



Education and training: *An investment in the future*

Special report
Gen. Martin assumes command of AFMC



LEADING EDGE

Headquarters
Air Force Materiel Command
Wright-Patterson Air Force Base,
Ohio

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Department of Defense
Thomas Jefferson Awards
First Place, Magazine Format,
1996
Second Place, 1998, 1997, 1995

Air Force Media Awards
First Place, Magazine Format,
1998, 1997, 1996, 1995, 1994
Second Place, 2002, 2000, 1993,
1992
Third Place, 2001, 1999



This funded Air Force magazine is an authorized publication published monthly for the people of the Air Force Materiel Command. Contents of LEADING EDGE are not necessarily the official views of, or endorsed by, the U.S. Government, the Department of Defense or the Department of the Air Force. The editorial content is edited, prepared and provided by the Public Affairs Office of Headquarters Air Force Materiel Command, 4375 Chidlaw Rd., RM N152, Wright-Patterson AFB, Ohio 45433-5006. The magazine can be found on the Internet on AFMCPA's home page: http://www.afmc-pub.wpafb.af.mil/HQ-AFMCPA/leading_edge/index.htm. Photographs are official U.S. Air Force photos unless otherwise indicated. Distribution ratio is 8:1. For submission and writers' guidelines, contact the editor at the above address or DSN 787-7602 or (937)257-1203. Send email to: LeadingEdge@wpafb.af.mil.



Up Front

4 New four-star offers thoughts on commanding AFMC

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6 — 17 AFMC: Investing in the future through education and training

This issue highlights the importance of Air Force Materiel Command's education, training and development mission. AFMC training programs range from traditional to non-traditional methods — mentoring, professional certification, virtual education centers, tuition assistance and graduate-level degree programs to name just a few. Turn the page to see the many ways AFMC personnel are expanding their knowledge.

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Cover illustration courtesy of the Air Force Institute of Technology (Mr. Eugene Lehman). Cover design by Ms. Libby Van Hook, editor.

On Page 27 in the July edition of the Leading Edge, Maj. Jeffrey Thorburn was incorrectly identified as the commander of the 96th Services Squadron. It should have read the 96th Security Forces Squadron.

Land rovers powered by AFRL-developed batteries

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — When the Mars exploration rovers "Spirit" and "Opportunity" launched from Cape Canaveral June 10 and July 7, a part of the Air Force Research Laboratory soared with them.

The two land rovers, expected to touch down and explore opposite sides of Mars in 2004, are powered by rechargeable lithium-ion batteries AFRL Propulsion Directorate experts researched and developed. "Spirit" and "Opportunity" will act as robot geologists while on Mars.

To search for and characterize a wide range of rocks and soils that hold clues to past water activity on Mars, NASA needed a more powerful lightweight battery to withstand extreme temperatures and provide more electricity to the rover.

Propulsion directorate officials said more power will allow them to perform on-site scientific investigations during the course of their 90-day mission and trek up to 40 meters per day.

— Reported by AFRL Propulsion Directorate

AFRL demonstrates new security technology

ROME, N.Y. — Representatives from the Air Force Research Laboratory Information Directorate and Dolphin Technologies of Rome recently demonstrated capabilities of the security-enhanced, multi-domain network management project to representatives of the U.S. Pacific Command at Camp Smith, Hawaii, as part of the Joint Warrior Interoperability Demonstration.

The project combines the security-tested and accredited information support server environment guard with the network management capability provided by the MDNM program, according to Mr. Scott Shyne, AFRL information grid division program manager.

The Defense Advanced Research Projects Agency provided funding that resulted in the Joint Intelligent Center, U.S. Pacific Command, requesting a leave-behind capability of the SE-MDNM platform so they could perform further testing and evaluation.

— Reported by AFRL Public Affairs

WR-ALC Team aims to Lean antenna workflow

ROBINS AIR FORCE BASE, Ga. — Teamwork was a key factor for a recent Lean event involving workers in the Precision Attack Radar/Gyro Branch of the Avionics Division, the Special Operations System Program Office and representatives of the 919th Maintenance Squadron out of Duke Field, Fla.

In a value stream map event in May the Lean team gathered to see what would improve the process of repairing the AN/APQ-122 (V) 8 "Mapper" antenna, used by special operations forces for precision ground mapping.

Several changes to the current process were discussed to improve the process, shorten work flow days and help reduce repeat work significantly — from 60 to 20 days, or a 66 percent reduction in flow days.

As a way to further the communication and understanding between the



Mr. Phillip Myers, electronics mechanic at Robins AFB, Ga., works on a ground map antenna. The radar system maps out terrain for Special Operations Forces units. (U.S. Air Force photo by Ms. Sue Sapp)

groups, the Duke Field team has invited the Lean team members to fly with them on a training mission. This will help those working the parts at Robins appreciate the need for the system to be in good working order on its return to the 919th.

— Reported by WR-ALC Public Affairs

AFRL, NASA sign agreeing to share research findings

BROOKS CITY-BASE, Texas — Sharing information and research on the human factors in space and aviation is the highlight of an interagency agreement officials from the Air Force Research Laboratory here and NASA Ames Research Center in California signed recently.

Much of the research, and the first collaborative effort, will center around the effects of fatigue on aviators and astronauts and methods to counter that fatigue. Experts from the NASA Ames Research Center study pilot fatigue and ways to combat the problem for civilian pilots, while AFRL's human effectiveness directorate researchers do the same for military pilots.

Other projects include collaborating on the effects of fatigue on the scientists and researchers working with the Mars Rover mission and people involved with jet propulsion studies.

— Reported by 311th Human Systems Wing Public Affairs

CV-22 Osprey returns to flight; first time in two years

EDWARDS AIR FORCE BASE, Calif. — The CV-22 Osprey aircraft nine showcased new modifications and a relocated antenna July 14 as it took to the skies for the first time in more than two years.

Osprey nine flew for more than an hour, performing a series of return-to-flight checks which evaluated the aircraft on basic flight performance, airspeed calibrations and handling qualities.

Aircraft nine hasn't flown since arriving here Sept. 18, 2000, because electronic warfare modifications tested in the Air Force Flight Test Center's Benefield Anechoic Chamber revealed weaknesses in its antenna installation.

During the past two years, the aircraft underwent modifications that included updating the electrical and hydraulic line clearances along with installing electronic warfare countermeasures and heat-seeking missile countermeasures.

— Reported by AFFTC Public Affairs

Gen. Martin offers thoughts on leading AFMC

By Ms. Libby Van Hook
AFMC Public Affairs

Air Force Materiel Command's fifth commander officially took the stick Aug. 22 during change-of-command ceremonies at the U.S. Air Force Museum. Gen. Greg Martin, former United States Air Forces in Europe commander, assumed command from Gen. Lester Lyles who retired after more than three decades in uniform. Gen. Martin spoke to the Leading Edge before assuming command regarding his leadership philosophy and initial expectations.

Q) How do you feel about becoming AFMC's new commander?

Gen. Martin: Absolutely thrilled! There are so many important and exciting things happening in the acquisition and logistics business, which I'm now going to have an opportunity to be a part of and learn more about. I can hardly wait to get started.

Q) Gen. Lyles told the command some very nice things about you. Is there anything you'd like to say about him?

Gen. Martin: I have had the pleasure of knowing Gen. Lyles from the time he was the Space and Missile Systems Center commander at Los Angeles Air Force Base, Calif., back in the 1995-1996 time frame, to being his next-door neighbor when he was the director of the Ballistic Missile Defense Organization and then the vice chief of staff of the Air Force. And now, as a fellow major command commander, I've gotten to know him not only professionally, but also personally. I can think of no finer gentleman or officer in our Air Force. But what's most impressive about him is, no matter what the job and no matter how difficult the challenge, he maintains a sense of professionalism and sensitivity to people that is truly extraordinary. And he does that while he works those most difficult problems and brings them to a successful and important conclusion.

Q) What kind of leader is Gen. Gregory Martin?

Gen. Martin: It's hard to capture a concept like that; I care



Gen. Greg Martin assumed command of the Air Force Materiel Command from a retiring Gen. Lester Lyles during a ceremony at the U.S. Air Force Museum, Wright-Patterson AFB, Ohio, Aug. 22. (Air Force photo by Ms. Libby Van Hook)

deeply for the people. I care just as deeply for the mission. In the end, probably the most important feature is that I rarely have the answer to any problem I face by myself. It usually comes from a thorough and detailed review of facts and opinions from many others associated with that issue or problem. Then I try very hard to make sure that the path chosen is one that all of those involved will understand, internalize and execute with a sense of ownership and determination.

Q) Do you think your experience in operational commands will help you as AFMC commander?

Gen. Martin: I hope so. Going into this command, I know there are many aspects of the Air Force Materiel Command mission that I'm not well-versed in. But, by the same token, there are many activities that are important to our Air Force, and in which AFMC plays a major role, that I am familiar with. I hope that between my operational perspective and this command's acquisition and logistics perspective, we'll find new and important areas to make the command even more effective and efficient than it has been in the past. And that "even" is very important. I must also tell you that as a warfighter I have been the beneficiary of AFMC's work, most recently in major support roles for two major conflicts — Operation Enduring Freedom and Operation Iraqi Freedom. AFMC delivered every time and should be extremely proud of the support it provides to the warfighter, specifically the men and women on the front lines of the world's greatest Air Force.

Q) What can we expect from you as commander?

Gen. Martin: First of all, I have great admiration and respect for the leadership Gen. Lyles has already provided this command. I hope to continue the positive direction he set out for this command. Along the way I think we'll find, as is true in any organization, some loose ends and areas where I'll be able to provide my operational perspective and leadership and make improvements to a command that's already carrying huge responsibilities for our Air Force. Specifically, I think we have a golden opportunity to reconnect our command and the assistant secretary of the Air Force for acquisition organization in a way that will provide tremendous energy and improvement to our acquisition cycle times and credibility. I will look for ways to continue to improve the speed in which we deliver the latest science and technology innovations to our weapons systems. I will continue the focus Gen. Lyles has had on creating the expeditionary culture and mindset within this command. And everywhere we can, we'll try to become, as Gen. Lyles has stated, more efficient and effective in everything we do.

Q) What do you expect from us?

Gen. Martin: I hope that I'll receive the same sense of dedication and loyalty from the officers, enlisted and Air Force civilian members of this command that were so obvious to me as a warfighter in the field during the Global War on Terrorism. And I hope that when we see a better way of doing the job or we make a change in either the structure or the relationships of our organization, that we pursue those changes with enthusiasm and the attitude that will allow them to be successful.

Q) What are your initial plans and expectations for AFMC?

Gen. Martin: I think first and most important is for me to learn as much as I can. I have the initial schedule of orientation briefings from the different directors on staff and have just finished the initial look at a base visit schedule to visit each of the major installations in AFMC. That way I can better understand the people, mission and the concerns they have whether it be concerns with the structure, facilities or resources. So, the first thing is to learn as much as I can from the organizations and from the bases. From that, we'll begin to work with the directors and commanders on those initiatives that can make a difference in improving the capabilities of this command. The problem during any orientation is that there's never a moment that a command such as AFMC is stationary. So while I'm learning, I'll have to be dealing with issues and challenges as they come forward. It's my hope that I'll get the orientations and introductory briefings done as quickly as possible, but nonetheless I'll rely very heavily on the professional people of this command to guide me during that orientation, while I'm dealing with the issues and challenges as they come forward.

