

intercom

Journal of the Air Force
C4 Community

August 2002



*AETC Comm and Info
helps Air Force keep pace
with IT advancements*



**2001 Comm
and Info Awards**
See Pages 22-27

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AETC communications and information

AETC keeps pace with IT advancements Page 4

Air Education and Training Command commander stresses the importance of communications and information and how it will help us remain the world's most respected air and space force. The Air Force must be able to find, fix, track, target, engage and assess anything on the face of the earth – at a time and place of our choosing.

Armament school IT piques student interest Page 8

In this high-tech world with lifelike video games, digital video disks, and high definition television, technical school classrooms at the 363rd Training Squadron's Aircraft Armament Apprentice School are challenged with captivating the attention of students.

USAF ATC tower operator course takes off Page 14

The Air Traffic Control Operator Apprentice School at Keesler AFB, Miss., is honing a new breed of apprentice controllers to meet a forecast increase in civil and military air traffic.



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On the cover

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71st Comm Squadron helps train pilots Page 18

With a limited number of members, it takes a dedicated team to meet Vance's demanding flying training mission.

Best of the Best

2001 Communications and Information Award winners Page 22

Information Assurance Campaign 2002

Public Key Infrastructure is tip of communications iceberg Page 28



The Air Force now relies on e-mail and the World Wide Web for all types of mission-related communications. With these capabilities come new threats and security concerns. One of the answers to this new communications threat is Public Key Infrastructure, or PKI.

Common access card enhances e-mail security Page 32

The Air Force has found a "smarter" way to strengthen e-mail security by introducing the common access card. The CAC replaces the traditional ID card and includes electronic data that allow the user to encrypt e-mail, electronically sign documents, and in general, enhance Information Assurance.



Visit the Computer Based Training System Web site at <http://afcbt.den.disa.mil>

AETC keeps pace with IT advancements

By Gen. Donald G. Cook

Commander

Air Education and Training Command
Randolph AFB, Texas



“We need to draw upon lessons learned in current operations in Afghanistan and around the world to develop programs that produce airmen ready to operate sophisticated combat technology – anywhere, anytime.”

Gen. Donald G. Cook

Virtually every mission in the Air Force today depends on our ability to communicate ... whether it's commanders to troops, the air tasking order, base infrastructure through theater deployable communications, or retargeting a B-1. In the future, these requirements will grow as we face new and more sophisticated threats. To remain the world's most respected air and space force, we must be able to find, fix, track, target, engage and access anything on the face of the earth – at a time and place of our choosing. Therefore, we must continue to enhance information technology, command and control, intelligence, surveillance and reconnaissance in every corner of the Air Force with assured communications.

That means we must have a concrete foundation that starts with trained and educated airmen who can leverage our technological edge and convert it into combat capability and effects. And that's where Air Education and Training Command comes in. We build America's Air Force one person at a time, providing mission-ready airmen to meet the needs of our “plugged-in” Air Force.

In today's information age, every passing day is another leap forward in technology. To meet the challenges of a connected “infosphere,” we must continue to transform our training and education programs. We need to draw upon lessons learned in current operations in Afghanistan and around the world to develop programs that produce airmen ready to operate sophisticated combat technology – anywhere, anytime. This is our priority

in AETC – it's where the rubber meets the road for us.

The men and women of AETC take great pride in living up to the command's vision of integrating innovation and technology to recruit, train and educate tomorrow's air and space leaders. Command-wide information technology strategies, standards and processes, and emphasis on treating the network as a critical information and technology resource, are creating synergy in our education and training processes. Distance learning and simulation are already commonplace; however, as integration of diverse resources and services takes place, new forms of training and education – such as virtual reality, the virtual information-space and collaboration tools – will merge into the training environment.

The Air Force's warfighting capability relies on the assured, successful transmission and use of 1s and 0s. Gaining an unprecedented advantage on the battlefield will rely not only on information technology, but on anticipating the changes necessary to exploit and mobilize technological breakthroughs. AETC will continue to integrate innovation and technology, in order to recruit, train and educate professional airmen, and to sustain the combat capability of America's Air Force.



AETC marks successful year

By Col. Paul Capasso
*Director of Comm and Info
Air Education and
Training Command
Randolph AFB, Texas*



Col. Paul Capasso

Since this issue of *intercom* focuses not only on Air Education and Training Command communications and information, but also on the Air Force's best in our career field, I've taken this opportunity to include recognition of AETC's best in this wrap-up of where AETC comm and info has been this year and where we're headed.

We held our inaugural AETC Communications and Information Awards Banquet during our communications and information conference at Randolph in June, and it was an outstanding success! Thirty of our 33 award winners attended. After a day of touring local sights, lunching with AFCEA, and receiving the command mission briefing, they were ready to have some fun. We were honored to have Rob C. Thomas II, assistant deputy chief of staff for Warfighting Integration at Air Staff, as our guest speaker. It was especially gratifying to have the opportunity to honor the three AETC award winners who went on to win at Air Force level.

As I watched our individuals and teams step up to receive their trophies, I was reminded of the broad scope of expertise encompassed by communications and information: communications-computer systems operators, comm-electronics maintainers, information managers, and visual information experts. And within these categories, there are even more specific areas – technical controllers, radar maintainers, spectrum managers and software programmers, to name just a few.

Our award winners represent not only the best in each category, but also the linchpins that hold our community together. It's their accomplishments, their excellence, that make our community function as one entity – the "whole" that is greater than the sum of its parts.

Nowhere has that been demonstrated better than in AETC over the past year. We laid out our priorities at the beginning of the fiscal year in a letter from our vice commander: server consolida-

tion, Microsoft's system management server, PC common operating environment, and increasing our secret Internet protocol router network capability. These priorities are about pursuing an enterprise-wide strategy and bringing together the standards, policies and information technologies to assure information superiority and decision dominance. Reducing the complexities of the way we gather, move, manipulate and store information is key to this endeavor. AETC's FY '02 IT priorities move us towards a common ground to ensure information is reliably delivered and appropriately protected.

The Air Force set a deadline of next month to complete server consolidation. With FY '01 end-of-year funds, we were able to make great progress. We developed a command-wide standard server consolidation configuration, and contracted engineering support to properly design a technical solution for each base. Communications squadrons were the focal point for this effort, assisting in gathering detailed information on existing equipment capabilities from each wing. Survey results were then outlined in a base-unique migration plan. By the end of June, we had reduced 1,167 servers across the command. We're also implementing an AETC standard storage area network solution. Conferring with the directorates, we've identified 87 AETC-unique functional systems to consider for server consolidation. We foresee even greater success in the coming year, as we ride the wave of momentum we've gained from the groundwork laid this year.

We contracted with Microsoft to develop an implementation plan to install system management servers throughout the command. SMS will provide long-awaited hardware and software inventory, software distribution, configuration control, and remote diagnostic network tools for base networks. We completed an implementation plan and provided training to the first class of technicians in May. The classes were well received and trainees were enthusiastic about the quality of training. Two Microsoft consultants completed documentation for Randolph AFB, and successfully implemented the first set of clients for the base. Sheppard and Lackland AFBs are next in line for standard configuration.

See **BEST** Page 6

Air Education and Training Command's 2001 communications and information award winners pose for a photo with Rob C. Thomas II (front row, fourth from left), assistant deputy chief of staff for Warfighting Integration, guest speaker for the awards ceremony. Also pictured (fifth from left) is Col. Paul Capasso, director of Communications and Information for AETC.



BEST
From Page 5

AETC procured a command-wide enterprise license for Microsoft products. This initiative – PC-COE – will provide the command a common operating environment and will save us \$2 million each year in software procurement. As of the end of June, more than 55 percent of our command-wide migration to PC-COE was complete, and we're on an achievable glide slope for full implementation by the end of the year.

SIPRNET is increasingly becoming the communications system of choice in all operational contingencies, and the aftermath of the 9/11 attacks drove home its importance to our command. AETC determined that SIPRNET was a must, and stepped up to fund installation for certain senior leaders. We completed site surveys across the command, and documented results in a "letter of intent" which advised each base how to prepare for installation. Although procurement of crypto equipment has slowed our progress, communications squadrons have worked hard to ensure their bases are "site ready."

In addition to these priorities, we've made great strides to consolidate functions among the AETC headquarters staff and Randolph AFB. We're partnering with the operations directorate to merge our IT resources, and we're working to collocate our network operations and security center with the base network control center, to gain economies of scale from fusing those operations. When the consolidation is complete, we'll move to re-engineer the NOSC/NCC functions to gain even greater manpower savings across the command.

We've brought home the true mission of AETC:

not just to recruit, train and educate, but also to replenish the Air Force's combat capability. Over the past year, we've completed a comprehensive scrub of our communications and information resources, loading them all into the aerospace expeditionary force library. The result: While communications and information resources account for just 8 percent of the command's manning, we make up fully 20 percent of the command's deployable unit type codes. Additionally, our airfield support at home has resulted in the highest reliability and availability rates ever attained in the command – contributing to successful completion of over one million sorties in the Air Force's busiest flying command.

In short, AETC has had an incredible year! We've succeeded in integrating various facets of our career field into a seamless organization. As we look to the future, we realize our challenge will be to integrate our organization into an even larger entity, to achieve seamless warfighting integration. Our goal is to effectively integrate advancements in the communications and information community with command and control, intelligence, surveillance and reconnaissance across the air and space domain. This will be the key transformational enabler for our nation's ability to find, fix, track, target, engage and access anything on the face of the earth ... and to do it not in days or hours, but in minutes, and yes, even seconds.

This is an ambitious goal ... but one that holds phenomenal promise for our future. As we move forward to embrace the promise, remember the words of a wise man who said, "The world moves so fast that there are days when the person who says it can't be done is interrupted by the person who's doing it." (Anonymous)

Schematic Power Browser enhances training

By Capt. Michael D. Stephens
Avionics Systems Flight Commander
332nd Training Squadron
Keesler AFB, Miss.

A suite of hardware and software assembled by Keesler's 81st Training Wing is setting a new standard for classroom instruction. The Schematic Power Browser presentation system is hugely popular among students and instructors alike, and it's no wonder. SPB increases instructor efficiency, enhances student performance, and solves problems associated with older classroom tools like overhead projectors and video displays.

SPB enables faster-paced presentations by hyperlinking text, images and video, then literally placing it at the instructor's fingertips.

Lt. Col. Rufus Jackson Jr., 332nd Training Squadron commander, said, "Experience with a single block of instruction shows average annual failures dropped from 20 to three – saving more than \$20,000 a year and providing mission-ready airmen to operational units sooner." Overall savings exceed \$350,000 since the system was implemented.

"SPB helps students associate real hardware with abstract images on wiring diagrams and schematic drawings," said instructor supervisor Anthony Woitalla. "This helps them understand systems more quickly and thoroughly."

Because SPB is seamless compared to overhead slides, instruction is more efficient. Instructors can cover 14 percent more objectives in the same time.

The core of the presentation system is the SPB software, developed at Keesler by the 81st Training Support Squadron. Hardware consists of a fast computer, a "one-gun" data projector, and a touch-sensitive electronic

white board. SPB allows instructors to abandon the mouse, step out from behind the podium, and call up a variety of multimedia images by simply touching "hot spots" on the electronic white board.

At Keesler, the concept of a touch-sensitive presentation system originated in 1997 when the 332nd Training Squadron acquired its first electronic white board. Computer and software resources at the time were insufficient to support a useable system. But over time, computers improved and so did the Schematic Power Browser software. Karen Dawson, of the 81st TRSS, initially developed the software, then worked closely with 332nd TRS instructors to refine it into a powerful classroom tool. Instructor and subject matter expert Edward Wood, of the Communication and Navigation Systems course, was first to use the system in the classroom.

