

# intercom

Journal of the Air Force C4 community ☆ September 2003

## COMM & THE WAR

### OPERATION IRAQI FREEDOM

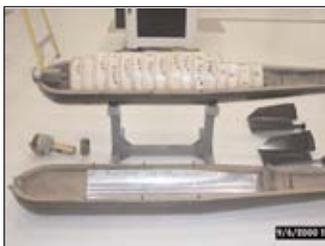
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# intercom



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**16** HF Messenger kits like these are making state-of-the-art communications possible

**THE JOURNAL OF THE AIR FORCE C4 COMMUNITY**

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**Submitting to the intercom**

Stories should be in Microsoft Word format and should be no longer than 600 words. Photographs should be at least 5x7 in size and 300 dpi. Submit stories via e-mail to [intercom@scott.af.mil](mailto:intercom@scott.af.mil).

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**Comments to the staff**

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## Letters to the editor

### Sounding the war cry

I found the “From the editorial desk” article by Tech. Sgt. Jim Verchio in the July 2003 issue of the *intercom* disconcerting. In the “Our Vision” block, the No. 1 item was “To serve as the primary public forum for the warfighting integration community.” Then there is the new name or departments that have sprung up all with the word “battlelab.” I do not think the name increases the efficiency of any of these departments; it simply gives them an aggressive title. Is this a new direction for the Air Force? Many years ago the Department of Defense was named the War Department. That was changed due to a common thought that this country believed in strength to preserve peace. What I have read in this issue makes me think that the Air Force is placing heavy emphasis on battles and wars. Yes battles and wars have to be fought, but is that our primary objective now? I firmly believe if citizens from other countries read this issue and saw the changes I’ve seen they would not consider America a peace loving country.

—Charles W. Bennett

*Thank you for taking the time to express your thoughts about items you see printed in the intercom. To address your comments, remember this is an Air Force magazine. We are the world’s premier “fighting” force, and yes we do sometimes go to war ... that’s our job. The intercom is a forum, an internal information tool, used to communicate and disseminate information to the communications community. Communications specialists around the globe are working hard every day to make sure the “warfighter” (a term that is used to describe those individuals or units who are on the front lines sup-*

*porting America’s interests) is equipped with the best and most innovative tools in communication technology. Whether it be in Iraq, or at home, the comm community’s leadership has recognized that by keeping the troops informed, it increases their readiness, morale and esprit de corps. The term battlelab is used to describe the organizations that were assembled to bring ideas from the drawing board into reality. Each battlelab covers a specific specialty, and they’re “think tanks” for ideas that can improve the way the Air Force does business. I’m not going to try and explain why they were named battlelabs—I do not know. What I do know is that the Air Force has a proud heritage, spanning more than 50 years, of aviation excellence ... and yes bringing the fight to those who wish to bring harm to our sovereignty. Our magazine is not published for the citizens of other countries, and I’m sure it’s not their only informational tool. The intercom is, and will continue to be, a forum for unilateral communication used to keep the comm and info community vectored toward America’s objectives.*

### Great job

The *intercom* continues to improve and you “all” are doing a great job. I would think that the XI and Col. (David) Kovach (AFCA commander) are really pleased with what you have accomplished in such a short time. I continue to get good comments from our AACS Alumni members who receive the *intercom* and those who visit it on the Web site. Those comments certainly are well deserved. Keep up the good work.

—Retired Chief Master Sgt. Hank Sauer

JAG  
in a Box

Joe Hinds  
AFCA/JA Counsel



### Cable funding

**May appropriated funds be used to install fiber or cable in base housing or visiting quarters?**



While federal law prohibits expenditure of appropriated funds for installation of communication lines in private quarters, there’s an exception for comm provided for command and control purposes—as long as it’s not a substitute for commercial comm service.

Provision of comm for the convenience of the occupant will not meet this test—it must satisfy a legitimate requirement for C2 access.

This will be determined by an individual’s military responsibilities, not simply his or her rank. The issue becomes more complex when asked to provide comm to visiting quarters because the need for C2 access will vary depending on the duties of individual visitors. Because of the random assignment of rooms, visiting quarters generally are wired on an “all or nothing” basis.

In such cases, the technical solution should involve an ability to turn connectivity on or off depending on the responsibilities of the occupant.

Because technology and the law change frequently, you may want to contact the comm lawyers at DSN 779-6060 for additional assistance.

**Send in your question to:**

**AFCA-JA@scott.af.mil  
or call DSN: 779-6060**

**WAR**

Airmen deliver success

# CSAF

Technology answers warfighter needs



From  
the Top

**WASHINGTON** – America’s recent conflicts have shown that the Air Force’s legacy of employing cutting-edge technology to confront threats to our nation’s security is very much alive and well.

This is what Gen. John Jumper, Air Force Chief of Staff, said in a recent Site Picture addressed to the service’s membership. He said airmen, equipped with new capabilities developed and delivered by other airmen, have won unprecedented success in the battle space.

“They’ve demonstrated that dominance in air, space and cyberspace yields decisive combat results.”

As Air Force experts upgrade existing systems and develop future capabilities to enhance the service’s warfighting edge, it’s imperative to retain and invest in the foundation that underpins these great successes—the airmen who conceptualize, acquire, test, deliver and sustain these new and innovative technologies.

“By investing in our airmen, we fulfill our first core competency and provide a critical element necessary to enable our other core competencies, including our ability to deliver technology to warfighting,” the general said. “Our technology, conceived in the minds of innovative airmen to answer warfighting needs, born and nurtured in our laboratories, guided and shaped by concepts of operations, refined in our battlelabs and joint exercises, and forged into revolutionary capabilities by our product and logistics centers, has given us unprecedented ability to achieve that dominance on the battlefield.”

The effects this applied technological know-how make possible are the result of an air and space power vision airmen throughout the Air Force make real, Jumper said. From the time the Wright Brothers first flew 100 years ago, the contributions of visionary airmen have defined us as a service today, and promise to transform our Air Force in decades to come.

“As Secretary of Defense [Donald] Rumsfeld has made clear, there will be no point at which we can say we have transformed the Air Force. Instead, we’re engaged in ‘building a culture of continual transformation, so that we are always several steps ahead of any potential adversaries.’”

A new way of thinking will be required to reach this promise, adding that Air Force people must continue breaking down the dogmas that stand in the way of translating visions into decisive, operational capability.

“We must get out of the mode of thinking only in terms of platform rather than in terms of capabilities. The time will come when we no longer have platforms dedicated to a single role or mission. Platforms must be capable of delivering multiple capabilities.”

In addition to overhauling our way of thinking, the general said service experts must also transform how the Air Force does business.

“We have made tremendous progress in shortening the

acquisition timeline and streamlining the bureaucratic processes, as evidenced by our ability to employ new systems like Predators and Global Hawks—to great effect—before they were formally declared ‘operational.’ Through our agile acquisition approach, we can field today’s technology today, providing new capabilities as they become available.

“The day is coming when prompt global strike will be a reality, when the kill chain will be reliably and consistently compressed to minutes instead of hours or days, and when the sum of all our sensor, command and control and information capabilities will be a cursor on the target and steel on the enemy. But there is work to be done.”

Jumper said as Air Force experts experiment with machine-to-machine conversations across the global grid, shortening the timeline from sensor detection to weapons on target, leaders envision a future where network-centric warfare gives the nation an even greater asymmetric advantage in the war on global terrorism and in future combat operations.

“To achieve this goal, we need innovative thinking from all of our people involved in system development, acquisition, and operational employment, translating the capabilities we need into technical solutions, weapon systems, and concepts of operations, tactics and techniques for their employment.”

Though Air Force experts are developing new systems such as the F/A-22 Raptor, Space-Based Radar, Multi-sensor Command and Control System, and Airborne Laser to counter the threats of today and the future, they have also achieved what Jumper categorized as dramatic results by updating older systems and reconsidering how they can be employed.

“Adding advanced data links to our aircraft, anti-jamming capabilities for our GPS-guided weapons, smart weapons and satellite communications to our bombers, and better self-protection systems to our airlifters will vastly improve our ability to generate the effects we want in the battlespace.”

Some of these modifications have been implemented with unprecedented speed — such as the installation of Litening II targeting pods and Predator video on B-52s.

“Such modifications are a testament to the skill, inventiveness and determination of the airmen who tackle these challenges, and to what they can do when unshackled from a risk-averse bureaucracy.”

Technology-to-warfighting is a key to the Air Force’s third core competency—integrating operations. He said the men and women in blue have not yet captured the full magnitude of what they’ve achieved in integrated operations during Operations Iraqi Freedom and Enduring Freedom with sister services and allies.

“At first glance, the results indicate that we’re delivering on the promise and vision we set down years ago, and that we can continue to develop the effects-based warfighting capabilities that will bring us victory over terrorism, and real security in the face of emerging threats around the globe.” (AFNS)



## **IRAQ** Fighting terror from home

### Preparing for the front

Aerospace Control and Warning specialist, Airman 1st Class Antwon Holt, communicates directly to the Command Post from the field phone powered by a generator while Security Force Response members Airmen 1st Class David Morel and James Reed, secure entry onto the camp. The 603rd Air Control Squadron and its equipment are at a site near Aviano AB, Italy, during training exercise Operation Scorpion Strike. While hundreds of people deployed to the frontlines, many units such as the 603rd continued to test their overall capability to deploy and operate in a wartime environment.

Photo by Airman 1st Class Isaac Freeman / 31st CS

**ENTRY  
CONTROL  
POINT**



# ‘Managing air power important as pulling the trigger on air power’

## Coalition neutralizes Iraqi air force resulting in total air dominance



Staff Sgt Jennifer Wallis / 30th SCS

Vice Chief of Staff Gen. Robert "Doc" Foglesong (R), visits with members from the 321st Expeditionary Maintenance Group during his visit to the 321st Air Expeditionary Wing Aug. 1. The general was in the area to speak with the troops and tour the base.

## ACC achieves ‘first ever’ accomplishments



Staff Sgt. Shane Cuomo / 1st CCTS

**Members from the 5th Combat Communications Squadron set up a Lightweight Multi-Ban Satellite Terminal April 24 at Tallil Air Base during OIF.**

**By Brig. Gen. William Lord**  
Directorate of Communications and Information

### OPERATION IRAQI FREEDOM

—The worst mistake that Iraqi soldiers Khaled and Ameen ever made was going to work that day. Their mobile missile battery had been sitting idle for almost two weeks and needed to be tested. All they were told to do was fire it up, perform a full operations check and load in some new target coordinates two hours after sundown.

Following orders, they waited until the night was so dark they could barely

see each other. When all was ready, Khaled signaled that it was time, and Ameen moved to power-up the battery. Once successfully online, his instructions were to load in coordinates for an undisclosed location in Kuwait and then power down the unit. He never made it to the final step.

While these soldiers were setting their target, the Combined Air Operations Center received information that they had been identified. The CAOC notified a Predator pilot who quickly maneuvered in for a closer look. Within moments, the Predator

began transmitting data in real-time back to the United States for analysis. The battery was identified, verified and confirmed as a target, and then the information was sent immediately back to the CAOC in-theater. With verified information in-hand, the CAOC alerted the on-call bomber aircraft already orbiting in the area. From their position, the bombers immediately engaged and deployed precision-guided munitions, while the Predator illuminated the target for them.

Scenarios such as this one played out several times during OIF. The United States' ability to paralyze the Iraqi air force and systematically neutralize its air defenses resulted in total coalition air dominance. During OIF, the Air Force flew approximately 41,000 combat sorties, destroying countless ground targets. Although Iraq maintained an air force, they did not fly any combat sorties against the might of the United States throughout the entire conflict.

During the first Gulf War, the Iraqi military learned that in order for battlefield assets to survive, they needed to conceal them or keep them on the move. Iraqis quickly realized that anything in the open was extremely vulnerable. With the expansion of America's available laser- and satellite-guided weapons, all adversaries' targets were rendered highly vulnerable to U.S. air, land and sea-based weapons.

The assessment that enemies would remain mobile and use concealment to mask their activities required us to compress our six-stage target cycle of find, fix, track, target, engage and assess, known simply as the "kill chain." With different tactics, and full exploitation of new technologies, OIF reduced the kill chain from hours to less than 10 minutes. The shorter the kill chain, the higher the probability of destroying time sensitive targets. Compressing and shortening the kill chain was not

an easy task, or one without cost. Each stage involves numerous organizations and seams between stages that transfer responsibility between parties. The requirement from the Chief of Staff, Gen. John Jumper, was to accomplish all these stages as quickly as possible.

Gen. Robert 'Doc' Foglesong, U.S. Air Force Vice Chief of Staff, said that "...managing air power is as important as pulling the trigger on air power ... The CAOC that we set up is the first example of us trying to pull together at the operational level all the pieces that are necessary to manage air power."

The capabilities of the CAOC were driven by operational requirements, and provided and maintained by communicators. Not only in the CAOC, but also on the battlefield, communica-

tions enabled battlefield effects.

These "first-ers" show that comm equals operations. These accomplishments were made possible because of the partnership and collaboration of operator requirements and technical expertise from concept development through full implementation.