Q) Is there anything else AFMC people need to know as you begin your command?

Gen. Martin: I think it's important for them to know that I don't have all the answers to the concerns and issues and all the challenges that face this command, but that's not new. I didn't have it all squared away when I went to USAFE and I didn't have it all squared away when I went to SAF/AQ or in any other job I've ever had. I depend on the people to help guide me as I learn and then to execute the decisions that we make along the way. Throughout my career that has served me well and the people have never let me down. I know that will be true at AFMC. As I said in the beginning, I am excited to be here doing this!

Q) Why do they call you "Speedy?"

Gen. Martin: When I was an F-4 pilot at Holloman Air Force Base, N.M., in 1973 to 1976, they had an indicator in the F-4 that said G S knots. That stood for ground speed in knots. My initials are G.S. Martin and I was on the squadron football team. I was an end and was a little faster back in those days, so I got the nickname "ground speed Martin" and that got changed to "Speedy." And that's my story and I'm stickin' to it. That's how that name came about.



"I am proud to be given the trust and opportunity to lead this command of professionals as we help develop, deliver and sustain the systems that will carry the world's greatest Air Force..."

Gen. Greg Martin

Developing airmen

The heart of combat capability

By 1st Lt. Gailyn Whitman
AFMC Public Affairs

In January 2003, Secretary of the Air Force Dr. James Roche and Air Force Chief of Staff Gen. John Jumper announced a more refined set of Air Force core competencies, placing the focus on developing airmen, technology-to-warfighting and integrating operations.

This issue of *Leading Edge* focuses on the first of the three core competencies, developing airmen. Airmen are defined as enlisted, officer, Guard, Reserve and civilian employees. According to Gen. Jumper, developing airmen is the heart of combat capability.

“One of the basic leadership principles of any successful organization is the investment of time and energy in properly preparing successive generations,” said Gen. Jumper.

Such principles have led to many opportunities for the Air Force Materiel Command family in the areas of continuing education and cross-functional employment opportunities to expand the workforce’s experience base.

Under the Air Force’s force development program, civilian employees will find opportuni-

ties to expand their knowledge and develop a broader scope of Air Force operational activities for senior leadership positions. The planning, development and execution of air and space power requires operational and technical skills beyond a single specialty, said Gen. Jumper.

The Air Force is helping to build a highly trained and

Senior leaders are also looking for ways to use the skills of enlisted airmen who already possess an advanced degree and examining ways to expand educational programs to support enlisted force development.

This issue covers many programs and educational services that enlisted airmen can use to expand their skill base.

“Our combat capability as an air and space expeditionary force depends on each of us passing knowledge gained through years of education, training and real world experience to those who follow.”

Gen. John Jumper

more skilled workforce and keeps doing so by ensuring that our enlisted forces have the development opportunities they need to remain the world’s premier enlisted air and space force, Gen. Jumper said.

One such development initiative for enlisted airmen is the opportunity to attend the Air Force Institute of Technology to earn a master’s degree.

These educational opportunities are not limited to enlisted airmen alone, there are many programs that benefit both officers and civilians, too.

According to Gen. Jumper, every airman has a stake in preparing future generations to lead this total force team. With this in mind, more officers will be called upon to serve as instructors at Officer Training School, ROTC and the Air Force Academy.



Gen. John Jumper, CSAF

Opportunities to teach professional military education courses at Air University and functional training courses within an officer’s career field will give officers a chance to help train future generations.

“Our combat capability as an air and space expeditionary force depends on each of us passing knowledge gained through years of education, training and real world experience to those who follow,” said Gen. Jumper.

“The advances being made are critical to the Air Force’s future,” said Gen. Jumper.

“The time, money and energy we invest in training, education and experience will continue to pay us back many times over in mission success.”

The men and women of AFMC can look forward to opportunities to teach, career broaden or expand their education as another benefit of working with the Air Force.

For those interested in these educational opportunities, visit the Air Force Director of Personnel Force Development Web site at <https://www.dp.hq.af.mil/afslmo/fd/> to learn more.

AFMC, AFIT, DAU partner, impact entire career field

By Ms. Libby Van Hook
Executive Editor

Getting more people trained to monitor the inner workings behind the myriad of contracts needed to support America’s warfighters is fueling a recent partnership between Air Force Materiel Command and Air Force Institute of Technology.

The partnership calls for AFIT experts to train production management specialists, or PMS sellers. The sellers are responsible for weapon system workload maintenance and repair, including those contracted to vendors outside government depots.

That responsibility includes keeping supply chain managers aware of everything going on with that workload, and could include anything from a work stoppage to a financial problem. It also requires them to interface with contractors, buyers, equipment specialists, item managers, planners and schedulers, according to Mr. Eddie Robinson, AFMC Depot Maintenance Division.

Facing a shortage of workers

The AFMC-AFIT partnership came about as air logistics centers throughout AFMC faced a shortage of production management specialists several years ago due to natural attrition brought about by an aging workforce. AFMC officials approached AFIT to help train the newly acquired force.

The affected centers include Oklahoma City Air Logistics Center, Tinker Air Force Base, Okla.; Ogden ALC, Hill AFB, Utah; and Warner-Robins ALC, Robins AFB, Ga.

“With the aging workforce continuing to contribute to the workforce shaping problem,” said Mr. Robinson, “the AFMC commander was concerned.

“He recommended all the air logistic centers hire additional PMS sellers. More than 300 were hired in a relatively short period, and training then became a head-



Ms. Helen Thomas, a production management specialist from Robins AFB, Ga., receives instruction on how to enter a clean repair room from Mr. John Allberry, Boeing Guidance Repair Center instructional designer. Students in LOG 132, a course developed in a partnership by Air Force Materiel Command, Air Force Institute of Technology and Defense Acquisition University, spend time in a classroom before traveling to private contractors for hands-on training. (Air Force photo by Ms. Libby Van Hook)

quarters tasking,” he said.

“We were essentially hiring new sellers and telling them ‘here is your desk and your job, now go do it,’” said Mr. Edward Koenig, deputy director of logistics at AFMC.

“They weren’t being given the advantage of understanding how they fit into the overall Air Force environment and provided with the technical training they needed for these very specialized and unique jobs,” he said.

Starting over

Not sure where to begin building a training program from the ground up, Mr. Robinson started by visiting the centers and meeting with long-term PMS sellers to determine just what training would benefit the new employees. The majority agreed the new hires would need training on contracting to become effective in their jobs.

With that in mind, he contacted officials at the AFIT, where a basic PMS course was taught many years ago. The instructors felt their resource bank needed updating to be relevant with current regulations. Together, with officials from the Defense Acquisition University located at AFIT, the two organizations decided to partner with AFMC to build a new training program.

Mr. Robinson traveled with those instructors to Robins, home to the largest group of PMS sellers in AFMC. Sellers requested courses on time management, financial management and job requirements.

And, once again, the overwhelming majority agreed that learning about contracting was the most important thing they would need to learn, Mr. Robinson said.

Partnership continued on
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Partnership continued from Page 5

Developing the program

Officials from AFIT, DAU and AFMC then developed the training program they felt would most benefit all sellers.

"Basically it's a 3-year on-the-job training program that includes formal classroom time culminating with Contracting LOG 132," said Mr. Bill Sirmon, Robins Logistics Management office. He, together with Ms. Vicki Huffman, Robins Contract DMG Branch, oversees the training course at Robins.

After completing that 3-year program, sellers are certified as journeymen and eligible for promotion to higher grades.

Mr. Michael Lacroix and Dr. Rose Smith, Defense Acquisition University, were instrumental in developing LOG 132.

"I want students to walk away with a better ability to communicate with their contracting officers," said Mr. Lacroix. "I want them to be able to think outside the box and challenge the system to find better ways to do their job. I don't want them staying in the comfort zone of 'it's always been done that way,' but to be able to break the mold."

The course provides students with an intensive examination of the life cycle of contracting, including the pre-award and the post-award contract administration phase.

Outside the classroom

But it doesn't stop there, Mr. Sirmon said. Following a week of traditional classroom training, the students head out to a private contractor site to learn how government contracts are handled, from original proposal development to the product being returned to the warfighter.

"Some of the students actually meet people they deal with in contracts they work everyday," said Ms. Huffman. "But that's not as important as their learning the process."

During a visit to the ring laser gyro division at the Boeing Guidance Repair Center in Heath, Ohio, students received actual hands-on training. (Air Force photo by Ms. Libby Van Hook)

By meeting with contractors face-to-face, the students have an opportunity to establish relationships where the PMS sellers, and contractors themselves, can communicate if they're having problems with a workload, she said.

Making comparisons

Ms. Vicki Shively, Mr. Ron Schencks and Mr. W. Jeffrey Lintz, PMS sellers at Robins who graduated from the course, agree that learning about industry techniques and seeing first hand how they support our warfighters was helpful.

"I went to Rockwell Collins and was

very impressed with their program," said Mr. Lintz. "I think it's the best time I've ever spent in a training class."

Ms. Shively visited the Boeing Guidance Repair Center in Heath, Ohio, where she learned how they're cutting down on storage expense by utilizing just-in-time inventory. "It's similar to our Lean initiative in the government," she said.

Drawing on his experience as a retired military member, Mr. Schencks said he knew how to get the job done, but the training "feathered out the edges. It brought it all together for me and gave me



a clear picture of duties as a PMS seller. It made me excited to come back and do my job!"

Participating contractors benefit from the program as well, as it gives them a better understanding of how the air logistics centers want to work with contractors and provides them an opportunity to train their employees in sustaining warfighter weapon systems, said Mr. Robinson.

Fine-tuning the course

With more than half of the new sellers having completed the course at this point, the training keeps evolving to be responsive to their needs, said Mr. Sirmon. Originally taught at AFIT, the classroom portion is moving into the air logistics centers.

That saves on travel cost, and helps students that would have a hardship being away from home for longer periods of time due to personal considerations such as single parenting. Having the course at the centers means they only have to travel for a week visiting a contractor site to graduate from the course.

Being responsive to the trainees' needs is only one of the ways this program is unique, according to people familiar with the program.

"If a seller at Robins is having difficulty with a task that no one else in his product directorate has experience with, he can call Mr. Sirmon or myself, or contact someone he's met in the course of their training for help," said Ms. Huffman.

Partnering in the work place

Perhaps even more important, the learning doesn't stop for sellers when they graduate from the program, said Ms. Huffman.

They get together several times a year, not only on work-related matters, but also on social occasions like Christmas parties, making it easier for them to network with one another.

"This is probably the only group of people I know who have a career occupation where they have a close bond based on their job nature and they need to stay in touch and share experiences," Mr. Robinson said.

"We've encouraged them to exchange phone numbers, and I'm glad they've done that," he said.



Top: Mr. W. Jeffrey Lintz, Mr. Ron Schencks and Ms. Vicki Shively, all PMS sellers from Robins AFB, Ga., completed the PMS course and now network together on a routine basis to help one another complete specialized tasks. Bottom: According to Mr. Eddie Robinson, Air Force Materiel Command Depot Maintenance Division, this training is an investment in the future. (Air Force photos by Ms. Libby Van Hook)

"Developing this program has exceeded my wildest expectations," he said. "I feel like we've really made an impact on the career field, which is one of the most important jobs in the U.S. Air Force."

