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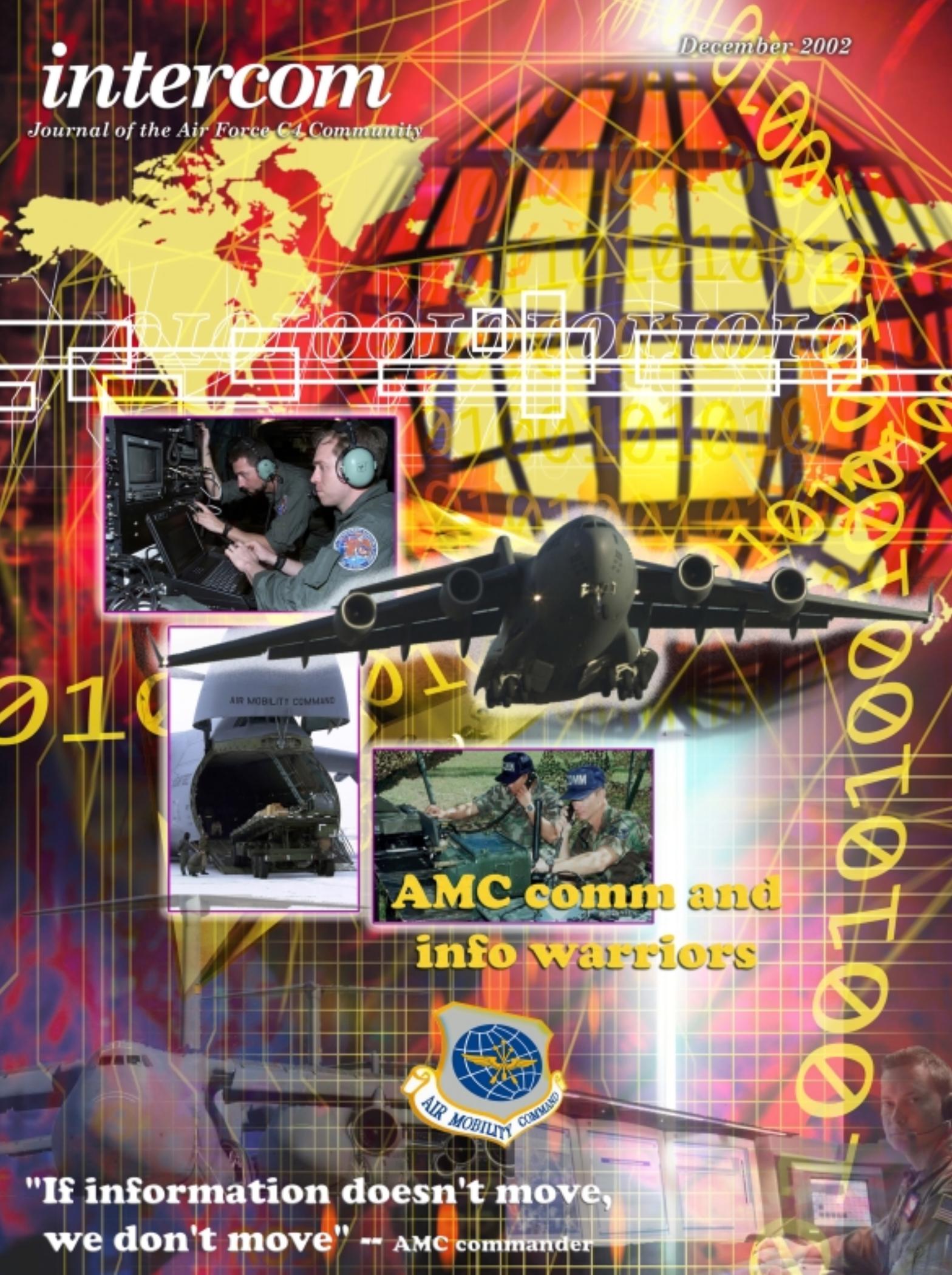
Journal of the Air Force C4 Community



AMC comm and info warriors



**"If information doesn't move,
we don't move"** -- AMC commander



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Air Mobility Command comm and info

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Gen. John W. Handy, AMC commander, says, "Information technology is as central to our mission as the planes and people that support our warfighters every day around the globe."

AMC employs architecture to accelerate worldwide MAF information flow Page 8

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Information assurance campaign 2002



Thanks for a great Information Assurance campaign!

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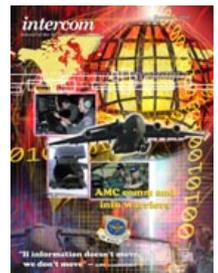
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The Air Force CBT WEB address has changed.



Visit the Computer Based Training System Web site at <http://usaf.smartforce.com>



Information technology ... AMC's key enabler

By Gen. John W. Handy
Commander, Air Mobility Command
Scott AFB, Ill.



“Because the size of our fleet, speed of our aircraft, and finite human resources are physical limits on how fast we can move, information technology has become an important force multiplier, driving the speed, effectiveness, and efficiency of AMC’s operational processes.”

Gen. John W. Handy

Air Mobility Command is an information-intensive command. Information technology is as central to our mission as the planes and people that support our warfighters every day around the globe. If information doesn't move, we don't move. Without IT, we cannot adequately support the warfighter. While this may be a bold statement, it is absolutely true. Information technology enables our effectiveness.

AMC is responsible for providing airlift, air refueling, special air missions, aeromedical evacuation for U.S. forces, and the secure, worldwide movement of national security material via courier escort. At any given time, 24 hours a day, 7 days a week, our aircraft and personnel are operating around the world supporting numerous

peacetime and wartime tasks simultaneously under multiple combatant commanders.

Prior to 9/11, AMC was flying an average of 250 missions per day. Since that time, we have engaged in the third largest airlift operation in our nation's history, supporting more than 29,000 airlift sorties, executing more than 9,950 air refueling missions, moving more than 250,000 passen-

gers, and transporting more than 334,000 tons of cargo between the United States and the U.S. Central Command theater of operations. We now average more than 350 missions per day. Only Operation Desert Shield/Storm and the Berlin Airlift were larger, but our support of Operation Enduring Freedom is not over yet.

Because the size of our fleet, speed of our aircraft, and finite human resources are physical limits on how fast we can move, IT has become an important force multiplier, driving the speed, effectiveness, and efficiency of AMC's operational processes. The command uses its IT to plan missions, track delivery, pay providers, and make most efficient use of its airlift and refueling assets. While AMC routinely operates in austere environments, our military and commercial transportation providers supporting Department of Defense missions demand a robust IT capability regardless of the locale.

From my desktop computer, I can track every AMC mission around the world. With a few "mouse clicks," I can pull up a wealth of information on any of our missions including where it originated, where the aircraft is, what cargo is being transported, the passengers onboard, and when the aircraft is due to arrive. I can even access information about the crew. This is the very same information and tool set used by the AMC Tanker Airlift Control Center to execute our mission.

AMC currently has seven primary command and control and support systems that process and exchange information critical to our mission execution. We have developed interoperable decision support systems to enhance airlift and tanker mission planning and scheduling, and we recently began deploying our next generation of integrated flight management tools that in the future will reduce the time aircrews spend on flight planning and allow more time in the air.

We've applied IT to process and track passenger movement on AMC aircraft at more than 200 locations around the world. We are also incorporating automation technologies such as wireless barcode scanners and radio-frequency identification tags at our major aerial ports to decrease the time it takes to process cargo and increase in-transit visibility of our cargo.

We've tied these systems together through interoperable IT, enabling a large portion of our

critical C2 data to be leveraged across the command and exchanged with U.S. Transportation Command's C2 systems.

The command has achieved considerable success in fielding systems that provide operational utility. The changing military operations and faster tempo of war mandate more flexible IT systems to provide commanders decision-quality information. All the data in the world is useless unless it can be acted upon—that's why AMC is striving to improve our IT systems every day.

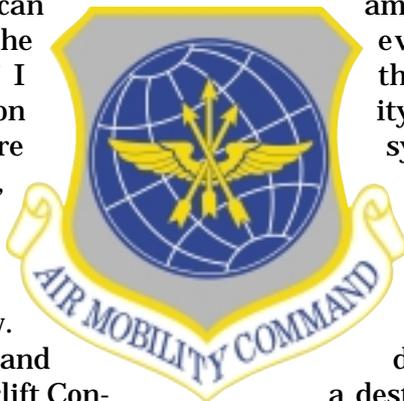
I'm pleased to say that AMC has leveraged IT to enhance our ability to support the warfighter, but we still have further to go. Our operators, customers, and C2 systems still do not have access to all of the relevant and timely information they require.

It is not sufficient that we can talk to our own aircraft anywhere in the world. In the near future we must also be able to dynamically exchange large

amounts of actionable information with every cockpit and among every theater's operations centers. The ability to gather information from source systems and sensors, regardless of theater or command, and to provide actionable information directly to our aircraft will significantly increase the speed of delivery to the warfighter. The ability to pass updated threat information or to change a destination while en route provides opportunities to improve the agility of the air mobility system to meet changing mission requirements.

AMC is focused on meeting the emerging asymmetric threats confronting us. AMC continues to increase the velocity of our mobility forces by breaking down the barriers to information flow both within and outside of our command. As we accelerate the delivery of useful, decision-quality information, we will enable faster, more efficient and more effective lift for the warfighter and dramatically reduce the time it takes to get our forces to the fight.

Information technology has been and will continue to be a core enabler to AMC's mission effectiveness and key to our ability to maintain mobility superiority. No other nation can match our synergy, drive, and capability to get people, supplies, and equipment to the fight ...anytime, anywhere. Information technology is the cornerstone to making this happen.



Managing change in technology vital

By Col. Michael J. Basla
*Air Mobility Command Director of
Communications and Information
Scott AFB, Ill.*

“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.”

Alvin Toffler

We live in an age of increasingly rapid change. Although we sometimes think of change as a technology thing, it is much broader. Our organizations are constantly changing, our strategies are constantly changing, our missions are constantly changing, and, yes, our technologies are changing. I believe one of our greatest challenges as information technology professionals is managing this change.



Col. Michael Basla

Change

A few examples of how change is occurring are easily shown.

Organizational Changes

The Air Force itself just had its 55th birthday, not a long time in world affairs, but within those 55 years the Air Force has continued to evolve its organization. For example, in the 1980s, the Goldwater-Nichols DOD Reorganization Act centralized operational authority through the Chairman of the Joint Chiefs as opposed to the service chiefs, thereby changing our command structures.