Success for communicators is not about providing comm, rather it's about providing combat effects. Communicators do themselves a disservice by focusing merely on the "provisioning of the comm utility"—that is a "plumber" role. Technical ability needs to be something we "do" but the focus of "who" and "what" we need to be about enabling combat effects.

Comm professionals need to think bigger than their badge. Technical skill is merely the foundation on which greater success can be built. To that foundation of operation and maintenance activities add management of resources and mission support. The pinnacle of the hierarchy of needs is an improved culture — where focus is on operations and combat effects.

Lt. Gen. Harry Raduege Jr., said it well, "People who know how will always work for those who know why." Communicators need to know why, as well as maintain the ability to execute how.

OIF demonstrated to the world, yet again, the awesome power and capability of the United States and our allies. The nature of warfare is changing. Technological advances make it possible to fight from and across great distances. While it may still be necessary to place troops in forward-operating areas, those numbers will continue to decrease. Future technologies that reduce forward deployment while shortening the kill chain will be the key to protecting our greatest asset in battle—our people. *(Capt. David Willcox contributed to this article)*

### FIRST EVERS FOR COMM

Out of the approximately 55,000 Air Force people deployed for OIF, only 2,500 or so were communicators. However, those 2,500 personnel, and their home support units, demonstrated capabilities that had never been used before such as the:

» First-ever airborne networking of Combat Track II with F-117s and B-1s, with Predator feeds to Special Operations Forces;

» First-ever engineering, testing, approval, and installation of a coalition network, which permitted coalition partners full use of CAOC tools;

» First-ever installation of Predator circuits more than 12,000 miles away, which allowed stateside units to control, fly and fight UAVs remotely;

» First-ever installation of Defense Message System at all deployed locations, which provided full AUTODIN redundancy for message traffic; and

» First-ever build and use of the ACC Reachback Force-level Technical Control facility, which permitted dynamic/real-time re-routing of C2ISR circuits.





Illustration by Tech. Sgt. Jim Verchio / AFCA Public Affairs

# Communications enable UAV success

**LANGLEY AIR FORCE BASE, Va.** — Much of the credit for UAV success during Operations Enduring Freedom and Iraqi Freedom can be attributed to the team of intelligence, communications, operations and requirements people who made it all work.

The intelligence community included its communications counterparts in Tasking, Planning, Exploitation and Dissemination team meetings, early in the OIF planning phase. What resulted, was the requirement to operate UAV missions from stateside via enhanced communications systems.

Many partnering agencies leaned forward to execute the \$8.4 million communications architectures making possible the concept of Remote Split Operations, or RSO. For example, the Defense Information Systems Agency activated key circuits in less than 30 days vs. the standard six months; \$650,000 of communications equipment was expedited through contracting procurement; and \$3 million of allied support was engineered, coordinated, contracted and implemented at three locations.

Although all of this happened with-

in a few months and was successful, there were a few obstacles to overcome. One communications site didn't have adequate power resulting in civil engineers urgently installing a generator. Critical equipment shipped overseas was temporarily lost, possibly jeopardizing the RSO activation date. Host nation approval, a somewhat complicated and lengthy process, was coordinated and approved within a few days only because partnering agencies understood the urgency.

RSO has become the buzzword in the Intelligence Surveillance and

Reconnaissance and operations communities and reflects the approach communicators are taking to engineer and implement communications systems. RSO makes it possible to remotely control two additional Predator orbits in the Central Command Area of Responsibility. It also maximized crew availability, training and morale.

RSO was also a new concept used in the Global Hawk mission for OIF. Crews were able to operate the Global Hawk aerial vehicle remotely from the safety of a stateside location. Global Hawk raw imagery was directly linked from the aerial vehicle via satellite to the stateside Mission Control Element and then directly to the imagery analysts. The airborne ISR assets, Predator, Global Hawk and the U-2, collectively brought Time Sensitive Targeting to the level of detecting, analyzing, targeting and destroying targets within minutes vs. hours. In some instances targets were discovered, confirmed by imagery analysts, targeted and destroyed within 45 minutes.

Imagery and video dissemination put extreme stress on available bandwidth. The Force Level Technical Control Facility here, conceived following OEF, was stood up ahead of schedule to meet the circuit-management requirements for OIF.

The procedures used for UAV operations in OIF will set the stage for future support efforts for these weapons systems. The key will be how well lessons learned are implemented. Improved circuit management by the FL-TCF, close teaming between the intelligence, communications and operations communities and continued improvements in the RSO architecture will ensure continued success stories for operations and result in true Time Sensitive Targeting. *(Submitted by ACC Warfighter C3 Support Division)*



Courtesy photo

**Leaflets like these told the Iraqi people to surrender their arms, and that America was there to liberate them from a hostile regime.**

## First **strike** on Baghdad

**By Michael Jackowski**

AF Information Warfare Battlelab

**LACKLAND AIR FORCE BASE, Texas** — “Ready, Ready, Drop!” Little did the pilot know that with those three words early in March 2003 he had opened a new chapter in the way the U.S. military fights wars.

The leaflet bomb, which he had just dropped on the capital of Iraq, represented the opening salvo of the operations—the information operations, that is. The bomb dispensed more than 60,000 paper leaflets spreading the good word the American military was coming to liberate the Iraqi people from the regime of Saddam Hussein. “Ready, Ready, Drop!” also earned the PDU-5/B leaflet bomb another time-honored distinction: First strike on Baghdad.

First strike is a term coined by aviators to identify the first weapon system to engage the enemy’s most crucial target. The PDU-5/B leaflet bomb claiming first strike is a new information warfare capability that delivers psychological messages rather than conventional munitions to targets behind enemy lines. In this case the targets are the hearts and minds of the

individual troops, their officers, or even the hearts and minds of the civilian population. Psychological leaflets rained down on Iraq from PDU-5/Bs weeks before conventional operations began. Here’s the story.

The need for a new leaflet delivery system grew out of several problems with the original canister, the M-129 E1/E2. Constructed of fiberglass, the M-129 canister limited the mission flight performance capabilities of the aircraft carrying it. Also, the M-129’s use of a primer cord to separate the canister’s two halves tended to burn up many of the leaflets before they ever reached the ground. These operational limiting factors made it difficult for mission planners to place psychological leaflet drops onto the air tasking order.

Recognizing these difficulties, Master Sgt. Charles Doig, assigned to Air Intelligence Agency’s Psychological Operations Division, submitted his concept for a solution to the Air Force Information Warfare Battlelab in January 2000. Doig’s idea was to retrofit a SUU-30H/B cluster bomb canister for leaflets as a substitute for the M-129. The SUU-30 canister doesn’t suf-

# INFORMATION WARFARE IN IRAQ



The bombs dispensed more than 60,000 paper leaflets. Both the Air Force and the Navy saved more than \$20 million by not having to develop an entirely new leaflet delivery system.

fer from the M-129's operational limitations. The SUU-30's initial leaflet drop in February 2001 was a success. However, the safety precautions required to remove the SUU-30's cluster bomb munitions made the demilitarization cost prohibitive.

The entire effort would have come to a complete halt there if it was not for the efforts of two AFIWB project officers. Lt. Col. Bill Beckinger began a search for another munition canister to use. A trip to the Crane Army Ammunition Activity in southern Indiana led him to the MK-20 Rockeye II canister which was both better suited for leaflet missions and offered better aircraft performance than the SUU-30.

Maj. Rick Wall then led the efforts for a new flight demonstration aboard an F-16. The retrofitted Rockeye canister first flew in November 2001 over Eglin AFB, Fla., with that base's 40th

Flight Test Squadron. Wall subsequently helped coordinate transition efforts for the new leaflet bomb with U.S. Special Operations Command, Air Combat Command, Air Intelligence Agency and the Army's 4th Psychological Operations Group.

With a successful demonstration and a combat mission need statement from a warfighting combatant commander, ACC quickly certified the Rockeye for Air Force aircraft. Similarly, the Navy conducted its own certification drops as well as catapult and trap tests for carrier operations. Demilitarization and modification of the Rockeye canister, now re-designated the PDU-5/B, as a leaflet delivery system began in earnest in January 2002. The PDU-5/B was employed extensively both in Afghanistan and Iraq as part of Operations Enduring Freedom and Iraqi Freedom. Nearly four dozen mis-

sions delivered more than 36 million leaflets over hostile territory.

The PDU-5/B has been a crucial player in the War on Terrorism communicating the United States' message of goodwill to non-combatants as well as a message advising adversaries to lay down their arms in OEF/OIF. The AFIWB's development of leaflet bomb is a big win for all aspects of America's combat forces. Aircrews now have a more robust munition with better carry and delivery capabilities. Psychological operational planners can now prepackage their leaflets for rapid shipment to the weapons load point. The ground crews can quickly load the prepackaged tubes into PDU-5/B canisters without modification. And financially, both the Air Force and the Navy saved more than \$20 million by not having to develop an entirely new leaflet delivery system.

A satellite with a large antenna and solar panels is shown in orbit above the Earth. The satellite is yellow and black, with a large white dish antenna. The Earth is visible in the background, showing the curvature of the planet and some cloud cover.

# SPACECOM

## delivers on time, on target support

**By Senior Master Sgt. Wayne Ince**  
Air Force Space Command

**PETERSON AIR FORCE BASE, Colo.** — The Star Trek fictional rubber met the reality road during recent contingency operations. Satellites traveling between 100 and 22,300 miles above earth provided the warfighter on the ground with vital intelligence, weather, navigation, and communications.

Whether maintaining, managing and operating space systems from control points around the world, or working side-by-side with deployed forces, Air Force Space Command ensured the delivery of essential information when and where it was needed.

While deployed to Camp As Saliyah, Qatar, Brig. Gen. Richard Webber, AFSPC director of logistics and communications, estimated that combined forces used 32 times the information bandwidth than previous Iraqi operations—even though we had one-third fewer people.

In his in-theater position as the U.S. Central Command deputy director of operations for space and information operations, the general coordinated the activities of space capabilities to enable the Combined Forces Commander, Gen. Tommy Franks, to

plan, command and control the missions of forces within Iraq.

General Webber, in concert with Col. Larry James, senior space officer at Prince Sultan Air Base, Saudi Arabia, was able to use space assets to provide precision timing and navigation to mitigate fierce dust storms and tough nighttime operations during the race to Baghdad.

Also, high-capacity satellite communications systems, both military and commercial, allowed continuous connectivity between General Franks' staff and the essential planners, analysts and leadership back home. Additionally, unmanned aircraft and high-precision weaponry required secure, robust satellite systems that far exceeded the dreams of Desert Storm-era warfighters.

While space is the focus of Air Force Space Command, AFSPC communicators were called into action for direct support to deployed operations. Communicators are standing shoulder to shoulder with the joint operational community to meet the important communication and mission data transfer needs being used to conduct Operations Enduring Freedom and Iraqi Freedom. Their intimate knowledge of space and ground system integration was instrumental to maintain-

ing our nation's asymmetric advantage in space for America's joint task forces.

As one of many examples of the success of AFSPC's space-based systems, the 4th Satellite Operations Squadron at Schriever AFB, Colo., ensured the continuous, uninterrupted support of the Milstar Satellite System.

Milstar communication satellites allowed Central Command to conduct rapid, secure command and control, which was critical during the early stages of OIF. Further, Air Tasking Orders and Tactical Land Attack Missile targeting information were delivered via 15 Milstar Low Data Rate networks. Theater users reported the communication support from the Milstar constellation was key to reliable command and control.

Without exception, deployed and stateside Space Command warfighters were able to see the fruit of their earlier labors. At their normal day-to-day jobs, they planned, developed and maintained the space-based tools now essential to modern warfighting. Once called to action, they were able to help put those tools to use. Most of all, their direct experience makes possible the improvements and changes that ensure the continued superiority of U.S. and coalition forces.

## **IRAQ** Fighting terror from home

### **Pull**

While Operation Iraqi Freedom forged on, keeping installations ready remained a top priority. Members of the 214th Engineering Installation Squadron assist the 1st Cable Maintenance Squadron and the 52nd Communications Squadron in replacing a microwave antenna at Pruem Air Station at Spangdahlem Air Base, Germany June 25. The old antenna had been destroyed by a tornado.

Photo by Staff Sgt. Toby Valadie / 159th Communications Flight







# Air Force flies high with **AIRBORNE**

**By 2nd Lt. Alessandra Alma**

Plans and Programs Deputy Flight Chief

**ANDREWS AIR FORCE BASE, Md.** — Meeting the need for airborne communications systems are the men and women from the 789th Communications Squadron here.

High Frequency Global Communications System, High Frequency e-mail and the Senior Leadership Communications Systems, or SLCS, are specific assets operated and maintained by the 789th CS, and the use of these systems played an integral role in support of Operation Iraqi Freedom.

The 789th CS is home to the Centralized Network Control Station, which provides HF global coverage to the Department of Defense, national leadership and world leaders. One asset of HF is the ability to communicate with ground parties via a phone patch. A phone patch is an electronic connection between a HF radio transmitter/receiver and a landline where parties can communicate.

## **Evacuee assistance**

By using these systems, radio operators have been able to assist many medical evacuation flights. One in particular involved a medical evacuation of 12 patients flying from Kuwait to Ramstein AB, Germany, that was featured on CNN. The tele-

phone operator was able to patch the call from the aircraft to the command post, allowing the pilot to give the status of his time of arrival and how many passengers he was carrying.