The former students have kept in touch with the course developers as well.

"The most rewarding part of this pro-

gram is receiving a call from a former student to say they've been promoted and they're giving us credit for that because of this training and the mentorship we've provided," said Mr. Robinson. "It makes all the hard work seem worthwhile."

Private industry hosts government

When the Air Force needed someone to train new employees on how private contractors handle government contracts, Boeing Guidance Repair Center jumped at the opportunity.

Located in Heath, Ohio, the former Newark Air Force Base was privatized in 1996, and the bulk of the mission remains the same, providing a perfect backdrop to train production management specialist, or PMS sellers.

"With the privatization of the center, we were able to continue the mission that was here previously, which was sustaining the ICBM guidance fleet," said Mr. Anthony Panella, business development manager. "We hired 90 percent of our workforce from Newark," he said. "But working here is different than working for the government. While there are regulations to follow, we're under a different set of rules, and that's a big change for our employees."

Boeing has hosted several groups in the past three years as part of production management specialist training the Air Force Materiel Command began in 2000, when the aging workforce created massive turnover in the PMS career field.

"We have been going through training sessions for several years, educating our employees on what it's like to be a contractor," he said. "And now we're trying to do that in terms of educating both sides. This provides our workers with a better understanding of how the air logistics centers want to work with contractors."

In a week-long visit to the plant, PMS students receive a condensed version of Boeing's new employee orientation, visit the centers clean repair rooms and receive actual hands-on training from center employees.

Boeing has benefited from the program in another way as well

— Warner-Robins Air Logistics Center, Robins AFB, Ga., has hosted members of their workforce for cross training at the government depot several times during the past several years.

"We teach them about the source of repair assignment process," said Mr. Eddie Robinson, AFMC Depot Maintenance Division. "That's the official process used by the Air Force to make a workload decision as to whether to go to a government depot or to a contractor facility. They also learn about public laws that helps determine that workload assignment and government regulations involved with the process."

The sessions proved very successful, according to Mr. Robinson, who said the program is growing as other contractors involved with the depots hear about the sessions and want to attend in the future. He's hoping to expand them to include all AFMC depots in the near future.

— Ms. Libby Van Hook, Executive Editor



Students from Robins AFB, Ga., visited the ring laser gyro division of Boeing Guidance Repair Center in Heath, Ohio, as part of their training program. (Air Force photo by Ms. Libby Van Hook)



Students in the Aerospace Vehicle Test Course at Edwards AFB, Calif., experience zero gravity during a ride in the NASA KC-135, also known as the "vomit comet." The AVTC trains students to become space flight-test engineers. (Courtesy photo)

USAF Test Pilot School reaches new heights

By Capt. Catie Hague
AFFTC Public Affairs

The increasing push for a military space force has led Defense Department officials to expand the Air Force envelope to include space education, with an emphasis on military applications. The U.S. Air Force Test Pilot School at Edwards Air Force Base, Calif., has followed suit, answering DoD's call by creating the first Aerospace Vehicle Test Course.

Covering the spectrum

The four-week course for qualified engineers includes approximately 80 hours of academics, supplemented with projects, simulations, field trips and flying, said Maj. Russ Adelgren, course director.

It covers a wide spectrum of aerospace disciplines, from the history of aerospace planes to the launch and return of the space shuttle.

"We currently have two hours of spacecraft re-entry and one hour on thermal-protection systems," Maj. Adelgren said,

"but due to the recent space shuttle disaster, we added another hour to discuss lessons learned from Columbia's destruction. We are always trying to keep the course as updated as possible."

The course also offers students the unique opportunity to actually apply everything they learn, Maj. Adelgren said.

"The students receive a T-38 Talon and an F-16 Fighting Falcon ride, two glider rides and a 'vomit comet' ride in NASA's zero-gravity trainer," Maj. Adelgren said.

The course includes field trips to the rocket labs and the rocket-launch vehicle operations and test complex at Edwards, the Vandenberg Spaceport at Vandenberg AFB, Calif., and the Johnson Space Center in Houston, Texas.

Adding to the curriculum

The Micro Satellite Launch Vehicle program was a new block of instruction added. It gives students a chance to fly an F-15 Eagle simulator, conduct a simulated launch profile and man the NASA-Dryden control room, Maj. Adelgren said.

"With this addition to the curriculum,

students were able to practice proper test discipline, while executing a test mission on a real-world project," he said.

"My fellow classmates and I were given a once-in-a-lifetime opportunity, a chance for young engineers to develop into future space flight testers," said Mr. Jason Torres, an engineer from the 412th Test Wing at Edwards. "This course used both academics and applications to illustrate flight test versus atmospheric flight test. Nowhere else can one receive a year's worth of hands-on aerospace education in the span of one month."

The training was invaluable, according to 1st Lt. Damen Provost, an engineer with Air Force Space Command's Space and Missile Systems Center Detachment 12 at Kirtland AFB, N.M.

Lending their expertise

"The students represented a wide variety of Air Force specialties, bringing knowledge from the course back to their respective units," said Lt. Provost.

Although the fundamental philosophy of testing is the same for aircraft or spacecraft, it is invaluable to have aerospace-vehicle experts teach this course, Maj. Adelgren said.

Therefore, not all instructors are members of the school staff, but they come from around the country to lend their aerospace expertise to the course, he said. Currently, there are about 25 teachers involved in the program, which holds courses about once every 18 months.

All students must have a bachelor's or master's degree in aeronautical, aerospace or astronautical engineering, or have a strong background in one of these fields. Students must also be medically qualified to fly and pass a Class-III physical.

"If you are lucky enough to attend this course, you can say that you were in the right place at the right time," said Mr. Johnny Armstrong, the chief engineer and course instructor at the access to space office. "You will be a part of the exciting future of the space program, learning how to test hypersonic vehicles in support of the Air Force mission."

For more information, call Maj. Adelgren at DSN 277-8882 or 661-277-8882 or visit the Web site at <http://www.edwards.af.mil/tps>.

“My” puts more “I” into IDP

Have you ever wondered what training opportunities were available to sharpen your skills and abilities? Or perhaps you’ve thought about how helpful it would be if the people you supervised could research the training and education opportunities available to them.

Both are now possible with MyETMS, a new subsystem of the Web-based Air Force Materiel Command Education and Training Management System, or ETMS Web.

“An accurate and realistic identification of an individual’s training and education requirements is critical to fulfilling those needs with the right training at the right time,” said Ms. Maggie Grace, AFMC Education and Training Division chief. “MyETMS offers the opportunity for employees to see their own individual development plans and search the ETMS Web course catalog to find the best means of fulfilling training requirements.”

The first of a two-stage enhancement to ETMS Web, this stage expands access to information that previously was restricted to supervisors and training administrators. The career brief contains position information, past assignment and employment experience, training and education history, and certification and recurring training information.

“MyETMS not only expands access to more people, but also provides individuals access to personnel information,” said Ms. Glenda Stuart, MyETMS project officer.

The first secure, Web-based interactive training management system, ETMS Web has been serving AFMC and its tenant organizations for more than five years.

“Phase II will go beyond ‘read only’ access and give users ability to be actively involved in their professional development,” according to Ms. Stuart.

Within the year, MyETMS users will be able to identify training requirements, create an automated DD Form 1556 and forward it electronically to supervisors for approval. E-mail capability will become a feature permitting automated notifications ranging from status of training requests to location and time of specific training events.

You can become a “user” by accessing MyETMS at <https://myetms.wpafb.af.mil>.

Training & Development



Many of our great Air Force leaders of yesterday, today and tomorrow have passed through the doors of Air Force Materiel Command. This highlights the importance of AFMC’s education, training and development division mission to plan, program, budget and execute education, training and development programs ensuring our Total Force — active duty officer and enlisted, reserve components and civilian

ians — has access to quality and effective education and training opportunities.

The Air Force believes increased knowledge of military studies, communication skills, leadership, management and supervision combined with civilian education prepare the Total Force to assume more responsibility. Consequently, increased responsibility increases leadership potential.

Team AFMC services more than 80,000 Air Force civilian, enlisted and officer personnel and the directorate of personnel education training and career development plays an integral part in providing education and training opportunities to help each team member reach his or her goals and potential. Thus, as the Air Force’s greatest leaders pass through AFMC doors, Team DPE is continuously seeking training and development to prepare Air Force individuals to meet tomorrow’s challenges.

Mentoring

When Dwight Eisenhower became a five-star general, he credited his long-time mentor for helping him grow as an officer and helping him learn military strategy.

Mentors like that of Gen. Eisenhower, can serve as valuable assets to a wide range of people. They can help an individual fit into his new organization and make a career ladder easier to understand. Mentors can listen and coach a staff member to be more productive. While the positives are evident, finding information about mentors or mentoring can sometimes be a challenge.

In response, Air Force Materiel Command has created a Web site to answer questions about mentoring. This information is available in the education and training knowledge area of the Knowledge Now Web site, <https://www.afkm.af.mil>.

The Web site includes training aids, mentoring tools, links to other mentoring sites on the Internet, and a feature that helps locate a mentor by reviewing short biographies.



Mrs. Pam Eyring mentors Staff Sgt. Jim Newell. AFMC has created a Web site to answer questions on mentoring. (Air Force Photo by Ms. Monica Morales)

Mentoring helps fulfill AFMC’s goal to acquire and sustain the human resources required to support the command mission essential tasks. It also contributes to fulfilling the Air Force competency of developing airmen. People are an important asset and helping them to develop both professionally and personally is the reason to mentor.

For more information, contact Ms. Pam Eyring at 937-656-0498, or visit the Knowledge Now Web site at <http://www.afkm.af.mil>.

Information provided by AFMC Directorate of Personnel Education Training and Career Development Division.

An educational journey

Today’s Air Force offers people the opportunity to achieve individual educational goals. There are many roads available for achieving those goals — with both traditional and non-traditional methods ranging from the Internet to classroom instruction.

Today more than 30 percent of the enlisted corps have two years of college; more than 5 percent have a bachelor’s degree, and nearly 1 percent have their master’s degree or higher.

Here’s an example of Senior Master Sgt. Lysander Dorsey’s journey toward achieving his educational goal.

Following 18 years in the Air Force and 10 permanent change of station moves, he decided to complete his bachelor’s degree via distance learning, thereby eliminating the problem of transferring and failing to meet residency requirements.

He chose Upper Iowa University after researching more than 60 schools. Following the university’s evaluation, he was only 11 classes away from his educational goal.

Balancing family life, military obligations, and school work, he was awarded his bachelor’s degree in Human Services May 10, 2003, joining the top 5 percent of the United States Air Force enlisted corp.

Now he’s using his educational and training experiences to advise and mentor his fellow enlisted troops in pursuit of their educational journey.



Educational services

Air Force education services programs offer a variety of avenues for members to meet their professional and personal educational goals, with programs ranging from licensure and professional certification to graduate level-degree programs.

- **Military Tuition Assistance.** The Air Force pays tuition costs and mandatory fees up to \$250 for a semester hour, or \$750 for a three-hour course. Military members eligible for the Montgomery GI Bill may use the “Tuition Assistance Top Up” benefit to cover costs exceeding the cap.