Brig. Gen. Ted Mercer, former 81st Training Wing commander, pointed out another reason for the system's remarkable effectiveness. "Today's students are brighter and more technically savvy. Many have grown up in an environment of video on demand, powerful home computers, and unprecedented forms of instant communication," the general said.

SPB applications don't end with avionics technical training. The 81st Training Wing has implemented SPB in 35 courses, and demonstrated it to senior leaders like Gen. Donald G. Cook, AETC commander. Most first-time spectators are astonished by the technology.

"The only limitation is the imagination of the developer," said Wood.

The wing is happy to grant the increasing requests for demonstrations, and has prepared a video to help spread the word. The Schematic Power Browser presentation system represents the future of AETC classroom presentation technology.



Armament school information technology piques student interest

By Capt. John T.
Willoughby

*Aircraft Armament Flight
Commander
363rd Training Squadron
Sheppard AFB, Texas*

The 363rd Training Squadron's Aircraft Armament Apprentice School at Sheppard AFB is captivating and motivating students. In this high-tech world with lifelike video games, digital video disks, and high definition television, technical school classrooms face the challenge of holding apprentice students' attention. The elite armament instructor force, also known as weapons loaders or "load toads", is piquing student interest with a three-front attack of unique information technology. Its arsenal includes the F-15E virtual reality simulator, interactive courseware and LINKS systems.

The unavailability of a multi-million dollar F-15E weapons trainer motivated the creative men and women of the 363rd TRS to find an alternative. They viewed the situation not as an obstacle, but an opportunity, and developed a \$425,000 substitute known as virtual reality simulation, which immerses students into a three-dimensional world. The simulator was needed to train students to render the aircraft safe-for-maintenance. Armament apprentice students seeking their 3-level skill certification must complete a battery of tests on the simulator. They enter the 3D virtual hangar by donning a head-mounted display and using a joystick to execute safe-for-maintenance tasks. The hangar contains a F-15E aircraft, fire extinguisher and composite tool kit. As students move around the aircraft making visual inspections, they perform



A student uses the F-15E Virtual Reality Interactive Courseware Simulator developed by the Armament Schoolhouse.

various maintenance tasks. They enter the cockpit for console switch orientation. The computer tracks mistakes and calculates a pass or fail rating. While safety violations in the virtual hangar are regarded as seriously as real-world violations, no equipment is lost, and no one is injured or killed. More than 100 students use the VR system annually, helping to reduce training workload for first-line supervisors. Prior to VR, safe-for-maintenance training required more than 40 hours. Now the same training takes less than four hours.

Number two on the IT training tool list is interactive courseware. Each student sits at a computer desk and completes maintenance tasks simulated on classroom computers. Students can tear



Students in a LINKS classroom. LINKS is a system designed to link several computer systems in a training environment. The instructor controls all the computers in the room and can release limited control to the student for ICW simulation completion. At any time, the instructor can view student progress, individually or as a group, on the instructor's monitor.

down, reassemble and perform an operational checkout of the 20 mm M61A1 gun system installed on F-15 and F-16 aircraft. They become proficient with all parts and technical order steps before performing these tasks

on an actual gun system. Other ICW programs include F-16 functional checks, aerospace ground equipment inspection and checkout, F-15 pylon removal and instal-



20mm M61A1 gun system

lation, F-15 gun safing and clearing, bomb lift truck inspection and operation, and A-10 selective jettison check. All of these simulations reinforce trainee proficiency, task safety, job progression, and job knowledge, and allow trainees to practice while they wait their turn to perform. These ICW lessons are used by all 3,000 of our annual graduates. ICW is portable for mobile training teams to deploy to other bases for in-place training. Simulations also cut down on wear and tear on real-world equipment in a training environment. ICW uses state-of-the-art technology to give students high quality training.

The final technological tool is LINKS. LINKS is not an acronym, but the name of a system designed to link several computer systems together in a training environment. The instructor controls all the computers in the room. Armament instruc-

tors can release limited control to a student to complete ICW simulation. At any time, the instructor can view student progress, individually or as a group, on the instructor's own monitor, without looking over the student's shoulder. The instructor can stop simulations and turn off student computer control to emphasize important material. LINKS also allows interaction between two or more student consoles, so that trainees can work as a "team" when necessary. However, there's no fooling around in this classroom, since the instructor is all-knowing and all-seeing. LINKS guarantees computer and information security at all times. Another unique use of the LINKS system is for block testing. Students must pass each individual block of instruction to move on to a higher block and eventually graduate from the apprentice course. A 70 percent score is required to pass each block. The range of armament courses is 9-15 blocks. All block tests are computerized and take place in the LINKS laboratory. During testing, the instructor can talk headset-to-headset with any student having a problem, without disturbing the other students.

While Air Education and Training Command continues to build a better Air Force, one student at a time, the 363rd TRS leads the way in infusing IT into the classroom. By using IT to capture student attention and interest, the aircraft armament schoolhouse is producing highly trained personnel to support global engagement and replenish the combat capabilities of America's Air Force.



Photo by Staff Sgt. Douglas Brunelle

Tech. Sgt. Manuel Smith, 367th Training Support Squadron media production flight, Hill AFB, documents the preflight stage of an F-16 from the 388th Fighter Wing at Hill AFB before a training mission.

Unique unit provides high-tech video services

Training aids 'ain't what they used to be'

By Senior Master Sgt. Lemuel Casillas
367th Training Support Squadron
Hill AFB, Utah

For Tech. Sgt. Byron Chaudoin, nothing could be better than fixing aircraft for the Air Force, except maybe passing on his knowledge to a new airman. As a B-52 crew chief assigned to the 367th Training Support Squadron's Interactive Media Instruction Flight at Hill AFB, Sergeant Chaudoin is in a position to share his experience with 6,000-8,000 airmen entering the aircraft maintenance career field each year. "When I was assigned to the flight line, I didn't have any idea that something like IMI existed. It would have been a great solution to training our new maintainers," Sergeant Chaudoin said.

On his recent tour on the flight line, there weren't enough maintainers or trainers. Sergeant Chaudoin is one of 55 maintainers, covering 25 aircraft specialties, tasked with developing IMI that ranges from avionics to hydraulics, and refueling for all assigned airframes. While he specializes in B-52 systems, other assigned maintenance specialists develop courseware for all weapons platforms and systems. Maintenance training ranges from A-10s and HH-60s to airlift, bomber, refueler and fighter aircraft. While maintenance personnel provide subject expertise to develop courses on proper and safe procedures, the squadron's videographers capture the images for developing training videos and interactive compact disks.

The marriage of these two specialties makes this Air Force training support squadron unique.

Tech. Sgt. Joan Young, a videographer assigned to the unit's media production flight, said, "It's really interesting to see the impact these training aids have on newly assigned personnel." Since her assignment, she's deployed to document footage for developing the Firefighter Protection Chemical Suit familiarization video.

Not only do the videographers document ground activities, but five are trained to capture air-to-air footage of America's Air Force in action. When they're not busy working on training course videos, they support Combat Camera mobility requirements on exercises, and humanitarian and combat operations, and manage the Air Force's most versatile TV broadcast van.

The 367th has touched all aspects of Air Force safety with their productions. "The products range from video tapes to interactive media on compact disk," said Dale Johnson, a producer director assigned to the production flight. He worked on the A-10 Emergency Ground Egress video with Sergeant Chaudoin. And while some productions are strictly for Air Force use, some have had far reaching impact across the DOD and commercial world. Brad Dallof directed a recent production of Cockpit Voice Recorder, an off-Broadway show of actual aircraft mishaps. This realistic reenactment was designed to train Air Force aircrews on coordination and communication, and how it was involved in these mishaps. The compact disk was adopted DOD-wide and by the commercial airline industry.

However, this evolving technology requires maintainers and videographers to constantly seek better ways to produce training aids. "A recent production called for documentation of KC-10 Emergency Ground Egress as part of a larger training package updating old programs with current and relevant safety information," Johnson said. The customer needed better user interaction with the training aid, so the producer changed the edit style to better align video with related training blocks on interactive disk, allowing more interactive transitions controlled by the user.

The maintainers and videographers are supported by three graphic artists, one photojournalist and eight computer specialists. Without state-of-the-art computers, with the ability to provide 3D animation and 2D graphics, the video and interactive courseware would become monotonous and boring. Graphic artists have created more than 350 products for eight maintenance courses and 15 video productions. The photographer can



Photo by Tech. Sgt. Kimberly A. Yearyean-Siers

Staff Sgt. Douglas Brunelle, aerial visual information production documentation craftsman, media production flight, videotapes Staff Sgt. Curtis Sallade, interactive multimedia instruction flight courseware developer, 367th TRSS, Hill AFB, demonstrating the use of emergency egress ropes by the aft door of a KC-10 Extender.

quickly photograph a piece of equipment and make it available for animation for interactive productions. For a recent interactive course, Egress Explosive Safety, graphics specialists created 200 3D models from a series of photos to build a virtual world.

While it's unusual to see a squadron comprised of maintenance and visual information specialists, it's the everyday mission of these dedicated individuals to provide effective training products and services for America's Air Force. "I only wish I knew then what I know now," said Sergeant Chaudoin.

Teaching seeks best and brightest

By Capt. Robert J. Bonner

Air Force Communications Officer Training
Instructor
333rd Training Squadron
Keesler AFB, Miss.

Who comes in contact with every new communications officer in the Air Force? Who gets a year-around opportunity to interact with Air Force senior communicators? Answer: Air Force communications and information officer training instructors.

Basic and advanced communications and information officer training, nestled snugly amid various technical training courses at Keesler, offers everything to communications officers. So why is it difficult for Air Force Personnel Center to find company grade officers to fill these immensely important jobs in the career field?

There are lots of jobs in the Air Force where you can make a difference, but not many allow you to see the “fruits of your labor” daily. BCOT and ACOT instructor is one of those jobs. You’re impacting about 150 new officers every day – and around 500 each year – who are joining the communications and information career field. These are individuals you will lead in the future, who may one day be your peers, and who will inherit the legacy of Air Force communications and information.

BCOT and ACOT instructor benefits extend even further. Is there a job you always wanted but could never get? Is there a job that would put your records over the top for promotion? Since the late ‘90s, being a BCOT or ACOT instructor has provided a stepping-stone for many individuals to assignments that may have seemed just out of reach. According to Michael Abbate, Training Development Element chief, “AFPC gives careful and insightful consideration to our outbounds for choice, career-enhancing positions. They get great assignments, based on what I’ve seen in the past four years.” While AFPC doesn’t have a blanket policy of favoritism for instructors, Maj. Martin

Schlacter, the center’s communications and information assignments officer, said, “The reason we consider assignments for graduating instructors so sensitive is that we want to slowly, but surely, reinforce the fact that the schoolhouse is a great place to work. We want the best officers to teach our ACOT and BCOT and to see those officers get promoted and get great OPD jobs when they leave.”

For generations of pilots, being an instructor pilot has been considered a plus for advancement. Capt. Thomas Lee, C-21 evaluator and former IP, said instructing “... is a good thing on multiple levels. It shows you’ve obtained a certain level of flying proficiency, aircraft and flying knowledge, and responsibility. Most people strive for it.” Not only does it show you’re a skilled and talented pilot, but “It’s very important for promotions, and to the airlines, if you get into the civilian aviation world,” he said.

This is testimony that only the best and brightest become instructors, whether here or in other operational training units. Unfortunately, AFPC receives volunteers for only one of every two T-prefix instructor positions in any given assignment cycle, according to Major Schlacter. More than likely, this is because instructor duty is not viewed as a “mainstream” job, like it is in the rated community. The reality is that instructors, who train and transform our newest communications and information officers, are crucial to the career field. Every senior comm and info leader knows you’re one of the career field’s best when they see “AFCOT Instructor, 333rd Training Squadron” in your duty history. Those who answer the call to teach know they’ll be taken care of – especially here at BCOT and ACOT. In order to embrace the warrior mentality the Air Force instills in all of us, we need to take cues from our flying counterparts. By making instruction as important in our career field as it is in theirs, we’ll be poised to transform communications and information officer trainees to an even more light, lean and lethal support force. Teaching isn’t just another job – it’s arguably *the* job to consider for your next assignment. Are you one of the best and brightest?