## **Telling the Air Force Story**

Phone patch capabilities also enabled the first DoD in-flight interview. While en route to Minot AFB, N.D., from a forward deployed location, a B-52 Stratofortress crew was able to communicate with the Air Force press desk at the Pentagon. The interview was featured live on CSPAN2 and reporters from CNN, BBC, FOX, Stars and Stripes and Defense Daily Newspaper were able to ask questions regarding the missions performed in support of OIF.

## **Airborne Comm**

The newly integrated HF e-mail system allows aircrews from the Airborne Warning and Control System the ability to send and receive classified messages 24 hours a day. Previously, aircrews had to transcribe information through voice communication. This integration into the HFGCS proved successful. Since its first use in February, the system has been invaluable to the success of the war in Iraq. HF e-mail provided U.S. Central Command the ability to electronically mail classified Air



# REVOLUTION

Tasking Orders to AWACS aircraft to direct the air campaign during OIF. With this system, aircrews were able to concentrate on other important duties.

The SLCS provides wideband data capabilities such as Internet, remote e-mail and video teleconferencing. SLCS is a worldwide service that can be accessed 24 hours a day and allows users to conduct mission related business while airborne. The president, vice president, secretary of defense, secretary of state and unified combatant commanders use this tool while airborne. This capability allows users to communicate with members at home base as if they were still in the office.

## Global grid

The 789th CS serves as a Global Network Operations Center, which troubleshoots links and equipment. The demand for this system came about as a result of Sept. 11, 2001, when airborne communications were limited due to saturated commercial satellite links. This system served as a major communications tool for Gen. Tommy Franks particularly during OIF. The use of airborne communications systems has not only proven to be a success but also a vital tool for America's leaders.

## HF MESSENGER KIT



▶▶ The HF Messenger Kit is an e-mail system that provides aircraft, marine vessels and ground users a worldwide communication capability for exchanging command and control data.

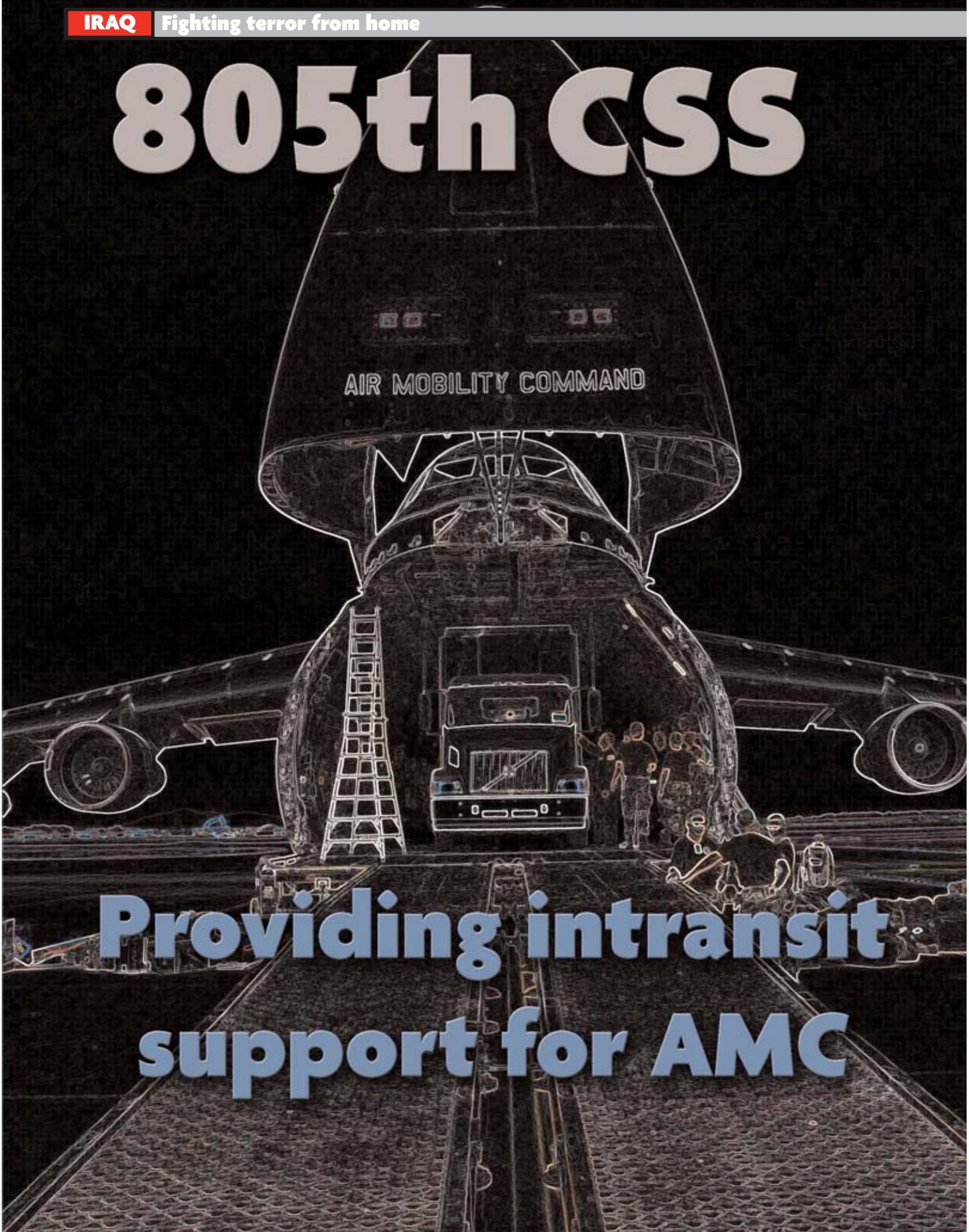
▶▶ The system is used primarily by the crews on the Airborne Warning and Control System, or AWACS.

**IRAQ** Fighting terror from home

# 805th CSS

AIR MOBILITY COMMAND

Providing intransit  
support for AMC



**By Senior Master Sgt.  
Alan McClellan**

Information Assurance Program Flight Superintendent

**SCOTT AIR FORCE BASE, Ill. —** Although the 805th Computer Systems Squadron from here did not have anyone deployed directly to the battlefronts during the war, as part of the Air Mobility Command team, we did provide new information technology capabilities and innovations for the command.

Each flight within the 805th CSS played a direct role in enabling AMC's global mission, the key to rapid movement of Department of Defense troops, cargo and weapon wartime requirements. The infamous Genghis Khan used an efficient horse and rider communication system called a Yam, to provide his global command and control links, and in the same tradition, the 805th CSS planned, provided and sustained the global C2 capability for AMC.

Software engineers delivered the Inspector General Performance Reporting System, providing commanders at every level full visibility into unit inspection results and best practices, so the command's deployable units were mission ready and able to meet the 150 percent wartime operations surge. During contingencies, the AMC Regional Supply Squadron's Forward Supply Support System provided real-time visibility into AMC aircraft part levels worldwide, which proved critical during operations build-up, when most aircraft in the AMC inventory were employed in the global transportation network. The tool enabled the maintenance downtime to be reduced by up to one week, ensuring passengers and cargo moved to the frontlines in record time.

The 805th CSS team also scrutinized and tested AMC C2 systems to

provide error-free, advance passenger information to the Immigration and Naturalization Service for all in and outbound CONUS passengers in support of Operation Enduring Freedom. They also validated the latest scanning device technology for the transportation system to ensure faster, error-free tracking of vital cargo moving to the warfighters deployed to Operation Iraqi Freedom. These new global tracking and reporting capabilities proved vital to the successful airlift of more than 112,000 short tons of cargo to OIF warriors, with user capability to individually track each pallet of cargo to determine transportation status and specific delivery times.

As system managers for many of the AMC C2 and transportation systems, the Wizards again delivered IT capability such as improved In-Transit Visibility of all passengers and cargo airlifted to the operations with the Global Air Transportation Execution System. They deployed systems to austere AMC airfields and worked to improve system reliability, improving intra-theater ITV from 27 percent to 99 percent in support of OEF airlift. Since Sept. 11, 2001, GATES has been a critical link to commanders by processing more than 700,000 passengers and more than 2 million short tons of cargo in direct support of Operation Noble Eagle, OEF and OIF.

To protect these critical systems, the 805th CSS information assurance experts sealed off possible vulnerabilities and boosted the security posture for \$86 million worth of systems. The AMC air operations center, Tanker Airlift Control Center (TACC), planners relied heavily on these systems to execute more than 350 global missions daily, and more than 700 missions per day at the peak of wartime operations. They also worked a C-5 wing's communications security material short-

age that threatened over 20 OIF airlift missions, providing a feasible solution that guaranteed warfighters and their equipment made it to war in Iraq on time.

The 805th CSS's tip of the spear comm warriors in the TACC sustained round-the-clock C2 communications and computer support to more than 750 TACC planners. They tasked all AMC communications teams supporting OEF and OIF involving 350 people and \$44 million of equipment. They also established global UHF SATCOM links used as the primary secure voice C2 link to all deployed forces from the TACC, as well as the positive control net for five combatant commanders during Operation Fundamental Justice movements of more than 600 Taliban detainees. They supported 25,980 sorties that transported 364,700 troops and 146,500 short tons of cargo to OIF theatre locations. The 805th CSS comm warriors at Headquarters U.S. Transportation Command also provided seamless C4 capabilities for OEF and OIF. Video teleconferencing specialists worked around-the-clock to provide critical four-star collaborative planning VTCs, which proved invaluable to USTRANSCOM planners as they met the President's objectives and accelerated force projection timelines. The network and computer Wizards also pulled through, successfully supporting over 10 Time Phased Force and Deployment Data headquarters conferences for more than 400 customers. These important conferences were the key to warfighting commanders receiving the necessary personnel and firepower to execute both OEF and OIF operations.



**IRAQ**

**Comm warriors on the front lines**

## No vacancy

An aerial view of the 363rd Expeditionary Communications Squadron taken in March. This satellite farm provided 35 long-haul links and 290 circuits to support operations in the AOR and reach back to the United States. As the war on terror continues, more comm and info specialists are finding themselves on the front lines. The locations are often austere and the amenities are few. On the following pages are images and stories from communicators who made it happen during Operations Enduring and Iraqi Freedom. Out of the more than 450,000 people deployed, only roughly 2,500 were comm and info specialists. However, because of comm's efforts, CFACC bases didn't experience any significant outage of communications.

Photo by Tech. Sgt. Paul Cox / 363rd CS

Source: OIF by the numbers assessment prepared by USCENTAF's Assessment and Analysis Division



## IRIDIUM



**This phone Rocks:** Capt. Bradley Gorden, a public affairs officer deployed in support of Operation Iraqi Freedom, takes time to check with higher headquarters using an Iridium cell phone.

# Keeping warfighters connected

**By Master Sgt. Richard Futrell**

Air Force Communications Agency

**SCOTT AIR FORCE BASE, Ill.** — For communicators and warriors in the U.S. military, commercial SATCOM has become an important, if not mandatory, part of their toolkit. Maj. Gen. Robert Dickman, Air Force Deputy Secretary for Space, said that during Operation Iraqi Freedom, commercial SATCOM provided 80 percent of all communication capacity.

As an element of commercial SATCOM, Mobile Satellite Services, normally called MSS, have proven to be an invaluable asset. The MSS systems the Air Force uses are primarily Iridium—handheld-sized satellite phones, and Inmarsat—laptop-computer sized terminals. Although Iridium can't send and receive large bandwidths of data, it does provide a lightweight, securable communications platform to pass the essential

bits of information in locations where other SATCOM systems cannot.

Yet, before Sept. 11, 2001, the advantages of Iridium were little thought of within the military, and were simply considered another gizmo. The diverse demands of a finite budget incited a consistent “no” from the services when the then-Secretary of Defense William Cohen asked the three services if they needed Iridium. Yet, Secretary Cohen persisted and the services, including the Air Force, began to accept Iridium.

Then came the largest terrorist attack ever to strike American soil. On that day, the Air Force's few Iridiums began providing critical communications in New York by the evening of Sept. 11.

A few months later, U.S. forces began pouring into Afghanistan to uproot an enemy entrenched in rugged terrain. Line-of-sight communications were not an option, and convoy style communi-

cations suites were not practical. Mobile communications were more than ever supporting our widely dispersed forces orchestrating simultaneous operations. Iridium enabled our forces to support conventional land and air strikes with precision.

This set a precedent to be exercised far sooner than would be anticipated.

Like Afghanistan, the Operation Iraqi Freedom warfighting plan looked to many small, isolated units; again, Iridium was the preferred communications choice.

During OIF, all three services used Iridium extensively—and all have hailed its capabilities.

With its constellation expected to last at least through 2010, Iridium is poised to provide the Air Force many more years of truly global, mobile communications. (*Maj. Miralba Fernandez-Covas contributed to this article*)

# Network defense teams

Communicators install intrusion detection systems abroad

By Richard DeLeon  
33rd Information Operations Squadron

## OPERATION IRAQI FREEDOM

— President Bush wasn't the only person to conduct a world tour visiting troops during Operations Enduring Freedom and Iraqi Freedom.