Change continued in 1992 when AMC and ACC were created. Organizational change continues today as the Air Force reorganizes all its wing structures. These plus other organizational changes have continued to improve our warfighting capabilities and I expect the process of organizational change to continue.

Strategy Changes

Our most basic defense strategy has also changed. We fought World War II by out-producing our adversaries with highly standardized, relatively low technology weapons systems. During the Cold War we reversed that approach and consciously adopted a strategy of high technology, relatively low production weapon systems. The military technology used in both cases was largely developed by the military. Today, we continue to have a strategy of high technology, relatively low production weapon systems, but in the case of infor-

Timeline

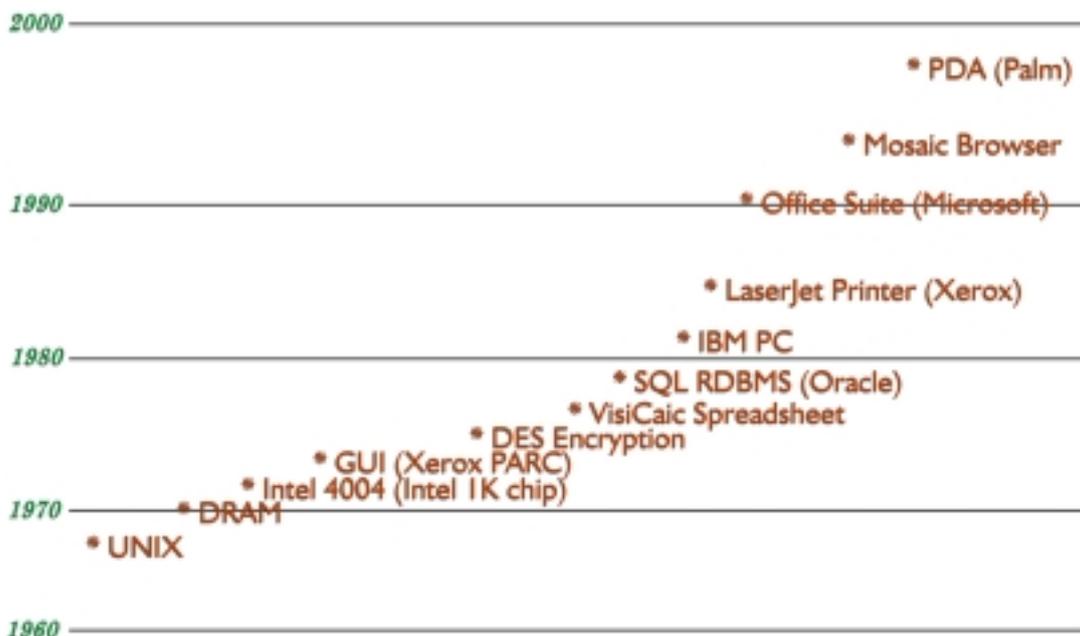


Figure 1

mation technology, we are relying primarily on commercial industry to develop the technology.

Mission Changes

Missions also change, sometimes coincident with organizational change and sometimes driving it. AMC suddenly acquired a major homeland air refueling mission when Operation Noble Eagle commenced after 9/11. Since 9/11, AMC has had nearly 6,000 aerial refueling missions in support of Noble Eagle. Since 9/11, we have also had to establish new relationships with law enforcement and immigration communities.

Technology Changes

For good reason, we probably most often associate change with technology. Figure 1 shows a timeline of some of the changes in IT.

Although managing change is important for all areas of the Air Force, it is most important for us in the field of IT. Upon Gen. Ronald R. Fogelman's departure from AMC to become the Air Force Chief of Staff, he was asked how technology would change the transportation business. He answered:

"It isn't likely we will see any startling breakthroughs in transportation or weapon systems during the next 20 years. Instead, we are going to make great strides in the areas of information storage, transmission, retrieval, and exploitation."

I believe another way of saying this is that 20 years from now AMC will still be flying C-17s, but four years from now we won't be using the same desktop system. That is, IT is the key enabler in transforming our military because IT is the harbinger of change. *"Air Mobility Command is an information-intensive command. If information doesn't move, we don't move,"* said Gen. John W. Handy, commander, U.S. Transportation Command, and commander, Air Mobility Command.

We have gone from an era where the commander had no real time comprehension of his own forces or the enemy's forces, to an expectation of total real-time visibility of friendly forces and near-total visibility of enemy forces. It's hard to overstate the impact IT change has had for military professionals. The very fact that IT is constantly changing means it can be a source of improving our military capabilities. Unfortunately, it will also improve our adversary's capabilities and thus one of our challenges is to be able to exploit the advantages of new IT better and faster than our adversaries. Finally, not only is IT changing, but the form of information is changing. Whereas commanders during our nation's founding viewed information exchange as primarily the exchange of

written messages over long time periods, today's commander needs to exchange digital messages plus imagery and video in real-time. While the added information forms greatly improve our warfighting capability, they also create challenges for communicators to retrieve this data and move it quickly anywhere worldwide.

Suggestions

At AMC, we're trying to accommodate change in our IT and I want to share some of our thoughts and suggestions.

Technical Solutions

It's easy to fall into the trap of viewing technical solutions as permanent and everlasting. If, instead, we view them as interim and subject to change it may cause us to acquire systems differently. First, we should critically examine any technical solution for its growth potential. Since we know most IT solutions have a relatively short lifetime, ***we should ensure our technical solutions don't foreclose reasonable advances in technology.*** Second, we should be sensitive to our culture and ***we should try to not adopt solutions that run counter to our culture.*** For example, we know our culture wants a certain amount of personalization of products. Our technical solutions that absolutely preclude any personalization by the user can be expected to be less readily accepted than those solutions that allow for individual preferences to be included.

If we view technical solutions as interim and subject to change, it may also cause us to examine our contract relationships. It's almost impossible to define long-range IT contract performance tasking because of the inevitable changes that will occur. Therefore, ***long-term contracts should be viewed not only from a cost and performance standpoint, but also from the standpoint of future changes.*** Another aspect of contracts affected by change is what deliverables are necessary when acquiring IT. If we do not expect to keep something long, we may want to avoid acquiring some repair documentation. ***Instead of repairing an item, it may be more cost effective to consider it "throw away" when obsolescence is considered.***

Security

Rapid change affects security in at least two ways. First, security becomes a never-ending point-counterpoint process. New security solutions will lead to new attack strategies, which will lead to

AMC employs architecture to accelerate worldwide MAF information flow

By Cynthia A. Marler

*Architectures and Integration Division
Directorate of Communications and Information
Air Mobility Command
Scott AFB, Ill.*

“We can’t speed up airplanes or ships, but we can accelerate information flow,” Air Force Gen. John W. Handy, commander, U.S. Transportation Command, and commander, Air Mobility Command, said in the opening speech of the 13th annual Information Technology Conference at the Dayton Convention Center. What a visionary statement. How are we able to accelerate information flow? Architecture—the key to understanding the business and technology, bringing together the best of both to provide extraordinary mission capabilities.

On Oct. 28, John M. Gilligan, Air Force Chief Information Officer, signed a formal charter to signify the establishment of the Mobility Air Forces Architecture Council. The MAFAC was created as one of several domain architecture councils that report to the Air Force Enterprise Architecture Integration Council. The purpose, scope, goals and membership of the MAFAC are defined in the charter, which has also been signed by all MAF spon-

sors (AMC/SC, PACAF/SC and USAFE/SC). The MAFAC is the newest addition to the EAIC.

The EAIC is an Air Force senior officer forum that addresses enterprise architecture and information sharing issues requiring coordination between commands. The EAIC functions as the Air Force “authoritative architectural forum” and is the primary means to effectively integrate and validate combat, combat support and business architecture efforts within the Air Force. “Our collective challenge is to continue the formative stage of MAF architecture development and determine how to leverage it across the Air Force,” said Gilligan at his visit to Scott AFB.

Why does AMC believe the MAFAC and architecture are important steps for the future of the Air Force? Col. Michael J. Basla, AMC/SC, said, “The MAFAC is an innovative forum for sharing information about the MAF enterprise with its partner commands. We’re excited about this council. It represents an extremely effective way of working cross-cutting architectural issues which directly impact mission capabilities and will enable us to accelerate information flow across the Mobility Air Forces.” Although the architecture

See **MAF** next page



Photo by Master Sgt. Ed Ferguson

John M. Gilligan (center), AF CIO, signs the Mobility Air Forces Architecture Council charter,

as Col. Mike Basla (left), AMC CIO, and Col. Rory Kinney, council chairman, watch.

MAF

From previous page

helps people understand the mission, it's using the architecture information and turning that into specific modifications to systems and technology that gives the architecture life, meaning and results. In addition, Basla said, "AMC communications and information experts develop architectures to make the MAF mission more efficient and effective. Ar-

chitecture is the means; improved mission capabilities are the result."

To commemorate the occasion, Gilligan presented the pen used to sign the charter to Col. Rory S. Kinney, chief, Architectures and Integration division (AMC/SCT), for "having significantly contributed to architecture development within AMC." For more information on the MAF council, contact Cyndi Marler at DSN 779-5395, cyndi.marler@scott.af.mil.