There are lots of jobs in the Air Force where you can make a difference, but not many allow you to see the “fruits of your labor” daily. BCOT and ACOT instructor is one of those jobs.

The reality is that instructors, who train and transform our newest communications and information officers, are crucial to the career field.

42nd CS supports AU's diverse mission

**By Capt. Nathaniel Ards
and 2nd Lt. Shilette Addison**
*42nd Communications Squadron
Maxwell AFB, Ala.*

The 42nd Communications Squadron is the only unit with the fulfilling mission of providing unique, tailored communications and information support to Air University, at Maxwell AFB. Every day, the 160-plus men and women of the 42nd CS rise to the challenge of meeting AU's diverse and time-sensitive requirements. They provide direct support to more than 7,200 end users directly connected to the network, and to more than 10,000 distant learning students across the globe.

While AU demands a lot from the squadron, their demands don't compare to those 42nd CS personnel place on themselves to deliver exceptionally high service to AU students and the rest of the Maxwell and Gunter Annex community.

The 42nd epitomizes the Air Force's "Service Before Self" core value. Members of this atypically structured comm squadron always put customers first. They support their customers in a unique way – they go to them, and they reside with them.

Despite 44 percent manning in the network control center, 42nd CS people manage to assign about 20 percent of the NCC staff to the AU Academic Circle Technology Team, where they provide frontline service to every leader and future leader in the Air Force. While housed in the academic circle, 42nd members have the arduous task of handling "on demand" requirements for more than 1,800 students and faculty members of the Air War College, Air Command and Staff College, School of Advanced Aerospace Studies, Squadron Officer

School, and Air and Space Basic Course.

On selected days, members of the circle technology team and the NCC rise at the crack of dawn, put on their uniforms, and hasten to their duty locations to beat the rush. More than 900 students – including 90 percent from the Air Force, 8 percent from other U.S. Armed Forces, 1 percent civilian, and 1 percent from more than 60 foreign countries – enter their doors to pick up one of more than 1,000 laptops the team maintains daily. They call this event "laptop issue," but handing them out is the easy part.

Each year, the 42nd CS collects 900 laptops from outgoing students and reissues 900 laptops to incoming students. The process is completed in less than two months. In those 60 days, laptops must be re-imaged using a process called "ghosting." This process takes about 25 minutes per laptop, which equates to about one work-month.

After ghosting, each laptop is configured for an individual student's unique profile, which takes another 10-15 minutes. Every year, the previous students' 900 e-mail accounts and home directories must be deleted and 900 new ones created.

The team also administers 12 servers daily. Ongoing administration never stops for remaining faculty and systems supporting academic applications. Although the list of tasks included in the laptop process could continue for several more pages, one point is clear: Members of the 42nd CS master this cyclical process with success and a smile and despite limitations of time, money, people and training. They make the difference in education and training at AU by providing optimal computer support to students and faculty – and no one does it better.

Maxwell NCC assures info flow

In addition to Air University, the 42nd Comm Squadron supports exclusive networking requirements of a host of tenant organizations, such as the Air Force Doctrine Center, the Air Force Judge Advocate General School, the Air Force Legal Service Agency and the Defense In-

formation Service Agency.

That's where the squadron's network control center steps in. The NCC is the nucleus of the entire networking community, supporting AU and Maxwell AFB missions behind the scene. The NCC uses its limited number of technicians to maintain 19 servers, six firewalls, three networks and three domains for information flowing into Maxwell for AU headquarters and its schools.

While 19 90-gigabyte servers might seem a lot for Maxwell-Gunter's population, it takes that and more to support AU's needs. It requires not only massive server space and memory, but also a gigabit backbone – implemented by 42nd CS with tremendous success and customer appreciation – to push needed information quickly to all the schools.

USAF ATC tower operator course takes off

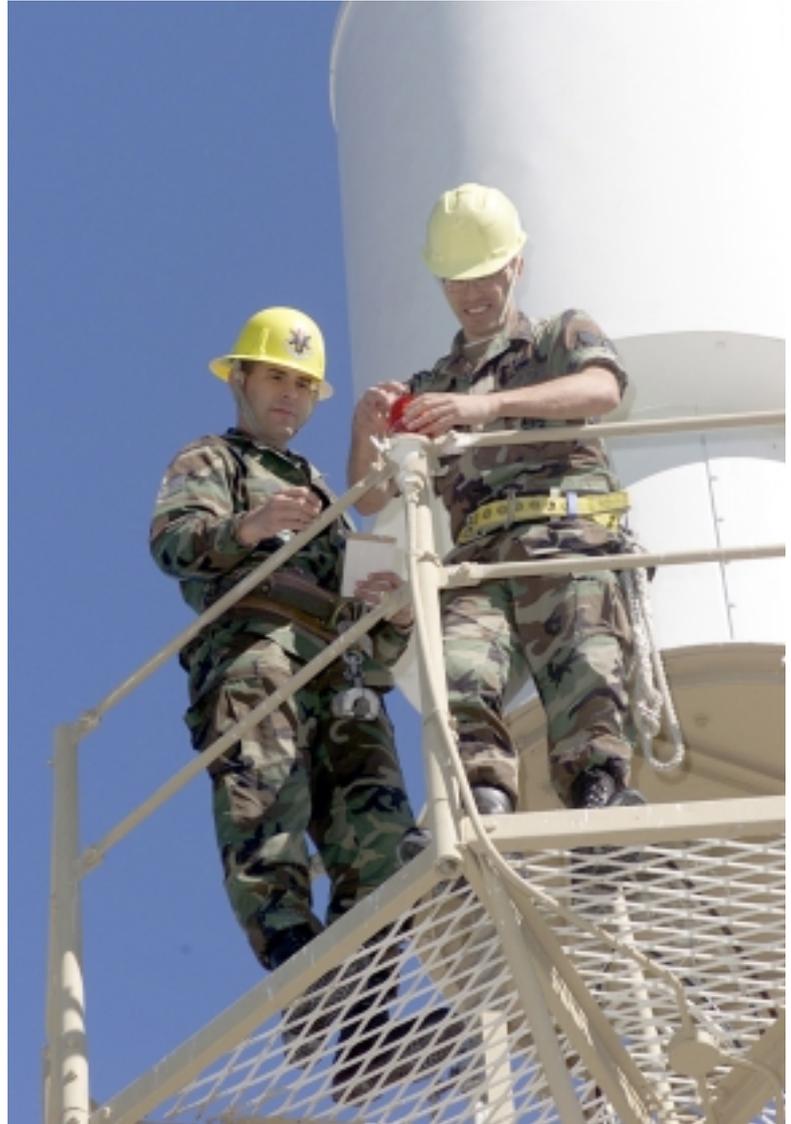
By Tech. Sgt. Ray Curry
334th Training Squadron
Keesler AFB, Miss.

The Air Force is honing a new breed of apprentice air traffic controllers to meet a forecast increase in civil and military air traffic. On the forefront of this effort is the Air Traffic Control Operator Apprentice School at Keesler, which completed its first specialized training class of control tower operators in January, graduating eight combat control team specialists and eight air traffic control tower operators.

“Our air traffic control course has made extensive changes over the past two to three years,” said Lt. Col. Gregory Kesler, 334th Training Squadron commander. “With great strides and improvements, we’ve increased the number of graduates from roughly 120 per year three years ago to 618 last year.” The ATC School expects to graduate more than 600 field-ready and better qualified apprentice controllers this year.

“Last October, we initiated a new specialized training program that allows us to train the same number of students, but with increased simulator training time in either the tower or radar labs,” Colonel Kesler said. “The goal is to produce a higher quality trainee with more exposure to the complexities of the career field to help reduce qualification times in the field.” The new curriculum mirrors the Air Force’s pilot training program in that all students learn the same fundamentals first, and then progress through a specialized track of either control tower or radar approach control operations.

After an initial ATC fundamentals block of instruction, the old ATC course allowed only 20 days of performance training in tower operations, and then 25 days in radar approach control operations. Under the new specialized courses, students still receive the same 72 academic training days, beginning with a comprehensive ATC fundamentals course. However, their actual performance training within the ATC specialty area – tower or radar



From left: Staff Sgt. Matt Webber, assistant NCO-in-charge of MetNav systems maintenance, and Senior Airman Arnaldo Alicea, MetNav systems maintenance journeyman, replace an obstruction light on a TACAN antenna. Both airmen are assigned to the 12th Comm Squadron, Randolph AFB, Texas.

approach control operations – is now 44 days.

Specialized ATC training produces apprentice controllers with more experience, more exposure and a better understanding of air traffic control operations. The result is a reduction in time required for on-the-job-training. “Specialized training should allow ATC graduates to arrive at their first duty location better trained, with the information fresher in their minds,” said Capt. Jeffrey McLemore, ATC school flight commander. “Their initial certification training time will be reduced,

so they'll be able to work unmonitored and become more productive sooner than graduates of the old ATC course."

Qualification Time Reduced. In March 2001, the Airfield Operations Executive Session and Functional Managers Workshop noted the Air Force was experiencing a bottleneck in controller qualification training and certification. At 274 percent of its normal trainee level, the Air Force's qualified controller training force was overburdened. Data from the workshop indicated the inflated trainee-to-trainer ratio limited qualification training progress and increased controller qualification times.

Air Force-wide, the average qualification time for control tower personnel was 10 months. Radar approach control personnel required as long as 24 months. The new ATC course has reduced these times.

Specialized Training Evolves. The school first introduced the concept of specialized training curriculums for the ATC career field at the Air Traffic Control and Airfield Manager Chief's Conference in December 1999. In October 2000, a Utilization and Training Workshop hosted by the school developed a blueprint for the new ATC specialty courses. According to Chief Master Sgt. Samuel Nickels, ATC school superintendent, "We can now provide the career field with a more qualified apprentice controller than under the old course. The goal is to certify the more qualified trainee sooner." Chief Nickels also noted, "We've already seen improvement in appraisal scores since the program's inception."

Simulation plays a major role in training quality. Research by the Volpe Center – a U.S. Department of Transportation research and development organization – indicates a positive correlation between the level of training reality and the degree of training transfer to real situations. In a related study of ATC trainees, the Volpe Center determined simulation duration and intensity also enhance the quality of training transfer.

The concept of "more hands-on training is better" is commonly accepted among educators.

Specialized training to provide more in-depth knowledge and experience isn't new to the Air Force. It initiated dual-track pilot training – fighter or airlift – in the mid-'90s. Using the same approach for control tower and radar specialist students, the ATC school began producing better-



Senior Airman Arnaldo Alicea and Staff Sgt. Matt Webber, 12th CS, Randolph AFB, inspect the recent installation of instrument landing system antennas.

trained and field-ready graduates within the confines of existing training resources.

"The transition had a definite impact on instructors," said Master Sgt. Robert Moore, the course's chief of control tower operations. "At the time of the course rewrite, we were gearing up for a STAN/EVAL and an ORI. No new instructors were allocated for lesson plan rewrite. Personnel worked extra shifts to ensure the resources were available to design and test 44 new training simulations. Extra man-hours were spent writing, reviewing and then rewriting documents and training aids."

The 334th Training Squadron and its ATC school are on course to achieve mission requirements through continuous improvement and state-of-the-art education initiatives – including specialized curriculums, advanced training simulation systems and Web-based training – while achieving greater efficiency and effectiveness.

Information managers key to AF success

By Tech. Sgt. Ben Arguilla
Master Instructor, Information Management Craftsman Course
336th Training Squadron
Keesler AFB, Miss.

