

intercom

Journal of the Air Force C4 community ★ April 2004



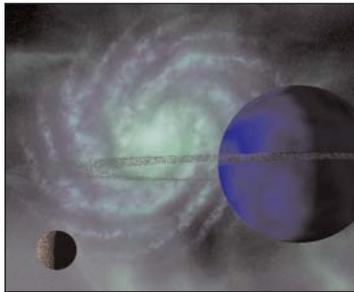
Satellite Comm

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- ▶▶ ACC Wideband: SATCOM in transition
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intercom



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THE JOURNAL OF THE AIR FORCE C4 COMMUNITY

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From the editorial desk



'Intercom' earns recognition

By Master Sgt. Karen Pettit
Managing editor

We'd like to pass along some great news about how your efforts helped earn this magazine recognition throughout the Air Force and DoD. Earning a **first place finish in the online publication category** of the Air Force's annual media contest is the *intercom online*, designed and built by **Tech. Sgt. Mark Diamond**. He's a public affairs NCO who volunteered his time to design and build our site. He has truly set the standard in Web publications, and we can't thank him enough for his excellent work. Next we thank you, our readers, who sent in stories, photos, feedback and suggestions, thus helping the *intercom* earn a **second place finish in the magazine category** at the Air Force level competition. Your contributions truly make this magazine a beacon for the rest of the Air Force, and we feel it's the best of the best. We hope we're making you all proud! Also, our staff, along with 1st Combat Camera's **Clarence Brown** and **Tech. Sgt. Cecilio Ricardo**, has been recognized for our December special issue as the **best designed publication in DoD's annual Visual Information Awards program**. That issue featured the work of combat camera photographers, and was cited for "setting the precedent in visual journalism excellence." We feel this recognition will help bring Public Affairs and Visual Information professionals together on many more important joint projects in the future. So pat yourselves on the back! You're awesome!



Letters to the editor

Then and Now

Please give Mr. Don Gasper my sincere thanks and gratitude for all that he did in featuring me in the "Then and Now" article published in the January issue.

I got positive feedback from my friends, associates and family, but the *best* was my own reaction to the article and the *memories* of the past that came to light! Many, many thanks!

—**Judge John A. Milano**
Garden City, N.Y.

I read with glee the fine article on Col. Derrel L. Dempsey in the February *intercom*. A career ATC officer, I was surfing through your on-line edition, reminiscing about all those neat controller stories and pictures that used to appear when it was still a "newspaper" and up popped the "Then and Now" tribute to Colonel Dempsey.

I still proudly carry a circa-1982 controller's "pink card," with Colonel Dempsey's signature emblazoned on it. His stellar example of effective leadership helped mold me into the officer I am today. My hat's off to him!

—**Maj. William A. Malec**
Goodfellow AFB, Texas

Great stories

Just a note to tell you all how much we at the AACCS Alumni Association appreciate the *intercom* magazine and in particular articles like the ones in the February issue on Col. Derrel L. Dempsey and Owen Hyams. It's just a great magazine, and our cyberspace members also read it on the AFCA Web site.

—**Mac Maginnis**
Membership director
AACCS Alumni Assn.

JAG
in a **Box**

Fritz Mihelcic
AFCA Deputy
Chief Counsel



Antenna access

Can we allow private carriers access to our on-base antennas so they can site cellular repeaters and other devices?

Yes. In 1995 President Clinton signed an Executive Memorandum allowing the government to lease space to private industry.

A This was followed by the 1996 Telecommunications Act and GSA guidelines encouraging this use.

If you do allow it, based on input from the base decision team, then your base can charge the fair market value for the space.

Half of the money received goes to the Air Force, but the other half can stay at your installation for local use.

If you can negotiate with the company for an in-kind payment, then you can keep everything.

In-kind payment can be many things, such as provided telephones, free airtime, and offers of maintenance for the tower itself. You've got a chance to be creative, but don't go overboard!

We've got a package of materials that outline things to think about, to include interference issues, security, contracting, and, of course, liability.

There can be pitfalls, so if this issue comes up at your base give us a call, and we'll be happy to help.