CHANGE

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new security solutions. ***Our need to improve and modify our information technology security solutions will never cease.*** A second impact of change on security is the need to evaluate security solutions contrasting the risk entailed and the functionality provided. Risk-free security solutions will not be possible, since attack strategies will change creating new vulnerabilities. ***We need to identify the new vulnerabilities and mitigate them or accept them.***

Standards

Standards have a unique position when considering rapid change. Standards are necessary within IT designs, but the very purpose of standards is to limit or slow change. Since change is limited by imposing standards and innovation generally involves change, standards stifle some innovation. The solution here is not to eliminate all standards, but ***we should critically examine imposed standards and limit them to the minimum number possible.***

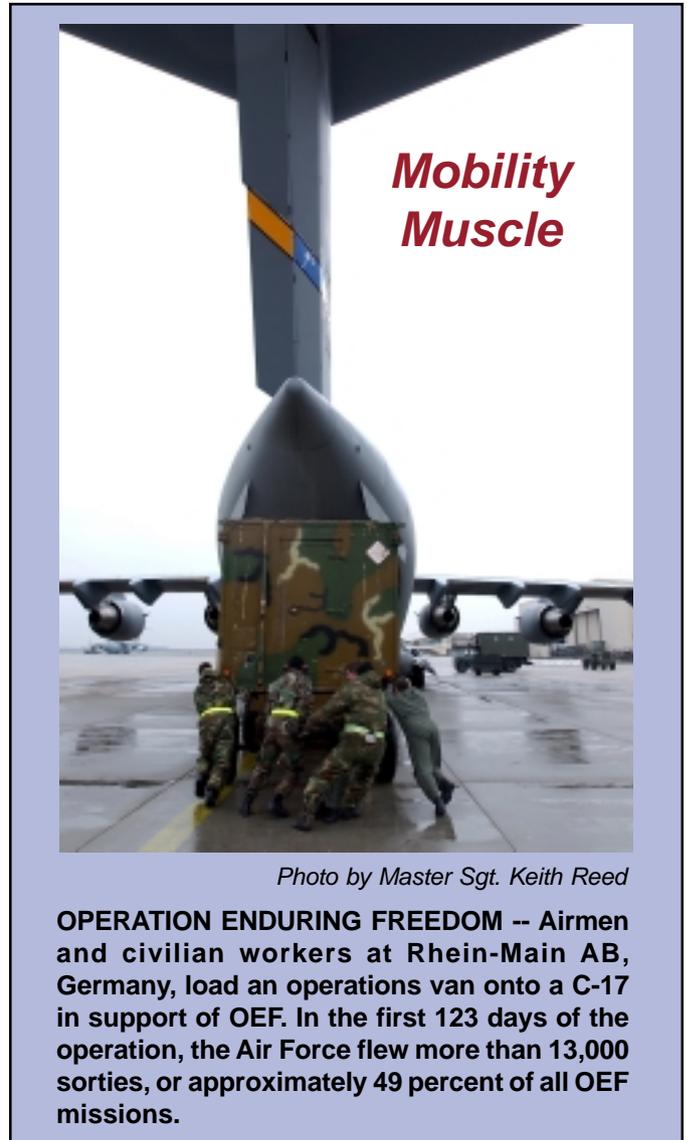
Standards also have the problem of being slow to change. This is especially true for de jure standards. These can only be changed when the ruling body agrees. In contrast, de facto standards can change relatively quickly, but carry the risk of becoming unsupportable. ***We should not limit ourselves to only de jure standards, but we must ensure that any de facto standards we impose or use are consistent with the mainstream commercial world.***

Finally, we need to consider the inevitable future changes in standards when we impose them on developers. Much like a pilot intercepting a plane does not target the other aircraft's current position, we shouldn't have our developers target current standards. Instead, ***we should have developers plot an intercept course for the standards that will be in effect when they field***

their product. Done correctly, the developed system will be in compliance with mandatory standards at the time of deployment.

Take Aways

Today, we in AMC are seeing all the aspects of change I mentioned above. Although it is a continuous challenge, I believe we are effectively managing change and enabling our command to meet the needs of the 21st century.



Automatic workgroup manager saves time

By 1st Lt. Steven R. O'Bannan
92nd Communications Squadron
Fairchild AFB, Wash.

Wouldn't it be nice to cut more than 10,000 manhours out of a workgroup manager's schedule? How about 100 percent Air Force Computer Emergency Response Team compliance? Would you like to guarantee that every machine attached to your network is certified and accredited? What would it be worth to know that only authorized software resides on your network? If you are sitting in the flight commander's seat, this sounds like a dream. If you are a systems administrator, it sounds like a nightmare. I will tell an enchanted story of how the "wiz kids" at Fairchild have done just that. The skullduggery incorporates two main elements: Remote Installation Server and Win 2K Group Policy Objects.

Enter the WM who begrudgingly plops down before "Airman Smith's" computer. The poor airman has managed to confound the PC beyond the skills of the WM. A fresh install is needed and the WM doesn't have the roughly two hours to sit and do a complete install. Meanwhile, back at Fairchild's Network Control Center, the stalwart administrators have set up a RIS. Now with a reboot and the push of a button, the WM can begin the automatic installation of the operating system with all the service packs over the network.

The RIS also installs a driver folder that you can customize to cover every machine on your hybrid network. The WM can walk away from the machine, re-educate Airman Smith, and check back with minimal user interface. The bulk of the install works automatically by presetting several of the options on your RIS. On average, the total desk time needed to complete the install is about 15 minutes. By using RIS, the NCC also has the ability to set default preferences to standardize the base's Win 2K installs.

After you have installed the OS on the machine, Win 2K GPO takes over. A GPO is a set of rules that gets pushed out every time a client boots up and connects to the network. It can detail everything from your default options and settings, to the software that you allow on your machines. The first time a newly RISed machine logs on to the network, it begins to install the approved software

packages that you want your users to have. The WM no longer goes around from machine to machine with an arsenal of CDs to install Adobe, Office 2000, Flash, WinZip and other commonly used software. If you have units with specific software needs, you can tailor a GPO to be unit-specific as well. This tool also allows you to check AFCERT compliance and updates automatically upon boot-up. This means you know all the machines on your network are compliant. A creative use we found for the GPO is with the PKI migration. Every PC must now have a card reader. At Fairchild AFB, we added the card reader's software and certificates to the GPO to automatically install upon the user's next boot-up. The only remaining thing is the hardware installation. This trick saved more than 600 manhours at this base.

There are endless applications and ways to save time and money with these tools. We challenge you to rival Fairchild's ingenuity—it's worthwhile to put your sharpest and brightest to the test.



Photo by Tech. Sgt. Anna Hayman

Team effort

Master Sgt. Greg Van Buren and Staff Sgt. Cathe Rynkowski install new computers at Combined Task Force headquarters, Incirlik AB, Turkey. Van Buren is assigned to the communications directorate, while Rynkowski is the information manager at the U.S. Commanding General of CTF.

AMC Code Vault improves software development sharing



**By Master Sgt. John Doe
and 1st Lt. Oscar Parra**
*805th Computer Systems Squadron
Scott AFB, Ill.*

To eliminate duplicate work in software development among units, the 805th CSS has developed a Web-enabled code module and application repository available to Non-secure Internet Protocol Router Network users via <https://codevault.scott.af.mil>. Since the site went live June 24, 15 applications and 61 code modules have been deployed. Organizations Air Force-wide, from major command network operations and security centers to the Pentagon, have downloaded applications. Code Vault avoids duplication of effort by providing users across the Air Force with a virtual store of applications developed for users within AMC.

The Code Vault Web site is divided into two main areas: code and applications modules. The first area consists of a repository of pre-tested code modules. This area is organized by programming language (e.g., Cold Fusion, Java), but it is searchable by module function. You can find code modules that perform functions such as alternating colors for even and odd rows in a Web spreadsheet, or even a page variable dump function that aids software developers in debugging operations.

If you are not into writing your own program, the applications area lists several different applications that are ready to be downloaded and executed. The applications page can be sorted by acronym, system title, or type. To easily help you find the application that you are looking for they have been divided into five categories: 1) Networked Information Exchange, 2) E-Course and Conference Schedulers, 3) E-Survey, 4) E-Training Aids and 5) Web Sites.

Networked Information Exchange applications consist of decision-making and situational awareness tools for tracking metrics, report and chart generation, legacy system integration and process automation. E-Course and Conference Schedulers provide online registrations so attendees from geo-

graphically separated areas can register easily on the network. E-Surveys provide a platform for filling out surveys online and easily administer and manage those responses. E-Training Aids are portable computer-based instructions, so organizations can monitor training completion. In the Web Sites area you will find a variety of Web sites with different themes such as a Command Chief Master Sergeant Web site and the main AMC Web page.

To download an application, a user establishes an account, then will be notified of any future upgrades to applications they have previously downloaded.

One of the most popular downloads has been the Vulnerability Assessment Tracker. VAT retrieves Internet Security Scan vulnerability data, filters out all identified false positives and sorts the records by IP addresses. The application can be used to notify administrators of the vulnerabilities and list fix actions. Because of its automation capability, this tool is now being used by many units across the Air Force, keeping network operations and security centers on the leading edge of defensive counter information.

Another application available through Code Vault is the Performance Report Tracking System, or PeRTS. PeRTS is a Web-enabled EPR/OPR tracking system. This system, developed in Java with an Oracle database, tracks and updates the status of current performance reports. Once a report has been initiated, an online report is generated with customizable date computations and tracking levels specific to officers, senior NCOs and enlisted personnel. Each reviewer in the chain is able to track the routing history of a given performance report to see where bottlenecks have occurred. The application also has several standard reports, such as all performance reports due in the next 90 days, for leadership situational awareness.

In addition to those mentioned, many other applications and code modules are available for download. The site is updated frequently with new items, so check Code Vault out first before spending time developing that new application.

Mobile system provides critical ground navigational support for military, civilian aircraft

By Master Sgt. Rob Corey
305th Communications Squadron
McGuire AFB, N.J.

The MRN-23 Mobile VORTAC system provides a critical mobile ground navigational system to support civilian and military aircraft. U.S. Transportation Command and Air Mobility Command rely on contracted civilian aircraft to maintain the high tempo of airlift operations associated with Operation Enduring Freedom and the global war on terrorism.

The VORTAC system has two primary components: very high omnirange, or VOR, and transportable tactical air navigation, or TACAN. The VOR generates navigational radio signals for civilian and military aircraft to fly from point to point safely. In addition, the system provides approach radials to the airfield, aiding the pilot with directional guidance for landing. Like the VOR, the transportable TACAN also radiates navigational signals, but, in addition, provides aircraft with distance information. However, only military aircraft can use the transportable TACAN system in locating extraction, drop and landing zones. Both of these individual systems are linked to provide the VORTAC configuration needed to operate at a deployable site.

The shelter housing the VOR equipment is mounted on a mobilizer and towed to the deployed location by a 1998 Hummer. Once on site, the transportable TACAN is hand-carried to within 350 feet and interconnected with the VOR via signal cable. The entire package can be transported to the deployment region by a single C-130 aircraft. The current mission of the system is supporting OEF.