- **Defense Activity for Non-Traditional Education Support Testing.** DANTES testing centers, located in the education offices, offer testing for college credit under the College Level Examination Program, DANTES Standardized Subject Test and Excelsior

College Examinations programs. Personnel can also take the GRE Subject exam testing, and PRAXIS series testing is available for those wishing to meet state requirements for teaching credentials.

- **Community College of the Air Force.** This is the largest community college in the world and is the only community college in the Defense Department, accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award the associate in applied science degree education and training with a core of general education requirements obtained from college courses or testing.

- **Air Force Virtual Education Center.** This is a Web-based program that provides access for information about education programs.

- **Commissioning Programs.**

Did you know?

The Air Force Acquisition Professional Development Program implements the Defense Acquisition Workforce Improvement Act by Congress to improve the management and professionalism of the acquisition workforce. It requires the Defense Department to define critical acquisition positions and formalize career paths for the acquisition workforce.

- Current Air Force-level guidance on APDP can be reviewed in the Web guide at http://www.safaq.hq.af.mil/acq_workf/_training.

- Air Force Materiel Command Force Development Branch is involved in the management of acquisition training required for APDP certification and continuous learning programs, providing command requirements, funding, program guidance and performance measurement for these programs. More information on the continuous learning program can be reviewed at http://www.safaq.hq.af.mil/acq_workf/training/.

- Certification standards and Defense Acquisition University required course information can be reviewed at <http://www.dau.mil/catalog/default.asp>.



Continuing Engineering Education Center

By Tech. Sgt. Carl Norman
AFMC Public Affairs

Military and civilian Defense Department engineers can thank Air Force Materiel Command Continuing Engineering Education Center officials at Wright-Patterson Air Force Base, Ohio, for making their licensure and certification studies easier.

The center offers one-stop shopping for more than 400 video-based career development, continuing education, professional engineering and fundamentals of engineering courses. Students and practicing engineers can use the center's resources as study guides for professional certification rather than having to chase down information.

Courses are available at no charge to the individual or his or her unit, and people can take them individually or in groups. Military officers incur no active-duty service commitment for taking these courses.

The center's study courses come in five disciplines — computer science, electrical and electronic engineering, general engineering, systems management and quality management. People can acquire them via the center's catalog at <https://www.afmc-mil.wpafb.af.mil/HQ-AFMC/DP/dpe/ceec/index.htm>; or by e-mail, phone or fax. The center can also be traced through the scientist and engineer career program.

Each course ranges from one to 40 videos and study guides and textbooks are included. When you order a course, you get all the video tapes that go with that course at the same time.

The center's staff work with more than 30 engineering universities to obtain the study materials. These include North Carolina State University, University of Idaho and Purdue University. Courses are primarily open to all military or DoD civilian engineers, scientists and technicians, but any other military member or civilian employee can check out the quality management courses or any others they feel they need.

The CEEC courses are simple to order and can be picked up directly from the center or the staff will mail them. Air Force certificates are available for courses more than four hours. To order, visit the CEEC Web site, e-mail requests to Theresa.Stratton@wpafb.af.mil; call 937-904-8151, or fax to 937-904-8159. DSN is 674-8151.

Left: An Air Force engineering and installation technician from the 28th Air Expeditionary Wing coordinates a work order over the phone at an operation location during Operation Enduring Freedom. (Air Force photo by Staff Sgt. Shane Cuomo)



More than 250 students attending Kent Elementary School in Columbus, Ohio, benefited early this spring by a Wright-Patterson AFB, Ohio, Education Outreach visit requested by Mrs. Hope Taft, first lady of Ohio. Top: Students interact with volunteers from the program and school personnel. Middle: Mrs. Taft travels through a bridge that students learned how to build during the visit. Bottom: Ms. Fran Johnson, coordinator for the Wizards of Wright program and a contractor with Wright Technology Network at Wright-Patterson, assists the students with the bridge construction. (Courtesy photos)

WPAFB: Reaching out to help inner city schools

By Ms. Susan Barone
ASC Public Affairs

The Educational Outreach Office at Wright-Patterson Air Force Base, Ohio, captured the attention of first lady of Ohio Hope Taft this spring when she visited the base to learn about initiatives to draw interest from children in grades K-12 in reading, math and science.

Mrs. Taft's visit prompted an invitation to share the Tech Trek mobile research laboratory and Wizards of Wright programs with Kent Elementary School, an inner city school in Columbus that she and Gov. Bob Taft adopted for the year.

Base volunteers interacted with more than 250 students at the elementary school, where at least 70 percent come from foster homes. Students rotated through four W.O.W. program demonstrations during the day and toured the Tech Trek, a 40-foot customized bus that brings the microscope technology field trip to the school, including a portable scanning electron microscope. The "wizards" came with kits to provide science demonstrations, such as motors and magnets, electricity and magnetism, bubbleology, chemistry, bridge building and the history of the Wright brothers.

The demonstrations made an impact on the students, who put their writing skills to use to write "thank-you" notes to base volunteers.

Mrs. Taft was made an honorary wizard that day, a distinction she appreciated, according to a note written to Ms. Kathy Schweinfurth, the base Educational Outreach Office coordinator.

"What an experience! Having the Wizards of Wright and Tech Trek volunteers at Kent today was an unforgettable adventure for the students, teachers and me," Mrs. Taft wrote. "I feel honored to be part of this team of wonderful, patient and knowledgeable volunteers who make it all work so well."

After the visit, Mrs. Taft wrote a note of thanks to Dr. Vincent Russo, executive director of the Aeronautical Systems Center, citing her admiration for what she called one of the best "hands-on school outreach program," she has ever seen.

The base Educational Outreach Office programs have reached more than 50,000 students since January 1999 when the office opened its doors. Base scientists, engineers and technicians who volunteer for the program have performed an average of 30 demonstrations a month since its inception in 1995, reaching more than 23,000 students. The Tech Trek mobile research laboratory has reached more than 13,000 students since 2001.

Free to local schools, the base Educational Outreach Office programs are funded by the Aeronautical Systems Center and the Air Force Research Laboratory and generate more than 1,200 in-kind volunteer support hours per month at an estimated value of \$1.4 million.

From vision to reality, AFIT makes its mark

The Air Force Institute of Technology at Wright-Patterson Air Force Base, Ohio, traces its beginnings to Col. Thurman Bane, the head of the Technical Section of the Division of Military Aeronautics. In November 1918, he asked permission to start an Air Service School of Application at McCook Field in Dayton, Ohio.

"The object of this school," Col. Bane wrote, "would be to give the proper technical training to the permanent officers of the Air Service...No man can efficiently direct work about which he knows nothing." One year later the school was established, and from his vision, AFIT was born.

What started as a school for select officers has grown into a premier educational institution for both officer and enlisted students, international students, and members of all branches of the armed services.

AFIT provides students with defense-focused graduate and professional continuing education and research through three resident schools — the Graduate School of Engineering and Management, the School of Systems and Logistics, and the Civil Engineer and Services School — as well as through its office of Civilian Institution Programs.

AFIT is also the home of four centers of excellence — the Center for Directed Energy, the Center for Information Security Education and Research, the Center for Measurement and Signature Intelligence Studies and Research, and, as of February 2003, the Center for Systems Engineering, or CSE.

At the direction of Secretary of the Air Force James Roche, CSE builds on AFIT's 20-plus years of systems engi-

neering expertise, offering a revised graduate degree program in Systems Engineering and a new graduate certificate program. Among the many partners in CSE, Air Force Materiel Command plays a prominent role as both a customer of the Center's education and training

"AFIT is to AFMC what the Fighter Weapons School is to Air Combat Command."

Gen. Lester Lyles

programs, as well as a supplier for some of the manpower and resources associated with the professional practice functions of the Center.

"I am excited about the prospects of having a Systems Engineering think tank adjacent to AFMC headquarters, Aeronautical Systems Center and Air Force Research Lab," said Gen. Lester Lyles, AFMC commander. "This is just what we need to bridge the gap between theory, education and practice."

While CSE allows for much collaboration, it is not AFIT's first partnership with AFMC. In August 2002, AFIT and AFMC created a special advisory group, framing the vision that — in the words of Gen. Lyles — "AFIT is to AFMC what the Fighter Weapons School is to Air Combat Command."

The advisory group offers unique research activities, exemplary graduate education programs, requirements-based education, and critical professional continuing education programs that are essen-

tial to the success of the Air Force and AFMC missions.

According to Gen. Lyles, "Technology has always been at the forefront for the U.S. Air Force. We want to make sure we have the people resources to continue working and developing those systems we'll need for the Air Force of the 21st century."

AFIT could not agree more, and for that reason it will continue to educate mission-ready men and women who can positively impact the Air Force.

And, because 25 percent of AFIT graduates are assigned to advanced academic degree billets in AFMC, a great deal of that positive impact will be the result of AFIT's relationship with AFMC.

From Col. Bane's viewpoint back in 1918 to that of Institute graduates who have walked on the moon, AFIT has progressed far.

However, some things never change. The commandant continues to stress excellence in education and research and to move AFIT through the 21st century, retaining its flexibility and resourcefulness in accomplishing its mission, just as it has done since its inception more than 80 years ago.

As AFIT continues its ninth decade of operation, faculty and staff members reflect with pride on the contributions the Institute's graduates have made on engineering, science, technology, medicine, logistics and management. These immeasurable contributions have been vital to national security.

The future promises to be even more challenging than the past, and AFIT is prepared to continue providing the environment and the opportunity for Air Force personnel to develop the professional and technological skills needed to master this dynamic challenge.

Learn more about AFIT at <http://www.afit.edu>.

— Ms. Kim Curry, AFIT Public Affairs

'Virtual Schoolhouse' becoming wave of future

Mr. Darren Heusel
OC-ALC Public Affairs

Using information technology to provide formal, long-term training is the idea behind the Air Force Institute of Technology's Virtual Schoolhouse, which allows military and civilian personnel the opportunity to further their education with the click of a mouse.

According to Maj. Michele Gaudreault, AFIT Advanced Distributed Learning Branch chief, Wright-Patterson Air Force Base, Ohio, the Virtual Schoolhouse provides an opportunity for Tinker AFB, Okla., personnel to receive online training in the systems acquisition process.

Among those aspects are acquisition strategy, product support planning and execution, financial management, engineering and science and technology.

Expanding the program

"The schoolhouse currently has 19 courses online, with five more courses in development and two under consideration," she said. "The courses provide continuous learning points, which are required to maintain one's acquisition certification."

Students can access the catalog of online courses at the Web site located at <https://www.vsh.afit.edu>, self-register for courses or log into the schoolhouse and take a course. Maj. Gaudreault said the Web site could be accessed from any standard browser, 24 hours a day, seven days a week.

"Our students are literally around the world," she said. "So no matter where they are, if they have access to the Internet, they can access the schoolhouse and their courses."

Once a student completes a course, she said the course remains accessible to the student — "sort of like an electronic course book."

"The difference between this and a

hard copy course book is that as our courses are updated to reflect the latest changes in acquisition policy, the students' 'electronic course book' is also updated because they are accessing the real course, not copies of a course given several months ago," she said.

Making dreams come true

Since May, Mr. Ronald Stanberry, a logistics manager in the B-1B System Support Manager Division at Tinker, has accumulated more than 100 hours through the AFIT's Virtual Schoolhouse.