Several two-man teams from the 33rd Information Operations Squadron's Air Force Computer Emergency Response Team, or AFCERT, traveled in theater to the Middle-East and Europe as well. Joined by volunteers from the Cryptologic Products Support Group, these network defense teams traveled from site to site to install intrusion detection systems, or sensors, throughout the [war's] area of responsibility.

"Since early January, our deployment teams continue to maintain a grueling pace in-theater. While some teams are redeploying, we continue to rotate people to the theater for site sensor installs," said Capt. Tobias Prettol, crew commander, AFCERT current operations.

Capt. Joseph Gallahn, chief, AFCERT operations, said, "The importance of these sensors can't be overemphasized. State-sponsored, or professional hackers, pose a considerable threat, more so during wartime. Their efforts are designed to degrade the networks and the mission critical operations that commanders depend on."

The team synchronized the deployment of more than 100 sensors for more than 70 sites in 12 countries in just a matter of months. In essence, the urgency and scope of the mission



Senior Airman Tia Schroeder / 509th CS

**Airman 1st Class Christopher McIntyre, an Infrastructure Maintenance Technician with the 405th Communications Squadron, troubleshoots the data network system at a forward location in Southwest Asia.**

required close synchronization with Defense Information Systems Agency, the CENTAF network operations and numerous other agencies.

Network architecture design, engineering and installation support and vulnerability and attack assessments were a team effort involving Air Force Information Warfare Center, Electronic Systems Center and 33rd IOS professionals. Lt. Col. Paul Nelson, 33rd IOS commander, said that if not for the team efforts, there would not have been the support needed for the troops, and that this requires the installation and operation of sensors that provide CND-related network traffic data feeds back to the AFCERT.

However, these installs cannot take place until the Defense Information Systems Agency, or DISA, does its part of providing the information infrastructure and providing the global

communications connectivity in the AOR. Following the DISA install teams with installs of their own, are the personnel from the CENTAF network operations and security center-deployed (NOSC-D), 9th AF, Shaw AFB. Once they establish the base network control center, the 33rd IOS installs the CENTAF approved standard IDS suite of tools. Getting all the sensor gear in-theater and coordinating the timely maneuvers of the sensor install teams to each site was an immense undertaking.

Capt. Mark Daly, chief, AFCERT incident response team, said, "The fact we were supporting OEF/OIF provided the sense of urgency needed to expedite the sensor installs. Yet because of the high ops tempo of ongoing war operations, performing the sensor installs became a matter of precise timing and extensive coordination."

# AFSOC

## Ingenuity in action

By Chief Master Sgt. Michael Ramos  
23rd Special Tactics Squadron

### HURLBURT FIELD, Fla. —

McGuyver is alive and well and is working in the Air Force Special Operations Command's Special Tactics units.

As in Afghanistan, the men and women of Special Tactics once again ingeniously brought the fight to the enemy during Operation Iraqi Freedom. ST units deployed in support of combat operations to include combat search and rescue, surveillance and reconnaissance, austere airfield survey, establishment, and operation, as well as terminal attack control.

All of these operations required improvisation and adaptation of existing technologies. The evolution of technology has led to unprecedented lethality on the battlefield. Whether it is the use of smaller, more capable radios, or more advanced laser range finders and designators, the capabilities of combat control and pararescue specialists have grown by leaps and bounds.

These improvements have required the communications specialists assigned to these units to expand their knowledge and expertise. From modifying GRC-206 communications pallets to providing recharging capability on the move, these guys have done it all.

Austere deployments have taught these units many lessons in self-sustain-

ment. It's one thing to arrive at a forward base that has been prepped but totally another to be the first on site. Often power and fuel are in limited supply and basic facilities are nonexistent. ST has learned that we must bring it all with us.

During both OIF and OEF, radio maintainers and meteorological navigation, or METNAV, specialists deployed beside combat controllers to austere airheads to begin the arduous task of establishing the airflow needed to bring vital supplies to the battlefield and to deliver humanitarian assistance to those in the most dire of situations.

METNAV's worked tirelessly to set up all weather instrument navigational aids, to include the Tactical Airborne Navigation and the mobile microwave landing system. These vital pieces of equipment permitted the movement of wartime equipment and personnel in all-weather environments.

Radio troops found themselves climbing to the tops of bombed out air traffic control towers, where their knowledge of antenna theory came in handy for improving the range of portable radio systems. Their improvements to existing systems ensured the fidelity of signals out to twice the range of standardized equipment, ensuring the safety of multinational aircraft operating in the terminal area.

Many innovations in communications technologies now make the ruck

sack of a combat controller lighter and more efficient, but there is still the problem of how to provide power to all those wonderful gadgets.

By fabricating adapters for the ever-present BA-5590 Lithium Battery and installing power converters into vehicles this problem is virtually eliminated. Another innovation comes with the addition of an omni-directional satellite antenna to the GRC-206 communications pallet, allowing airfield teams to conduct operations on the move. An additional advantage to this capability is it reduces the use of batteries for man-portable satellite communications by more than 75 percent.

By drastically reducing the quantity of batteries used, the logistics of running an airfield are greatly simplified. The addition of e-mail capability to the arsenal also reduces the use of batteries and makes the lines of communication quicker with less chance for misinterpretation. Instead of passing long verbal situational reports, fielded forces can simply type messages, add attachments and send the whole package on its way.

Air Force Special Operations Command Special Tactics units carry the fight to the enemy wherever that may be. Whatever the mission calls for they get it done. "First there, that others may live."

A pararescueman in full combat gear, including a helmet, goggles, and a rifle, is rappelling down a thick rope from the side of a Black Hawk helicopter. The helicopter is positioned at the top of the frame, with its rotor blades and landing gear visible. The background shows a clear blue sky and a building with several windows. The ground is littered with rubble, including bricks and debris, suggesting a conflict zone or a training exercise in a hostile environment.

**Drop Zone:** A pararescueman drops in at Baghdad Air Base from a Black Hawk helicopter in support of a Combat Search and Rescue exercise. The exercise is designed to hone the skills of CSAR teams staged in hostile locations.

Master Sgt. Robert Hargreaves / JCCC





**IRAQ** Comm warriors on the front lines

## Disassembly

Staff Sgts. Shawn Melendez and Lawrence Miles disassemble a GRA-4 antenna July 21 at a forward operating location. Both NCOs are assigned to the 321st Expeditionary Communications Squadron supporting Operation Iraqi Freedom.

Photo by Staff Sgt. Jennifer Wallis / 30th SCS



# 22nd Communications Squadron

## Taking comm into **Baghdad** International Airport

By Chief Master Sgt.

Herb Hanson

Chief Enlisted Manager, 22nd CS

### OPERATION IRAQI FREEDOM

— After several ramp ups, the 22nd Communications Squadron from McConnell AFB, Kan., arrived in the Area of Responsibility in support of Operation Iraqi Freedom. The 19-person team was divided with 11 going one way and the remaining eight heading in the opposite direction with nine short tons of equipment.

The team of eight communicators along with nine short tons of Theater Deployable Communications equipment headed to a classified location in the AOR. We were successful considering we were only there for about three weeks due to the curtailment of air operations at our location. Before we started tearing down our equipment, we were told our team was redeploying back to our home station. Within a couple of days however, we were told we were moving to a forward location. It took U.S. Forces Central Command a couple of days to figure out exactly where we would end up, but it was determined that our slice of the 22nd CS would go to Baghdad International Airport to assist in establishing comm's center stage.

Airlift in the AOR was extremely congested at the time, so it took us a frustrating two weeks, but we finally arrived in Baghdad in early May. Maj. Doug Hartley, the 447th Expeditionary Communications Squadron commander from the Niagara Falls Air National Guard and the 3rd Herd were already there and establishing an initial comm capability in this bare base, combat environment. We immediately jumped



Courtesy photo

**Members of the 22nd Communications Squadron erect a CSA line-of-sight mast in Iraq. The mast is used for VHF and UHF communications.**

in to provide much needed augmentation. It didn't take us long to establish an exceptional working relationship with our fellow comm warriors. At the time, there was a dire need to expand the reach of comm from the limited, initial phase to one of full support for the many multi-service and government organizations arriving every day. This was difficult due to the inherent limitations of the TDC package, but within a week or so we began receiving huge shipments of equipment from other locations throughout the AOR.

Engineering and installation teams began arriving in force and proved essential to establishing connectivity throughout the airport complex. Rapidly, our communications services began to grow. Within four weeks, the network expanded from less than 150 served to more than 1,200 customers. The Air Force comm team assembled for Baghdad provided the punch necessary for the warfighter to continue successfully prosecuting its mission. The robust, reliable network and the tele-

phone capabilities helped to secure the necessary intelligence data to allow other government agencies and special operations forces to continue their hunt for high value targets. The satellite pipeline was crucial to providing the Combined Air Operations Center with a near real time picture of the Iraqi air-space. Along with these accomplishments, we continued to expand our reach on the base support side. Our specialists worked hand-in-hand with the Network Operations Security Center-Deployed to guarantee connectivity for systems operating GATES, SBSS, TCAM and MIRC, which is a SIPRNET program that allows CSAR forces to communicate during life saving missions.

Even after deploying for Operation Enduring Freedom last year, I am still amazed at what we accomplished this time around. For us, being in Baghdad during this critical moment in time reinforced the fact that comm brings an amazing amount of capability to the fight.

# 352nd SOG: Works through harsh conditions to bring comm to the fight

By Master Sgt. Wayne Cloutier  
352nd Special Operations Group

**RAF MILDENHALL, United Kingdom** — When you think of deploying for Operation Iraqi Freedom, Arctic weather and snow probably do not come to mind. But, the 352nd Special Operations Group had to deal with just that in the opening days of the operation as they set up initial communications support for Task Force Viking.

Initially, a small command and control team deployed to a forward location as part of a site survey to look at alternative staging areas for a Joint Special Operations Air Detachment. When it became clear that the first choice was no longer an option, the decision was made to base not only the Joint Special Operations Air Detachment North but also the Joint Special Operations Task Force-North at the forward location.

The 352nd SOG deployed a small amount of C4 equipment and personnel to bolster the C2 troops already on site. Communications were critical to prioritizing the flood of incoming people and cargo into the country originally destined for another initial staging location. The 352nd SOG established the foundation of JSOTF-N communication network by late February.

With temperatures often below 0 degrees Fahrenheit, setup was difficult; however, critical voice and data links were made available within two days of equipment arrival.

The initial radio team arrived and set up C2 for reachback and, during the course of the next four months, performed flight following for 950 sorties totaling more than 3,000 hours. This

ensured the delivery of more than 3 million pounds of cargo and 4,000 passengers for a 96 percent mission effectiveness rating. At the peak of the conflict, operations were being supported from five locations simultaneously.

The 352nd SOG communication team started with a Lightweight Multi-band Satellite Terminal and a Theater Deployable Communication-Initial Communication Access Package palletized to support less than 50 people. The team managed to design and implement a voice and data network supporting Air Operations Center and a Joint Operations Center for more than 300 Army and Air Force people during the opening days of the Iraqi conflict. By the time the 352nd SOG moved forward into Iraq, they used more than 10,000 feet of data cable, 16,000 feet of voice cable and 5,000 feet of fiber.

As the conflict continued, the 352nd SOG was augmented by the Joint Communication Support Element and other communications units of the U.S. Army. The multiple units tied routers

and voice switches together to provide overlapping coverage guaranteeing warfighters the ability to contact units in the field, and transmit and receive operational data in real time—even if one or more units experienced an outage or were slowed by high circuit use. The goal was to give users access to voice or data whenever they needed it.

The operations at the forward location ensured the Iraqi northern oil fields were secured, and larger, deployable communications packages could deploy safely into the theater of operations.

The 352nd SOG moved from the cold of one country (it snowed the day after they deployed) to the heat of Iraq in early April. Based on lessons learned from the joint communication operations at forward locations, equipment and its setup were carefully considered before one pallet was broken down. The ability to tie multiple voice and data networks together with other Air Force and Army units had been the success of the Task Force and would be again in Iraq.

The initial communication setup in Iraq allowed JCSE and the Army to tie into the 352nd SOG placed infrastructure. Chunks of data and voice networks were sliced off and supported when other communications arrived in theater with minimal impact to the user. This same process was reversed allowing units to return services back to the 352nd SOG so they could deploy to other locations.

From the cold of one country to the heat of Iraq, the 352nd SOG remained flexible and learned the importance of combining into a joint team.





**IRAQ** Comm warriors on the front lines

**Going up**

Tech. Sgt. Robert Rolling with the 407th Expeditionary Communications Squadron measures a mounting bracket for a microwave cable antenna July 25 at Tallil Air Base, Iraq, in support of Operation Iraqi Freedom. Even though President Bush in May called an end to the hostilities in Iraq, American and coalition forces are preparing for sustainment in the country.