Send in your question to:

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



Space

Leadership in the 21st century



From
the Top

By Brig. Gen. Richard E. Webber
Commander, 21st Space Wing

PETERSON AIR FORCE BASE, Colo. — When Space Command activated in 1982, its first commander, Gen. James Hartinger, said it was “a crucial milestone in the evolution of military space operations.” Since then, Space Command has lived up to its mission statement to “Defend the United States through control and exploitation of air and space.” We’ve evolved from a command that only developed, launched, and controlled satellites to a command that integrates space combat power into how we organize and fight our nation’s conflicts.

We have shaped the future and now it’s time to move on to “Command the Future”—the vision of the current commander, Gen. Lance Lord.

During Operation Enduring Freedom, I had the opportunity to bring “space power to the fight” as the first senior space officer assigned to a combatant Coalition Forces Air Component Commander, and served as the Assistant Combined Air Operations Center Director for Space and Information Operations within the area of responsibility.

We led the first employment of deployable space systems in direct support of combat operations. Operations includ-

ed the first employment of the Global Positioning System Enhanced Theater Support capability. This was the first time we folded the full spectrum of space capabilities into the Master Air Attack Planning process, ensuring integrated air and space combat power was directed on-target and on-time.

We used the Space Based Infrared Systems to provide immediate battle damage assessments and support to combat search and rescue operations. The warfighting capabilities provided by our space forces are clearly key military asymmetric advantages not seen before OEF, and clearly an advantage we can no longer fight without.

Operation Iraqi Freedom was the first real “space war” with truly integrated space throughout the battlespace. We used capabilities from space to ensure we maintained both air and space superiority. The contributions provided were many—high bandwidth, protected, robust communications, missile launch warning, real-time battle damage assessment support, and more than 700 deployed space professionals contributing to the fight.

These advantages are not just the result of our space systems and their capabilities alone. Our leaders are a large part of the equation. The vision of establishing a senior space

Seven thrusts to success

Space Command’s strategy, commanding the future, is the flight plan for transformation to maintain control of the ultimate high ground of space. Our strategic thrust areas capture the essence of space transformation.

“Command the Future”

This concept provides the overarching vision and guidance for efforts in the other thrust areas.

1

Enterprise

This thrust leads the development of a new generation of capabilities, to include responsive/assured space access, integrated ISR, prompt global strike and space superiority.

2

Partner

A key product of this area is to enhance our capability to command and control space forces by creating and sharing a joint battlespace awareness capability.

3

Unleash human talent

This thrust develops space professionals and guides career paths to create a space cadre of all the disciplines needed to maintain space dominance.

4

officer continued to evolve after our Afghanistan OEF experience with the placement of a dedicated senior space officer, and for the first time the Combined Forces Air Component Commander was designated as the Space Coordinating Authority to integrate all joint space capabilities on behalf of the combatant commander.

We've matured the contributions of space to a level that is revolutionary in the realm of combined and joint operations. This new construct wasn't envisioned 50 years ago. Today we have space operators working alongside operators at combatant commands around the world as well as at their air, land and sea components. In the future, the senior space officer in the air component will be known as the Director of Space Forces, as approved at CORONA South in February.

The DIRSPACEFOR construct is similar to the senior space officer concept—a senior advisor to the Commander Air Force Forces and Combined/Joint Forces Air Component Commander during conflict. The DIRSPACEFOR has many responsibilities including assisting in the prioritization of space capabilities, coordinating reachback, and most importantly, executing day-to-day authority to coordinate joint theater space operations. The DIRSPACEFOR is a leader in space capabilities and the contributions that Space brings to the fight.

The DIRSPACEFOR must, as its predecessor the senior space officer did, become an integrated partner in how we command, control and execute air and space power as part of a joint team. We must integrate air, land, sea and space capabilities to provide the greatest combat advantage and deliver the most potent wartime effects. Only within the last 10 years, after Operation Desert Storm, did the concept of integrating space capabilities begin to be realized across not only the Air Force, but all services, and influence how we all organize, train, equip and fight our nation's conflicts.

Just as space transformed our society (GPS, for example,

syncs our power grids, cell phones, and ATM transactions), it has transformed our military with the doctrine-changing DIRSPACEFOR construct. Air Force Space Command, under the leadership of General Lord, is taking the team farther ahead in this transformation, and every leader in the command has a vital role in this effort.

His intent is to transform the command and provide full spectrum space combat capabilities to ensure the United States remains the preeminent space force on earth.

Space superiority is our mandate and requires the same sense of urgency that we placed on gaining and maintaining air, land and sea superiority.