The system is maintained by the 305th Communications Squadron Meteorological Navigational work center at McGuire AFB. Original plans had a second system assigned to Travis AFB, Calif., but during the current deployment it was determined that collocating personnel and equipment to one base would streamline logistics reachback and maintain system integrity. The AMC METNAV functional manager is the program man-



From left: Master Sgt. Rob Corey, Mobile VORTAC instructor, shows McGuire AFB students – Staff Sgts. Alain Fontaine and John Hupp, and Airman 1st Class Ashley Couse – how to raise the system’s counterpoise.

ager and coordinates actions through AMC/DOA. Ultimately, the Mobile VORTAC is used by USTRANSCOM to support the civil reserve air fleet during operations and contingencies.

Currently the system is deployed supporting flights in and out of USCENTCOM AOR. Deployed personnel overcame many issues, from host nation site agreements to actual equipment problems, to provide continuous navigational coverage. Rotations were immediately established to ensure technicians were able to take advantage of this first-ever deployment. Each team has placed its own stamp on the mission, from assisting pararescue teams to improving work center appearance, creating an office environment, constructing an overhang, improving the tent city and implementing a fuel delivery system.

The METNAV work centers at both Travis and McGuire have been pivotal in the reach-back logistics arena, with individuals putting in many extra hours to ensure replacement parts and supplies are shipped out. In June, a team engineered an AC/DC power supply to use with the transportable TACAN. This new power source allowed the TACAN to use the larger VOR generator and place

See **MOBILE** next page



A KC-135 Stratotanker refuels an F-16. Inset: personal digital assistant like ones used by boom operators.

By Capt. Rodney Lykins
805th Computer Systems Squadron
Scott AFB, Ill.

Used for aerial refueling and airlift, the KC-135 Stratotanker enhances the Air Force's capability to accomplish global reach and global power by getting aerial resources to the fight. In Southeast Asia, KC-135 Stratotankers made air warfare different from previous aerial conflicts by allowing combat aircraft to spend more time in target areas.

Capable of carrying a whopping 200,000 pounds of transfer fuel, the KC-135 was used most recently to support long-haul combat missions during Operation Enduring Freedom. However, until the recent release of new hand-held weight and balance software, KC-135 boom operators relied on a 10-year-old, antiquated computer system. The new

system, designed to modernize pre-flight load balancing activities, virtually eliminates manual load balancing calculations.

Using a Palm operating system on a personal digital assistant, boom operators are now able to plan and record fuel offloaded for tanker aircraft. In addition, the new software was developed to provide faster and more accurate computations. For example, the previous system required that generic fuel loads be used. Now, fuel is loaded directly from the technical order. Although the software is not used for in-flight load balancing, it may be used to check balance if inputs are provided.

Ultimately, this system upgrade makes mission planning more efficient, faster and more accurate, while reducing effort and the possibility of errors. The result is increased effectiveness in allowing the KC-135 to accomplish its role in the global reach and global power mission.

MOBILE

From previous page

its smaller generator into a standby power role. Technicians would no longer have to fuel the smaller generator four times a day. All ground navigational systems require a flight check to en-

sure proper operation. The flight check crew stated this was the best deployable system they had ever tested. This is a direct result of the total team concept surrounding our program. From the top down, everyone has a vested interest and input. We have been supporting OEF for just short of

a year, and we will continue to support this and any other mission with the same fervor. While we do not get to see our customers, our customers know we're there and they rely on us to provide them the safest navigational signal possible.

Air Mobility Division relies on communications

By 2nd Lt. Thomas P. Martin Jr.

*615th Air Mobility Operations Squadron
Travis AFB, Calif.*

Without Air Mobility Division communications, tracking Air Mobility Command assets in the area of responsibility would be like turning back the clock to when dry-erase boards and tablet paper were the standards. The mission would still get done, but it wouldn't be nearly as effective or efficient.

The comm part of the weapons system enables AMD personnel to exercise command and control of AMC assets while in theater. Most communicators know the success of the mission depends greatly on the efficiency and effectiveness of their communications systems. The AMD relies on its communications section for all of its comm-related issues; however, it relies heavily on the competence and technical skills of both the computer and radio comm systems specialists.

As technology continues to advance, military members are relying more on their computer systems to help them become more effective workers. With this push towards automation, the AMD communications workload has been heavily weighted toward the computer side of comm.

AMD comm is the on-site point of contact for several computer-based applications that complete the In Transit Visibility picture. When AMD comm brings the command and control information processing system to the AOC, authorized personnel are provided a system with near-real-time C2 information updates on AMC missions worldwide. The C2IPS is really nothing more than a client-based software program; however, in most cases the technicians will deploy with all the necessary hardware to create their own "virtual private network." This configuration allows for some autonomy while still using the host base network infrastructure for inter-connectivity. Unlike the theater deployable communications system, AMD comm relies on the host base for reach-back capability.

C2IPS technicians are trained to install all the necessary hardware and software and to administer the system for optimal performance. But their contribution to ITV isn't just limited to one sys-

tem. C2IPS technicians are familiar with the operation and administration of Global Decision Support System, the Global Command and Control System, and Mission Monitoring and Management. Like C2IPS, these applications are client-based and require reach-back capability to conduct successful operations. Even though operations are heavily dependent on these reach-back applications, they don't account for all of the AMD computer workload.

Information managers carry a substantial part of the AMD computer systems workload. Just like the private sector, the military has realized the power of Web-based services. AMD comm has created a secure Web site to enable authorized users to browse up-to-date information critical to operations in the area of responsibility. IMers maintain the AMD Web site by posting daily briefings, administrative tools and special instructions. The IMers would be a wasted resource if this were the extent of their involvement. So, the AMD employs the IMers' workgroup management skills. Because the typical user isn't allowed to manage their own computer, user privileges can sometimes create problems. Something as simple as changing the computer's time display can prove to be quite challenging for a typical user. AMD WMs facilitate smooth computer operations by providing quick and expert assistance to the users. The C2IPS technicians and WMers work together on PC problems, complementing each other's abilities and providing the user a superior service. Despite the level of customer service or maintenance capability in the computer realm, there are cases where passing information requires the use of an alternate means. AMD comm solves this problem by providing both high frequency and satellite communications radio systems support.

AMD comm employs radio systems to satisfy two mission requirements. First, it's necessary for the AMD to have positive communications with forward-deployed locations for command and control of tactical airlift control elements. Second, the AMD must have direct comm with AMC aircraft during "close-watch" missions in the AOR. An "old dog," the Pacer Bounce radio set has proven to be

See **AMD** next page

AMC NOSC increases security awareness

By Tech. Sgt. Richard Collins
868th Communications Squadron
Scott AFB, Ill.

Adding to the growing list of priority resources, network assets have become nearly as critical as aircraft to mission accomplishment. According to network monitoring statistics, AMC survives more than 6,200 network intrusion attempts per year. To remain intrusion-free, AMC's Network Operations and Security Center relies on the "defense in depth" principle.

The "defense in depth" principle enables the AMC NOSC to apply multiple security measures to deter, detect, isolate and contain network intrusions. Some of these measures include security training, continually updating anti-virus software, and network firewalls. However, password security is the first line of defense against network intrusions and following established user passwords is an integral part of this defense. Ultimately, personnel are responsible for following password security guidelines. Some of the basic principles of password security include:

- * Passwords should use a combination of numbers, letters and special characters. Example: (2s*;i9p@)
- * Passwords should be at least eight characters in length. Example: (S*;i6q!@b)
- * Change passwords at least every 90 days.



* If you write your password down, make sure you store it in a secure location.

* Select a password that is easy to remember, but not easy to crack.

The AMC NOSC uses a suite of tools to derive a comprehensive listing of vulnerabilities plaguing AMC's network. These tools include Internet Security Scanner, Lophtrcrack password cracking tool, and Telesweep, a modem scanning tool. These utilities are deployed to gain a full insight into network activities. We realize that there may be inconvenience associated with some of our tools;

however, they are imperative to ensuring network resources are available for use in accomplishing AMC's mission.

To ensure your system is secure, ask your workgroup manager or system administrator to verify that all applicable C4 NOTAMs (directives), which are sent from the AMC NOSC, have been applied to your machine. These NOTAMs are sent out to provide workgroup managers with instructions regarding how to install important, and sometimes-critical, patches on your computer. These simple checks will ensure AMC's network security posture remains at the highest possible state.

Ultimately, network intrusions will always be a reality. However, personnel and technology working together can significantly reduce the probability of attacks on network resources. For more information, contact your workgroup manager or a local system administrator.

AMD

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quite useful. Ease of installation and reliable long-range capability make the HF radio system a simple solution for passing unclassified information with AMC aircraft in the AOR. The AMD uses its HF primarily for air-to-ground comm, but it can be used for communicating with HF-equipped forward deployed TALCEs too.

SATCOM, although capable of air-to-ground operations, is typically reserved for comm with other ground stations. Satellite communications, when in voice mode, enables the AMD to have in-

stant contact with forward operating locations and doubles as a backup to telephone systems during outages. In data mode, though a slower method of transmission, SATCOM provides the means for distant stations to send and receive exact copies of mission essential information without serious delay or miscommunication. This technology enables AMD C2, in the absence of landlines, a capability often taken for granted.

Using AMD communications to track AMC assets in the AOR has proven to be vital to accomplishing the mission in the most proficient and effective way.

Dover hits it big with 'Dual Gig-E' upgrade

By Senior Airman Frank Cotonio
436th Communications Squadron
Dover AFB, Del.

Over the past year, the 436th Communications Squadron's Network Control Center, Dover AFB, planned and executed a "Dual Gigabit Ethernet" network upgrade. This upgrade is leading-edge in terms of speed, survivability and intra-base capacity, and thrusts Dover's network well into the 21st century. Successful network managers are in constant search for the next upgrade that will support their "corporate vision," as networks continue to evolve dramatically. Computer systems of today require a network that can support technical advancements such as Voice-over IP, real-time streaming media, and high-speed access to critical data. The Dover network is well-positioned for all of these.

The crack team of network professionals at Dover found an ideal, cost-effective solution to meet the base's demand for high-speed, reliable data access—a Dual Gigabit Ethernet backbone. Tech. Sgt. Tom Jackson, 436th CS's NCOIC of Network Infrastructure and Dual Gig-E team lead, said, "I'd put this network up against any as far as cost, speed, and ease of maintenance. It is a very simple, though technically superior design, and enables training the young troops quickly."