The life-cycle of information is the reason information managers exist: creation, collection, access, storage, retrieval and disposal. U.S. Codes and Public Laws require information managers to properly manage information generated by government agencies. The IM mission is the same in peace and war, regardless of media: to ensure information is available to users, when they need it, to accomplish the Air Force mission.

Before computer technology entered the work center, IMs managed data in a primarily paper-based environment. Publications, forms, memorandums, messages, file plans and other paper products were manually typed, coordinated and suspended, without the convenience of computers. Information managers continue to manage data, but it now includes digital products stored on diskettes, CD-ROMs, workstations, and servers. The most efficient way to share and communicate information between information systems is through a network. It's information in binary format transmitted through cables, hubs, routers, servers and the Internet. IMs need to know how information they're managing is being used within these media, and to learn how to manage technology rather than letting technology manage them. In short, it's essential for information managers to have proper training.

Information management apprentice, or 3-level, training at Keesler consists of 37 academic days. It covers functional responsibilities, opening a computer system and learning the different components, learning hypertext markup language used to build Web pages, defense messaging system, administrative communications, word processing, spreadsheets, graphics presentations, electronic mail, and databases. Training also includes Privacy Act, Freedom of Information Act, computer



Photo by Oscar Sanchez

(From left) Tech. Sgt. Oscar Ortiz, chief, Application Services, and Tech. Sgt. Michael King, chief, Messaging Services, update the Web with new security patches.

security, handling classified information, records management, forms, publications, and networking terminology. Graduating airmen begin on-the-job training and 5-level career development courses at their first duty station. After completing their last, or 7-level, career development course, they return to Keesler for the Information Management Craftsman 7-level course.

The IMC course lasts two weeks, and is designed to hone IM skills and knowledge. It prepares them to become better working supervisors. War and contingencies are discussed, along with the responsibilities of different positions an information manager may be assigned to. Technical skills training includes designing, building, and troubleshooting a Web site, basic network troubleshooting, user account management, network printer management, system crash recovery, information system usage and operation, and workgroup management responsibilities.

The workgroup manager is the first recourse for troubleshooting an information system. WMs work with other IMs and unit end-users. They're there to see first-hand the problems encountered

by users in day-to-day operations. If a problem is beyond the WM's ability to solve, the functional systems administrator or help desk steps in. Workgroup management responsibilities are outlined in various Air Force publications, including a training guide in AFJQS3A0X1-225D.

Following are some frequent questions and comments from information managers.

“How can I get the training and experience I need to become a workgroup manager?”

With the Air Force facing the challenge of “doing more with less,” it's sometimes difficult to find training funds. Here are a few ways you can receive training and gain experience, some for free:

- * Many bases have a workgroup management training program. Contact your base 3A0xx functional manager for details.

- * Volunteer time with a functional systems administrator, maybe an hour or two a day. Many FSAs need help and are willing to train in exchange for labor.

- * Take some computer-based training to expand your knowledge of terminology and concepts. More information on Air Force CBTs can be found at <http://214.3.105.142/default.asp>.

- * Take some accredited computer and networking college courses. The Air Force can pay most of the cost through tuition assistance. The “Top Up” Veteran Affairs program can pay 100 percent of your tuition. See more on Top Up at <http://www.va.gov>.

- * Volunteer for networking projects with local schools. Netday is a nationwide project that normally provides free training. Find out more at <http://www.netday.org>.

- * Volunteer to teach basic application courses at a local library. After dealing with users on a daily basis, information managers should be well qualified to answer simple questions like how to bold text, add a picture, or center a title.

- * Read books and publications. Local libraries normally have a section on computers and networking. Many magazines offer free subscriptions to information technologists.

These are just a few suggestions for the immediate future. Just remember to be proactive and ask for training.

If you identify needed training while on a deployment, contingency, or in-garrison operation, put it in an after-action report. The report should make its way through the base functional manager to the MAJCOM functional manager. MAJ-

COM functional managers occasionally meet at Keesler in a utilization and training workshop to decide what needs to be taught in technical training and career development courses. They look at all factors, including inputs from IMs in the field, and if they identify needed training in more than one MAJCOM, they may vote to add it to formal training. Your recommendations can help determine the availability of future IM training that's critical to a mission-ready Air Force. Fill out your after-action reports!

“I'm being used as a personnel specialist rather than an information manager.”

Educate your supervisors. Some supervisors are not aware of the changing role of the information manager. If you feel you can't directly approach your supervisor, ask for the assistance of your base functional manager through your chain of command.

“Everything's contracted out.”

Since most contractors don't go to war, you need to maintain proficiency in your technical skills. Do volunteer work or apply your knowledge at home. “At home?” you may ask. According to a U.S. Department of Commerce survey report, as of September 2001, more than 50 percent of U.S. households have an Internet connection, and that number is still growing due to broadband technology. Meaning, more than likely, you already have an Internet connection at home. How does that help? The Internet follows the same rules as most military networks. You can use a lot of the same troubleshooting techniques at home that you use at work. This will also give you an edge when calling for technical support.

“My functional systems administrator won't allow me to do anything.”

Again, this is a matter of educating your supervisor. If you need assistance, talk to your base functional manager, going through your chain of command.

As you can see, this article concentrated on the technology side of information management. That's not to say the other duties of an IMer are not as important, but this is the part many people still aren't fully aware of. Technology and workgroup management can't replace traditional IM duties, but they can increase the effectiveness and efficiency of the IMer and the Air Force mission.

Please e-mail any comments to ben.arguilla@keesler.af.mil.

71st Comm Squadron helps train pilots

By Maj. Mike Shepherd
Commander
71st Communications
Squadron
Vance AFB, Okla.

Tucked away in north central Oklahoma, Vance AFB is a wonderfully kept Air Force secret. Set in Garfield County about 50 miles from the Kansas border, it's surrounded by a largely agricultural community, with hundreds of oil and natural gas wells dotting the landscape.

Vance sits adjacent to Enid, a town of about 45,000 that enthusiastically embraces the military. Each unit has a community honorary commander, and businesses throughout the area "adopt" each pilot training class during their year-long tour. The community also pays the final 25 percent of tuition assistance for all military who attend college classes – as a result, the only cost for most students is for textbooks.

While Vance is a small base, there's nothing small about its mission. The wing trains more than 400 Air Force, Navy, Marine and foreign national pilots annually, flying more than 66,000 sorties and 94,000 hours. Most days, the skies over Vance resemble a just-disturbed beehive, as T-37, T-38 and T-1 trainers fill the air.

The 71st Communications Squadron is also small by Air Force standards – with only 40 enlisted, officer and civilian employees, and another 50 DynCorp contractor employees who provide network, small computer, information assurance, land mobile radio, help desk, visual information, postal and telephone services.

With a limited number of members, it takes a dedicated team to meet Vance's demanding flying training mission. But it's a mission understood by all.

Airman 1st Class Erin Brown, a recently as-



Senior Airman Isaac Rayevich, of the 71st CS at Vance AFB, Okla., bench checks a rivet switch radio.

signed radar apprentice, knows the importance of her role. "I help the wing train pilots. They can't fly without airfield radar, so it's my job to keep it operating," she said. Recently she started pulling weekend standby, and received her first maintenance page. "The highlight of my tour so far was when I was called out to fix a radar display monitor. While it was only a computer reset, I fixed it myself, so I helped the wing recover aircraft that day."

As Air Force communications career fields struggle with low manning and a shortage of trained technicians, it's troops like Airman Brown who must shoulder a larger load, earlier in their tours.

Tech. Sgt. Dana Aldrich, radar NCO-in-charge, agrees. "Young airmen will get more training here in one year than most get in three years, and will end up doing work performed by staff sergeants at normal bases. They're productive early – and they have to be. Our exceptional equipment uptime rates prove their dedication to mission."

Staff Sgt. Mike VanKirk, meteorological and navigation systems NCO-in-charge, concurred. "You're looking at the METNAV shop," he said, pointing to himself and Airman 1st Class Corey Watson. "Luckily we'll get another METNAV troop in a couple of months. That's important, as Airman Watson is slated to deploy this fall."

Due to the high operations tempo, this fall's Aerospace Expeditionary Force rotation will be a significant challenge, but one the unit is ready for. Nearly all squadron members are trained and ready to support AEF or contingency taskings.

Master Sgt. Joe Lovato, who performs triple duty as first sergeant, maintenance superintendent and unit deployment manager, is a stern taskmaster who ensures all troops receive required training well before the unit's AEF rotation. "With the current world situation, we just don't know what our AEF rotation is going to bring, so we've pretty much prepared the whole squadron for deployment. My bags are packed, too," said Sergeant Lovato. "We may be needed anywhere in the world on very short notice. The folks are ready and I've got more volunteers than I can count who want to take the next deployment."

Staff Sgt. Jerry McDonald, ground radio assistant NCO-in-charge, and winner of the Lt. Gen. Leo Marquez Technician Supervisor Award for AETC for 2001, recently returned from a deployment to Aruba, supporting the drug interdiction mission for the U.S. Customs Service. "I like to deploy," he said, smiling, "and Aruba was beautiful. We worked a lot of long hours, but it was enjoyable, too. It was rewarding to hear about the capture of boats

or aircraft attempting to smuggle drugs into our country. I feel like we made at least a small dent in the drug trade."

Tech. Sgt. Bret Rice, plans flight NCO-in-charge, recently came to Vance from Little Rock AFB, Ark. "Being at a small base doesn't mean we have a small mission – it means we have the opportunity to work closely with our customers and civil engineering on a daily basis. Our civil engineers are contract employees, and they're among the best I've worked with at any base. They're so responsive, we can provide personal service to each customer."

Sergeant Rice allowed that the comm squadron's close partnership with the civil engineers has paid dividends. "We researched all their pending projects, and for some of them comm hadn't been fully integrated yet. We were able to gain a foothold in the planning process during design reviews. When we team up that way, it's better for the wing," Sergeant Rice said.

Teamwork helped the wing through difficult times when a devastating ice storm hit the base in January. During a day-long downpour, approximately two inches of ice coated Oklahoma, shattering more than 7,000 telephone poles, downing almost 1,000 miles of power lines, and leaving central Oklahoma shivering in the dark.

As soon as the power went out, base civil engineer crews scrambled for generators and a community dining facility was set up in the chapel annex, since Vance doesn't have a dining facility. Base housing residents ran gas stoves to keep temperatures above 50 degrees, while the

Contractor key to base SUCCESS

Walking into Vance AFB, Okla.'s, pristine network operations center for a site visit, the first thing Dennis Stone, from Air Education and Training Command's Network Operations and Security Center at Randolph AFB, Texas, noticed was a startling lack of blue-suiters. Instead, he was welcomed with a hearty handshake by Kelly Killam, network chief and DynCorp employee. After working closely with the contractor for a week, Stone left favorably impressed. "This is the best-looking network control center I've seen," Stone said. "You can see they really take pride in what they do."

While competitive sourcing and privatization of information technology services continues to sweep through the Department of Defense, accompanied unsurprisingly by growing pains, the IT function at Vance has been under contract for more than 40 years. In 1960, the Air Force directed what was then Air Training Command to test the idea of using contractors to provide support services at pilot training bases. ATC chose Vance to fully test the idea by contracting support services. After a trial period that achieved considerable cost savings, the Air Force

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AU takes corporate approach to IT acquisition

By Maj. José Díaz and Marietta Magaw
*Air University
Maxwell AFB, Ala.*

Historically, Air University has procured and supported its information technology in much the same way as any other Air Force organization: Rather than planning and programming for IT as a strategic resource, AU purchased all the IT it could with whatever year-end fallout money was available. This led to uneven IT refresh rates, unsatisfied customers and wasted money. On top of that allocation strategy, the many schools and organizations under the AU umbrella operated autonomously and procured IT independently, with little thought to corporate standardization or long-range planning.