This year we will celebrate the 50th anniversary of Air Force Space and Missiles. Satellite communications is an important part of this celebration, but by far, it is not the only capability Space brings to the fight.

Through focused, trusted and experienced leadership, we've matured Space to become an integrated and essential partner in wartime and peacetime. The biggest challenges to our space forces are not behind us, but lie ahead.

Continued leadership, focused on commanding the future and integrating our capabilities throughout the joint fight will ensure we maintain the asymmetric advantage that has allowed us to be the dominant and winning force. I cannot imagine a more exciting time to be in the Space business.



Satellite launch

SPACECOM flight plan

Warfighters

This thrust focuses our ability to operate from, in and through space with combat ready forces. The DIRSPACEFOR construct is leading the way.

5

Wizards

This thrust charters professionals to think outside the box and encourages space specialists to develop new power theories and concepts.

6

Technology to warfighting

This thrust recognizes today's capabilities are based on yesterday's technology, and we must focus this technology on warfighting capabilities.

7

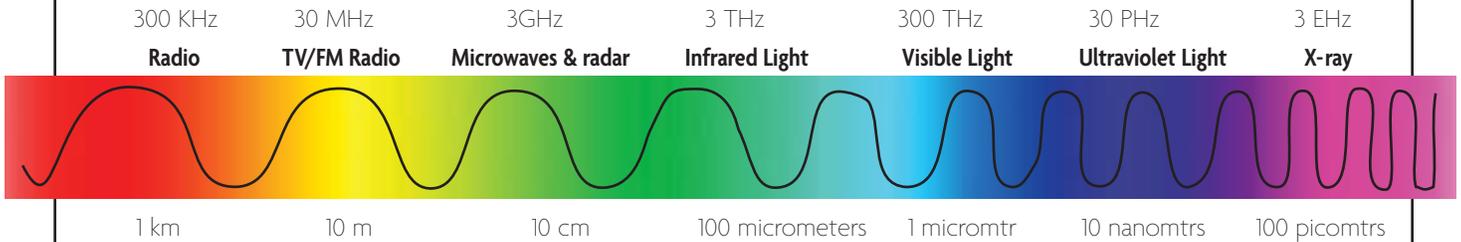
Satellite Comm 101

By: Master Sgt. Karen Pettitt
Source: U.S. Army, AFCA

When discussing satellite communications and capabilities, it's good to have a baseline of understanding. Here are few critical items to consider:

Understanding the frequency spectrum

Frequencies are measured in hertz: kilo, mega, giga (radio, microwave, radar), tera, peta, exa (light, ultraviolet ray, x-ray). The higher the frequency, the more power required to penetrate rain, snow, etc., while lower frequencies suffer less attenuation.



There are three parts to all communications: the space segment, the control (or antenna/dish) segment, and the ground/user segment. Wavelengths determine the design of the antenna. Normally, the higher the frequency, the higher the bandwidth and data rate support.

Where the 'bands' fit in

Radio frequencies are divided into groups that have similar characteristics called bands, that are then sub-divided into channels. Many different frequencies are used in satellite communications. They are referred to by letters or by the frequency acronym. Different bands work better for different missions. Also, various bands are used so more of the spectrum can be used. The higher the frequency, the bigger the bandwidth. For example, 3 GHz has 400 times more the bandwidth capacity than 30 MHz.



* Referring to bands of satellite comm freqs by using letters started in WWII to keep enemy forces from determining the exact radar frequencies being used. This is why the designations follow no logical sequence.

Small terminals, economical, flexible, highly mobile.

Vulnerable to nuclear event, susceptible to jamming, crowded spectrum, access is difficult.

More bandwidths, flexibility in routing, global connectivity, less vulnerable to nuclear blackout.

Limited frequency allocation, susceptible to jamming, ground terminals are large and expensive.

Extensive bandwidth, uncrowded spectrum, jam resistant, small equipment, least vulnerable to blackout.

Technology immature, risky, susceptible to rain, expensive to outfit.

Satellite types the DoD uses



UHF Follow-on
 Mobile units. Space segments are limited, users increasing.

Global Broadcast System
 Newer capability. High throughput, small antennas, smart push/pull data broadcasts.

DSCS (Reachback)
 User data requirements increasing for data, imagery and split-based operations.

Milstar
 Used for battlefield communications. Well protected for the warfighter.