He said he found out about the program when a friend sent him an e-mail encouraging him to "check it out." From there, Mr. Stanberry said he went to his B-1B staffing advisor and asked her to "verify the process."

"Because I attend many meetings for the B-1B community concerning areas I didn't have any previous knowledge, I wanted to understand their process so I could benefit my section better," he said.

Mr. Stanberry said because the classes are computer-based, it was easy for him to work around his workload. In addition, he said he was able to work on certain sections and complete a few courses at a time instead of trying to fit the class time into his schedule.

"The AFIT Virtual Schoolhouse made available education on Air Force related courses that I would otherwise have to go TDY to accomplish," he said. "This has made me better at my job and has allowed me to expand my training beyond my career field, with no lost time on my present job or use of limited TDY funds."

"This is a dream come true for my future training requirements. By being able to complete these courses sooner, I will be able to finish my level-one requirement in record time."

In a briefing on the benefits of the Virtual Schoolhouse last year, Maj. Richard Remington, head of the Department of Systems Management,

School of Systems and Logistics, AFIT, said the first System Acquisition School Virtual Schoolhouse was available to the entire Air Force work force in January 1997.

He said the overwhelming success of this initial pilot confirmed the need for quality training to be made available over the Internet to the work force in a timely manner. In fact, he said, the team who put it together was awarded the Vice President's Hammer Award in October 1998 for "helping to reinvent government."

"By the end of fiscal year 2000, more than 3,000 students had successfully completed courses on the Virtual Schoolhouse," Maj. Remington said. "This translates to a completion rate of 77 percent. What's more, from an Air Force perspective, the value of training is related to its impact on productivity."

Saving time and money

In fiscal year 2000, productivity savings alone account for almost \$1.8 million for the 1,585 student graduates, he said. "When TDY savings are added, this increases to \$3.4 million, or \$2,128 per student."

He also pointed out a high satisfaction rate from Acquisition Reform Course offerings.

"The high satisfaction rate is the primary reason that we continue to increase our e-learning offerings each year," he said.

Since the program's inception, Maj. Remington said the Air Force has achieved tremendous cost savings in travel expenses and productivity.

"In addition," he said, "course critiques affirm the value of Advanced Distributed Learning to provide quality training to our work force. In support of DoD directives, the Department of Systems Acquisition Management is committed to expanding the use of ADL within the Air Force Institute of Technology."



AF Museum welcomes technology demonstrators

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Two aircraft technology demonstrators heralded for pioneering breakthrough capabilities that promise to transform military airpower formally become part of the U.S. Air Force Museum in a turnover ceremony July 16.

Officials from the Boeing Company and NASA, along with museum and Wright-Patterson leadership were present when the Bird of Prey and X-36 technology demonstrators were officially transferred to the museum.

The Boeing Bird of Prey served as a highly classified project from 1992 to 1999 before Boeing officials unveiled it Oct. 18, 2002. Museum experts said its flight tests helped prove many new stealth concepts and revolutionized aircraft design, development and production.

— Reported by AF Museum Public Affairs

Marathon adds two new features to annual event

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — This year's Air Force Marathon here will feature a 13.1-mile half-marathon and a 5K — or 3.1-mile — race in addition to the full marathon and marathon relay team races during the Sept. 20 event.

The half-marathon race will be on a 13.1-mile loop-back course that will share the start and finish lines with the full marathon. Half-marathon and marathon relay participants will race alongside one another until the turnaround point just outside of Gate 15A, then the half-marathoners head back toward the finish line near the Air Force Museum.

The half-marathon is geared toward those who have been conditioning for shorter races and want a new challenge.

— Reported by ASC Public Affairs

SSG research agreement services save AF dollars

MAXWELL AIR FORCE BASE, GUNTER ANNEX, Ala. — Defense Department customers can now purchase independent consulting and other information technology services at discounts thanks to Standard Systems Group experts here issuing blanket purchase agreements.



AFMC logistics personnel see 'parts' in action

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Air Force Materiel Command logistics personnel attending a July Readiness Spares Workshop here traveled to the Dayton Airport to see a mobility readiness spares package. The spares package traveling with the U.S. Air Force Thunderbirds is identical to ones used for real world deployments. Most of the attendees, who handle logistics for the spare parts package, had never seen one in actual use. Here Tech. Sgt. Jerry Molina, a supply representative for the Thunderbirds, talks to members of the group. The Thunderbirds were here to perform in the Dayton 2003 Air Show celebrating 100 years of powered flight. (Air Force Photo by Ms. Libby Van Hook)

Experts in SSG's Acquisition Division issued the BPAs to The Meta Group and Gartner Inc., for consulting, research and advisory subscription services. All DoD organizations are authorized to order from these BPAs, which will run for one year and have two additional one-year options.

The BPAs allow DoD customers to purchase independent consulting, access to current published information technology research as well as access to hundreds of analysts, all at considerable discounts from the vendor's comparable Federal Supply Schedule contract.

— Reported by SSG Public Affairs

AFRL develops efficient Environmental Control Unit

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — A new field-deployable environmental control unit Air Force Research Laboratory experts recently developed is helping shield America's warfighters and their equipment from

extreme desert heat and other conditions. The unit is a tent cooler designed to heat or cool military tents in the most extreme temperatures.

During Operation Iraqi Freedom, tent coolers were used to relieve troops from the 125 degree Fahrenheit heat of the Iraqi deserts. The unit is also used in tents where military equipment is stored, to protect it from the harsh weather conditions that may interfere with its performance.

The new design, tested at Fort Drum, N.Y., was built through a Cooperative Research and Development Agreement which brought together experts from AFRL and Mainstream Engineering Corporation, and is the second-generation prototype designed to operate in nuclear, biological or chemical mode. It can act as either a heater or an air conditioner and can be operated by a remote control.

— Reported by ASC Public Affairs



Courtesy photo.

Auto ACAS reaches final test session

A system that detects potential airborne collisions and shows the aircraft's autopilot how to avoid them recently entered its final flight test session at Edwards Air Force Base, Calif.

Experts at the U.S. Air Force Test Pilot School are putting the Automatic Air Collision Avoidance System, known as Auto ACAS, through its final paces through mid-August.

Maj. Jim Less, TPS Auto ACAS project pilot, said the ultimate goal is to demonstrate automatic collision avoidance between two aircraft to make aviation safer.

The Auto ACAS is an algorithm, or computer program, which detects a potential airborne collision, chooses the optimum avoidance maneuver and sends an avoidance command to the aircraft's autopilot, Maj. Less said.

The system's overall testing program was split into four sessions. Session I, completed at the beginning of April, involved three flights on the Variable Stability In-Flight Simulator Test Aircraft, known as VISTA. This verified that Auto ACAS was properly incorporated into the aircraft which can maneuver like a variety of aircraft, varying the aircraft's flying qualities.

Sessions II and III were accomplished in June with aircraft flying against a virtual target to collect initial data and evaluate algorithms, Maj. Less said. Session II was completed at Edwards using the VISTA,

while Session III was completed at Fort Worth, Texas, using a Lockheed Martin F-16.

During these sessions, Maj. Less said the virtual target was transmitted from the ground using a datalink that interacted with the aircraft to simulate an airborne target.

"For this test, we modified a datalink used on operational F-16s to transmit Auto ACAS information," Maj. Less said. "The modified datalink was hooked up to a desktop computer running a flight simulation program on the ground to produce a virtual target seen by the pilot in the air."

Flight testing during the final phase will evaluate collision avoidance in a series of flight scenarios using the VISTA and a production F-16 from Eglin Air Force Base, Fla. During the scenarios, the two planes will fly in a collision course to test the system's ability to activate the autopilot avoidance maneuver and prevent a collision, according to Maj. Less.

He said throughout multiple simulation sessions and the first three flight test sessions, engineers applied lessons learned to perfect the Auto ACAS algorithm. The algorithm, which is a computer code programmed to recognize when an avoidance maneuver is required, was modified to recognize the difference between close formation flight and a potential collision course.

"This is not designed to be a warning system," Maj. Less said. "The pilot

should not know the system is there until it is needed to save his life."

Mr. Magnus Ljungdahl, a Swedish test pilot working with the program for more than a year, explained that the program has quickly progressed from simulators to airplanes.

"With alterations from each phase, the system has improved significantly," he said.

The Swedish government's involvement stems from an earlier joint research project called the Automatic Ground Collision Avoidance System. The Swedish government shares half the cost of the Auto ACAS, which is approximately \$12 million. Currently, the Swedish government has test pilots and engineers working with TPS at Edwards.

Both Sweden and the U.S. Air Force will own Auto ACAS after its development stage. According to Maj. Less, an important future application of Auto ACAS will be to allow unmanned aerial vehicles to operate freely and safely with manned aircraft.

Maj. Less said developing and flight testing the Auto ACAS has been a cooperative effort between the Air Force Research Laboratory, Sweden's FMV (Försvarets Materielverk), Lockheed Martin, Saab, Bihle Applied Research, Veridian, NASA Dryden Flight Research Center and TPS.

— 2nd Lt. Brooke Davis and Capt. Catie Hague, AFFTC Public Affairs



Mr. Heath Perimon, front, and Mr. Don Brown, both of CBI Construction, examine the inside of enormous ducting required for the upcoming Joint Strike Fighter test program at Arnold Engineering Development Center, Arnold AFB, Tenn. (Air Force photo by Mr. Gary Barton)

JSF test program one of largest in AEDC history

Test experts at Arnold Air Force Base, Tenn., recently started an estimated \$200 million Joint Strike Fighter test program officials say is one of the largest and longest duration propulsion test programs in the center's 52-year history.

During the next eight years, more than 5,000 engine-operating hours of testing on the JSF's F135 powerplant are planned at Arnold Engineering Development Center.

"Beginning this November, development altitude testing is scheduled and will continue for three full years without much downtime," said Ms. Susan Vining, AEDC project manager. "In the March-April 2004 timeframe, the F135 RAM accelerated mission testing will begin."

She said that during that time, engines will undergo parallel testing in preparation for follow-on altitude and RAM sea-level qualification testing starting in 2005.

It's a huge undertaking

According to Mr. Norman Weinberg, AEDC test contractor project manager, every engine in the JSF F135 Systems development and demonstration program will be tested at AEDC.

"Normally we would test some of the engines and others would be tested at other sites, but this time AEDC will test them all," he said. "The AEDC tests comprise 40 percent of the total engine test program."

In preparation, AEDC officials are using \$25 million of the funding to manufacture special test equipment for three test cells to provide "unique major new engine support systems to simulate F-35 aircraft interfaces," Mr. Weinberg said.

AEDC employees are designing, fabricating and installing most of the special equipment and will modify several existing STE systems from the previous JSF concept development test program of the late 1990s, he said. While designed for use during the systems development and demonstration test phase, the new equipment and modifications will also support testing on the JSF alternate engine, the General Electric F136.

"Since both engines are designed to power the same aircraft, the new special test equipment and modifications we make will be applicable for testing both engines," Mr. Weinberg said.

Increasing the work force

Mr. John Turner, director of the AEDC test contractor aeropropulsion systems test and evaluation department, said the company recently hired several employees to help meet the challenges of supporting the extensive test program.

"The workload projections for fiscal year 2003 were projected to be lower than fiscal year 2002," Mr. Turner said. "However, largely due to the JSF program, the fiscal year 2003 workload substantially increased."