Photo by Staff Sgt. John Barton / 52nd CS



# AIRPOWER



# ENABLER

## Communications as a weapon system

By Maj. Amy Dayton  
Chief, CAOC Systems Division

**PRINCE SULTAN AIR BASE, Kingdom of Saudi Arabia** — Whether it was a B-2 bomber flying directly from Missouri, an E-3 Airborne Warning and Control System aircraft flying out of Saudi or an F-18 Hornet flying off a Navy aircraft carrier, control of the skies fell to the Combined Forces Air Component Commander and his operators.

The CAOC is a weapon system just like an aircraft, ship or tank and was the primary theater command and control

facility for orchestrating the Operation Iraqi Freedom air campaigns.

Although it is considered deployable, this \$45 million weapon system is parked in the middle of the Saudi Arabian desert and comes standard with almost 2,000 people, large projection screens and a network better than most fixed bases. What was so exceptional about the CAOC during this war, however, is that comm was no longer viewed as a constraint. After Desert Storm, the Department of Defense focused on ways to increase bandwidth, decrease its footprint, reduce the time it takes to get communications pack-



**Prince Sultan Air Base is located 80 kilometers south of Riyadh. During the decade following Desert Storm, it was host to more than 4,500 U.S. military personnel and an undisclosed number of aircraft . During mid-2003, the roughly 4,500 U.S. troops at PSAB redeployed from Saudi Arabia to Qatar, leaving about 500 in Saudi Arabia, primarily at Eskan Village.**

source: Global Security.org

ages in theater and improve interoperability between joint systems and networks. With this war, it was evident joint and coalition systems interoperated smoother than ever expected. Some of the greatest successes were the implementation of coalition releasable networks and the use of collaborative tools for time critical targeting.

This war also tested the known limits of many of the existing systems such as the Theater Battle Management Core System. TBMCS is a system of systems that is primarily used to create the daily master air attack plan and the air battle plan, from which the Air Tasking Order and Airspace Control Order are generated. During Operations Southern Watch and Enduring Freedom together, daily ATOs averaged 100-200 mission lines per day whereas OIF had a record setting 2,000-2,800 mission lines per day—that's nearly 4,000 sorties—making the air campaign the largest series of air battle plans in history.

More than ever before, this war was fought by embedded coalition forces, making information sharing a critical necessity. This challenge was overcome by the implementation of coalition networks that could be accessed by both U.S. forces and their coalition partners. These networks were encrypted and ran across the SIPRNET, keeping infrastructure simple while providing a means for dissemination of releasable information.

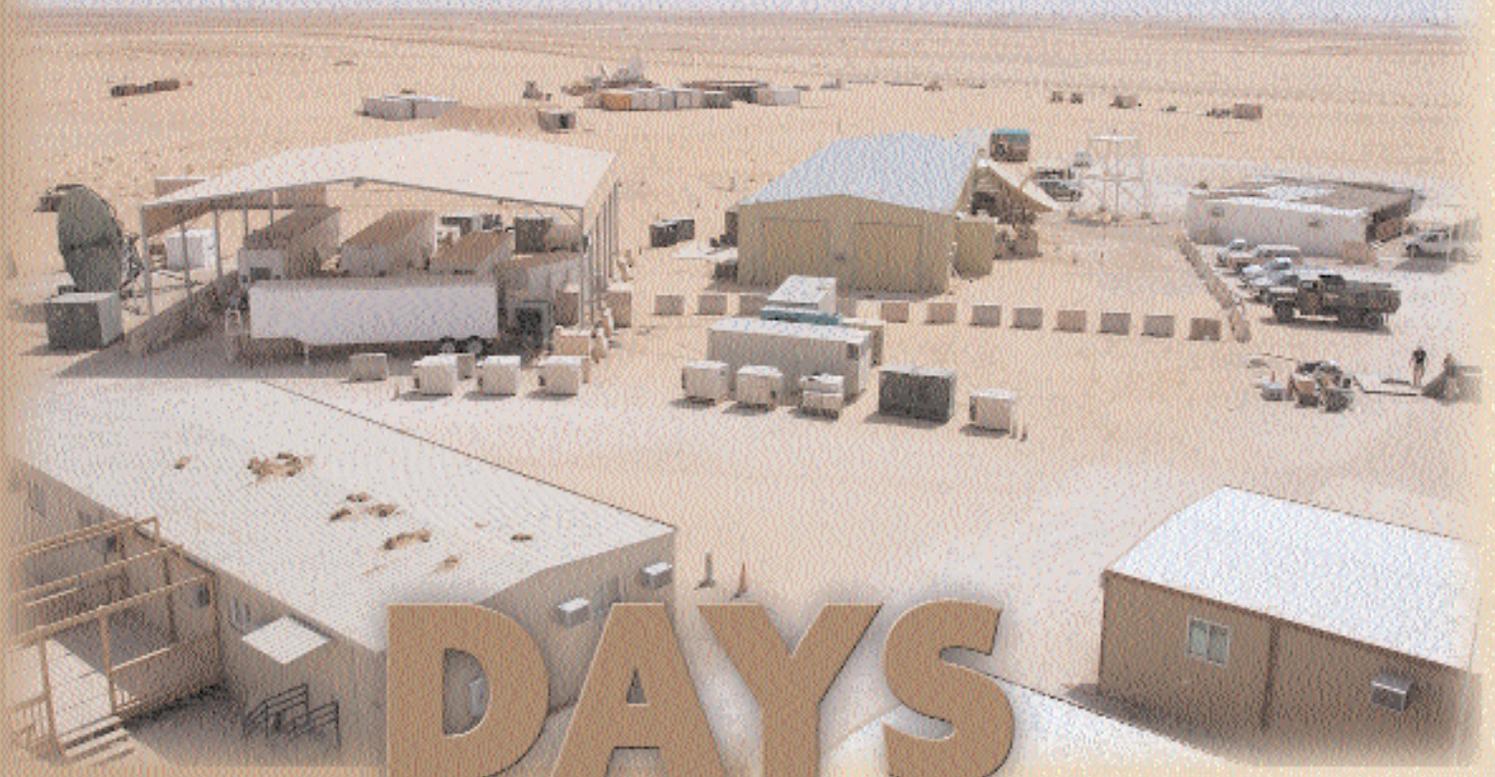
These networks were critical to the dissemination of the daily ATO and intelligence data to coalition forces within the CAOC as well as throughout the area of operation. But even more technically challenging was the implementation of an architecture that actually allowed trusted coalition partners access to C2 systems on the SIPRNET. This history-making, NSA-approved architecture allowed select coalition forces

who were embedded in the operational cells of the CAOC to have limited access to C2 information through carefully constructed guards on the SIPRNET. Through this architecture, the forces were able to fully participate in combat planning and combat operations through the use of the same C2 systems as personnel without the compromise of information.

This war's success wasn't just due to equipment, its success can also be attributed to the technicians who worked night and day preparing the CAOC for war. From the help desk technicians to the engineers, the communicators had an overwhelming commitment to mission accomplishment. The team that installed and maintained the CAOC was 163 people strong: a mix of officers, enlisted from all branches of service, and more than 30 contractors that gelled together into a cohesive unit. This team closed more than 600 comm-computer requirements in the three months prior to the war, resolved an average of 50 help desk trouble tickets each day, and stabilized all systems so that comm was the last thing on the operators' minds on day one of the air campaign.

Operators were coming by the help desk on a daily basis to congratulate the technicians for how smoothly the communications systems were running. As an example of incredible last minute success stories, CAOC technicians upgraded TBMCS to version 1.1.1 just three months prior to the war, providing a Web portal capability that for the first time allowed a standard SIPRNET PC user to directly view the CFACC's main execution database thereby allowing near real-time execution decisions at the unit level. The end result was a stable and reliable weapon system that executed its mission safely and effectively.

# ARABIAN



# DAYS

## 363rd CS keeps PSAB connected

By 1st Lt. Ryan Latreille

363rd Communications Squadron

**PRINCE SULTAN AIR BASE, Kingdom of Saudi Arabia** — There's a place in the middle of the desert where communications professionals have come and gone in a continuous rotation for the past seven years. It's a place that will soon be a memory for more than 250 communications warriors who've spent the past year managing and upgrading its huge communications network.

This place is a large patch of desert just outside the Saudi Arabian city of Al Kharj, 60 miles south of Riyadh, the capital of Saudi Arabia. Prince Sultan Air Base, or PSAB, is a sprawling air base in the middle of the desert, making its a prime location secure enough for operations supporting

Operation Iraqi Freedom.

The communications professionals have kept the network system running like a well-maintained machine before, during and after OIF, and now that the communication needs at PSAB have been met, they're getting ready to redistribute their resources elsewhere.

As with any large machine, there are many parts and each part must perform its function for the whole to succeed. One such part was the command section of the 363rd Expeditionary Communications Squadron, located down the street from "Al's Garage," another U.S. basing site, on the outskirts of "Operations Town," often referred to as the "Ponderosa." The Ponderosa was the center hub for all communications throughout the area of responsibility, or AOR.

When the communications warriors of Air



**Members of the 363rd improved and expanded the already extensive communications network at PSAB.**

Expeditionary Force cycle 7/8 arrived here, a major theater conflict was on the horizon. Material requirements for PSAB, as well as many other locations throughout the AOR, needed to be established. The 363rd ECS was tasked to prepare the largest communications hub in the AOR. Millions of dollars were spent prior to OIF to improve and expand the existing communications capabilities at PSAB. The Plans and Implementation shop took the lead role in organizing and tracking more than 1,100 communications requirements as well as the integration of 16 new units into the wing infrastructure. The equipment custodians tracked 5,800 extra items valued at \$10.3 million, and more than 500 computers and monitors and \$750K worth of network equipment and audiovisual support ordered and received at PSAB just prior to OIF.

The first step in expansion was to lay a solid foundation, and that's exactly what the SCM Flight "Cable Dawgs" did. They laid more than 13 miles of new cable infrastructure. With more than 60 units on base, often the existing infrastructure was disrupted, but the repair time was always kept to a minimum.

In support of the Combined Air Operations Center located at PSAB, a state-of-the-art command and control system was installed. The Information Systems Flight Infrastructure shop, with the help of a team from Hanscom AFB, installed Theater Battle Management Core Systems-Unit Level. This effort, which encompassed 61 core buildings and more than 135 computer terminals, was up and running in only three months and provided critical command and control data to the CAOC.

Due to the requirements associated with providing the critical command and control information to the right people and getting it to the right places in the AOR, the existing capabilities desperately needed attention. Because the 363rd ECS was so far ahead of schedule, the equipment was already on-site and simply needed to be installed and configured. More than 200 Cisco switches replaced legacy hubs, routers upgraded and critical redundancy was added to all of the Information Transport Nodes.

Despite all of these upgrades, more information still needed to flow not just in PSAB, but also throughout the other

bases in the AOR. The only way to ensure that things ran smoothly was through teamwork, and was vital in the success of the Wideband SATCOM shop and the Tech Control shop.

In a collaborative effort, these shops increased overall bandwidth by an astonishing 90 percent—20 times more bandwidth than used during Operation Desert Storm. They maintained and monitored the equipment that provided the critical information hub between theater bases and the CAOC. The bandwidth allowed the joint planning and execution of time-sensitive targeting, Air Tasking Order and target folder dissemination, strike base mission reports and battle management assessments. In addition, they managed the video circuits that were crucial to linking the AOR to state-side for video exploitation, U-2 and Predator imagery download, and video teleconferencing with the National Command Authority. Together, these shops supported 26 OIF and Operation Enduring Freedom bases in the AOR.

The PSAB communications squadron also installed and delivered hundreds of land mobile radios, cell phones, pagers, computers, copiers and cable TV drops. DSN capacity was increased by 50 percent to support thousands of extra coalition forces new to PSAB.

The Network Control Center alone processed more than 10.2 million e-mail messages during OIF. These efforts greatly contributed to the success of OEF and OIF and increased troop morale on base. Deployed members were able to be in contact with their loved ones at home via email and voice services, and through the Postal Service, which made sure that more than 1.1 million pounds of mail—an increase of 300 percent over OEF—was delivered to PSAB troops.

The 363rd ECS is now in the drawdown mode at PSAB and is distributing millions of dollars in assets to other bases. The TRC-170 systems that provided communications links to the nearby Eskan Village have been taken down after being in place since 1996. The 100A and 85B SATCOM system vans have been packed up and sent back to the depot for refurbishing after years of operation. During the war, there was an empty sand parking lot behind the SATCOM facility, and now antennas and tactical communications systems on wheels fill the lot, ready to move out.



# The final chapter for mail ops at Sultan

**By Master Sgt. Steven Chase**

U.S. Consulate, Sydney, Australia

**PRINCE SULTAN AIR BASE, Kingdom of Saudi Arabia** — At the beginning of Operation Iraqi Freedom, the reality of doubling our original tour lengths set in, and we adjusted our mission accordingly. Not only was PSAB closing; postal operations at PSAB were also coming to an end.

This team effort, involved postal troops in Riyadh, Air Combat Command, the Military Postal Service Agency and the U.S. Postal Service.

More than 50,000 pounds of postal supplies and equipment had built up during the years and had to be moved. It started with 19 IONSCAN bomb-detection machines, and

ended with projecting the last business on the postage meters.