Commercial
 Used to augment MILSTAR, high throughput, pay for services.



Skyward bound

A Boeing Inertial Upper Stage payload booster vehicle successfully deployed an Air Force Defense Support Program satellite Feb. 14. The Defense Support Program is a satellite surveillance system providing the United States and its allies with ballistic missile early warning and other information related to missile launches, surveillance and the detonation of nuclear weapons.

Courtesy photo



Air Force SATCOM

COMMUNICATORS LEVERAGE FUTURE TECHNOLOGY

By 2nd Lt. Dennis French Jr.

31st Combat Communications Squadron

TINKER AIR FORCE BASE, Okla. — Years of research, real-world experience, user input and new advances have brought about many innovations in the way the Air Force connects today's warfighters.

"In today's Air Expeditionary Force environment, satellite communication is critical for us to provide support at home and deployed locations," said Senior Master Sgt. Richard Henderson, supervisor of the 31st Combat Communications Squadron Network Systems Flight.

Some of these innovations include commercial equipment, which is cost effective, solid-state and will extend the life of several satellite terminals. For example, the 3rd Combat Communications Group has new commercial modems plus up and down converters available for the AN/TSC-100A. The 3rd Herd has implemented some of these changes and has reported increases in both efficiency and circuit robustness.

"These upgrades are coming at a time of change for the military, and we're able to be flexible and change along with it," said Master Sgt. John Houghton, NCOIC of 31st CCS Weather Systems Support cadre. "We have lighter packages and are able to deploy smaller teams. Many of these upgrades allow deployment set up to be completed hours ahead of schedule, which saves the military time and helps complete the mission faster."

A new innovation for wideband SATCOM is the Wideband Gapfiller Satellite program, which replaces the

current Defense Satellite Communications System. This new system transmits a much higher data rate, 2.4 gigabits per second — almost 10 times the rate of the DSCS satellites. This program provides the Department of Defense with a military Ka-band operating at 20-21 GHz download and 30-31 GHz upload.

With technology, it's important for communications warriors to look to the future.

REPLACING MILSTAR

The Advanced Extremely High Frequency system is one of the satellite systems projected for the future. This system will replace Milstar and will provide 12 times the throughput of that system. Single user's data rates increase dramatically, more than four times that of Milstar. So for every one link of the old Milstar, the Air Force now has 12 operating at four times the speed. This upgrade is like a one-lane road being transformed into a 12-lane information Autobahn.

Like Milstar, AEHF uses spot beams, which focus power to improve the overall connection to small and large terminal users all while minimizing interception and interference opportunities of adversaries. This system will ultimately support twice as many tactical users and enhance compatibility with international allies.

Another part of the protected satellite system is the Advanced Polar System.

In 1995 the Joint Requirements Oversight Council recognized the need for polar coverage. At that time, payloads were added to host satellites,

which provided minimal coverage. The Advanced Polar System has been proposed for the 2008-2010 timeframe to replace the host packages already in use. This will provide much needed coverage for ships and aircraft operating in these regions.