Mr. Turner said meeting the increased workload requirements continues to be a tremendous challenge, requiring intensive management, planning and creativity.

"We've added personnel in critical areas and will continue to do so as requirements increase," he said. "The JSF program is extremely important to the Defense Department and AEDC. We are committed to making it highly successful."

— Ms. Tina Barton, AEDC Public Affairs

Process sheds layers of planes' paint

Air logistics center's move to pressurized depainting saves on time, efficiency

Layer by layer, the B-1 Lancer in building 3228 of the Oklahoma City Air Logistics Center sheds paint under a pressurized assault by tiny bits of plastic.

It's the first aircraft at the center to be stripped by the dry media process in the high-tech depainting facility which opened this spring.

The dry medium, said Mr. Brian Koehl, B-1 structural engineer, is Magic 2 — a nano-composite mix of blended plastics, each with different densities and cutting qualities. The texture, he added, is like sand grains.

Mr. Koehl said dry media are safe to use on both aluminum and composite parts — important since the B-1's 10,500 square feet of surface area is 10 percent composite.

Looking for new methods

Previously, workers would "scuff sand" the bomber's skin to remove enough of the existing coating to create a surface to which new paint could adhere.

Throughout the course of multiple programmed depot maintenance cycles, however, that became more difficult to do.

"We had to find some way to get the paint off," Mr. Koehl said.

The B-1 test subject for the dry media stripping was built in 1986 and underwent its first depot maintenance in 1990. By 2003, its multiple paint coatings were 15 mils thick. The norm is a 1-multimeter primer and 2 multimeters of topcoat.

Cutting back work schedule

Two years ago, the air logistics center chemically stripped a B-1. Not only was the process time consuming — three weeks to mask the aircraft and two weeks to strip it — but the chemicals couldn't be used on the plane's composite parts.

Mr. David Painter, first shift production supervisor in building 3228, said the timeline for masking and stripping this B-1 is



Workers use a dry media propelled by high pressure to strip multiple coats of paint from a B-1 bomber at the Oklahoma City Air Logistics Center, Tinker AFB, Okla. The dry media stripping is a first for B-1s at the center. The workers are, from left, Mr. Jeff Lair, Mr. Kenneth Gilbert and Mr. Patrick Lemmings. (Air Force photo by Ms. Meredith Zimmerman)

18 days, but their goal is 12 days.

That aircraft, Mr. Koehl said, was weighed before and after the chemical stripping. A comparison of those weights showed the bomber was carrying 1,800 pounds of paint before the chemical strip.

Such weight, he pointed out, "potentially could reduce the bomber's range or increase fuel usage."

Mr. Painter said the dry media stripping is both a prototype for the B-1 and a shakedown for the building.

The dry medium, he said, is performing up to expectations, although there have been a few mechanical problems with equipment in the new building.

Composite compatibility

"As far as the process, how the blaster removes the paint, everything looks great," Mr. Koehl said. "The B-1 program has been looking at processes to remove paint since the early '90s. Media blasting has been around a number of years, but it just now got to the point it's safe on composites."

Mr. Painter said the depaint facility operates around the clock five days a week.

The spent media is swept up and put

into a recovery system, where a series of shakers filter out dust and paint chips. The media can be cleaned and reused an estimated 10 times.

The dry media stripping is preferred by most workers, Mr. Painter said, because there's no chemical smell.

"But this dry media stripping is labor intensive," Mr. Painter said, explaining that the workers must hold a hose discharging Magic 2 at 30 pounds per square inch for "four to five hours at a time."

Mr. Koehl said both the B-52 and KC-135 are approved for dry media stripping. The B-1, he added, was "kind of unique" in that time constraints and the potential for damaging composite parts made chemical strippers unfeasible.

Learning new skills

Twelve B-1 aircraft come through the air logistics center each year for programmed depot maintenance, the engineer said.

"If we want their workload, we've got to be able to depaint their airplanes," Mr. Painter added. "We're in a real learning curve and manpower curve."

— Ms. Jeanne Grimes, OC-ALC Public Affairs



The Honor Guard performs the six-man flag fold before it is handed to Senior Master Sgt. Noel Sepulveda (center), who then presents the flag to the family. From left to right: Senior Airman Anthony Holly, Airman 1st Class Christopher Willingham, Senior Airman Michael Rogers, Airman 1st Class Glen Robinette, Airman 1st Class John Mennano and Senior Airman Bryan Judy. (Air Force photo by Mr. Keith Pedersen)

Honor Guard shows its true colors

Precision performances, pride reflect members' dedication, sacrifice

Flawlessly synchronized, flowing and near other-worldly in their movements, members of the Kirtland Air Force Base, N.M., Honor Guard carefully handle and fold the American flag at retirement ceremonies and funerals for veterans.

Their precision performance is also featured at special recognition ceremonies like the one at which the Air Force Cross was presented to the spouse of Senior Airman Jason Cunningham, a pararescue man who died in service.

The members' unobtrusive presence and demeanor at funerals or during the Missing Man Table Ceremony is the epitome of dignified and respectful comportment as they perform what they call a "privilege" and "honor" for their fellow service members.

The Honor Guard also provides a

bugler, a three-volley firing party and color guards pallbearers for funerals. On the lighter side, color guards are available for retirements and members provide saber arches for weddings.

"The Air Force takes on even more meaning...now you represent the Air Force front and center. When people see you, you are the Air Force."

Senior Master Sgt. Noel Sepulveda

Those smooth, effortlessly appearing performances are not without a price to the Honor Guard members, who sacrifice

personal time and effort in their quest for perfection in performance.

Kirtland Honor Guard member Senior Master Sgt. Noel Sepulveda of the Air Force Inspection Agency has served at two other locations in the Honor Guard and knows firsthand the dedication and perseverance required of each member.

"It is very time demanding," Sgt. Sepulveda said. "You have to be committed because everything — the march, the slow salute — is different...it is slow, meticulous and sharp."

Using words similar to those of Tech. Sgt. Marvin Noll, a former Honor Guard noncommissioned officer, Sgt. Sepulveda said serving means "practice, practice, practice with teams."

Sgt. Noll, now on duty as NCO in charge of current operations at the 58th Operation Support Squadron, has contin-

ued serving in the Honor Guard on nights and weekends when he can be available.

Why do these airmen dedicate themselves to such a time-consuming, rigorous job that is all volunteer?

Although service in the Honor Guard is clearly a career enhancer, Sgt. Sepulveda said being part of the prestigious group is "more of a sense of pride, esprit de corps" and an "honor and a privilege."

Members must be sharp and as near perfection as humanly possible in their performance as they are continually paying tribute and respect to the flag.

"The Air Force takes on even more meaning...now you represent the Air Force front and center," he said. "When people see you, you are the Air Force."

Sgt. Noll agrees, saying that "the Honor Guard was always the best of the best and they are the last representation of the military that most families will see."

Sgt. Noll added that "giving our fellow comrades the honors they deserve is only a small token of appreciation that we can give back for all that they have done for their country."

Sgt. Sepulveda, noting the expression of appreciation from the parents of a Los Lunas airman killed while helping injured children in Afghanistan, quoted them as



Clockwise from left, Airman 1st Class Jennifer Barnes, Senior Airman Anthony Holly, Airman 1st Class Matthew Garner and Senior Airman Mel Acata practice properly folding and dressing the flag. (Air Force photo by Mr. Keith Pedersen)

saying, "Just seeing you folks, the way you performed, it helped us and made us very proud."

Airman 1st Class Lloyd Whittacre, like Sgt. Sepulveda, personally experienced the aftermath of Sept. 11, 2001, while working as a civilian in Washington, D.C.

For him, the attack was life changing, resulting in his decision to join the Air Force and the Honor Guard.

"I will never forget what I saw, people working together...I will never forget those who have paid the greatest sacrifice for our freedom," Airman Whittacre

explained. "That is why I chose to join the Honor Guard — to pay my respect to those I saw fall at the hands of those who seek to destroy America."

Patriotism aside, Sgt. Sepulveda said, Honor Guard members make great employees.

"Membership tells you this person has commitment because everything you learned is totally changed — they have a sense of wanting to do the best job and take that back to the workplace," Sgt. Sepulveda said.

Serving, he said, helps build responsibility and meticulousness, particularly for younger, newer airmen. Sgt. Sepulveda added that from a supervisor's perspective, "you get back a good airman."

Sgt. Noll, who served on the Honor Guard team for two years before heading the team as NCOIC for two years, said that his experience will "always be the best part of my career."

"I did receive a STEP promotion while serving as the NCOIC, and I believe that it is because of the recognition and the job that Honor Guard gave me," Sgt. Noll said.

— Ms. Jennifer West, 377th ABW Public Affairs



The Honor Guard firing party stands at ease, awaiting the order to come to attention. Pictured from left to right are Senior Airman Anthony Holly, Senior Airman Bryan Judy, Airman 1st Class Rory Baumgarten, Airman 1st Class Christopher Willingham, Airman 1st Class John Mennano, Senior Airman Michael Rogers and Airman 1st Class Glenn Robinette. Giving orders in the background stands Senior Airman Scott Bass. (Air Force photo by Mr. Keith Pedersen)

ASC lends expertise in Iraqi war

As people around the world watched Operation Iraqi Freedom on television this spring, few viewers could have known how critical Aeronautical Systems Center at Wright-Patterson Air Force Base, Ohio, was to America's overwhelming success against former dictator Saddam Hussein.

What Americans saw in six short weeks was the result of the center's dedication to two Air Force core competencies — developing airmen and technology-to-warfighting. It also came from years of deliberate, focused defense acquisition, as well as “quick-response” actions, by thousands of ASC people.

“The fact that ASC people and weapon systems helped our warfighters win Operation Iraqi Freedom was not by chance, but careful design,” said Lt. Gen. Dick Reynolds, ASC commander. “We delivered as promised.”

Even before the war began, ASC pre-positioned various military and civilian specialists in theater, including about 350 security forces, physicians, medics, public affairs specialists, acquisition program managers, financial managers, contracting officers, first sergeants, supply and intelligence specialists.

While all Aeronautical Systems Center contributions to Operation Iraqi Freedom were important, several examples stand out.



B-1 Lancer

The B-1 bomber fleet, managed by the B-1 System Program Office, was airborne over Iraq 24 hours a day, seven days a week even before the war began, sustaining a mission-capable rate near 80 percent. By improving the bomber's Beyond Line of Sight/Situation Awareness Targeting Update System, the SPO enables the aircraft to provide a continuous, airborne, on-call, precision-strike capability to respond quickly to emerging targets. As a result, the aircraft delivered more than 2,100 Joint Directed Attack Munitions and made the B-1 with the JDAM the “strike platform of choice” for the Combined Air Operations Commander.

B-2 Spirit

The B-2 team boosted American firepower over Iraq by certifying for use in less than 10 days a new “CRASH PAD” JDAM variant designed to incinerate Iraqi biological and chemical weapons. The program office also slashed certification time for the Joint Standoff Weapon operational flight software; overcame a contractor logistics support funding shortfall to deliver the GBU-37/B “bunker-buster” munition; and speeded up production/repair and delivery of bombs-on-target tail kits.