After nine months of planning and three months of pre-cutover testing, members of the 436th CS led the way by installing the command's first Dual Gig-E redundant backbone. Not only is this a major improvement for getting bits from point A to point B, but it also keeps Dover's network on the forefront of technology, paving the way for future IT initiatives and expanded network capacity.

During project planning, the network infrastructure team made many preparatory changes behind the scenes transparent to the customer, ensuring a truly "seamless" transition—an elusive entity in today's world of network upgrades! Dover has a 100 percent Enterasys network with more than 250 Enterasys switches installed. There are

approximately 4,500 nodes connected via eight information transfer nodes, servicing 125 end building nodes. The 436th CS ran new fiber optic cable and upgraded hardware and firmware to lay the foundation for a successful project. Knowing the importance of planning, Jackson constructed a network laboratory to fully test the solution before any live network changes. The team identified and mitigated several potential problems to ensure a smooth transition, using two Enterasys Smart Switch Routers coupled with various network components in a test environment. They ran through every imaginable scenario before the live upgrade.

When the team was ready to "throw the switch," so to speak, they worked hand in hand with engineers from Enterasys Corp., the provider of Dover's core network routers. The transition was completed in five hours one night, executed seamlessly as planned.

How does the new architecture affect Dover customers? The end user sees a marked improvement in speed because the core of the network now passes data significantly faster than before. Network speeds are increased from 100 Mbps to 2 Gbps (2,000 Mbps). This gives the customer the ability to more effectively use centralized applications that previously would have been extremely network intensive. Prior to the upgrade, the Dover AFB network architecture was susceptible to a single point of failure. Now the core is completely redundant. Users also see improved access time to the Internet, e-mail and file servers.

Maj. Paul Bianchi, 436th CS commander, summed up Dover's network upgrade emphatically with glowing reviews. "These are exciting times in the comm and IT world, and this event is indicative of the fast and furious progress we're making in the Air Force. This upgrade will have a positive and lasting impact for the entire Dover team and is a true benchmark for others to gain from." He went on to add, "I'm proud of our network professionals who did all the heavy lifting, a remarkable effort—and really appreciate AMC's support with the wing LAN funding to make it happen! A real team effort."

Global Decision Support System II software improves command and control of AMC resources

By Master Sgt. Mark White
805th Computer Systems Squadron
Scott AFB, Ill.

Given the current worldwide military operations tempo and the breadth of the Air Force's involvement, practically everyone in the country has seen the fast-paced clips on the news showing Air Mobility Command personnel and equipment in action. We've watched in awe as our tankers perform their mid-air dance with myriad aircraft, off-loading the fuel needed to take the fight anywhere in the world. We've seen the absolute concentration on the faces of the material handling equipment specialists expediting tons of cargo out of the belly of a huge transport aircraft. But have you ever considered how those resources happened to be there, always seemingly in the right place, at the right time?

The short answer, of course, is effective command and control. Global Decision Support System II is the next generation of software that will provide unit and force level command and control of AMC's resources around the world.

Contracts to develop GDSS II were awarded in March 2001 to Federated Software Group, developer of the original GDSS, and to Computer Sciences Corporation. Though not contractually tied, these two contractors have worked as a coalition under the direction of AMC's Directorate of Communications and Information.

Requirements for this system have been solicited from representatives of the Tanker Airlift Control Center and AMC's wings. In addition to the functionality of its predecessor, GDSS II will include the functionality of the Command and Control Information Processing System. The user community was also asked to identify functionality gaps in the old systems. Some of the 29 major functional areas in GDSS II include:

- * Mission management/flight following
- * Mission planning
- * Aircraft management
- * Crew management and scheduling

GDSS II is being built using the spiral software development methodology. The hallmark of

this methodology is its short-cycle of requirements collection, design, coding, and testing. The output of one cycle feeds the next cycle until there is sufficient functionality for production release. GDSS II is scheduled for 14 spiral iterations total, though it should have some operational capability after eight spirals, probably in the third quarter of fiscal year 2003. Full fielding is likely in 2004.

The overall goal of GDSS II development is to provide a common operational view of air mobility information tailored to the specific needs of users at all levels: headquarters, wing and deployed. A single C2 system will greatly reduce the need for cross-echelon training, streamline support and maintenance requirements and reduce program and operational costs. It is also expected to improve mission data integrity and timeliness and improve reliability over current systems.

The GDSS II development team has taken a unique approach to improving system availability and reliability. Users of many existing "global" systems access data on or through a single server physically located nearby. When that server is down, or a network problem prevents connection to it, the user is simply out of luck, and the mission suffers. GDSS II will prevent this shortcoming by implementing eight server "islands" around the globe. Each of these server islands will provide identical services and users will automatically be connected to the "best choice" island. All data will be replicated among all islands globally, ensuring a single version of the truth for all users regardless of location.

Major software components of GDSS II will be Microsoft's Windows 2000 Advanced Server, Sun's iPlanet Web server software, and Oracle's 9i relational database management system. Among the hardware components included with GDSS II will be Dell servers, Cisco routers, firewall and Virtual Private Network systems from Cyberguard and Alcatel, respectively, and an EMC storage solution.

The functional manager for GDSS II development is Maj. Wiley Allgood, HQ AMC/DOR, and the program manager is Maj. Alan Abangan, HQ AMC/SCP. Additional information on GDSS II is available at <https://jefferson.scott.af.mil/>.



AMC completes e-mail consolidation

By 1st Lt. Oscar Parra
868th Communications Squadron
Scott AFB, Ill.

Following Information Technology success stories of well-known civilian companies like Oracle, IBM and Sun, AMC's Network Operations and Security Center is quickly approaching a fully integrated e-mail consolidation network for all AMC bases. Based on the SECAF and CSAF Information Technology Summit Initiative, HQ USAF/SC tasked AMC NOSC as the "lead command" to consolidate and centralize IT services. Driven by the SECAF and CSAF, the goal of this effort is to improve efficiency, effectiveness, and quality of life.

As of Sept. 26, e-mail services at all 12 AMC bases were migrated to the AMC NOSC consolidated network. Among these bases are Charleston AFB, S.C.; McConnell AFB, Kan.; Fairchild AFB, Wash.; McChord AFB, Wash.; Scott AFB, Dover AFB, Del.; Pope AFB, N.C.; Travis AFB, Calif.; Grand Forks AFB, N.D.; MacDill AFB, Fla.; and Andrews AFB, Md.; which represent more than 73,000 e-mail accounts.

The AMC consolidated network is based on Storage Area Network topology using separate processor and storage devices running Windows 2000 Advanced Server and Exchange 2000. As part of Windows 2000 deployment, AMC partnered with Air Force Communications Agency and Air Force Network Operations Center to establish an AF operational Active Directory environment used to manage the entire Air Force enterprise.

As with any change, there is always a period of adjustment. People may wonder why e-mail consolidation is necessary how it can improve efficiency, effectiveness and quality of life. Ironically, the answers lie in lessons learned from the civilian corporations. In fact, large American businesses have repeatedly shown consolidation of IT services leads to immediate benefits such as reduced costs, increased efficiency/effectiveness and more importantly, a more secure and reliable network.

Some advantages of centralizing the e-mail servers have already been noted at AMC. For example, e-mail service uptime has risen from 96.7 percent to 99.4 percent in past 18 months while overall hardware overhead has decreased by nearly 66 percent. Consolidation has also enabled the NOSC to come up with innovative ways to redistribute bandwidth and have resulted in boosting network performance by an incredible 200 percent at several bases. Additionally, during the effort NOSC Network Engineers identified and corrected numerous improper network configurations leading to increased network security.

Overall, e-mail consolidation is an important step towards total enterprise management and obtaining higher service assurance levels for AF Information Technology services. Efforts like this one considerably improve information delivery to the warfighter, while reducing costs and improving network security. Additional information regarding this effort can be found on the AMC NOSC Web site at https://amccg.scott.af.mil/cgHome/nosc/E-Mail_Web/index.html.



Relief communications

Senior Airman Timothy Smith, from the 615th Air Mobility Operations Squadron, and Staff Sgt. Robert Spradlin work together to bring up communication capabilities for the survival recovery center at a deployed location during Exercise Phoenix Readiness Nov. 5. The troops deployed to set up a base around an air field to provide assistance with incoming supplies through air transportation during a humanitarian relief effort.

Photo by Staff Sgt. Reynaldo Ramon

92nd Comm Squadron helps save a little history

More than 40 volunteers help revitalize Camp Seven Mile

By Tech. Sgt. Dave Chandler
*92nd Comm Squadron
Fairchild AFB, Wash.*

Although the recent operations, contingencies and deployments increased an already challenging high operations tempo, the men and women of the 92nd Communications Squadron at Fairchild AFB find a chance to look back and reflect on an older generation's time of need.

The 92nd CS adopted a much neglected and secluded part of Riverside State Park, not far from Spokane, Wash. Almost 70 years ago, President Franklin D. Roosevelt instituted a plan to assist a very needy and poor American society, just recovering from the deepest economic depression of its young history.

This plan, part of FDR's New Deal, was the creation of one of the greatest uses of human labor. These workers built some of the biggest landmarks in this great nation. The plan established a work force, the Civilian Conservation Corps, which set up camps in almost every state across America. Originally set up in a fashion that many in the military are now very used to, "tent cities" are where people lived for months at a time. In Washington State, three of these camps flourished and provided a way for young unemployed men to find work to provide for their families and helped re-establish the United States.

One of these camps was dubbed Camp Seven Mile and became the base camp to a growing, enthusiastic work force. Camp Seven Mile is situated deep in the recess of Riverside State Park and for a time was home to hundreds. As the camps grew, tent city gave way to permanent buildings that included workshops, dormitories, bathhouses, and dining halls, all built by its live-in work force. The workers learned new trades in masonry, carpentry and other forms of construction. They contributed to building great parks in Washington and Idaho, bridges, the Grand Coulee Dam, and other everlasting tributes to the great Northwest. De-



While working on the restoration of Camp Seven Mile, Fairchild AFB volunteers take time out for a photo. The camp is in Riverside State Park near Spokane, Wash.

cedes later, however, Camp Seven Mile was just a memory. In stepped the 92nd CS volunteers.

When the 92nd CS started the project and adopted the camp almost two years ago, what lay ahead was a mystery. Since Riverside State Park had grown and buried the camp, the first eight volunteers had to "fight" their way in, removing tons of fallen trees, dead wood and weeds. Enthusiasm for the work increased, and now more than 40 volunteers are working to give Camp Seven Mile back its old face. As work continues, the dead wood gives way to foundations, walkways and old camp-sites. Volunteers uncovered parts of the camp that had not seen light for years.