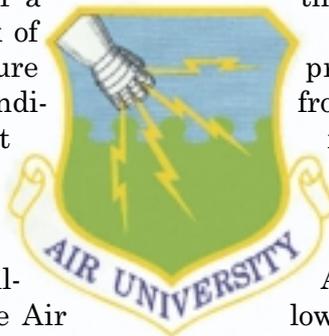
Then Air University Commander Lt. Gen. Don Lamontagne decided it was time for a change. The first step was to think of IT as a university resource and procure it corporately, rather than through individual schools. Using FY '01 fallout funds, the first step ended successfully in a consolidated AU bulk purchase in September. This effort procured \$1.5 million in new hardware, ultimately saving the university, the Air Force and the taxpayer more than \$560,000. Carrying this philosophy a step further, AU addressed a bulk purchase of audiovisual requirements. The result was a total FY '01 corporate savings of \$641,000 for hardware alone.

But consolidating purchases to obtain the lowest unit cost was merely the first step. For the long-term health of AU, it became important to change our IT culture. General Lamontagne directed school commandants to identify critical IT requirements for the next three years, and then consolidated traditional IT budgets of the schools into a central fund administered by AU Communications and Information. Consequently, AU no longer relies on fallout funds to address IT needs. Like all other strategic resources, IT requirements are addressed in the program objective memorandum, planned and sourced. To help address unforeseen anomalies, IT requirements

are updated and validated early in the fiscal year, and purchased corporately, yielding consolidated savings through continued bulk purchases.

Capitalizing on proven successes in FY '01, AU expanded its vision in FY '02. Schools more closely examined customer needs, and identified many that could be met with existing resources. As an example, AU was able to reuse 30 percent of desktop monitors, for a savings of about \$43,000. But the largest savings, more than \$100,000, came from a business process change employing the local communications squadron and workgroup manager structure to "ghost" the AU image on 2,362 new desktops and laptops, eliminating the typical vendor charge of up to \$43 per unit. In the second year of corporate purchasing, although the industry saw higher memory chip prices, corporate savings were more than \$515,000.

Addressing business process improvements on the hardware refresh front is not the only area in which AU is making an impact. It forged a partnership with Microsoft Corporation in a major desktop software licensing arrangement. The Microsoft Campus Agreement is a special arrangement allowing higher education institutions to receive special pricing on Microsoft operating systems and application software. Instead of purchasing desktop software in the traditional manner, AU now leases standard products annually and receives upgrades as they're released at no additional charge. Annual cost is a paltry \$41 per permanent party faculty and staff member, compared to over three times that for typical corporate or Air Force lease arrangements. An added benefit of this agreement allows faculty and staff to use any contracted product on their personally owned computers. This new agreement is expected to save the university over \$1.1 million each year versus traditional software purchasing strategies. The Microsoft agreement is AU's implementation of Presidential Executive Order 13103, which prohibits acquisition, repro-



See **AU** next page

Senior Airman Matthew Waligorski troubleshoots an OD-153 display indicator at the Vance AFB radar approach control.



SUCCESS

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decided to keep the base under contract. Though the contract has changed hands three times – most recently being awarded to DynCorp in February 2001 – many employees merely “switched shirts” from the previous contractor, making the changeovers relatively smooth. Vance now has about 1,000 contractor employees.

Capt. Don Mercer, who manages the quality assurance function that oversees the contractor’s IT performance, is thrilled with what he sees. “Other bases may have contracted functions, but you generally see military people providing base operating support. Here, with the contractor handling all the behind-the-scenes support, military people can focus their efforts on the core mission – training pilots. The contractors strive to make Vance a showplace. In the communications and information arena, they’ve done many things ahead of the command and the Air Force – for example, server consolidation. While the rest of the Air Force is pushing to get it done this year, Vance’s contractor completed server consolidation at the base three years ago. They’re always looking to the future, not content to rest on their laurels. That approach has helped

make us successful.”

Wally Cox, contract information systems chief, said, “Our workers are genuinely concerned about getting the job done. It’s not about how few write-ups we receive, or how big a fee we earn. We want to be proud of the service we provide the government. Several IT employees are prior-service and they know the best way to get the job done to please the customer. Our customers expect more from contractors than the standard, and I think if you compare us to other bases, you’ll see we exceed those standards.”

The newly arrived wing commander, Col. A.J. Stewart, immediately noticed the contractor’s impact on Vance. “I just met a family this week that works here – two brothers and a sister. When they go home at night and talk about their day, they talk about Vance. Working here is a major part of their lives,” Colonel Stewart said. “They told me Vance is their base and they have pride of ownership. Many people tell stories of parents and grandparents who also worked here. The Vance you see today is their legacy,” the colonel said.

“At other bases, you often have contractors who come and stay for awhile and then leave. Our contractors are here to support Vance for the long haul – and it shows,” he said.

AU

From previous page

duction, distribution and transmission of computer software in violation of applicable copyright laws. It’s also the realization of the Air Force’s PC-COE concept at AU.

AU’s success with competitive corporate pricing led AETC to look at using the process throughout the command. Coordinating closely with AETC Communications and Information and Standard Systems Group, AU is helping to refine AFWay internal processes to capitalize on savings from large bulk purchases. AETC and AU are committed to using AFWay to streamline the purchase process, while delivering the largest savings to the Air Force.

As the Air Force increasingly views IT as a force multiplier, AU has shown it’s possible to treat IT as the strategic resource it is. Willingness to change internal business processes can deliver huge dollar and effectiveness returns to any organization that’s willing to embrace innovation.

best of the best

2001 Communications and Information Awards

The Air Force Communications and Information Awards are based on excellence in support of the Air Force mission, and annually recognize the

best units and people in the Air Force communications and information community.



Maj. Gen. Harold M. McClelland Award (Large Organization)

**86th Communications Group
Ramstein AB, Germany**

This award recognizes the best communications and information systems organization with more than 300 people.

**Gen. Edwin W.
Rawlings Award
(Team)**

This award recognizes the innovative use of C4 systems technology that has most enhanced Air Force operations during the year.

**Network Administration/
Maintenance Team
436th Communications
Squadron
Dover AFB, Del.**



**Lt. Gen. Harold W. Grant Award
(Small Organization)**

1st Combat Communications Squadron, Ramstein AB, Germany
This award is given to the best organization with 300 or fewer people.

best of the best

Company Grade Officers



Capt. Anthony J. Blevins

*57th Logistics Group
Nellis AFB, Nev.*



Capt. Felipe M. Olivera Jr.

*Joint Communications
Support Element
MacDill AFB, Fla.*



Capt. Donovan L. Routsis

*32nd Combat
Comm Squadron
Tinker AFB, Okla.*

Captain Delgado is also the Air Force's nominee for the Air Force Association's Brig. Gen. Billy Mitchell Award for Communications and Information Excellence.



Capt. Oscar Delgado
*366th Comm Squadron
Mountain Home AFB,
Idaho*



Capt. Timothy J. Willwerth
*11th Comm Squadron
Bolling AFB, D.C.*



Senior Master Sgt. Henry D. Atkinson
*Air Force Comm Agency
Scott AFB, Ill.*



Staff Sgt. Shane Flint
*353rd Comm Squadron
Eielson AFB, Alaska*



Senior Airman Jodi L. Zochol
*55th Comm Squadron
Offutt AFB, Neb.*

*Information
Management
Enlisted
Members*

*Communications-
Computer
Systems
Enlisted
Members*



**Senior Master Sgt.
Joseph C. Ferrall**
*35th Comm Squadron
Misawa AB, Japan*



**Tech. Sgt. William E.
Hayman**
*Joint Comm Support
Element
MacDill AFB, Fla.*



**Senior Airman Bradley
S. Nelms**
*16th Comm Squadron
Hurlburt Field, Fla.*



**Master Sgt. Eric J.
Laurhammer**
*805th CSS
Scott AFB, Ill.*



**Tech. Sgt. Manuel L.
Smith**
*367th Training Support
Squadron
Hill AFB, Utah*



**Senior Airman Dawn M.
Anderson**
*1st Combat Camera
Squadron
Charleston AFB, S.C.*

*Visual
Information
Enlisted
Members*

*Postal
Service
Enlisted
Members*



**Senior Master Sgt. John
V. Czupalowski**
*PACAF Air Postal
Squadron
Hickam AFB, Hawaii*



**Tech. Sgt. George T.
Flaig**
*USAFE Air Postal
Squadron
Ramstein AB, Germany*



**Airman 1st Class April
D. Heller**
*374th Comm Squadron
Yokota AB, Japan*



Romme D. Burch
*Air Force Weather Agency
Offutt AFB, Neb.*



Yahari H. Butler
*690th Intelligence Support
Squadron
Lackland AFB, Texas*



Gerald Brown
*31st Comm Squadron
Aviano AB, Italy*

*Senior-
Level
Civilian
Employees
(GS 9-12)*

*Junior-
Level
Civilian
Employees
(GS 1-8)*



Joan D. Clark
*11th Comm Squadron
Bolling AFB, D.C.*



Edgar Montoya
*HQ Air Education and
Training Command
Randolph AFB, Texas*



Deborah M. Alfaro
*74th Medical Support
Squadron
Wright-Patterson AFB,
Ohio*

*Air Force
Electromagnetic
Spectrum
Manager*

**Tech. Sgt. Dennis H.
Gould**
*USAF CSS
Ramstein AB, Germany*



*Air Force
Installation
Spectrum
Manager*

**Master Sgt. Kevin W.
Broughton**
*1st Comm Squadron
Langley AFB, Va.*



Information Assurance Professional

*** Staff Sgt. David S. Honaker**
42nd Comm Squadron
Maxwell AFB, Ala.

*** Air Force nominee for national-level Frank B. Rowlett Award**



Air Force Darryl G. Winters Award

Staff Sgt. Cecil M. Ricardo
1st Combat Comm Squadron
Charleston AFB, S.C.



Information Assurance Organization

33rd Information Operations Squadron
Lackland AFB, Texas

*** Air Force nominee for national-level Frank B. Rowlett Award**

Public Key Infrastructure is tip of communications iceberg

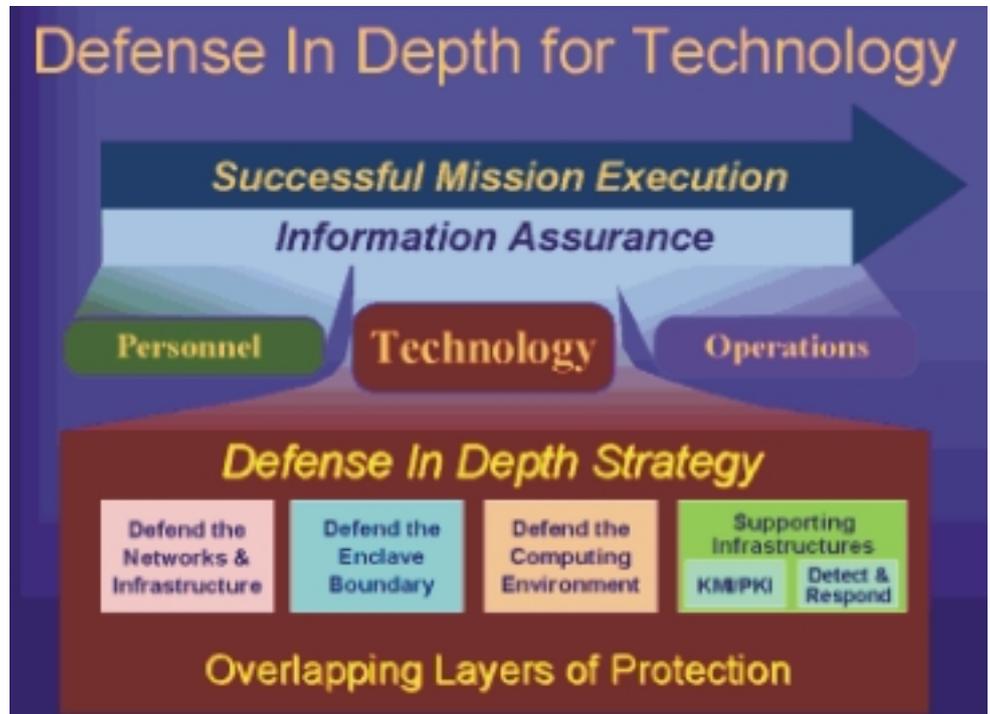
By Col. J. Craig Brown
Chief, Command, Control,
Communications and
Computers
Air National Guard
Arlington, Va.