Sending a team to speed installation of portable shelters at forward-deployed locations, the B-2 SPO ensured better maintenance of the aircraft's low-observable materials to boost sortie rates and permit operations closer to combat zones. It also accelerated installation of a new PRC-117 tactical communication system for secure satellite voice/data communications and critical mission updates.



F-117 Stealth Fighter

According to program officials, the stealth fighter was a critical element of the coalition's surprise attack on Iraqi leadership. Working with prime contractor Lockheed Martin, the SPO developed and validated the expanded enhanced guided bomb unit “smart weapon” in just 12 days, and fielded a cockpit night vision goggle modification in less than two weeks.

Global Hawk Unmanned Aerial Vehicle

The Global Hawk Unmanned Aerial Vehicle, managed by the Reconnaissance SPO, captured more than 3,500 images of potential targets to share with warfighters. Flying 3 percent of air-breathing imagery intelligence missions and 5 percent of high-altitude reconnaissance sorties, Global Hawk accounted for 55 percent of time-sensitive targets generated to kill Iraqi air defense equipment. During 15 combat missions totaling 350 hours, Global Hawk located and helped warfighters dispatch 13 enemy surface-to-air missile batteries, 50 SAM launchers, 300 SAM canisters, and 70 SAM transporters, plus more than 300 tanks totaling 38 percent of known Iraqi armor.

“From the beginning, we had Global Hawk over the top of Baghdad, in orbit from Kirkuk and Urbil in the north to Baghdad in the south,” said Lt. Gen. “Buzz” Moseley, Coalition Forces Air Component commander. “They're amazing systems that provide an outstanding capability and set of options for the air commander, combatant commander and other component commanders. We're on the threshold of something exciting and new with unmanned aerial vehicles.”



C-17 Globemaster III

The C-17 and Propulsion SPOs worked with defense contractor Pratt & Whitney to deliver early 11 spare engines from its current production contract. These engines were necessary to increase War Readiness Engine spare to support Air Mobility Command's strategic airlift operations. The C-17 SPO also procured commercial airline seats for integration onto materials-handling pallets, which increased the C-17's capacity from 102 to 189 troops; completed aircraft integration analysis and airworthiness tests to lift in-flight restrictions on satellite communication radios; and expedited acquisition of infrared lens covers to enable C-17 flights into hostile territory without visible landing lights.

From March 26-30, a fleet of 15 C-17 aircraft flew 62 airlift missions and delivered more than 400 U.S. Army vehicles and 2,200 troops (including dropping 1,000 soldiers from the U.S. Army's 173rd Airborne Brigade who parachuted behind enemy lines) into Northern Iraq to secure the airfield at Bashur — all in an astounding 96 hours.

“We used every capability you could imagine with the C-17 to do something no other nation in the world could bring about,” said Col. Bob Allardice, commander, 62nd Airlift Wing, McChord AFB, Wash. “And we did it with a 100 percent success rate. America's getting our money's worth out of this jet.”

Predator UAV

The Predator UAV, another Reconnaissance SPO program, flew more than 100 sorties and 1,000 hours at lower altitudes to help warfighters identify and destroy suspected enemy hideouts and vehicles, as well as Iraqi missile support vans and anti-aircraft artillery sites through real-time, streaming video feeds routed to coalition ground troops. Specialized Predators linked multiple UAVs, successfully “buddy-lasing” potential targets to produce predictable Hellfire missile kills and ensure safe armed escort of coalition ground troops and vehicles.

“Every day, we had Predators over the top of Baghdad looking for SAM radars, missile launchers and leadership targets we struck to help us determine if we needed to re-strike them,” said Gen. Moseley.

— Ms. D. Sue Baker, ASC Public Affairs

(All photos courtesy of the U.S. Air Force)





AFMC Mission Support Directorate

Consolidating functional organizations improves communication, coordination

Capt. Dave Smith
AFMC Public Affairs

Recent restructuring initiatives at Air Force Materiel Command's headquarters provided senior leadership a single point of contact for installation support issues and a headquarters advocate for the command's air base wing commanders.

In June, AFMC officials created a mission support directorate, consolidating the functional organizations of security forces, civil engineer, services and the command chaplain. The restructuring streamlines headquarters

processes and improves communication and coordination according to Col. Larry Spencer, director of the new AFMC Mission Support Directorate.

Day-to-day issues

The directorate is taking on the day-to-day installation support responsibilities similar to the way the air base wing commanders do at AFMC centers, according to Col. Spencer.

"In AFMC," he said, "our center commanders have the installation commander responsibilities. But, they typically lean on their air base

wing and group commanders to work day-to-day installation support issues. In essence, the air base wing structure streamlines command and control of center installation operations," he said. Now, take that approach a leap forward to the headquarters.

An added benefit

"It makes sense to have one person as the point of contact for day-to-day installation support operations as well," said Col. Spencer. "It improves our communication and coordination, and it also gives our wing commanders an advocate here in the headquarters, something

they did not have before," he said.

Col. Spencer, recently selected for promotion to brigadier general, added that his position will help improve the coordination process within the headquarters, because he will be the advocate for those installation support functional organizations to the commander.

Following through

"In some cases, I'll be able to make the decision, and in others, I'll take it to the command section for a decision. It's going to be a judgment call, but it will be my responsibility

to make that call, and then follow through when we do send something forward for the commander's approval."

Col. Spencer said it's been working well so far, and the directorate has already had success coordinating decisions more quickly. "Every day, more and more people are coming to see me regarding installation support issues," he said. "I am now their advocate to the commander and can take some of the work off their plates."

On growing pains

But, any restructuring initiatives can have some growing pains according to Col. Spencer.

For example, realigning the four directorates into the Mission Support Directorate changed the headquarters'

organizational structure.

Although the four directorates retain their names, they are now known as offices instead of directorates, and their organizational leads now report to Col. Spencer.

Improving business

"Any time you change organizational structures and reporting officials," Col. Spencer said, "it can be an emotional thing. But, I think that as people get used to this structure, and see the benefits, it will become less emotional, and will continue to improve the way we do business."

AFMC officials created the Mission Support Directorate as part of a headquarters restructuring initiative that also moved safety, protocol, public affairs and the command historian offices under the director

of staff, and will eventually integrate the AFMC Acquisition Center of Excellence into the Directorate of Requirements.

A year-long test

Command officials said they will evaluate the realignments during a one-year test period to determine their effectiveness.

"A year from now, we want to see the mission support directorate as the single point for the command's installation support issues," Col. Spencer said. "We also want people within this directorate, and in our command's field units, to see this new directorate as a very positive, logical step providing an advocate for them and improving our communication, coordination and decision-making processes."

Putting people first

To help the directorate achieve those goals, Col. Spencer falls back to his top priority, "people first, mission always."

"We don't get anything done without people," he said.

He plans to implement a mentorship and career development program for both the military and civilian members in the directorate and focus on other activities and programs designed to build cohesion and improve teamwork.

Col. Spencer said a few other Air Force major commands are moving toward a mission support structure similar to AFMC's. "This is the wave of the future for installation support," he said, "and it's very exciting to be in AFMC on the front end of that wave." *(All photos courtesy of U.S. Air Force)*

Patience is par for canine course

Brooks analyst brings dog into home, takes to classes for future in security

Taking a high-energy furball with potential and nurturing him enough so he's capable of attending dog training school is not an easy task, even for the most experienced canine trainer. Yet to Ms. Kay Heihn, being a pooch pal to an animal that may someday help protect America's homeland is worth the fuss over puppy-inspired "backyard landscaping."

Ms. Heihn, an Air Force Center for Environmental Excellence cost performance analyst at Brooks City-Base in San Antonio, Texas, has analyzed for months the cost of keeping a dog in her home. This effort comes in support of an innovative breeding program jointly sponsored by the Defense Department and the new Transportation Security Administration, formerly known as the Federal Aviation Administration.

"You provide them with love and an environment where they can tear up and destroy things," quipped Ms. Heihn about young dogs enrolled in the Defense Department Military Working Dog Veterinary Services' Behavioral Medicine Puppy Program.

The federal government inaugurated the program in response to a growing requirement to use military working dogs in support of homeland defense initiatives. The Behavioral Medicine Section of the Military Working Dog Veterinary Service's 341st Training Squadron at Lackland Air Force Base, Texas, is the breeding ground for a program that leverages citizen support to prepare dogs for a government service career.

"The program is designed to give young dogs a lot of exposure to a variety of different people and environments," said Ms. Heihn, who became a program volunteer last fall. Program officials prefer that individuals or families raise puppies, nine weeks to 12 months old, in a nurturing home for five to seven months rather than limiting the animals' development through confinement to a kennel environment.

Gizmo, a friendly 7-month-old Belgian Malinois, is Ms. Heihn's latest houseguest.

"I got Gizmo in early January 2003. I have brought him to my office several times, but the older he gets the higher the energy level he has," she said.

The breed, similar to a German Shepherd, is preferred by Lackland handlers because of the animals' high intelligence.

"He has the perfect personality for searching out things," Ms. Heihn said, noting that Gizmo's backyard searches often lead to trouble.

Ms. Heihn, who had never raised a puppy, was initially interviewed by program officials concerning issues like the condition of her yard and fence, and other pets or people in her household.

"Very little training is provided prior to receiving a dog," Ms. Heihn said. However, a key phrase that she was taught is "take a break," dog talk for going to the bathroom.

Volunteers are, however, provided with some support includ-



Ms. Kay Heihn, an Air Force Center for Excellence analyst at Brooks City-Base, Texas, often brings Gizmo to work as part of the puppy's socialization training. (Air Force Photo by Mr. Rudy Purificato)

ing full medical service including the dog's shots, as well as its tags, collar and carrying crate.

Puppy classes every other week are part of the program's requirements.

Veterinary behavioral specialists work with each puppy to determine, through various games and activities, whether the animal has social or environmental interaction problems. Additionally, agility tests and medical checkups are included in periodic assessments.

"The periodic testing determines if the puppy is ready for school. If the dog is not ready for school, I get him back for two months so he can mature. He's then re-tested. If he washes out of the program, I have the right of first choice to keep him," said Ms. Heihn.

Gizmo is adjusting well to his home which includes Pepper, Ms. Heihn's 8-year-old female black Labrador. Ms. Heihn admits she tries not to get emotionally attached.

"It's like raising foster children so they can go out into the world. These puppies have a job to do. My job is to nurture them," Ms. Heihn said.

If Gizmo makes it to dog school, he could eventually be used to search for explosives, drugs, landmines, illegally imported food, gas leaks and illegal currency.

For now, Gizmo is content with teaching his master a few tricks.

"Gizmo has taught me tolerance and acceptance. I can now accept the new hole in my garden hose," she joked. What she can not accept, however, is the notion that he is "nothing but a hound dog."

— Mr. Rudy Purificato, 311th HSW

Deployed man's family rebuilds after fire

Sergeant in Iraq endures 44-hour wait after word of blaze, family's injuries

A Tinker Air Force Base, Okla., airman deployed to Iraq is back home helping nurse his family to health after a fire recently destroyed their home.

The 2-year-old daughter of Staff Sgt. Steven Mitchell, a power production chief with the 34th Combat Communications Squadron, was the most seriously injured. She had first- and second-degree burns on her arms, chest, stomach, legs, hands and face, and smoke caused carbon monoxide poisoning in her lungs.