Recently, the volunteers helped the Park Service host some of the long-ago residents of the camp and dedicated a plaque to their work and memories of Camp Seven Mile. Working hard like their predecessors years ago, the 92nd CS continues finding and uncovering more of the past. The dream of what the camp can be grows with each visit. In time, maybe the foundations will once again become buildings and the revitalized camp an everlasting tribute to an ideal that helped rebuild America and make her strong.

NCC is keystone to information superiority

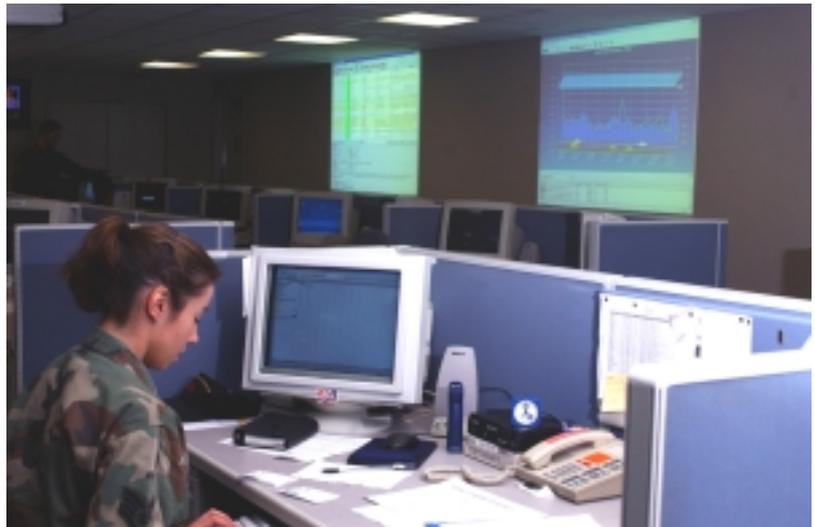
**By Senior Master Sgt.
Gregg Snyder**

*89th Communications Squadron
Andrews AFB, Md.*

Since the beginning of what we term “modern warfare,” we have seen evidence that the ability to communicate is critical to an effective battle campaign. And just as strategists recognized that the ability to centrally observe, plan and direct the campaign is vital, our ability to centrally observe, plan, direct and control the supporting communications infrastructure is essential.

While serving as Chairman of the Joint Chiefs of Staff, Army Gen. Henry H. Shelton declared before the House Armed Services Committee in February 1999 “...information superiority is one of our core competencies.” This one public statement gave long-sought corroboration to the communicators’ cry for recognition of the important work they do to support warfighters. The resulting attention on our services magnifies the importance that we have a seamless and maximally efficient command and control structure to ensure we don’t fail our front-line fighters. The network control center is the keystone for that structure.

The rapid expansion and integration of computer technology into virtually every facet of military operations has created dependence on and craving for the capabilities it provides. From the simple ability of a soldier to send an e-mail from anywhere in the world to the ability to provide real-time targeting information to the pilot in flight, our communications networks represent a weapon system in their own right. The NCC commands and controls the bits and bytes, routers, switches, hubs, computers, and various other parts and pieces that make up the “order of battle” for the network just as if they were soldiers on the ground vital to winning the war. The airmen and NCOs working there must be fully trained in their profession if they are to succeed. They must have the right tools to provide enterprise visibility and the ability to make adjustments where needed or repair failed segments of the network in the short-



Staff Sgt. Heather Alden, network management supervisor, updates the Andrews network configuration database. The Andrews network enterprise has more than 16,000 managed devices supporting nearly 7,500 customers.

est time possible.

While having the right training and tools to do the job is an absolute must, one essential philosophy must be observed and executed to ensure the NCC’s success – all the functional areas must be integrated into a centralized operation. The *communications focal point* (help desk, maintenance control), *network administration* (messaging and application services), *network management* (configuration control and infrastructure support), and *network security* provide the most efficient command and control capabilities when they are visible and accessible to each other. This allows them to quickly coordinate troubleshooting, course of action planning and corrective action execution. For the commander, it affords a one-stop shop to gain complete situational awareness of support to the wing mission. For the major command headquarters, the NCC represents their single provider for all communications support to that base location and the source for feedback on the status of network resources.

At Andrews AFB, the 89th CS embarked on an aggressive plan in 2000 to achieve total integration of the NCC. With strong support from our squadron and group commanders, the NCC team first documented the requirements to form crews as described in AFI 33-115, then budgeted and or-

ganized accordingly to consolidate seven separate work centers into the room which housed the former Automatic Digital Network switching center. Together with assistance and funding from AMC, we were able to replace some of our seriously aging equipment. To maximize our ability to proactively respond to network faults or degradations, we employ remote monitoring and control tools that report status of virtually every device on the network. We also use automated tools to watch network servers and our most critical processes, such as electronic mail, which keeps us aware of any interruptions or degradations. We've instilled the attitude in our NCC technicians that a proactive approach to fixing the problem before the customer sees it, rather than operating in the reactive support mode, goes a long way to making our lives easier. Hopefully soon, using remote configuration management tools, we'll minimize trips to desk-side to resolve software issues. To ensure our people are equipped with the latest skills, we recently hired a full-time contract trainer to conduct network professional courses in our new Network Academy. The result is a remarkable operation that looks, feels and acts like a command center, fully capable of visualizing, planning and executing the mission of supporting our most important customers—the 89th Airlift Wing and their special air missions for our national leaders.

In Joint Vision 2010, published in 1996, then Chairman of the Joint Chiefs of Staff, Army Gen-

eral John M. Shalikashvili, highlighted the “emerging importance of Information Superiority.” Then in Joint Vision 2020, General Shelton extended our view to see information superiority as a means to a broader end—Decision Superiority. The Vision says, “Decision superiority does not automatically result from information superiority. Organizational and doctrinal adaptation, relevant training and experience, and the proper command and control mechanisms and tools are equally necessary.” Air Force Vision 2020 builds on this assertion by committing to “[modifying] our command organizations to take full advantage of air, space and information expertise.” The recent integration of the Communications and Information Directorate on the Air Staff into the new Installations and Logistics and Warfighting Integration directorates fulfills that commitment. NCCs will realize the benefits of this new organizational structure, because XI will ensure future modifications to our networks and automated data processing systems fit the missions they support, while IL will provide the logistics and operational framework to sustain the communications networks and automated systems far into the future.

The Andrews NCC stands at the forefront with a clear view of its role. Strong leadership, documented processes, integrated capabilities, world-class training and a ready spirit for continual transformation marks this NCC as dedicated to supporting everyone involved in the fight, from our halls

of national leadership to the foxhole. And we have no reservations in making that claim, because our prime customer lives in the White House and our people routinely deploy to the front lines where the foxholes are.

It bears mentioning that the 89th Comm Group earned AMC's recognition as the best large comm unit for 2001. We'd like to believe that our efforts to eventually become the best NCC in AMC played a part in garnering that accolade.



The Andrews NCC was one of the first to consolidate all functions in a single work area. Extensive use of remote monitoring/control tools contributes to efficiency.

43rd CS hosts invaluable field training exercise

By 1st Lt. Jennifer R. Valentine
43rd Communications Squadron
Pope AFB, N.C.

After Sept. 11, 2001, the Air Force challenged more than just the global reach laydown units to provide basic comm requirements to include Non-secure and Secure Internet Protocol Router Networks and voice via the Theater Deployable Communications Initial Communications Access Package suite in a bare-base environment. Many AMC units rose to this challenge. But, with these challenges and successful deployments came the inevitable question ... who would provide training and continuity for the members at home station to meet the ever-increasing need for the TDC/ICAP assets?

The 43rd CS answered this question. The 43rd CS held a unit training exercise that involved people from Pope and members from other AMC bases including Fairchild AFB, Calif.; McChord AFB, Wash.; Travis AFB, Calif.; and Grand Forks AFB, N.D. The participants came to Pope to receive familiarization training on the TDC/ICAP system.

"We're delighted that Pope can offer something of value to our colleagues from other AMC bases," remarked Maj. Sarah Zabel, 43rd CS commander. "As more AMC equipment is deployed, we think that consolidated exercises like this will become the norm."

The team had clear training objectives for the exercise: run core services from a bare base environment, establish a link and pass voice and data traffic (for SIPRNet and NIPRNet) through the Light-weight Multiband Satellite Terminal. Personnel "deployed" to the Green Ramp on Pope AFB set up two Drash tents and one Darnel, and coordinated with three different squadrons on base to ensure adequate support to sustain the exercise.

During the exercise, Pope ran 24-hour operations and worked with Fort Dietrich as the standardized tactical entry point site. They operated on 512K bandwidth on the LMST, and while they had some problems establishing a stable link, they received training on troubleshooting techniques, which eventually resulted in isolating the problem to a faulty patch cable. With that problem corrected, they were able to push both voice and data



Master Sgt. Michael Chagnon, 43rd CS, and Senior Airman Kevin Rankins, 92nd CS, configure theater deployable communications telephone equipment.

traffic through the LMST.

Not only did the team receive invaluable technical training and troubleshooting experience, but personnel also received training on proper tent procedures, camo netting, and MEP-3 generator operations.

AMC recognized the need to train personnel at home station for two reasons: one, many units tasked with the TDC/ICAP package were already deployed in support of Operation Enduring Freedom. These units deployed with their subject matter experts for extended periods of time, leaving new personnel (mainly three-levels) back at home station with either no equipment or no personnel left to get them duty-position qualified on the equipment. Second, with the forecasted Air Expeditionary Force and OEF rotations, some units will be called upon to maintain TDC/ICAP equipment suites already established in their deployed location. Other units will be tasked to maintain equipment they do not have assigned to their home units. Consequently, conducting training exercises like the one at Pope is going to be the only opportunity some personnel will have to get familiarized with the TDC/ICAP equipment prior to deploying to support contingencies.

Pope's field exercise was a benchmark for AMC. To meet the increasing demands of today's military, units need to continue to work together in field exercises. An exercise like the one conducted at Pope is a good way to ensure America's continuing success in not only OEF, but in all future military endeavors.

Thanks for a great Information Assurance campaign!