Twenty years ago we would have never imagined sending unclassified mission, tactical, and administrative information at the speed of light across the Internet. A new era of communications has evolved into a way of life for most military operations. We now rely on e-mail and the World Wide Web for all types of mission-related issues. With this new capability comes new threats and security concerns.

One of the answers to this new communications threat is Public Key Infrastructure. PKI is a new tool being deployed within the Department of Defense and the Air Force to protect our communications. PKI is being added to increase the defense-in-depth strategy within the Air Force to enhance the security posture in our network infrastructure.

The Air National Guard and Air Force Reserve Command theme for this month of the 2002 Information Assurance Awareness Campaign shows where technology is heading: Public Key Infrastructure.

PKI is the "iceberg" with several "tips" devel-



oping and changing the way we communicate now and will in the future.

PKI enhances the emerging Information Assurance defense-in-depth strategy.

As network warriors in the 21st century Air Force, we need to protect our information in order to protect our past, our current missions, and our future endeavors. Each of us has a responsibility to protect information within our network infrastructure. PKI gives us another tool to allow us to be successful in that mission.

Please read, retain and implement the information provided to you in this month's IA campaign on Public Key Infrastructure.

PKI enhances the emerging Information Assurance defense-in-depth strategy

Defense-in-depth

- * Defend the network and infrastructure
- * Defend the enclave boundary
- * Defend the computing environment
- * Supporting infrastructures

PKI

- * Identification and authentication
- * Integrity
- * Non-repudiation
- * Confidentiality

Public Key Infrastructure – What Is It?

By Chief Master Sgt. Dave Stantz

Information Operations and Assurance Branch
HQ Air Force Reserve Command
Robins AFB, Ga.

Public Key Infrastructure, or PKI, is the mechanism that allows you to digitally sign and encrypt an e-mail message, for example, with assurance that only the intended addressee will receive it, and the receiver will know that only you could have sent it. It also protects the message from being viewed or altered by an unintended party while in transit.

PKI includes the basic underlying framework and services that ensure security of our information systems. Its implementation within the Department of Defense will provide the means to attach digital signatures to electronic documents, and to encrypt and decrypt electronic documents for secure transmission.

Our current e-mail systems expose us to a number of security risks. E-mail can be intercepted and its contents can be changed without our knowledge. It can even be sent in someone else's name, which can allow the sender to deny sending the e-mail. PKI minimizes these possibilities with four important security features: authentication, integrity, non-repudiation and confidentiality.

Authentication verifies that e-mail senders or digital signers are really who they say they are. It also enables Web sites and other file servers to authenticate *your* identity before granting you access, and it allows you to verify the Web server's identity as well.

Integrity uses a digital signature to ensure data was not altered during transmission. It provides the receiver a warning if data was tampered with in transit.

Non-repudiation provides assurance that the sender of a digitally signed e-mail message or the signer of a digitally signed document can't deny completing or conducting the transaction.

Confidentiality uses encryption to ensure data can only be read by intended recipients.

The PKI framework depends upon a chain of trust that includes a registration process, certificate management, and public key-enabled applications.

- The *registration process* ensures identities of

end users and server devices are properly established and documented.

- *Certificate management* facilitates issuance of three digital certificates: an *identity* certificate to digitally sign electronic documents, an *e-mail signature* certificate to digitally sign e-mails, and an *e-mail encryption* certificate to encrypt and decrypt e-mail.

- *Public key-enabled applications*, such as your Web browser and e-mail program, are used to apply PKI security features to data.

To use PKI, you must first be *registered*. The military personnel flight verifies your identity and manually inputs true and trusted information. Data is stored on highly protected servers – known as *certificate authorities* – maintained by the National Security Agency and the Defense Information Systems Agency. The CA issues and stores the identity, e-mail signature, and an e-mail encryption certificate for each registrant. The CA also generates a pair of digital keys, one *public* and one *private*, for each registrant. A copy of the public key is maintained at the CA. The public key encrypts data and verifies the identity of the sender. The private key is used to digitally sign e-mail and other data, to decrypt e-mail, and to access servers.

After registration, the military personnel flight issues a common access card, or “*smart*” card, which replaces the traditional identification card. The CAC has an integrated circuit chip which stores the user's PKI certificates and digital public and private key pair.

Finally, after personal computers and local networks have been appropriately upgraded – with software loaded and smart card readers installed on PCs – the user is ready to access PKI security features. The user simply inserts the CAC into a reader, enters a PIN, and selects options from a PKI-enabled application such as Outlook. Then he or she can digitally sign and encrypt e-mails and documents, and send them with confidence that only the addressees will receive them, and that they won't be intercepted or altered during transmission.

PKI provides the using community with authentication, integrity, non-repudiation and confidentiality, and therefore a more secure method of transmitting information over the Internet.

Protect your Automated Information System

By Tech Sgt.

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No one could have imagined a few years ago that we'd have so much information on the Internet and be so reliant upon e-mail as our primary means of communication. We now process most of our work on some type of automated information system, or AIS. These systems are interconnected by computer networks which lead directly to the World Wide Web. As a result, the need and concern for security is at an all-time high.

Public key infrastructure, or PKI, is another tool to protect our networks, but only if system integrity is maintained from beginning to end. As users, we need to understand our part is in the overall defense-in-depth strategy deployed to protect our networks.

In simple terms, PKI can be thought of as electronic encryption keys, or certificates. One is open and available to the public, while the other is private and similar to a personal ID card or driver's license. Both are obtained and shared through a trusted authority or certificate authority. The key pairs enable e-mail users to send secure data and sign messages digitally.

PKI is often seen as the little yellow lock that appears on your Web browser. It's also the foundation for encrypting and digitally signing e-mail. Users receive their private PKI certificate on a smart card, along with a personal identification number.

PKI is designed to address major security concerns within computer networking today, including availability, integrity, authentication, confidentiality and non-repudiation.

Availability is assurance the system is ready



for use when needed.

Integrity is verified through checksums within PKI.

Authentication is through PKI server certificates.

Confidentiality is ensured through encryption.

Non-repudiation is protected through use of personal private certificates.

Note, non-repudiation is the ability to prove you're the person who sent an e-mail or digitally signed a document. It's similar to the friend-or-foe identity checks used by pilots and air traffic controllers.

As with any aspect of security, there must be a secure process to develop, deploy and deliver security or security technology. PKI is no different, since it relies on digital certificates to authenticate and identify an individual or organization on the Web or in e-mail.

Certificate generation is extremely secure and is conducted in vault-like rooms secured by biometrics devices, video surveillance, and cipher locks, which can only be entered by two-person teams. Security requirements are similar to those of a nuclear facility.

Sounds secure, right? Not entirely. The major vulnerability in PKI or any security process is people. While the process and facility used to electronically generate a certificate are generally se-

PKI-related Web sites

USAF PKI System Program Office

<https://afpki.lackland.af.mil>

USAF PKI System Program Office— Training Materials

https://afpki.lackland.af.mil/html/trg_materials.html#PKIAwarenessBriefing

USAF PKI System Program Office— PKI Overview

<https://afpki.lackland.af.mil/html/overview.html>

USAF PKI System Program Office —PKI Overview Guide

<https://afpki.lackland.af.mil/assets/files/overview.pdf>

USAF PKI System Program Office— Air Force PKI End User Training Guide

https://afpki.lackland.af.mil/assets/files/EU_Tng_Guide_txt.pdf

USAF PKI System Program Office— PKI End User Frequently Asked Questions

https://afpki.lackland.af.mil/html/faq/end_user_faq.html

Information Assurance Support Environment— PKI

<http://iase.disa.mil/pki/index.html>



Information Assurance Support Environment— Overview of PKI

<https://iase.disa.mil/PKI/PKIoverview.html>

Information Assurance Support Environment— PKI Web Sites of Interest

<http://iase.disa.mil/pki/pkisiteoi.html>

DOD PKI Program Management Office— Documents of interest

<http://www.c3i.osd.mil/org/sio/ia/pki/documents.html>

DISA article, Public Key Infrastructure: A Mechanism to Secure and Protect the Defense Information Infrastructure

https://www.afca.scott.af.mil/ip/info_services/dodpkidocs/Pki1.doc

cure, the people who develop, deploy and deliver the certificates can make mistakes, or users can misplace their certificate or forget their PIN.

All of this is not to imply that PKI doesn't have its value, because it does. It's an added tool to help you, the user, secure our network resources. The key to successful deployment of PKI is physical security and chain of custody of the certificates, or keys.

Certificate authorities are secure and their processes are secure, but once the certificate is issued it becomes the user responsibility to secure and protect the technology and the process. As users, we need to understand

our part in the process to protect and secure our PKI certificates from being compromised, misused or intercepted by unauthorized users.

User Responsibilities

To protect PKI, users must:

- * Obtain and protect PKI certificates as closely as money.

- * Maintain PKI electronic certificates in a safe place.

- * Secure and protect passwords and PIN numbers. As a rule, never write down passwords or PIN numbers, but if you do, seal them in an envelope and keep it in a safe for future reference.

- * If you lose or misplace your PKI certificate, report it to your supervisor or your local trusted

agent immediately so they can revoke your PKI certificate.

- * Never share or allow another person to use your personal PKI certificate.

Security is a process to mitigate risks to our networks from attack, misuse and denial of service. While no technology can completely eliminate vulnerabilities, PKI is a key weapon for our use in network defense.

You, the user, are always the first and last line of defense in any security solution. Take your role seriously and use the technology responsibly.

More information on Air Force PKI is available at <https://af.pki.lackland.af.mil>.

Common access card enhances e-mail security

By Master Sgt. Janet C.
Bazile-Bajkowski
101st Support Group
Maine Air National Guard
Bangor, Maine

Have you ever wondered whether our e-mail system is really secure? Or whether an e-mail you received actually came from the person identified on the "From" line? Or whether someone could have intercepted and altered an e-mail, and sent the revised version to you?

The Air Force has found a "smarter" way to strengthen e-mail security by implementing a new Department of Defense technology called public key infrastructure, or PKI, to enhance Information Assurance cryptographic functions. Leading the implementation is the Air Force's Public Key Infrastructure System Program Office, in the Network Services Division, Electronic Systems Center, Hanscom AFB, Mass.

A key element of PKI is the common access card, or CAC, which is replacing older identification cards throughout the Air Force. In addition to your name and photo, the credit card-sized CAC has an integrated circuit chip, magnetic strip, bar code and other information. Your computer will be equipped with a special CAC card reader that will be used to, among other things, logon, encrypt or encode e-mail, and electronically "sign" documents. When you insert your CAC into your reader, you'll enter your personal identification number to gain access, then click the appropriate icon for various functions, such as digital signature or encryption. After an e-mail is encrypted, it may only be deciphered and read by the intended recipient, effectively ensuring secure communication. Another security feature is the data integrity system, which issues a warning when an e-mail message has been altered – whether intentionally or unintentionally.

The CAC's integrated circuit chip contains



Army photo by Staff Sgt. Kathleen T. Rhem

Card readers like this, once attached to a personal computer, can be used to verify an individual's authorization to access information or to digitally sign e-mail messages.

three embedded PKI certificates that allow the user to perform various functions.

- * The identity certificate allows you to digitally sign DOD documents and authenticate secure Web access.
- * The e-mail signature certificate permits you to electronically sign e-mail messages.
- * The e-mail encryption certificate allows you to encrypt and decrypt messages.