NARROWBAND

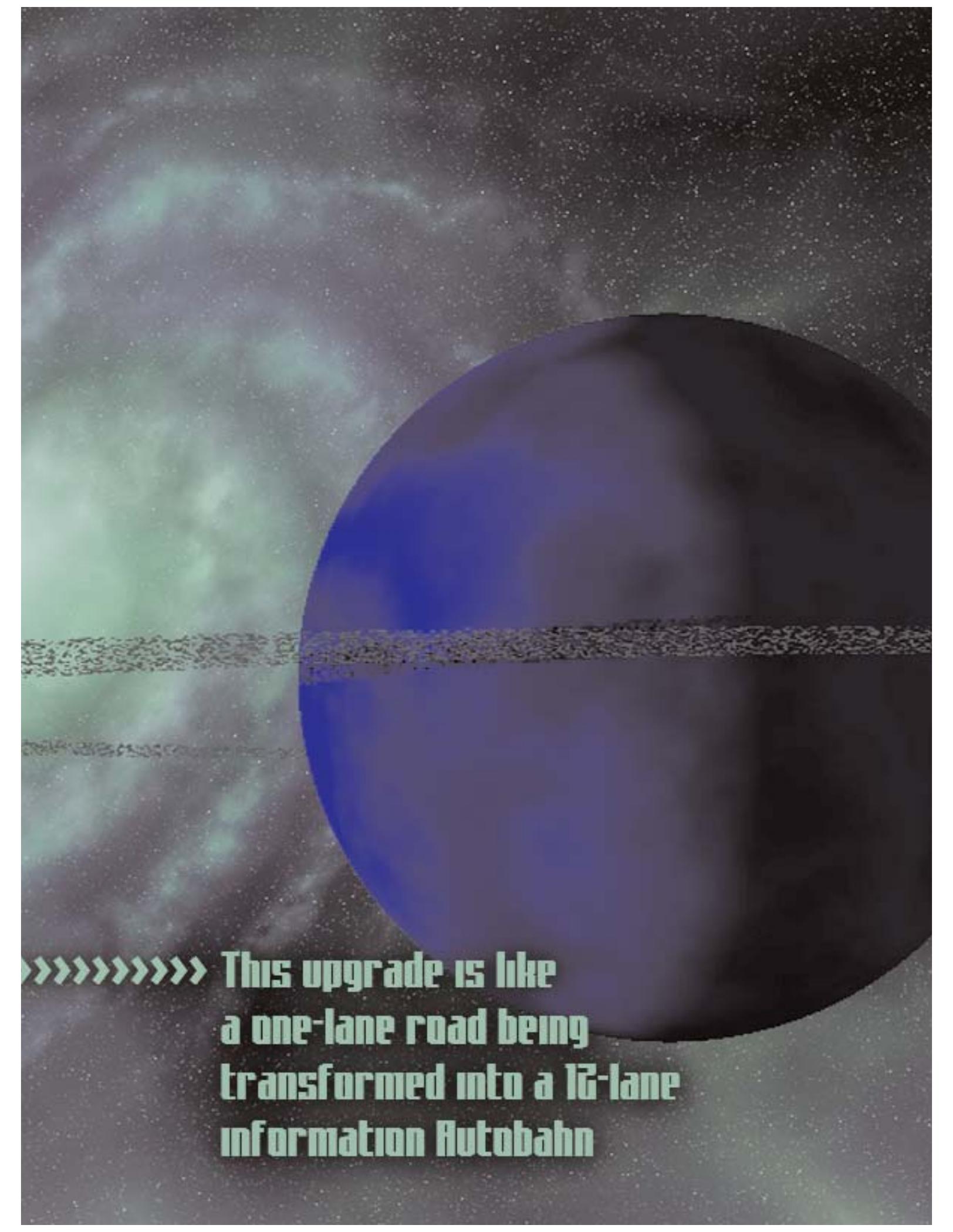
Another part of the satellite family is narrowband communications.

Narrowband comm systems provide data rates of 64 kbps or less and are usually used for broadcast reception and mobile users. These functions are currently supported by the Ultrahigh-frequency Follow On constellation. The current UFO constellation is made up of nine satellites, one of which is an on-orbit spare. The Advanced Narrowband System will replace this system because it falls short of its anticipated need. The Advanced Narrowband System has several components: DoD space; commercial space; telemetry, tracking; and command; network control; user entry; and gateway.