By Brig. Gen. Bernie Skoch
*Air Force Director of
 Communications Operations
 Air Force deputy chief of staff for
 Installations and Logistics
 Washington, D.C.*

Although our 2002 Information Assurance campaign formally draws to a close at the end of December, our vigilance to protect and defend Air Force information systems and networks must never stop. As a direct result of your great work on this important campaign, Air Force people around the globe are far more aware of the issues, and more importantly, have the knowledge to effectively protect against threats and mitigate vulnerabilities. This has been especially evident in the dramatic drop in user-caused network incidents over the past two years.

My sincere thanks to all major commands, the Air Force Communications Agency, the Air Force Pentagon Communications Agency, and all the other participating field operating agencies for making it happen. Your workload, operations tempo, and schedules were already busy, but you made time to conduct outstanding monthly cam-



campaign themes covering the full spectrum of information assurance. Your creativity, thoroughness, and dedication resulted in a great team effort unmatched as far as I can tell, ensuring superb warfighter support through networks that have successfully withstood would-be attackers. Well done! Our special thanks go to organizations listed below for helping to make this activity a success.

Please review the IA campaign themes listed in the box below. And as you do, remember that this campaign showcased multiple individual articles, informational pamphlets, educational tutorials, posters, videos, and more, all of which will continue to be available for your use on the AFCA Web site at: https://www.afca.scott.af.mil/ip/iaac_menu.cfm.

Starting in 2003, we will conduct an **Information Assurance Emphasis Month** each September. Planning has begun and involvement from MAJCOMs and field operating agencies will continue to be essential in keeping our IA posture and knowledge base high. In addition, the IA medalion program will continue to recognize our Air Force IA superstars. Again, our continued vigilance will keep Air Force networks safe and secure ... I am confident we are all up to the task.

2001 overall theme: <i>Global Vigilance, Reach and Power: Information Assurance in the 21st Century</i>			2002 overall theme: <i>Defeating Global Terror Demands Effective Information Assurance</i>		
Month	Theme	MAJCOM/Org	Month	Theme	MAJCOM/Org
Jan.	Networthiness: Roles, Responsibilities	AFCA	Jan.	Contingency Planning	AFCA
Feb.	Web Security	AF/SC	Feb.	Portable Electronic Devices	AFPCA
March	Digital Devices	AMC	March	Securing Air Force Operations	ACC/AIA
April	Threats and Countermeasures	AFOSI	April	Remanence Security	AMC/AFSOC
May	IA and the Deployed AEFs	ACC	May	E-Mail	AETC/AFWA
June	User Responsibilities	AETC	June	Vulnerabilities and Incidents	AFOSI/AFIWC
July	Communications Security	AFMC/AFSOC	July	Air Force Enterprise Network	AFMC/AFNOC
Aug.	Telecommunications	AFRC/ANG	Aug.	Public Key Infrastructure	AFRC/ANG
Sept.	IA and Allies	USAFE	Sept.	Viruses	USAFE
Oct.	Computer Network Defense	AFSPC	Oct.	User Responsibilities	AFSPC/USAF
Nov.	E-Mail	PACAF	Nov.	Web Security	PACAF
Dec.	IA, The Way Ahead	AFCA	Dec.	IA: A Campaign in Review	AF/ILC

Cyber warriors protect Air Force computer network

By Staff Sgt. C. Todd Lopez

*Air Force Print News
Washington, D.C.*

Air Force computer systems around the globe are kept safe from viruses and unauthorized users by a dedicated group of computer network defenders.

Because the Air Force computer network is a weapons system and is under constant attack by viruses and illegal entry attempts by adversaries, defending that weapons system has become an ongoing war, said the director of operations for the 33rd Information Operations Squadron, home of the Air Force Computer Emergency Response Team at Lackland AFB, Texas.

"We believe we are on the front lines of the cyber war every day," said Lt. Col. Rob Kaufman. "Our crews are well-trained, motivated and committed to stopping network intrusions and viruses."

AFCERT has strong allies in its fight to protect the global Air Force computer network, he said.

"In this fight, we are not alone," Kaufman said. "Fellow computer network defenders at major command network operations and security centers and base-level network control centers are in the fight with us. Together we are able to fight off malicious hackers that range from the nuisance 'script kiddies' to the professional hackers."

Kaufman and other cyber warriors use an arsenal of software and hardware to defend the Air Force computer network.

"We have a sensor out there at every single one of our bases and even some non-Air Force bases," Kaufman said. "That is our primary defensive mechanism."

Computer experts at Lackland's Air Force Information Warfare Center developed the current sensor platform, which has been acknowledged as a "one-of-a-kind" capability second to none. The sensors scan network traffic for virus signatures — telltale strings of ones and zeros that indicate the presence of malicious logic. When they find such a string, AFCERT moves quickly to let everybody know about it.

"What we will do is put out advisories to the field so they will understand what an exploit or vulnerability can do to a computer and what miti-

gating steps they can take to protect themselves," Kaufman said. "If the threat is very bad and we think it is a system-wide type of threat, we will release a time compliance network order, which directs field units on what steps to take to protect themselves."

AFCERT monitors the network traffic for some 500,000 Air Force computers, he said. Those machines generate around 10 billion network events each year, including e-mail messages, Web page views, telnet sessions and other network traffic. That opportunity allows AFCERT to be the first to come in contact with a lot of potential viruses.

"We can actually get viruses 'in the wild,' tear them down and see what they do," Kaufman said. "We reverse engineer the viruses and, based on what we see in those viruses, we are able to build alert strings for our sensor so we can get an indication or warning when a new virus comes out. It also allows us to develop countermeasures for those viruses."

In addition, countermeasure engineers at the Air Force Information Warfare Center help develop more robust and long-term solutions against the emerging threats, he said.

Those countermeasures and alert strings are not just sent to local bases. Sometimes they are sent to commercial anti-virus software developers so they can be added to the global database of computer viruses. In this way, Kaufman said, results of AFCERT's work reach beyond the Air Force. "There is a community of interest out there that will feed information to commercial vendors, and we have specifically fed them information that they have not seen elsewhere," he said. "We have identified technical threats and have passed them off to commercial vendors so they can protect the nation."

Although more than 100 individuals at AFCERT work in conjunction with major command NOSCs, base-level NCC personnel, the Air Force Information Warfare Center, and the Air Force Office of Special Investigations to secure Air Force computer systems worldwide, Kaufman said the computer user is still the key to network defense.

"Air Force computer users can help by using

See **CYBER WARRIORS** next page

Interagency OPSEC support staff Web content courses available

GREENBELT, Md. – The Interagency OPSEC Support Staff provides training. Summaries of courses are provided below. Those interested in having these courses brought to your organization and tailored for your personnel, contact IOSS at (443) 479-4677. For more information on class schedules, visit their Web site at <http://www.ioss.gov>.

OPSE2350 OPSEC and Web Content Vulnerability

Description: This seminar addresses the vulnerabilities associated with using Web pages to provide information to the public and those associated with using the Internet to do open-source research. The focus is on content rather than technical security. Requires a U.S. Secret clearance; however, classes can be taught at the unclassified level with prior coordination.

Target Student Population: Web page administrators, public affairs officers, and information security practitioners.

Delivery Mode: Platform instruction with student participation in small group

Length: 16 hours, 2 days

Schedule: Linthicum, Md., Feb. 19-20, April 24-25 and July 29-30.

OPSEC1300 Operations Security Fundamentals (formerly known as OP-300)

Description: This course is designed to provide federal employees and federal contractors with a basic working knowledge of OPSEC as outlined in National Security Decision Directive. Lectures focus on understanding how OPSEC principles are used in the workplace, especially in the law enforcement military, research, development, testing and engineering and acquisition communities. Requires a U.S. Secret clearance; however, classes can be taught at the UNCLASSIFIED level with prior coordination.

Target Student Population: This course is useful for those who need a familiarity with the OPSEC process, to include managers and executives.

Delivery Mode: Platform instruction and video teleconference available.

Length: 8 hours, 1 day

FY 2003 Schedule: Feb. 3, Linthicum, Md., May 1, July 8, (also incorporated into the National OPSEC Conference and Exhibition, May 19-23.

OPSE1301, Operations Security Fundamentals CBT (formerly known as OP-301)

Description: This course is designed to provide federal employees and federal contractors with a basic working knowledge of OPSEC and how it applies to executive branch agencies and departments. The course focuses on the history of OPSEC and the OPSEC process as described in NSDD-298. Students have an opportunity to choose scenarios to practice OPSEC in different environments.

Target Student Population: Unit personnel who require knowledge of the OPSEC process, but who will not be asked to perform OPSEC analysis, including managers, working group members, and OPSEC coordinators supporting the unit OPSEC program.

Delivery Mode: Computer based training provided on one CD. Contact the IOSS at 443-479-4677 or visit the IOSS Web site to order the CD.

Length: Self-paced, approximately 4 hours

CYBER WARRIORS

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strong passwords and by ensuring their anti-virus software is current on both their work machines and home machines," Kaufman said. "They should only open attachments they are expecting and ensure new systems are properly configured and patched to the latest revision levels."

AFCERT's efforts to defend the Air Force network are proving successful, he added.

"Three years ago, we had close to 10,000 Air Force computers that were compromised with viruses. That was about the time the Melissa virus came out. It was a very bad situation," Kaufman said. "In 2001, we had fewer than 700 Air Force computers compromised by viruses and the number is down even more in 2002."

Kaufman said he believes AFCERT is ready to handle future threats as well.

"Like fighting an air war, the cyber environment is extremely dynamic," he said. "It is changing constantly as technology improves and new vulnerabilities and tactics are discovered."

Air Force communications, intelligence and engineering professionals understand the dynamic nature of the network, and Kaufman said he believes they are equipped to deal with whatever comes along.

"We are trained to do the in-depth analysis, event correlation, incident response, and countermeasure development necessary to secure our networks," he said. "Every hour of every day, we Air Force network defenders are standing watch."

Air Force demonstrates 'smart tanker' concept

EGLIN AFB, Fla. (AMCNS) –The Air Force moved one step closer to achieving its 'smart tanker' vision Oct. 23 when the first Roll-on Beyond-Line of Sight Enhancement, or ROBE, pallet-equipped tanker successfully relayed communication data while flying from here to Hanscom AFB, Mass.

