for roaches, an ideal resting place for rats and a dark shelter for spiders.

If you have a problem with gnats, replace the dirt in potted plants every few months. Gnats lay their eggs in the dirt. *(Courtesy of 45th Space Wing Public Affairs)*

Bases win environmental awards

Three Air Force bases have received White House Closing the Circle awards for their individual environmental programs. A fourth base received an honorable mention for its program.

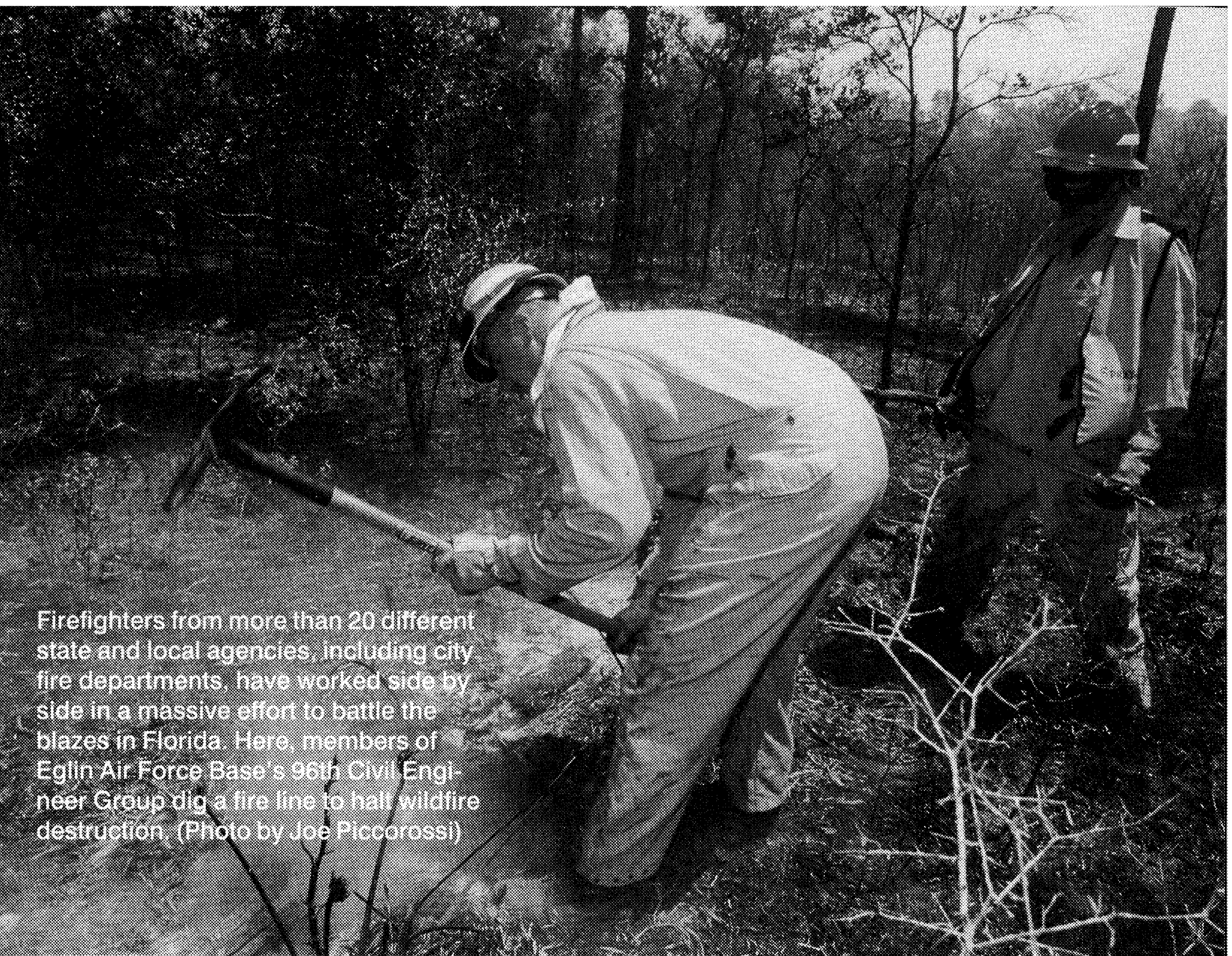
Closing the Circle awards are presented to federal agencies that demonstrate outstanding achievement in areas including environmental innovation, recycling, and waste and pollution prevention. This year there were 315 nominations from which 18 winners were selected. Twelve agencies were selected for honorable mention.

Air Force environmental programs honored were those at Brooks Air Force Base, Texas; McClellan AFB, Calif.; and Wright-Patterson AFB, Ohio. The Air Force Academy, Colorado Springs, Colo., received an honorable mention for minimizing hazardous waste through recycling.

The Air Force Center for Environmental Excellence at Brooks was recognized for its role in the Texas Pollution-Prevention Partnership. The partnership was formed in 1996 to make pollution prevention the first choice in environmental management by federal and state agencies. The largest in the nation, the group has 25 agency members and teams federal facilities and a state regulatory agency, the Texas Natural Resource Conservation Commission, to work toward a common goal. The partnership conducts non-regulatory pollution prevention site-assistance visits and has identified 400 opportunities to reduce hazardous waste, air emissions, water use and more. These assessments have reduced waste and compliance costs while producing savings.

For hazardous waste prevention, an award went to McClellan's Environmental Management Directorate. In recent years, the base has spent an average of $4 million annually on pollution prevention and has reduced hazardous waste disposal by 82 percent since 1985. Among McClellan's most notable programs are a project to treat and reuse plating shop rinse water, the start of a hazardous waste "pharmacy" to manage the issue and requisition of hazardous materials on base, an aggressive curbside recycling program that has reduced solid waste disposal by over 65 percent and a "clean-air commute" program that encourages people to use alternatives to fossil-fueled automobiles.

The 88th Air Base Wing at Wright-Patterson won its award based on its radioactive material recovery and recycling program. Established in 1993, it provides an alternative to long-term waste storage. Over a four-year period, this program reduced radioactive waste activity by 99 percent and saved more than $600,000 in disposal costs at the base. Radioactive materials recycled there include depleted uranium, krypton, tritium and others. Since the program is the only one of its kind within the Defense Department, more than 400 requests from 125 Air Force installations have been received to recycle radioactive materials at Wright-Patterson.*(This report courtesy of the Air Force News Service)*



Firefighters from more than 20 different state and local agencies, including city fire departments, have worked side by side in a massive effort to battle the blazes in Florida. Here, members of Eglin Air Force Base's 96th Civil Engineer Group dig a fire line to halt wildfire destruction. (Photo by Joe Piccorossi)