For those of us in postal operations, our successes during this deployment can be attributed to a total team effort. The build-up of personnel from 4,000 to more than 10,000 personnel defined our mission statement, and it was always a challenge to keep up with mail flow. Throughout the history of PSAB, squadron leaders witnessed the incoming volumes of mail and declared it a priority. Additional personnel assigned from within the wing enabled 24-hour operations at the aerial mail terminal and the opening of a second APO to better serve the customers. The landing of AN12, the Russian version of a C-130, carrying 25,000 pounds of mail, inspired our commander to rouse as many as 30 troops to



Photos by Staff Sgt. Derrick C. Goode / AFNEWS

Post office people unload, sort and deliver two five-ton trucks filled with incoming mail for troops in the Middle East. (Left) Airman 1st Class Karen Sexton, an augmentee with the Postal Service, sorts first class mail going out from the Middle East April 7.

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**Our mission is over. We go home knowing what we accomplished did have an impact in the War on Terrorism.**

build pallets and help break down and distribute mail. Without their help we could have never met the needs of so many customers.

This Air Expeditionary Force deployment marks an occasion all of us in postal should be proud of. We supported the long build-up for OIF to the complete shut down of operations.

Marked on the signed inside wall of the mail terminal are the names of postal troops who have served over the years. So many names, familiar to me during my years of postal service, marked next to the many augmentees, past and present, who stepped up to make an impact to the base.

As I stood in formation at my final farewell to the Khobar Towers Memorial, one of many closing tributes to Prince

Sultan Air Base, the significance of this base overcame me. This memorial, commemorating 19 airmen who made paid the price for freedom, stands testament to the sacrifices thousands of troops endured while assigned here during the years.

Our mission is over. We go home knowing what we accomplished did have an impact in the War on Terrorism. The half a million pounds of mail moved during my seven-plus months may fade into the millions of pounds delivered through the years, but we leave here now knowing those of us in postal comforted the troops, provided critical components needed to fight and provided the morale boost we all needed to carry on.

# Meeting the call

By Maj. Gen. Timothy Peppe

Special Assistant for Air and Space Expeditionary Force Matters

WASHINGTON — Whether you were deployed to Southwest Asia launching wave after wave of aircraft, or at your home station working extra

Point  
of View

shifts to cover for those who were, you know that the Global War on Terrorism has required a massive Air Force effort.

But oftentimes I think it's hard to appreciate the full spectrum of operations our Air Force has participated in as part of the liberation of Iraq, the destruction of Al-Qaida, the protection of our homeland skies and the other recent operations in defense of our country.

So, I thought it would be helpful to provide a "strategic overview" of what the Air Force has been doing since Sept. 11, 2001.

To do this, I'll discuss the large numbers of airmen involved, the air mobility assets used and the incredible combat support efforts undertaken to defend the United States. **Not since Desert Storm has the Air Force been called**

**upon to amass as large a fighting force as it did for the War on Terrorism.** The Air Force has responded magnificently to the call for air and space power after Sept. 11, drawing from an unprecedented six Air and Space Expeditionary Forces. Add to that the significant portion of our air mobility and other enabler forces, and you start to see the immense scope of our service's recent activities.

**Although not everyone in each AEF was called upon to deploy, more than 120,000 airmen were involved and more than 50,000 deployed. And these were not just active duty, but Air National Guard and Air Force Reserve airmen as well.**

That total-force effort was also seen on the home front, where almost 20,000 additional active, Guard and Reserve airmen kept our homeland secure, supporting Operation Noble Eagle on the mainland and in Alaska, Hawaii and Guam.

Of course, these warfighting commitments didn't just affect those on the front lines. They affected the total Air Force community as home stations reduced services to its non-deployed

members, families, Reservists and retirees. In some cases, the Army National Guard and U.S. overseas allies filled in for those deployed by providing security for air bases at home and abroad.

Among the large numbers of people fighting the War on Terrorism are many who, prior to Operation Iraqi Freedom, were already operating at a high tempo. Airmen and equipment supporting the E-3 AWACs, E-8 Joint Stars, RC-135 Rivet Joint, U-2, Predator, Global Hawk and air mobility missions, as well as special operations airmen and combat search and rescue



AIR EXPEDITING

# for AIRPOWER!

forces, were already incredibly busy.

Because of OIF, training programs for the people assigned to these missions were greatly reduced and, in some cases, stopped altogether due to lack of aircraft, aircrews and maintainers.

**The War on Terrorism has also required some Herculean efforts by our air mobility team.** Air Mobility Command's total force of active-duty and air-reserve-component forces continued an unrelenting pace that began Sept. 11, 2001, and built our globe-spanning en-route structure, moving people, equipment and supplies, as well as deploying Air Force fighters and bombers. This

tremendous effort supported not only the Air Force, but also our sister services and coalition partners.

Many of the people and much of the equipment and supplies AMC moved were part of the extensive combat support efforts the war required.

**For example, the Air Force opened and operated an additional 18 expeditionary bases around the OIF area of operations, calling upon combat and combat-support capabilities from many AEFs. In some cases, entire Air Force career fields were tapped out.**

Opening these bases put pressure on AMC's tanker and airlift control elements and all of our combat support. After hostilities began, these TALCEs, along with assessment teams and contingency response units, also opened several bases inside Iraq.

The most recent campaign in our country's war against terror perfectly illustrates the might and power of the U.S. Air Force.

As Operation Iraqi Freedom unfolded, the world watched as air power from the Air Force, Navy, Marines and Royal Air Force attacked

Iraqi command and control with devastating precision.

**The combination of air and space power, special operations and information operations ground down Iraqi forces, leaving them demoralized, disoriented and without effective command and control.**

As a result, coalition ground forces shattered Iraqi resistance wherever it was encountered.

**While the giant-sized efforts of our Air Force are often exhausting and thankless, all airmen should be proud of what they have accomplished.** Al-Qaida is in disarray, our homeland skies are safe and the people of Iraq are finally tasting freedom. In the end, I think our Air Force chief of staff, Gen. John Jumper, said it best.

"As we begin the process of redeployment and reconstitution, we can all be proud of the total team effort," the general said. "Although the AEF may never be called upon in the future to simultaneously deploy people from six AEFs, we can all take great comfort in the knowledge that the AEF can, and will, respond successfully to any challenge our nation faces."



ONARY FORCE

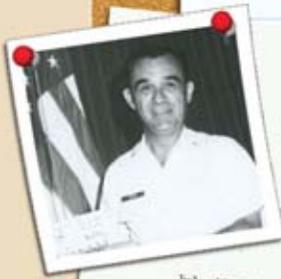
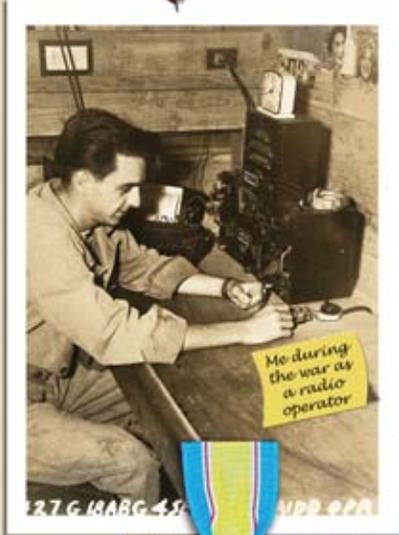
- Memoir of a Korean War communicator -  
By retired Lt. Col. Richard Frye

## A narrow escape at K-24

In 1951, a well documented book chronicled the activities of the 18th Fighter Bomber Wing from the inception of the Korean War through late 1951, however, some of the occurrences were only given cursory comment due to space constraints. One quote from its pages stated, "Remember the time Livermore and five airmen turned infantrymen and practically played hide and seek with some guerillas for almost two weeks on that airstrip? And the time we bugged out a matter of hours before the commie avalanche from the north poured over one of our sites." (Ross Livermore was a captain at the time and later became a lieutenant colonel.)

Due to the unusual circumstances of the item concerning evacuation prior to the Chinese onslaught [of which I was part of], a detailed account of that encounter follows. We were a detachment assigned to K-24, an airstrip located approximately 50 miles northeast of Pyongyang and about 100 miles from Choson on the Yalu River. We were a forward operating base for the 18th Fighter Group. Our base was parallel to a wide river. The terrain was flat and barren, and it was cold! On Nov. 26, 1951, 200,000 Chinese launched an attack on U.N. forces and North Korean guerillas were active to our south. We were ordered to evacuate our position in early December and most of the support people left immediately. Sixteen communications troops remained to destroy sensitive communications equipment. All other unclassified equipment was evacuated on a train headed south. We were to be picked up by C-47 that afternoon and taken to our new operating location in South Korea. The aircraft never showed up. It was later determined that an erroneous report of our complete evacuation had been sent to 5th AF Headquarters. Our wing commander,

Col. Low, and our squadron commander, Maj. Steele, were the only officers with us at the time, and they calmed us and issued instructions to dig in and an aircraft would certainly come for us the next day. We had, by this time, no communications capability at all. At dawn the next morning we looked across the river and saw a small contingent of Chinese troops who were estimated to be 3 to 4 miles distant. At the time, we didn't believe they were aware of our presence. Major Steele had our wire chief go to the cable head where there were some cable stubs sticking out of the ground and an EE-8 field telephone was used to ring down on pairs of wires. After several attempts, an operator at K-23 in Pyongyang answered and our commander was patched in to 5th AF HQ and connected to Gen. Partridge. We were assured that help was on the way. Less than an hour later, we saw an aircraft approaching from the east. It was a C-119 which was being ferried from Japan to Seoul and was diverted over the Sea of Japan to our location. The enemy population across the river was growing and as the aircraft approached over the river, he began to receive small arms fire from the ground troops across the river. (We had no way of warning him). The pilot, a second lieutenant with a Thai cadet co-pilot, landed, and, with the engines running, had us tumble into the aircraft from the rear. About two hours later, we landed safely at Suwon airstrip just south of Seoul. Later reports indicated that the Chinese occupied K-24 late that same day. It was a memorable and harrowing experience.



July 12, 1971

Commander  
Telephone & Teletype  
Horton Air Force Base  
San Bernardino, California 92409

Dear Sir:

Many thanks for all of the assistance you and your staff gave us when I made my 20th Anniversary USO Christmas Tour. Our telephone service has never been better, and I am informed it was because of the helpfulness of your telephone operators.

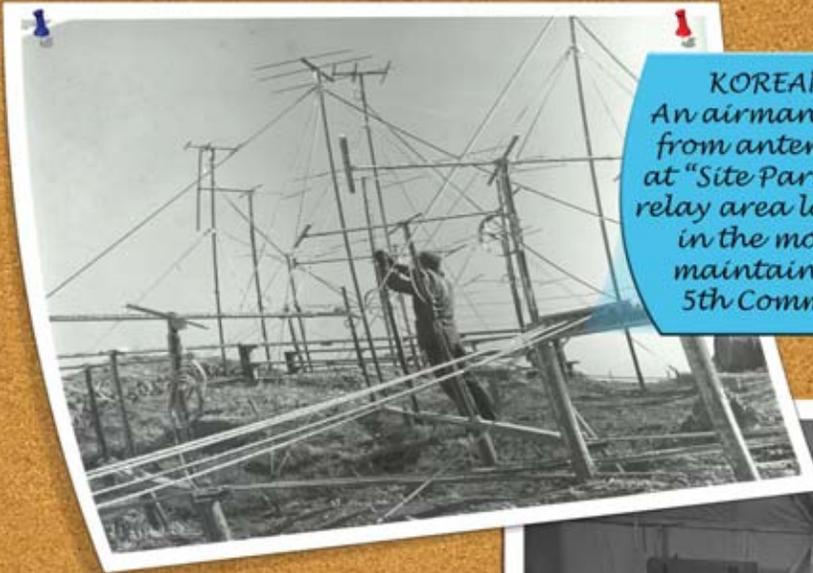
Under separate cover, I am sending you a memento of the Tour, with my best wishes.

Sincerely,  
*Bob Hope*  
Bob Hope  
M:go

BOB HOPE

I'm proud of this note from Bob Hope that was sent to me in 1971. He came to K-9, Pusan, Korea, in October 1950 when things were really hot!

# COMMUNICATIONS DURING WAR

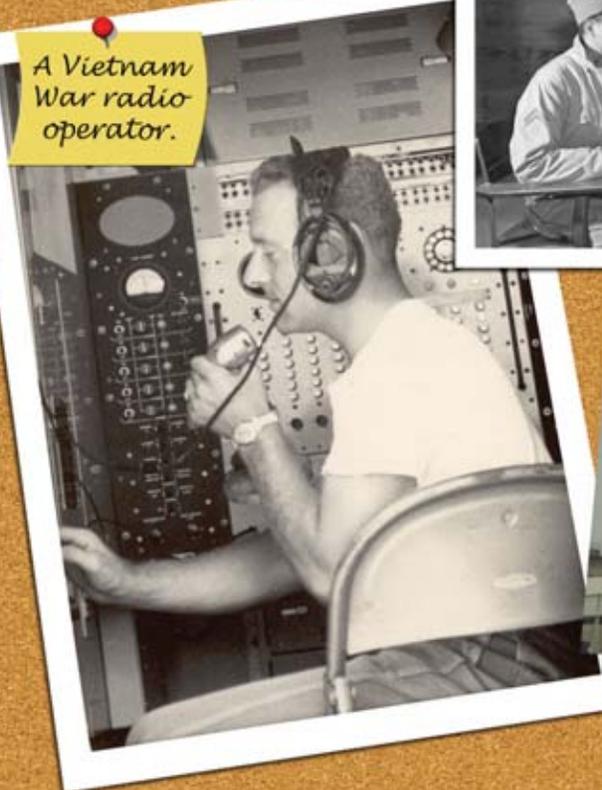


**KOREAN WAR:**  
An airman cleans ice from antenna cables at "Site Paris," a radio relay area located high in the mountains, maintained by the 5th Comm Group.