Maj. Gen. Robert F. Behler, commander, Air Force Command and Control, Intelligence, Surveillance and Reconnaissance Center at Langley AFB, Va., said, "This is no minor event. We now have connectivity for our warfighters. This was achieved in six months when the warfighters' requirements for ROBE were validated."

Right after Sept. 11, 2001, Air Force Chief of Staff Gen. John P. Jumper stated the need to move faster toward network-centric warfare and described a vision of using air refueling tankers as airborne "nodes" of a warfighter communications network.

One of the goals for Air Force transformation is the integration of military assets. The "smart tanker" expands the air refueling mission to one of communications platform. The general directed the transformation effort to increase the use and effectiveness of the tankers that are "always there," close to danger zones or flying intercontinental routes as part of Air Mobility Command's airbridge.

During the Oct. 23 flight, the Air Force demonstrated its ability to connect the beyond-line-of-sight with the line-of-sight Air Force by relaying data from the KC-135 ROBE. ROBE translates and extends the range of communications that will allow all warfighters to have the same situational awareness, whether en route, engaged or air refueling. Aircrews then have the same operational picture.

ROBE will become a vital part of a global network to provide critical data to warfighters more quickly for faster decision-making and time sensitive engagement of critical targets. This translates directly to information superiority on the battlefield.

ROBE is the first in a family of Scalable, Modular, Airborne, Relay Terminals, or SMART, that will grow in capability with the availability of software programmable radios and advanced antennas. SMART terminals will reside on tankers and will be suitable for other platforms including unmanned and ground- or sea-based vehicles.

Initially, ROBE will be a data relay that will allow Line of Sight/Beyond Line of Sight communication among members of the network. The primary objective is to connect battle directors in the Air and Space Operations Center to those communicating in theater or en route.

During the demonstration, a ROBE pallet-equipped KC-135 from the 319th Air Refueling Wing, Grand Forks AFB, N.D., successfully moved all tactical data from deployed F-15s and Joint STARS to an operations center at Hanscom AFB. The demonstration team also reset the system during flight to demonstrate that the ROBE system can be remotely

controlled from the ground.

Dr. James G. Roche, secretary of the Air Force, endorsed ROBE in March, calling for "no more vanilla tankers." Members of the AFC2ISRC, Electronic Systems Center at Hanscom AFB, and AMC at Scott AFB, Ill., worked as a team to transform the smart tanker vision into reality.

By May, the Air Force will field the first ROBE-equipped SMART tanker and complete delivery of the remaining 19 palletized systems and 39 modified aircraft by next fall. (Courtesy of AFC2ISRC)



Maj. Gen. Robert F. Behler, commander, Air Force Command and Control, Intelligence, Surveillance and Reconnaissance Center at Langley AFB, Va., examines information from the ROBE unit prior to its takeoff Oct. 23.

Achieving your full potential: not a sprint, but a marathon

By Roxanna Zamora

*Directorate of Resource Planning
DCS, Warfighting Integration
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For most people, the goal of being a nationally ranked ultra-marathon runner is unthinkable. But for Rob C. Thomas II, Air Force assistant deputy chief of staff for Warfighting Integration, his impressive finishes in marathons and ultra-marathons are a testimony to his belief that with proper planning, training, experience and character, anyone can achieve their full potential.



Rob C. Thomas II

Today, Thomas focuses on executing the Air Force chief of staff's vision of providing warfighters the tools to launch an attack at the time and place of their choosing. He assists Lt. Gen. Leslie F. Kenne—the Air Force's DCS for Warfighting Integration and “senior communicator”—in integrating manned, unmanned and space systems, and developing long-range strategic plans for integration of C4ISR. An important part of this effort is guiding the development of C4ISR plans, policy, architectures and processes. The DCS also recommends resource allocations across 124 program elements valued at more than \$11 billion.

Equally important to Thomas is his role as senior civilian for the Air Force communications and information functional community. In this capacity, he helps Kenne leverage unique talents and experience of the civilian communications and information work force to achieve total force mission readiness. “It's our goal to ensure Air Force communications and information civilians are afforded the professional development and career assignment opportunities they need to realize their full career potential.” As in training for a marathon, this requires planning, training, experience and character.

When it comes to career progression, Thomas quotes one of the NFL's all-time winning coaches,

... ultimate goal is to assure communications and information civilians have every opportunity to achieve their full potential as they progress through the “marathon” of their professional life.

Chuck Knox, who advised, “Always have a plan, and believe in it. Nothing happens by accident.”

For the communications and information professional trying to develop a career plan, Thomas recommends the SES template as a valuable tool for laying out experience and education goals for progression to leadership positions. This template is available through <http://www.dp.hq.af.mil/afslmo/afslmosl/slpath01.htm>.

Another useful resource is the comm and info career program, or CICP, team at the Air Force Personnel Center, which provides career advice for meeting professional goals. CICP information is available online at <http://www.afpc.randolph.af.mil/cp/cicp>. Using these resources, the comm and info professional can begin to develop a personalized plan that meets both professional and personal goals.

A marathon is not won by planning alone. The second step is to train and gain experience by running races. Likewise, with the right training and experience, the career professional is better prepared to take on leadership challenges in the Air Force. To this end, Thomas recommends employees, “Get an advanced degree, complete professional military education, and acquire specialized training. Be mobile and look for different kinds of jobs to build breadth of experience.”

One also needs to be familiar with opportunities like the Scope Champion program. With support of the MAJCOMs and agencies, Thomas is developing the program to groom the next generation of comm and info leaders. Select positions provide participants the work background needed to fill senior leader positions. Scope Champion also involves education, training and mentoring.

He advised civilians to learn the active duty personnel system. “Ours is a single combined force with military and civilian members. We need to be skilled in writing OPRs and submitting awards, for example, to help assure the success of our military people and our organization,” Thomas said. He also recommended getting involved

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Experts meet at Scott to revise workgroup management exportable course

By Chief Master Sgt. Brian Hale

Chief, Information Management Plans and Programs

*Air Force Communications Agency
Scott AFB, Ill.*

Is your workgroup management training program struggling? Feel as if the current WM course needs updating? To field a revitalized WM course, a group of major command workgroup manager subject matter experts met here to revise the current Air Force WM exportable course. The exportable course serves as the foundation for local WM training programs.

The first standardized Air Force WM course was distributed in April 2001, when the Air Force Communications Agency delivered to the field an ACC/AFSPC hybrid course. With information technology ever evolving, the course needed to be refreshed. Also, additional MAJCOM workgroup manager experts and WM course instructors were brought into the fold



From left: Master Sgt. Janice Stubblefield, superintendent USAF comm and info technology training at AFCA; Tech. Sgt. Debra Wheeler, 30th CS training center, Vandenberg AFB, Calif.; Master Sgt. Lorenzo Thomas, 15th CS training center superintendent, Hickam AFB, Hawaii; and Master Sgt. Jesse Johnson, AETC WM POC, Randolph AFB, Texas; collaborate on WM course narratives.



Photos by Master Sgt. Ed Ferguson

From left: Tech. Sgt. Lisa Collins, AMC Training Center, Scott AFB; Tech. Sgt. Terry Meyers, ACC WM point of contact, Langley AFB, Va.; Staff Sgt. Laurie Morrow, AMC Training Center; and Chief Master Sgt. Brian Hale, information management plans and programs chief, AFCA; review WM course material.

during the latest development effort to assemble a “best-of-practice” course.

The new exportable course will contain 12 modules and will include some new subject areas to include an introduction to WM module, computer security module, and an IT requirements planning module. Course materials will include a narrative, lesson plan, and slides for each module. The new exportable course is designed to be taught in four days (32 hours of instruction). Local WM courses should be a minimum of five days, usually containing four days of Air Force-provided material and one day of instruction on local WM procedures.

Course materials will be finalized by Jan. 1 and will be posted to the Air Force Information Management and Postal Web site at <https://www.afca.scott.af.mil/imweb/> upon release.

Lending a hand

Senior Airman Christian Fiore, 321st Air Expeditionary Group Communications Flight, works on the arm of the ANDROS robot that was damaged in transit to a deployed location. ANDROS is used by Explosive Ordnance Disposal personnel for explosive reconnaissance and situation assessment, as well as explosive disposal and disarming. Airman Christian is a satellite wideband and telemetry systems technician deployed in support of Operation Enduring Freedom from the 267th Combat Comm Squadron, Otis ANG Base, Mass. He's not a robotics technician, but because of training received in his civilian job, he was able to make the necessary repairs to the robot. This is



Photo by Staff Sgt. Robert E. Minder

a great example of how extended experiences and job knowledge of Guard personnel help to support the mission not by just doing their day-to-day jobs but also by contributing knowledge gained from their civilian employment.

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outside the work area. "Take advantage of speaking opportunities and sit on panels. Let people know who you are, and that you're a resource with credibility and expertise." He said developing effective verbal and written communication is another essential element of building executive potential.

When asked what's helped him in his professional life, Thomas pulled a well-worn piece of paper out of his wallet with a list of the work ethics he's followed for many years. "The Air Force pays me to exercise judgment and take responsibility," he said. His guidelines for success include: "Always work your boss' problems. Don't whine. Know where you stand. Never consider geography in making career decisions. Attitude is more important than ability. Know the big picture. Work harder than anyone else." He always volunteered to take on the biggest challenges. "You need to take advantage of opportunities for growth, even if you don't have the experience," he added.

However, success requires more than planning, training and experience. The desire to win, per-

sistence and mental preparation are inherent traits of the victorious marathoner. In the same way, career progression requires something intrinsic—commonly called character. The Air Force calls it core values—integrity, service before self, and excellence in all we do. An associate pastor and Sunday school teacher, Thomas illustrates the importance of character by quoting a passage from the book of Proverbs: "A good name is more to be desired than great riches." He concluded, "You must always strive to do what's right, and integrity is central. Lots of folks have prayed for me, and I believe that's more important than anything I could do for myself."

Thomas has set a new course to place increased emphasis on assuring communications and information civilians develop effective career plans. He's resolved to give them the information and resources they need not only to develop their ability to fulfill future leadership roles, but to be better prepared to help guard our nation's security. His ultimate goal is to assure communications and information civilians have every opportunity to achieve their full potential as they progress through the "marathon" of their professional life.

**"AMC information technology
has been and will continue to be
a core enabler to AMC's mission
effectiveness and key to our ability
to maintain mobility superiority."**

*Gen. John W. Handy
Commander
Air Mobility Command*