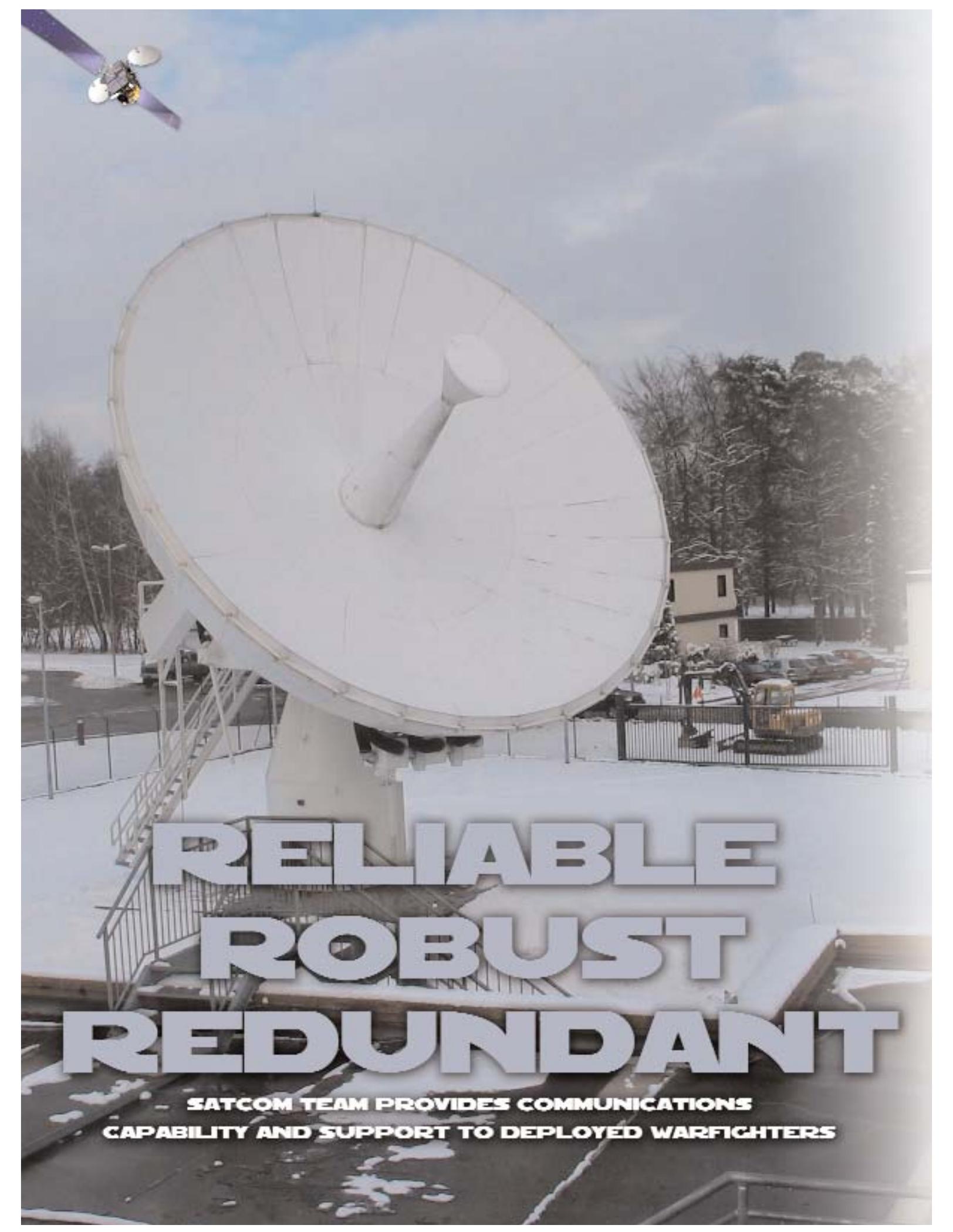
SMART SATELLITE

Satellite manufacturers are also exploring the possibilities of on-board processors. This will allow satellites the ability to route, transmit and manage bandwidth while also completing all the functions of a ground terminal.

By placing processors on-board, this gives the satellite dynamic bandwidth allocation, which enables a more efficient use of the limited resource, allowing better application performance for multi-media traffic and higher traffic volume.



➤➤➤➤➤➤➤➤ This upgrade is like
a one-lane road being
transformed into a 12-lane
information Autobahn



RELIABLE ROBUST REDUNDANT

**SATCOM TEAM PROVIDES COMMUNICATIONS
CAPABILITY AND SUPPORT TO DEPLOYED WARFIGHTERS**

Deployed warfighters require three Rs for success

By 2nd Lt. Matthew Bannantine
435th Communications Squadron

RAMSTEIN AIR BASE, Germany — Reliable, robust and redundant are the types of communications systems deployed warfighters have come to expect on the frontlines of America's Global War on Terrorism. What troops may not realize is that it takes a team of dedicated professionals working non-stop behind the scenes to ensure that these three Rs are met.

RELIABLE

Between July 2002 and June 2003, the most critical span for Operations Enduring and Iraqi Freedom, the SATCOM facility had absolutely zero downtime for any scheduled or unscheduled maintenance. This means the SATCOM team provided an amazing communications capability and support to our deployed warfighters, an incredible feat that entailed keeping a decade old satellite terminal and supporting equipment up and running.

ROBUST

The 86th Communications Squadron was directly responsible for providing one-third of the communications reach-back capability to deployed warfighters supporting OEF and OIF. This service supported 290,000 troops and led to the execution of more than 17,600 successful combat sorties. As daily operations began to slow, the communications need remained at a premium. When deployed troops got a spare moment, they made morale calls back home to their families. At one point, the SATCOM shop was processing 60,000 DSN calls a day through the Switch Multiplexing Unit.