**WWII:**  
Tuskegee airmen train at the flying school in Alabama.



**A Vietnam War radio operator.**



**Desert Storm comm.**



Designed by Master Sgt. Karen Petitt  
Historical photos compiled by  
Patrick Johnson/AFCA HO



# RESHAPING how we test & field INFORMATION TECHNOLOGY

**By Mr. David Tillotson**

Director, C4ISR Architecture and Assessment  
DCS Warfighting Integration

The Air Force is working on a new process that will revolutionize Air Force acquisitions and improve the way the Air Force designs, develops, tests and fields weapons systems for warfighters.

Currently, the Air Force uses independent processes to document, design, develop, test and support National Security Systems and Information Technology systems. Process owners and stakeholders work in isolation, developing documentation for their piece of a program's lifecycle.

This creates two fundamental problems. First, process owners and stakeholders don't effectively communicate important information among themselves so important details (such as security accreditation and certification requirements) are left out of acquisition and procurement contracts. Because assessments are not done until late in the development cycle, information gaps and deficiencies aren't found until it's too late to make changes.

The second problem is that people don't take advantage of information from previous or parallel efforts. Each process owner or stakeholder produces records, certifications, analyses, and reports strictly for their purposes. These documents can hold lots of redundant information or, worse yet, conflicting data.

In the end, warfighter require-

ments are not met because of fielding delays or systems are fielded that are unsupported, stove-piped, unsustainable, and not user-friendly. Aside from wasted money, time and labor, this could put warfighters and their missions in jeopardy.

To solve this, the Directorate of C4ISR Architecture and Assessment, or AF/XIW, is leading an Interoperability and Supportability Steering Group that developed a new information-based, integrated process concept called the Integrated Framework. It will apply to all Air Force programs throughout their lifecycles. It also calls for sharing information among all process owners and stakeholders from requirements generation through fielding and sustaining a program.

Using the Integrated Framework requires a transformational shift of current practices and more cooperation on the part of Air Force process owners and stakeholders. Everyone will be involved from program inception – including requirements, acquisition, intelligence, and test communities – regardless of a program's acquisition category or funding appropriation.

The Integrated Framework will be an information-based collaboration that takes place predominately in cyberspace. The Steering Group's vision is to link various existing Air Force databases that contain requirements, acquisition, testing, development, and sustainment information. Process owners and stakeholders will take advantage of existing knowledge

management tools to access the different databases. Users will be able to input and extract information via the present web-based interface that will direct all of a program's information to the required database. The tool will also track users' inputs and produce tailored information worksheets for each program.

Because all process owners and stakeholders will have access to the Integrated Framework system, information can be shared at any point during a program's lifecycle. The databases will include all of the information requirements housed in the multitude of acquisition documentation. The bottom line goal is to eliminate wasteful processes and non-value-added paperwork as we go about the business of fielding systems.

After developing its initial concept in February, the group spent the next few months creating an Integrated Framework model. That model is now ready to be tested. The Steering Group and various Air Force, Joint and DoD organizations will run a pilot program through October.

The Steering Group is working with the Standard Systems Group on a list of candidate programs for the pilot. Participants will include program managers, developers, testers, Air Force Communications Agency, major commands, and Air Force headquarters functionals. It's all about ensuring the capabilities provided to warfighters are secure, interoperable, supportable, sustainable and useable.

Personnel News

**PERSONNEL WEBSITES:** If you're tired of searching for those hard to find personnel Web sites, then take a look at a recently updated "Toolbox." This document provides a consolidated listing of Web sites from the Air Force Personnel Center and from other official sources. It covers Air Force benefits, retraining, Selective Re-enlistment Bonuses, assignments, education, promotions and news sources. The list was originally created by Master Sgt. Mike Faulkingham, the career assistance advisor at Malmstrom Air Force Base, Mont., and is updated periodically. Check out the newest version at [www.afpc.randolph.af.mil](http://www.afpc.randolph.af.mil) and click on "enlisted," "retention," "supervising information," then to "supervising" and it's listed at the bottom of that page. (Senior Master Sgt. Leon Hall, Scott AFB, Ill.)

**PREVENTING WORK VIOLENCE:** Workplace violence recently made national headlines at the Lockheed Martin plant in Meridian, Miss., where six people died and nine others were injured. JoAnn Hutchison, workforce effectiveness branch chief at Warner Robins, AFB, Ohio, said the term "workforce violence" brings to mind physical attack or assault, conversation that was once considered "shop talk" and is no longer appropriate. Workplace violence is now defined as any specific acts, words, comments or conditions that would lead a person to reasonably believe a violent act will occur. And officials at all levels say they take protecting people and property very seriously; actions or threats of violence will not be tolerated and will be dealt with appropriately. Disciplinary actions taken for violence-related incidents could include removal from employment in some cases. (AFMC News Service)

**Troop support**  
**GIFTS TO THE TROOPS:** As a result of the overwhelming public support for the military during the ongoing War on Terrorism, the Department of

## Don't be involved in a career wreck caused by a faulty record

### Check out your civilian career briefs online

Your career brief information is now just a few clicks away (or a lot of clicks if you don't have a Common Access Card) at the following Air Force Personnel Center Web site: <https://www.afpc.randolph.af.mil/afpcsecure/default.asp>. All you need is a logon ID and password to AFPC's secure web site. If you don't have a logon or your password has expired, this page will give you instructions on how to set up or refresh your account. Once you have successfully logged onto this site (just click OK, next, continue, or finish through all the certificate prompts), you will see a button for civilian career brief. Just click on it, then submit and you should see a page with your name and links to display various information from your personnel record. You should click on each of the links to review the data and verify its accuracy. There is also an option to print your career brief. If your review reveals missing or incorrect information, contact your local Civilian Personnel Flight for guidance on how to get your record updated. Remember, as the owner of your personnel data you are responsible for seeing that it's maintained properly with routine checkups and necessary repairs. (Diane K. Hancock, AFCA)



Defense has drafted specific guidance to deal with the acceptance of gifts by its personnel. According to the guidance, Air Force employees and their families may accept gifts from non-Federal sources as long as those gifts are not offered by a prohibited source or offered due to the personnel's official position. Prohibited sources include anyone who seeks repayment from the gift, to include doing or seeking business with the employee's agency, conducting activities regulated by that agency, or having interests that could be affected by the agency's action. The guidance recommends that monetary gifts from the public be made directly to private relief organizations, such as the Air Force Aid Society, American Red Cross, United Service Organization and Veterans of Foreign Wars. These donations are eligible for deduction from the donor's tax return. As the number of servicemembers deploying to support operations overseas has increased, so has the amount of gifts sent to deployed locations. Due to security and transportation concerns, DOD urges that the public do not send mail or pack-

ages to deployed troops unless they are family members or personal friends. Other means of showing support include online greeting and thank-you cards located on several different Web sites. Another way to show support is by volunteering time and resources through local service organizations to help the families of deployed troops. Information on other ways the public can show support for the troops can be found at [www.af.mil/news/opscenter/troop\\_support.shtml](http://www.af.mil/news/opscenter/troop_support.shtml). (2nd Lt. Dustin Hart, AMC/PA)

**TICKETS TO IRAQ:** Some people think they can just show up to a military terminal and hop on an airplane to get to Iraq. Not so says Sharon Boynton, Deputy Director of the Global Channel Operations at Scott Air Force Base, Ill. Servicemembers should first

visit their installation transportation officer to ensure transportation on an Air Mobility Command Patriot Express commercial mission. It's important for Iraq-bound travelers to understand why there may be no space offered for passenger movement on an aircraft headed in their direction. Currently, there are no validated passenger missions from Ramstein directly into Iraq, according to Ms. Boynton. The combatant commander's priority is movement of sustainment cargo. When passengers ride on military aircraft, there is less space available to move palletized cargo and vehicles.

"To alleviate the need to create new missions validated for passengers, and to avoid a backlog of weary passengers, U.S. Central Command directed Patriot Express as the preferred travel mode through Al Udeid (Qatar) and Kuwait to get to Iraq," said Brig. Gen. Paul J. Selva, TACC commander. "If you are bound for a destination in Iraq, plan your travel with your installation transportation officer as early as possible for booking on a Patriot Express mission to a theater hub location.

The Patriot Express system enables deploying personnel



travel aboard a commercial aircraft departing the U.S. from Seattle, Atlanta, or Baltimore (the main departure points from the East Coast), as well as Frankfurt, Germany. Passengers then proceed to Kuwait or Al Udeid where they will transfer to a military aircraft for movement into the Iraqi theater.

There are no AMC contracted commercial aircraft flying directly into Iraq because of the existing security threat. (Master Sgt. Paul Fazzini, AMCNS)

## KUDOS

**DMS STRIKE TEAMS:** From the scorching heat and blowing sand of the Arabian Desert to the freezing cold of the Himalayas, the Defense Messaging System Air Force Strike Teams encountered a range of weather conditions and technical hurdles to bring secure e-mail to the Air Force warfighters in Southwest Asia. DMS is the replacement for the aging AUTODIN messaging system, which will be phased out by the end of this month. Unlike AUTODIN, DMS also allows people to send attachments right to the users' desktop, alleviating the cumbersome and time-consuming process of hand delivering critical, time-sensitive messages such as Air Tasking Orders. Air Force Communications Agency, and the Defense Messaging System-Air Force Program Management Office and the DMS Technical Support Center (both part of Air Force Materiel Command/Standard Systems Group), assisted in developing the plan and leading its execution.

Three teams of four to seven people spent countless hours hopping C-130s to travel to 21 bases, in 12 countries including Afghanistan, Bahrain, Djibouti, Kuwait, Kyrgyzstan, Oman, Pakistan, Qatar, Saudi Arabia, United Arab Emirates, Uzbekistan and Iraq. Two team members were right in the middle of the action at the Combined Air Operations Center in Prince Sultan Air Base, Saudi Arabia. They worked directly with the Joint Communications Control Center to ensure Air Tasking Orders were available to the warfighters. The biggest challenge of the operation was pro-

viding the fortezza security cards, which are unique to each organization user. However, a unified effort between the organizations, including 24-hour card-cutting operations, ensured cards were available. The teams also overcame "timing-out" obstacles on the DMS system by devising a scheme to employ a Local Service Directory Agent, which would replicate the global directory at the local level. In some cases, with excess servers not being available at a site to employ as agents, the teams devised a work-around using a standard PC to act as the agent. (Maj. David Hansen/AFCA)

**SCOPE NET:** Eight members of an elite computer weapons operation unit called SCOPE Network volunteered to assist the Network Operations and Security Center deployed out of Shaw AFB, S.C., in what they thought to be a routine computer network upgrade task.

The NOSC-D is responsible for all phases of network operation in Southwest Asia, but the simple mission took so many twists and turns, it

was as if the job came out of a Stephen King novel.

The first two objectives started in January, focusing on support for Jordan, and those sites set the tone for the next 90 days. Throughout the upgrade, customs officials held up the equipment for weeks as countries did not allow the team to enter certain areas, and there were limitations on personal and job related items the team could bring into the country. After finally completing the set ups in Jordan, then standing up a site in Kuwait, the team's efforts were delayed for political sensitivities. But, the team found other ways to help the war effort. They installed Net Scout equipment at other bases used to collect network data throughout SWA to help the NOSC-D create simulations and develop modeling so as to get an idea what the network, throughout SWA, looked like during a state of war. They also assisted other bases with overcoming critical network failures. Then, other sites were ready for the team before they made it into Iraq, where they were responsible for the network upgrade of three bases.

Deployments to Iraq will become commonplace during the next year or so, but the SCOPE Net team will have the knowledge that they were there from the beginning. (Capt. Alfredo Corbett/AFCA)

**TROOPS CAPTURE IRAQI:** Troops from the 3rd Combat Communications Group at Tinker Air Force Base, Okla., called on school-taught skills in June when they helped capture a member of Saddam Hussein's republican guard at Baghdad International Airport. Staff Sgt. Juan Camargo, a heating, air conditioning and ventilation technician with the 32nd Combat Communications Squadron, was working June 9 alongside other 3rd Herders at a radar site at the airport when the enemy soldier was spotted by three air traffic controllers during a security check of the premises.