As PKI is installed throughout the Air Force, each base will issue CACs, install card readers and train users. While this new technology is secure, medium-grade service secure e-mail isn't a substitute for the Defense Message System.

Although the PKI program and CACs will take some time and effort to fully implement, the Air Force and individual users will be well rewarded – with a system that affords greater protection for sensitive Air Force information transmitted in e-mail messages.

Ensure smooth transition to common access card

Maj. Christopher J. Dates
126th Communications Flight
Illinois Air National Guard
Scott AFB, Ill.

As Air Force bases continue to receive common access card capability, here are some “lessons learned” to keep in mind to help smooth your transition to the new system.

- * Units will receive two types of card readers: serial port readers and universal serial bus port readers. Note, universal serial bus port readers won’t work with Windows NT.

- * Units don’t have to pay for initial installation. They’ll receive the number and types of readers identified in their initial survey.

- * Common access cards will be issued to all Air Force military, civilian and contractor person-

nel, and will replace previous versions of military and civilian ID cards.

- * Family members and retirees will continue to use DD Form 2 identification cards.

- * Individuals receiving a CAC will need to choose a 6-8 digit numerical personal identification number at the time of issue.

- * Organizations shouldn’t upgrade security service on their server until all or most of their people have received their CAC, understand how to use it, and have registered their certificates.

- * If the CAC is removed from the reader during a network session, the system will lock. It can be unlocked by reinserting the card and entering the PIN.

- * The time needed to issue a CAC is about 15 minutes, but plan for 20 minutes just to be safe.

VANCE

Continued from Page 19

icy outdoors became the only refrigeration available to many families. Military and civilian employees filled the fitness center’s makeshift “cot city,” thankful for a warm bed and hot food. Some families in outlying communities were without commercial power for nearly a month.

One squadron member, Staff Sgt. Jim Doherty, realized an opportunity to help the local community. More than 500 trees on base were heavily damaged, littering the ground with huge limbs. Sergeant Doherty pulled crews together to cut up the limbs for firewood, and arranged a drop-off area in downtown Enid to provide the sole source of heat for dozens of families.

For many, Vance isn’t a “high on the dream sheet” assignment. “Unless you’re from Oklahoma, this doesn’t sound exciting at

first,” said Tech. Sgt. Jeff Simon, information systems quality assurance personnel representative, and Oklahoma resident. However, once folks sample the community’s warmth and openness, and their unabashed appreciation for the Air Force presence in Enid, many choose to stay. It’s an area devoted to family. Enid is Sunday afternoon American Legion baseball games, and Saturday evening stock car racing. It’s children walking hand-in-hand, feeding the ducks or intently waiting for fishing bobbers to dip in town park waters. Hearty waves greet friends and newcomers alike – it’s a setting not far removed from a Norman Rockwell painting.

First Lt. Ann Marie Smits is thrilled she came to Vance. “As a brand new Air Force lieutenant, it’s a great place to be stationed. It’s a small wing, so you’re involved in everything. I’ve had a lot of access to senior leadership. At a bigger base, you

won’t see that. Here I’ve had the opportunity to work directly with the squadron, group and wing commander daily. You’re really a part of the mission.”

While signs outside the base urge pilot trainees to “Train Hard, Serve Well, Return Soon,” the roar of a passing two-ship T-38 formation overhead constantly reminds observers that Vance is preparing our next generation of warfighters. Every three weeks, as members of another pilot graduating class cross the stage to receive their wings, the 71st Communications Squadron can pause for a moment to take pride in knowing its around-the-clock dedication plays a crucial role in fulfilling Vance’s mission to train America’s newest aviators.

Then it’s back to work. The next class is on the runway awaiting clearance for takeoff – ready to touch the sky.

Center conducts C2 automated testing

By **Dr. James J.
O'Connor III**

*Software Test Engineer
Command and Control
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The Freeman Computer Sciences Center at Eglin AFB is committed to providing the best possible automated developmental and performance testing of computerized command and control systems. Its C2 automated testing, or C2AT, capability includes developmental and performance testing of computerized command and control systems in the Microsoft Windows and Sun Solaris operating system environments. Automated tools are used to chronicle testing requirements and document test results. The AT plan provides a detailed description of how each test event is performed. Skilled users complete events, and their actions are recorded and saved as automated test scripts. Data and user screen integrity checks are included in the scripts to provide additional success or failure confidence. Test plan software executes the AT plan on a minimal hardware suite with no human interaction. After the automated test is completed, an AT report is generated as a Microsoft Word document. Performance or load testing can also be accomplished on a small suite of computers simulating hundreds of simultaneous users. Monitoring database servers, Web servers, and computer networks using these AT tools can give a complete picture of the computer system and confidence about its readiness for operational testing. If discrepancies are found, test scripts can be rerun as performed earlier to further identify problem causes. After discrepancies are corrected, regression or repeat testing can



Complex air/land battlefield scenario requires fast, accurate automated command and control.

be carried out to ensure corrections in one part of the code, or changes in hardware configuration, haven't created other problems.

C2AT Environment

C2AT uses Mercury Interactive, or MI, commercial off-the-shelf software products to perform developmental and performance testing. MI products work in the Microsoft Windows, HP-UX, Sun Solaris, UNIX, and LINUX operating system environments. They are fully integrated within the family of products and are open test architecture, or OTA, compliant. MI interactive software is compatible with programs written in all major languages – including Oracle, Sybase, or Microsoft Access or Microsoft SQL Server databases – and with all the major Web servers. MI products are Test Director, LoadRunner, WinRunner, and XRunner. C2AT test tools include Test Director, for Microsoft Windows environment; WinRunner, for Microsoft Windows environment; Xrunner, for UNIX, HP-UX, and Solaris environments; and LoadRunner, for UNIX, Microsoft Windows, and

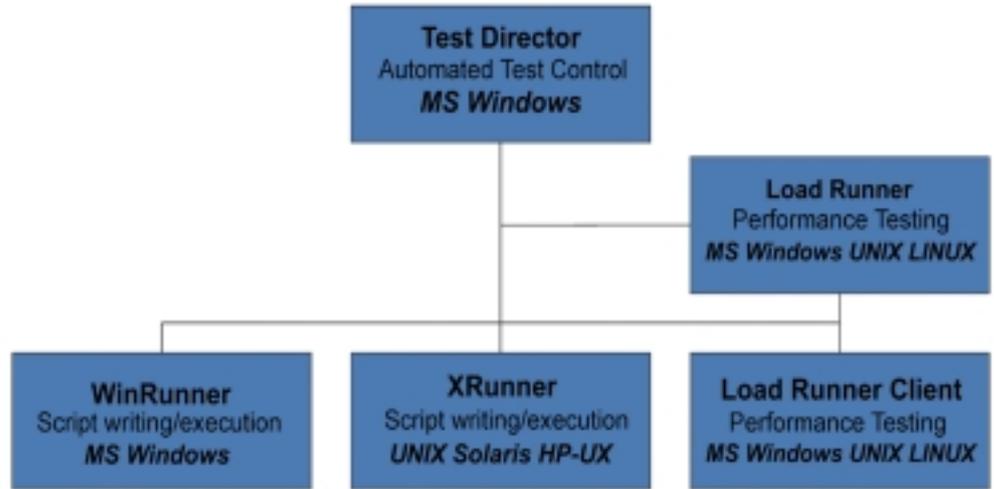
LINUX environments. Test Director and LoadRunner fit on additional hardware added to the C2 network. XRunner and WinRunner fit on actual C2 work stations. When possible, it's advisable to put XRunner and WinRunner on a separate hard drive on a typical application work station.

Developmental Test Process

This process is driven by test requirements, which are studied and listed in Test Director software. After requirements are listed, the test plan is written in or copied to Test Director software. Test scripts are developed based on client work stations, running WinRunner or XRunner. They are written automatically in test script language by recording user input. Integrity and database quality control checks can be added to WinRunner or XRunner test scripts. The scripts are then imported into Test Director and organized in its Test Lab module. Test scripts are executed by Test Director, and run on client work stations, on WinRunner or XRunner. Test Director software compiles test results, detailing any defects in its Defects Module. After defects are corrected, the entire test can be rerun, ensuring a fix in one area doesn't cause a problem in another area of the automated system. When the developmental test is complete, it's archived for future releases of the command and control software.

Performance Test Process

This process is also driven by test requirements documented in Test Director. The LoadRunner test plan is used to write in the number of virtual users, virtual test scripts (LoadRunner), GUI test scripts (WinRunner or XRunner), and monitoring specifics. While LoadRunner executes the test scripts, many key factors are monitored, including server performance, database servers, Web servers, network, and transactions per second. Results are sent to the LoadRunner analyzer and then finalized in Test Director. If corrections are needed, the test can be rerun with little or no preparation



Automated testing tools applied to development of command and control processes and procedures.

time. Test results clearly indicate how software will perform within detailed performance specifications, including maximum use conditions.

Future Development

C2AT is the most effective way to perform developmental and performance testing. Developmental testing events are designed to ensure that computer systems provide expected information. During initial developmental testing, discrepancies are identified and corrected. Corrections are tested in isolation. When automated tools are used, the entire developmental test can be rerun at any time, ensuring that a correction in one part of the code doesn't cause problems in other parts of the code (regression testing).

After a C2 system passes developmental tests, a load test can be devised to ensure system performance meets specifications prior to operational testing, or as part of an operational testing event. During traditional developmental and operational tests, discrepancy identification is left up to test personnel who interpret events with professional judgment. C2AT uses computerized tools to identify discrepancies and eliminate potential inaccuracies of professional judgment, with minimal hardware and personnel costs.

As the Freeman Computer Sciences Center conducts command and control system developmental and performance testing into the foreseeable future, it will continually strive to provide its customers better and more complete testing, and faster and more effective system development.

AACS Alumni visit AFCA's Heritage Hall

SCOTT AFB, Ill. — A common tie binds members of the AACS Alumni Association—once a communicator, always a communicator! The name “AACS Alumni Association” is derived from both the Army Airways Communications System and its successor, the Airways and Air Communications Service.

Two prominent members of the group, retired Chief Master Sgt. Richard “Hank” Sauer and Lt. Col. Richard “Dick” Frye, visited the Air Force Communications Agency at Scott AFB and its Heritage Hall, where Chief Sauer’s photo hangs in the Communications and Information Hall of Fame.

Colonel Frye recently succeeded Chief Sauer as executive director. The group has more than 2,700 members who served in AACS, Air Force Communications Service and/or Air Force Communications Command units from 1938 to 1993.

The objective of the AACS Alumni Association is to foster awareness of the Air Force communications and air traffic control missions performed by AACS, AFCS and AFCC. The organization provides its members a forum to renew friendships and exchange news. At their reunion next month, the group will vote on expanding the organization to include people who were assigned to the Air Force C4 Agency, Air Force Communications Agency, and the Air Force Flight Standards Agency, created as follow-on organizations to the AFCC in the 1990s to support communications and air traffic control.

About 35 percent of members have an air traffic control background; 35 percent served in some type of communications—crypto, teletype, message center, and radio operations – and the remaining 30 percent were everything from commanders, flight check pilots, crew members, personnel, supply, and all kinds of maintenance of crypto, teletype, radio, nav aids, etc., to finance clerks.

One thing that hits you when you meet these two veterans is their pride in being Air Force communicators. Another is their energy and enthusiasm as they talk about their military experiences and do their part to keep communications heritage alive.

“We are really a diverse group who in our Air Force days were part of a great outfit, doing lots of different things to support the Air Force. We can be proud of the air traffic control and other com-



Janet Moreiko-Gagen, AFCA public affairs, gives retirees Lt. Col. Richard Frye (middle) and Chief Master Sgt. Hank Sauer a tour of AFCA's Heritage Hall.

munications support that over the years contributed to the Air Force’s success,” said Colonel Frye.