Mrs. Tonya Mitchell, Sgt. Mitchell's wife, said she woke up around 2:15 a.m. the fateful morning of the inferno in her Midwest City home.

"I knew I had left the air conditioner on, but I was so hot," she said. "I opened my eyes and it was real hazy...I got up and looked down the hall, and all I saw was orange. There was nothing but fire."

Mrs. Mitchell said she and her 11-year-old son, Mathew, ran downstairs to get her mother, her grandmother — who happened to be visiting — and her other two children out of the house. She grabbed the cordless phone along the way, and in a mad rush to get everyone out and call 911, Mrs. Mitchell realized 2-year-old Maddie wasn't with them.

Though told firefighters were on their way, she said it wasn't soon enough for a mother who desperately wanted her baby.

"I grabbed a towel and was ready to go back in and grab Maddie, but right as I grabbed the towel, the front door burst into flames," she said.

She then went to the back of the house, to Maddie's bedroom, only to find flames already burning the toddler's skin.

"I broke out the window and drug her out," Mrs. Mitchell said. The only tools she used were her bare hands.

After reaching the front of the house carrying Maddie, firefighters and paramedics had arrived.

Though her grandmother and her son, Mason, suffered from burns and smoke inhalation, Maddie was hurt the worst.

Sgt. Mitchell was sitting in a tent in



Staff Sgt. Steven Mitchell, 34th Combat Communications Squadron, his wife Mrs. Tonya Mitchell, and their children Mason, 4, and Madison, 2, have felt the support of their extended military family as Madison recovers from burns and the family begins looking to make a fresh start. (Air Force photo by Ms. Margo Wright)

Iraq when a co-worker told him to call the squadron right away.

"He wouldn't tell me why, just that I had to call home immediately," he said.

From the time Sgt. Mitchell found out his little girl was in intensive care at Children's Hospital until the time he landed in Oklahoma City, 44 excruciating hours passed.

"It was pure hell," he said. "When you're just waiting and not knowing exactly what's going on, it's hard to bear."

And he said walking into the hospital and seeing Maddie proved even harder.

"It's a sad thing when you're looking at your own child in that condition," Sgt. Mitchell said. "It's just a real sick feeling."

The hospital released Maddie three days later, but Mrs. Mitchell said she continues to go to the burn unit twice a week. Maddie's mother is impressed with the quick recovery.

"As soon as she could get up from ICU, she was running around playing and I was chasing her with an I.V. pole," Mrs. Mitchell said. "I was relieved because I know how important it is in the healing process for children to return to their nor-

mal routines as soon as possible."

The Mitchells said the continued support of friends, specifically members of the 3rd Herd, the family support center and other organizations helped the family cope — especially since the Mitchells did not have renter's insurance.

Capt. Maurice Dunn, 34th CCS acting squadron commander said helping the Mitchells falls right in line with the rest of his job duties.

"My primary responsibility is to take care of my people," he said. "I don't mind stepping up into that position and helping Tonya, especially since Steven was deployed."

In addition to helping the Mitchells find a temporary place to live, clothing, appliances, furniture, toys and monetary donations, members of the 3rd Herd helped with the ultimate chore — moving. The family found another house, complete with a fire-detecting alarm system.

"We've been overwhelmed with the caring and the love that's been shown to us," Mrs. Mitchell said. "It's just been unbelievable and we're very lucky to be associated with such a great group."

— Ms. Amy Welch, OC-ALC Public Affairs

Five students earn national award

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Five high school students from across the nation were awarded cash prizes totaling \$17,000 during the Century of Flight Awards ceremony July 17 at the 2003 Dayton Air Show.

The students, chosen from 175 competitors, received their awards from Maj. Gen. Paul Nielsen, Air Force Research Laboratory commander. The students also received a free trip to Dayton to attend the Centennial of Flight celebration for both themselves and a parent. The winners were:

- Ray He, Hempfield High School in Landisville, Pa., won the grand prize of \$6,000 for his paper titled, “*Magnetoplasmdynamics: Ionization and Magnetic Field - Improving the Efficiency of Ion Propulsion.*”

- Laura Wong, Villa Victoria Academy in Yardley, Pa., won \$4,000 for her paper called, “*I See You! Robotic Navigation Using Appearance-Based Obstacle Detection.*”

- Stephen Kennedy, Indianapolis, Ind., won \$3,000 for his research paper, “*Creating an Effective and Efficient Cooling Method for Turbine Blades.*”

- Lauren Hansen, Wasatch High School in Midway, Utah, won \$2,000 for her paper titled, “*Nanostrands in Hybrid Composites.*”

- Eric Mueller from Acton Middle School in Granbury, Texas, won \$2,000 for a paper titled, “*Icing is Such a Drag: Aerodynamic Effects of Ice Accretion on Wings at Multiple Angles of Attack.*”

The contest dovetailed with Dayton’s Inventing Flight event, which celebrates the 100th anniversary of powered flight and the innovation of the Wright brothers. The laboratory-sponsored competition was a one-time event conducted in 2003 as part of the Centennial of Flight celebration.

About 800 students competed in regional and state science fairs across the United States. They each submitted a 10-page paper based on his or her research and its possible aerospace



Ray He tours the human effectiveness panoramic night-vision goggles division at the Air Force Research Laboratory at Wright-Patterson AFB, Ohio. He won the Century of Flight Award grand prize of \$6,000. The prize was for his paper titled, “*Magnetoplasmdynamics: Ionization and Magnetic Field — Improving the Efficiency of Ion Propulsion.*” (Courtesy photo)

applications. From that group, 175 stepped forward.
— Reported by AFRL Public Affairs

Eglin bomb teams cinch DoD-level awards

EGLIN AIR FORCE BASE, Fla. — Seventy-five people from the Joint Direct Attack Munition Joint System Program Office and 35 people here who developed the Passive Attack Weapon were recognized with the 2003 David Packard Excellence in Acquisition Award.

During a recent ceremony at Fort Belvoir, Va., the Acting Under Secretary

of Defense for Acquisition, Technology and Logistics Mr. Michael Wynne, presented two of the four Defense Department-Level Packard Awards to representatives of the teams.

The JDAM is a tail kit that when put onto a dumb bomb, makes it a precision-guided weapon that uses an inertial navigation system, updated from the global positioning system, to correct for wind drift.

Once released from the aircraft, JDAM is completely autonomous and flies to a predetermined set of coordinates. Because of its low cost, accuracy and reliability, JDAM has become the “warfighters’ weapon of choice,” according to the Air Force, Navy and Marine Corps pilots using them in Operations Allied Force, Enduring Freedom and most recently in Iraqi Freedom.

— Reported by AAC Public Affairs

Researcher named employee of the year

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — A senior at Wright State University working at the Air Force Research Laboratory, Materials and Manufacturing Directorate here has received the Southwestern Ohio Council for Higher Education Student Research Program Student Employee of the Year award for outstanding contributions to science and engineering.

Mr. Dean Brown, an engineering physics major from Ashland, Ohio, was recognized for successful development and application of a unique experimental data acquisition system supporting research in nanotechnology, a highly advanced field of investigation dealing with materials at billionths-of-a-meter scale.

He was nominated for the award by Dr. Tim Bunning of the directorate’s Survivability and Sensor Materials Division, and Dr. Richard Vaia and Dr. Rachel Jakubiak of the Nonmetallic Materials Division.

As the scientists who oversee his research, they indicated that Mr. Brown’s experiments were the “critical lynchpin” to an international collaboration on laser technologies with the Institute of Electronic Structure and Lasers in Hellas, Greece.

— Reported by AFRL Public Affairs

AFRL names scientist as latest fellow recipient

KIRTLAND AIR FORCE BASE, N.M. — The Air Force Research Laboratory has selected Dr. Robert Pugh as its latest fellow.

Dr. Pugh has a worldwide reputation for visionary leadership and groundbreaking technical achievements in space research.

AFRL’s Fellows program recognizes its most outstanding military and civilian scientists and engineers for either their research and development accomplishments or exceptional technical program management.

Currently the associate chief scientist of the AFRL’s Space Vehicles Directorate, Dr. Pugh assists in managing the technical

content and quality of the directorate’s investment in space system science and technology.

— Reported by AFRL Public Affairs

SBIR program recognizes small business specialist

ROME, N.Y. — Ms. Janis Norelli, a small business specialist at the Air Force Research Laboratory Rome Research Site, has been honored by Air Force Small Business Innovative Research, or SBIR, program officials.

Ms. Norelli, an 18-year member of the Rome staff, was selected as the SBIR Program Manager of the Year.

Managed by the AFRL, Wright-Patterson Air Force Base, Ohio, the SBIR Program is designed to stimulate technology research by small businesses, while providing the government with cost-effective technical and scientific solutions to challenging problems. SBIR also encourages small businesses to market their technology in the private sector.

Ms. Norelli was cited for her initiative, her knowledge of the SBIR program and its intricacies, and her efforts to advance the SBIR and small business technology transfer programs in the Air Force.

— Reported by AFRL Public Affairs

White Knights shine with 11th Air Force award

ROBINS AIR FORCE BASE, Ga. — There are many ingredients that go into the 653rd Combat Logistics Squadron’s 11th Air Force Outstanding Unit Awards, but according to Lt. Col. Stacy Boudreaux, the key elements are its programs, processes and people.

Dating back to 1980, the unit has garnered this high honor nearly a dozen times and each extends the unit’s long list of achievements.

The 653rd CLSS commander said the outstanding unit award is not a competitive award, but a decoration for the unit in recognition.

The White Knights’ success in their most recent win can be attributed to their global aircraft repairs and supply and transportation efforts throughout 2002. During Operations Enduring Freedom and Iraqi Freedom the performance of the unit

has been second to none, and according to Col. Boudreaux.

Some of the CLSS’s accomplishments for 2002 included the deployment of 56 Aircraft Battle Damage Repair or rapid area distribution personnel to support the warfighter on missions ranging from warehousing in an austere environment and supporting the U2 operation to helicopter recovery at Kandahar International Airport.

Helping to deliver 2 million tons of humanitarian rations was also a high point.

In addition, the team performed depot level repair on C-17 aircraft under field conditions at Incirlik Air Base, Turkey.

They also helped Air Guard units at Moffett Federal Field, Calif., and Stratton, N.Y., eliminate isochronal inspection backlog, correcting more than 500 discrepancies at each site.

— Reported by WR-ALC Public Affairs

Two new fellows inducted at AEDC banquet

ARNOLD AIR FORCE BASE, Tenn. — Two former Arnold Engineering Development Center employees were recently honored as the 41st and 42nd AEDC Fellows.

Dr. John Benek, who served more than 30 years at AEDC, was honored for his contributions in the development of advanced computational dynamics tools with a particular emphasis on the application to the test and evaluation of aerospace systems. Additionally, his work with NASA and industry leaders to develop leading edge technologies influenced the evolving role of computer simulations and wind tunnels in the development of flight vehicles.

Mr. Glenn Norfleet, a 20-year AEDC employee, was honored for his contributions during the intercontinental ballistic missile era, during which he advanced and established the model for the test and evaluation of reentry vehicles and systems. He helped to design and develop impulse wind tunnels. Mr. Norfleet was also responsible for the addition of the hypervelocity track system in AEDC’s G-Range.

— Reported by AEDC Public Affairs