"They found this guy lying down in an abandoned building at the radar site," Sergeant Camargo said. "They had no clue who he was. They went ahead and confronted him [and] one of the guys said, 'Call the 3rd Herd.' All of us went out there with our



Master Sgt. Shawn Murphy / RAGBRAI

## Freedom Ride

Air Force Communications Agency's Dr. Carol Belt leads the parade of 'Team Air Force' cyclists July 26 into Fort Madison, Iowa, during the seven-day, 450-mile Des Moines Register Annual Great Bike Ride Across Iowa. The American flag on Dr. Belt's bike had been recently flown over Baghdad and Bagram, and was carried in the parade to honor American forces serving in Operations Enduring and Iraqi Freedom.

weapons to make sure they were OK and to secure the perimeter until security forces showed up." Camargo, joined by Master Sgt. Artie Poe, Staff Sgt. Dennis Hernandez, Senior Airman Donald Beasley, Senior Airman Michael James, Airmen 1st Class David Kennedy and Brandon Collins, flanked the abandoned building where the Iraqi soldier was hiding.

"We secured a 360 [degree] perimeter around the building - just the way the CCRS teaches us," said Sergeant Camargo, who completed the mandatory in-processing course in February. "It was fresh in my mind; it helped out quite a bit."

Tech. Sgt. Michael Mujwid, NCO in charge at the school, said the CCRS curriculum includes land navigation, rules of engagement, use of force, mission defense, use of the M-16, code of conduct, tactical movements and anti-terrorism.

Participants learn how to move as a team to take out an enemy. The Iraqi was first spotted by Airman 1st Class Richard Mansure as he patrolled the area with Staff Sgt. John Shipp and Senior Airman Matthew Hanes.

It was their first patrol on their first day for the pair, who realized something was going on when Airman Mansure suddenly chambered a round in his weapon. "We didn't have any rounds chambered," Shipp said. "When Mansure chambered his round, we stopped and did the same." Sergeant Camargo said the 3rd Herders were in Baghdad for a six-month deployment. "It's calmed down quite a bit since we first got here, but it's still dangerous," he said. "It's still hostile out there. The day before yesterday we got a call from base defense telling us Army was under fire not far from us. We still do security checks and have to go in pairs." (*Maj. Matthew Haber and Capt. Trisha Cundiff*)

## New Developments

**\$2.2 BILLION BUDGET:** Air Force Materiel Command leaders showed members of the House Armed Services Committee in July a few technologies that \$2.2 billion in 04 Air Force dollars

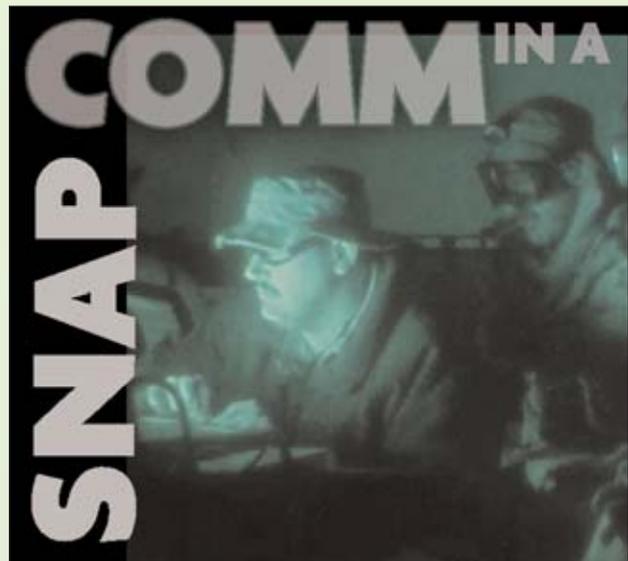
would continue funding.

The congressmen witnessed firsthand such technologies as the battlefield air operations kit designed to make combat controllers more efficient while lightening their backpack load; panoramic night vision goggles, which give operators a more natural view of their surroundings as they go into nighttime operations; and active-denial technology designed to control large crowds via millimeter wave energy that causes intense heat without causing injury.

Addressing committee members in formal testimony, Maj. Gen. Paul Nielsen, Air Force Research Laboratory commander, said technology allowing the Air Force to transition to advanced munitions before Operation Iraqi Freedom greatly added to coalition success.

He said weapons designed to neutralize chemical weapons and a non-explosive weapon designed to penetrate soft storage facilities and mitigate chemical or biological weapon threat in the process both proved significant resources for the warfighter.

But directed energy is literally the wave of the future, Nielsen said as he indicated possibilities ranging from laser communications to advanced lasers for tactical weapons. Directed energy deals with lasers, high-power microwaves and other associated energy technologies such as active denial. With future national security and continued American military might in the crosshairs, Lyles cited three strategies Air Force experts will use to spend allocated dollars wisely. First is procuring integrated, innovative technology solutions to make sure warfighters' needs are supported in every aspect. The second strategy is procuring new and enabling technologies that Air Force Research Laboratory experts are studying. Nielsen cited self repair as one example of biomimetics— trying to find materials that emulate nature by mending themselves much as a starfish does when it loses a limb. The third budget strategy is to attract and nurture scientists and engineers, as the Air Force is short some 2,500 people in this area. (*Tech. Sgt. Carl Norman, AFMC Public Affairs*)



The 16th Communications Commandos deployed all over the world in support of Operation Iraqi Freedom and Enduring Freedom.

They've used all types of equipment to give deployed commanders real-time communications capabilities in the field. The equipment needed to fulfill their missions has ranged from four full pallets to just two small suitcases. In just two suitcases a communicator can provide secure, non-secure voice and data. It also provides a means for secure Internet connectivity back to their home station network.

This portable communications system is referred to in the special operations community as the Small Network Access Package or SNAP.

SNAP and one communicator were the communications vital link at a Forward Arming and Refueling Point at the beginning of OIF. Tech. Sgt. Robert Kalch had just hours to pack his bags and hop on a MH-53 PaveLow for a ride to a classified FARP. After arriving on station Sergeant Kalch set up the SNAP terminal in 15 minutes and was providing the on-site commander with full communications in less than 30 minutes.

The SNAP consists of a data case and a M4 case. The data cases consist of a notebook computer, ISDN terminal adapter, printer and scanner. The M4 case contains an INMARSAT "M4" Terminal and STU-III. Sergeant Kalch used all of these devices to support U.S. and coalition personnel at the FARP location.

Leadership was able to use MIRC chat to talk over the secure network with numerous sites coordinating everything from aircraft maintenance to tracking multiple ongoing missions. The SNAP is also capable of video teleconferencing, and secure fax transmissions with additional equipment. (*Master Sgt. Timothy Davis, Hurlburt Field, Fla.*)

# Wireless networking for the **classified** ENVIRONMENT



## Secure wireless environment

Wireless Local Area Networks offer several benefits over wired networks, such as flexibility and mobility. These capabilities, especially important to users in deployed environments, have up until now been unavailable to users of classified networks. Additionally, there have been significant security concerns with WLAN use. Encrypted WLAN components could change that in the future. Currently, the Air Force Communications Agency is testing one such device, SecNet 11.

## What is it?

SecNet 11 incorporates NSA Type 1 encryption approved up to and including Secret level within a PC card (pictured), to provide a variety of options for Secure WLAN implementation.

## How does it work?

In the simplest Secure WLAN configuration, notebook or desktop computers equipped with the SecNet 11 card can communicate with each other directly via an ad hoc network. This is useful for small advance teams or special operations units that need a small-scale secure WLAN capability.

For more robust capabilities, a SecNet 11 Access Point can be used to connect one or more SecNet 11-equipped PCs to a wired network infrastructure. SecNet 11 Wireless Bridges can be used to connect two independent networks into a single network, enabling secure point-to-point wireless communication. This capability may prove useful in connecting classified network enclaves within a deployed base. The Wireless Bridge can also be configured to operate simultane-

ously as an Access Point. The Access Point and Wireless Bridge devices both require the insertion of a PC Card to operate, and are unclassified when the card is removed.

SecNet 11 uses a modified version of 802.11b protocol, and so is not interoperable with non-SecNet 11 WLAN devices. The operating frequency is 2.4 GHz, but the manufacturer may in the future offer versions that operate within military bands (C, L, and X) that will enhance deployability. AFCA has already evaluated WLAN frequency converters with great success – the report is on the AFCA web site.

## Preliminary tests

Preliminary AFCA test results yielded network throughput of 3.69 Mbps, comparable to actual throughput of 802.11b WLANs. Range testing results showed that using the default antenna the SecNet 11 functioned at distances of more than 2,100 feet (0.4 miles) with line of sight. By attaching external antennas and amplifiers, outdoor performance was demonstrated successfully up to 10 miles point-to-point. Network and device management is a prime consideration especially for a deployable network.

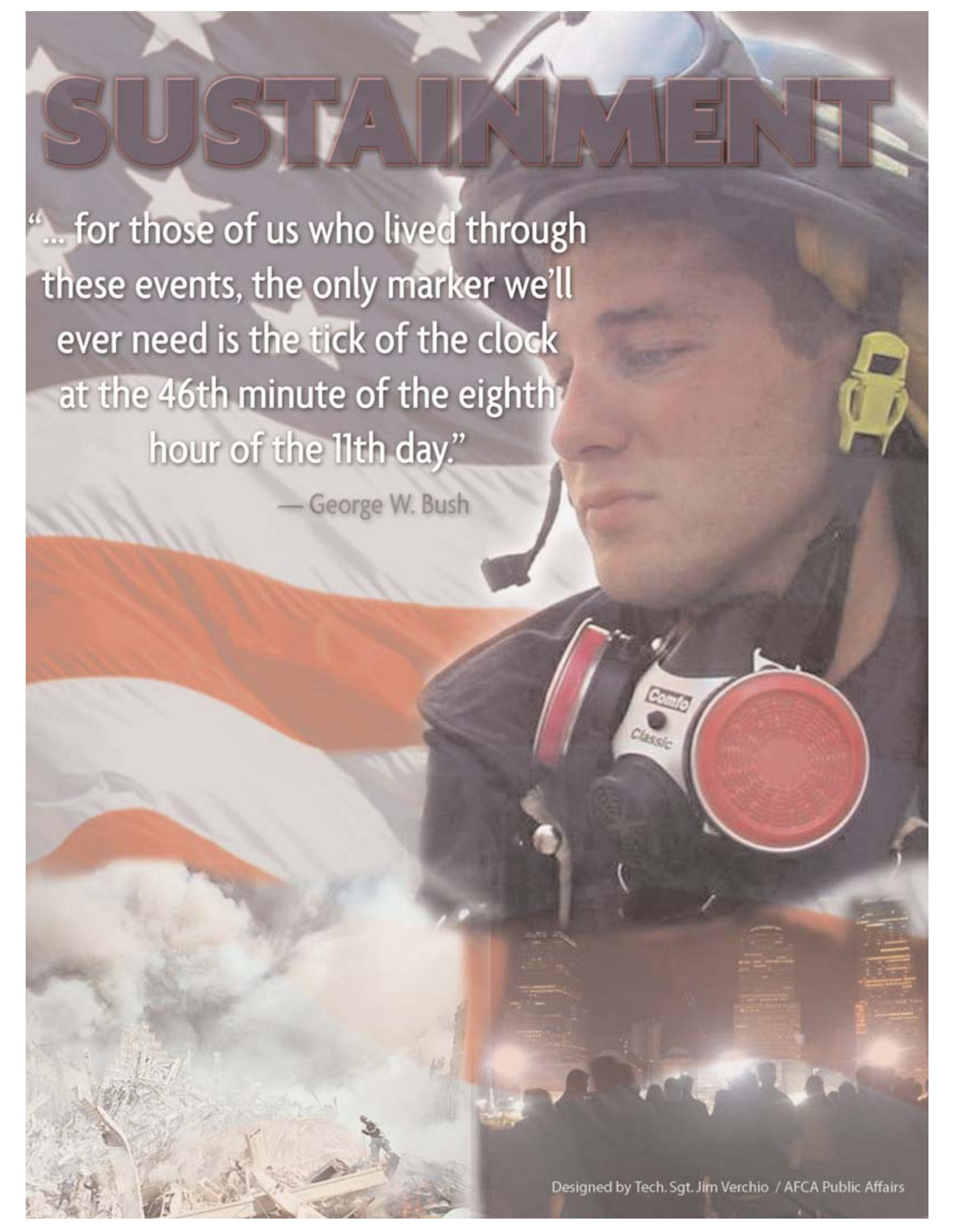
Authenticated users can configure and manage the Wireless Bridges and Access Points on a SecNet 11 network by using a web-based utility. Loading of the cryptographic key into the SecNet 11 PC card is accomplished with a standard Data Transfer Device using an adapter cable. The keyed PC cards can be zeroized either physically or via software.

**A technical evaluation of the SecNet 11 will be available soon on the AFCA Wireless Networks Web page: [www.afca.scott.af.mil/wireless](http://www.afca.scott.af.mil/wireless)**



Source: Mr. Cedric Mitchell, AFCA/TCI

# SUSTAINMENT



“... for those of us who lived through these events, the only marker we’ll ever need is the tick of the clock at the 46th minute of the eighth hour of the 11th day.”

— George W. Bush

*Euphrates*

“This enemy holds no territory, defends no population, is unconstrained by rules of warfare, and respects no law of morality.

Such an enemy cannot be deterred, contained, appeased or negotiated with; it can only be destroyed, and that’s the business at hand.”

*Lake*

**--Vice President Dick Cheney**  
on the Global War on Terrorism