The AACS Alumni Association was formed on Sept. 30, 1977, during what turned out to be the first AACS Reunion. Larry and Doris Camp were visiting with Dux and Pearl LeDoux in Eunice, La., in the fall of 1976. What started as an invitation to a weekend in Columbus, Ohio, became a reunion and the creation of the alumni association. The Camps have the honor of not only hosting the first reunion in 1977, but along with the LeDoux’, being the driving force of what is now one of the finest alumni associations in the Air Force.

“We have members who were not retired military, but were in for a war, got out, and did other things,” said Colonel Frye. “We have attorneys, doctors, ministers, a supreme court judge, you name it. The common tie is that they were at one time in the basic communications business of the Air Force or supporting communications,” said Chief Sauer.

The chief’s first trip to Scott AFB was more than 50 years ago as a technical sergeant at the crypto school. He had joined the U.S. Naval Reserve in 1947. His father, who was in the Army and fought with Brig. Gen. John “Blackjack” Pershing against Pancho Villa, was disappointed that he even considered the Navy. The younger chief solved that problem by enlisting in the Air Force in April 1948.

“The Air Force sent me to clerk typist school at Lowry AFB. Just before graduation, about 15 of the 60 or so students were put on orders for the 1800th AACCS Wing, Langley AFB, Va. We went through a crash course in cryptography and were sent to Europe to support the 1807th AACCS Wing’s Berlin Airlift mission. Two of us were selected to go to Tempelhof. When President Truman extended all of the military for one year, I decided I liked the Air Force and reenlisted.

“Comm, for the most part, was radio stations and teletype and we were just starting to think about and organize mobile communications units,” said the chief. “In May 1951 at Munich Riems, the 1860th AACCS Mobile Communications Squadron was formed and I was selected as the operations sergeant.

“From 1954 to 1957, at the 1809th AACCS Group in Nagoya, Japan, we were downsizing from the Korean Conflict. I was the war plans NCO, weather systems NCO, test bed NCO for the creation of the 296XX plans and programs AFSC, liaison for comm with the Japanese Air Self Defense Force, IG team member, and oh yeah, cryptographic NCO was my primary duty,” Chief Sauer said.

“The group commander recommended me to Maj. Gen. Daniel Doubleday, commander of AACCS, to be NCO-in-charge of the war plans division at headquarters. I was in the advance party with the move to Scott in late 1957.

“As I look back, the differences are huge, but the people are still smart and dedicated,” said Chief Sauer. “I laughed through nearly 28 years of Air Force life and I loved every minute of it.”

Colonel Frye enlisted in the Air Force in 1949. After 32 weeks of radio operator school at Keesler AFB, Miss., assignments as an enlisted man included communications center and radio operations duties at Guam; Korea; Dobbins AFB, Ga.; Ramstein AB, Germany; and Seymour-Johnson AFB, N.C.

In March 1958, he was selected for Air Force Officers Candidate School, graduating as a second lieutenant in September. He returned to Keesler for 43 weeks to attend the communications officers course, followed by assignments at Fortuna AFS, N.D.; Kotzebue AFS, Alaska; Pease AFB, N.H.; Offutt AFB, Neb.; Westover AFB, Mass.; Diyarbakir, Turkey; McClellan AFB, Calif.; Norton AFB, Calif.; and Fort Carson, Colo.

During this phase of his career, he rose to the grade of lieutenant colonel, and performed duties

across the spectrum of communications, electronics, computer and command and control environments.

They have millions of great memories—all related to people. When asked about being in the Communications and Information Hall of Fame, Chief Sauer said, “Being inducted into the Hall of Fame was awesome. I know of at least a dozen NCOs who could have been standing in my place that night. Just being recommended by the Alumni Association is an honor.”

Colonel Frye and Chief Sauer both worked with most of the Hall of Fame inductees, primarily retired general officers, and consider them friends. They also have close ties with many people still on active duty. “The man who’s going to be our guest speaker in Dayton this year, Brig. Gen. Mike Peterson, I knew as a second lieutenant,” said Colonel Frye. General Peterson is now commander of the 81st Training Wing at Keesler.

“I had a methodology I’d developed at Norton AFB. As commander of the largest communications squadron, I had seven new second lieutenants. I paired each of them with a senior NCO in his field. I told them I wanted to give every lieutenant a job with responsibility. I wanted an NCO to work with them and train them. That worked very well. While many of these new officers’ classmates were reading tech orders or bringing coffee to the commander, my guys were in charge of work centers. They grabbed on!

“Of those seven, one was hurt in Vietnam and medically separated. The other six, at a time when the selection rate for regular officers was 3 percent in communications, all progressed. “In 1975, General Peterson came to me as a second lieutenant and I gave him an E-9 and a work center with 28 people,” said Colonel Frye. And the rest is history.

“People like me were given the opportunity to succeed, and not fail, by the likes of Maj. Gen. Paul Stoney, Maj. Gen. Daniel Doubleday, Maj. Gen. Van C. Doubleday, Maj. Gen. Gerald Prather, Maj. Gen. John Randerson, Maj. Gen. E. Blair Garland, and many other fine communications officers,” said Chief Sauer.

“If you implant that attitude, the thing is, there is nothing that you can’t do,” Colonel Frye added.

“Those guys didn’t care what I had on my arm or on my collar,” the chief said. “They only cared about what I had between my ears. So they gave

Air Force selects program to replace FormFlow

By Tech. Sgt. Tim Dougherty
Air Force Print News
Washington

Air Force officials at the Pentagon recently approved a plan to acquire a new information management tool software package that will replace the FormFlow program used for more than a decade.

After nearly a year of extensive testing and research into ways to improve form support to warfighters, the Air Force Departmental Publishing Office has selected PureEdge Solutions as this replacement technology. The program is a “quantum leap” over previous ways users processed data or exchanged information, said Carolyn J. Watkins-Taylor, AFDPO director.

“We recognize now more than ever that any modernization program we initiate must include methods of providing our warfighters with an optimal level of support,” Watkins-Taylor said. “We are excited at the potential opportunities that this kind of cutting-edge technology can provide, especially when it translates into a more efficient and effective support method.”

An information management tool, or IMT, is simply a form, but one that is far more advanced and user-friendly than the old FormFlow versions, Watkins-Taylor said.

Immediate benefits of the new software and its IMTs include digital signatures, document routing, online or stand-alone mode and the ability to package a form and all related data into a single file. With FormFlow, the form and the data were separate elements, while with PureEdge, the IMT and the data always stay together.

“One of the main complaints about FormFlow is people say they keep losing their data,” Watkins-Taylor said. “With this new solution they won’t even have to look for the data because it will be with the document. The IMT maintains the integrity of the document with the data, and it also keeps



Photo by Tech. Sgt. Jim Varhegyi

Tech. Sgt. Duane Presing, an information management specialist stationed at the Pentagon, puts the PureEdge software through its paces during a demonstration at the Pentagon in early July.

any attachments that you might have.”

Another benefit of the new software is that file sizes are kept to a minimum.

“The average IMT will be from 12 to 24 kilobytes, and that’s small,” Watkins-Taylor said. “With FormFlow, the file sizes ranged from 178 kilobytes to one megabyte, because you have the form and the data that had to go together. Smaller files use less bandwidth.”

The technology was demonstrated at the Pentagon in early July. More than 100 people used the program to complete some common Air Force IMTs, and their reactions were very positive.

“You dream about things like this and to finally see it now is wonderful,” said Tech. Sgt. Duane Presing, an information manager with Air Force financial management who has used forms on a daily basis for 20 years. “This is leaps and bounds over what we’ve ever had in the past. I’m very happy the Air Force is replacing FormFlow and can’t wait to use the new system.”

The wait will not be long. Watkins-Taylor said the goal is to start Phase 1 on Aug. 15, when the

See **Form** next page

VISIT

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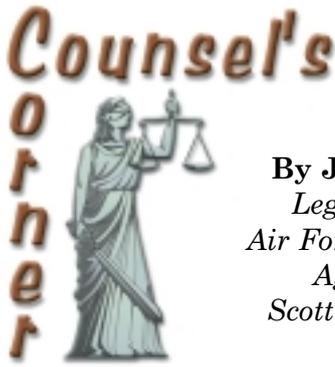
me the tough jobs. The secret is that if you work for good people, you’ll learn good things.”

“The Air Force gave us all

these opportunities,” said Colonel Frye. “All we had to do was go after them.”

Their strong commitment to promoting communications and camaraderie between the Air

Force communications and air traffic control veterans, has proved Frye, Sauer, and other members of the AACS Alumni Association, to be a crucial part of the Air Force’s C4 team.



Card users earn small business credit

By Joe Hinds
Legal Office
Air Force Comm
Agency
Scott AFB, Ill.

Plastic is a way of life – even in the Air Force. The simplest way to buy something today is with a credit card, and the commercial government purchase card is no exception. As a rule, it can be used to pay for official government purchases up to \$2,500.

Even though purchases under \$2,500 are exempt from the small business set-aside program, card users should still make an effort to buy supplies and services from small businesses, and notify the small business advocate at the base contracting office.

You can help your base get small business credit by consulting the Federal Supply Schedule. Small businesses are marked with an asterisk. In addition to advising the small business advocate, it's recommended to keep a record of your small business activities.

There are rules that must be followed to avoid misuse of the government card. For example, if you want to buy a computer monitor for \$800, a central processing unit for \$1,500, a color printer for \$1,000, and stereo speakers for \$100, it's theoretically possible to buy them either as a package for \$3,400, or separately. May you use the government card? That depends on whether your requirement is for the entire package. If so, the answer is no, because it's not permissible to intentionally split parts of a package into separate purchases just so you can stay below the \$2,500 threshold. It would be OK to purchase the monitor, CPU and speakers with the card for \$2,400, if that was all you needed. But if the \$1,000 color printer was part of your requirement, you would not be permit-

ted to carve it out of the package to make a separate card purchase.

Another point to remember: Before you use the government card for communications, computer equipment or software purchases, you first must contact your unit C4 systems officer, who will look at your needs and existing solutions before providing approval.

If you wanted to buy a cellular telephone for \$600, including yearly cellular service for \$2,000, could you use the card? Probably not, because you can't use the phone without the service. So, you must add the costs of the phone and the service, and the total is not under the \$2,500 threshold. Anything under that amount is permissible, as long as you don't exceed your other limits on use of the card.

May you purchase secure telephone instruments with the card? No. AFI 64-117 prohibits acquisition of controlled cryptographic items. This property must be requested through base supply, to ensure accountability.

It's also important to contact your contracting office before using your card, since that office may know of an existing contract vehicle, such as a blanket purchase agreement, which might allow you to use the card for an amount exceeding the threshold. For instance, Air Force Way, or AFWay, is an online gateway for purchasing computer hardware that provides the flexibility to increase cardholder limits to above \$2,500 but under \$25,000.

Purchases under \$2,500 are NOT exempt from Section 508 of the Rehabilitation Act, which states that all electronic and information technology items purchased with the government card – such as computers, copiers, printers and software – must be accessible to people with disabilities.

For more information, contact your base contracting or staff judge advocate office.

FORM

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100 most commonly used Air Force forms will be converted to IMTs and made ready for use, with the remaining forms converted in the coming months. Phase 2 will focus on building partnerships with functional areas throughout the Air Force to examine how IMTs can improve business processes.

"We're changing our whole approach to focus on content and user interaction," said Bruce Lyman, lead architect for the Air Force's transition to PureEdge. "The primary goal is to make things easier on the user and easier on the Air Force by replacing an obsolete system. We're taking a content approach rather than just worrying about what the forms or the little boxes look like. The PureEdge technology allows us to do all of this and more."

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" ... we must continue to enhance information technology, command and control, intelligence, surveillance and reconnaissance in every corner of the Air Force with assured communications."

***Gen. Donald G. Cook
Commander, Air Education
and Training Command***