REDUNDANT

This is perhaps the most difficult R to attain because of funding requirements, but the Air Force and DoD have seen to it that this will no longer be a problem.

In December of 2003 the 86th CS received the Air Force's newest Teleport site upgrade. The site is a telecommunications collection and distribution point augmenting the established services Ramstein already offers to our deployed warfighters. The new facility

provides interoperability between multiple Military Satellite Communications and commercial satellite systems while providing deployed Ground Mobile Forces with DSN, Video Teleconferencing, DRSN, Automatic Digital Network and secure and nonsecure network connectivity, Information Assurance tools and strategic and tactical C4I support with worldwide reach-back capabilities to the Defense Information Systems Network.

The 2400-square-foot teleport support facility is the home for all of Ramstein's base band equipment associated with the Commercial STEP mission. It houses equipment for Ramstein's C- and Ku-band satellite dishes and the install of support equipment for four EHF and two UHF antennas scheduled for installation at Ramstein between 2004-2005. All these pieces will then be routed to the newly installed Multiplexer Integrated DCSS Automated System. This system will emulate existing multiplexing and switching equipment while occupying much less floor space. MIDAS will also automate all the routing within the STEP site and increase the communications capability to our deployed troops by an amazing 300 percent.

The past few years have proven the Air Force has indeed become more expeditionary. Programs such as teleport will guarantee the Air Force is ready to meet the changing and challenging needs of its military endeavors.



Photos by Master Sgt. Leroy Lambert / NCOIC SATCOM

In the foreground is the AN/GSC52 dish supporting the MILSATCOM mission with X-band. The next dish is the Ku-band followed by the C-band dish for commercial SATCOM traffic. The building in the background is the brand new Teleport facility.



ACC WIDEBAND SATCOM in transition

By Mr. Richard Emmert
Headquarters Air Combat Command

LANGLEY AIR FORCE BASE, Va. — As the Department of Defense transforms to network-centric warfare, Air Combat Command is modernizing its satellite communications terminals to keep pace with ever-expanding AEF connectivity requirements.

The terminals being fielded today, and in the future, bring increased reliability and flexibility to the warfighter thus requiring a smaller footprint and less manpower. These terminals are being designed to support a broad range of missions as the Air Force migrates to a common terminal product line.

Many of today's SATCOM systems are fast approaching the end of their life cycle. These legacy terminals are unable to meet

mission requirements as DoD fully embraces the constructs of NCW.

ACC, working with Electronic Systems Center and the Air Force Space Command, will field SATCOM terminals capable of supporting current and emerging information exchange requirements of a highly mobile Air Expeditionary Force. These terminals bring increased capability, reliability and flexibility to the warfighter in a lighter, leaner package.

Under the transformational communications initiative, the vast majority of wide-band SATCOM will be IP-based traffic with satellites functioning as space-based routers.

In addition to the systems in the graphic below, the Air Force will begin fielding the Ground Multi-band Terminal beginning in fiscal '06. This terminal will be capable

of operating full duplex in the C-, X-, Ku- and military Ka-bands and will be produced in both transit-case and platform-mounted configurations. Both versions will support two simultaneous hub-spoke networks with a maximum of six spoke terminals per network. Initially, GMT will support a max data rate of 50 Mbps and in later spirals, up to 274 Mbps. These terminals will be fielded to combat communications squadrons to replace existing GMF terminals. Current plans call for fielding a limited number of GMT terminals to support Global Hawk Unmanned Aerial Vehicle and Distributed Common Ground Station connectivity requirements.

These and other programs are part of an effort to migrate to a common terminal product line that satisfies a broad range of missions.

Terminals below represent a piece of ACC's modernization plan through 2010 and provide the foundation for transitioning to network-centric MILSATCOM.

+ AN/TSC-94 GMF terminal



The older legacy systems, such as the AN/TSC-94 Ground Mobile Forces terminal, will be replaced by the end of fiscal '04.

+ AN/USC-60A Tri-band terminal



Current plans will field a total of 70 AN/USC-60A systems capable of operating in the C, X and Ku-bands at data rates up to 8,448 Mbps.

+ 20 Quad-band Hub terminals



Quad-band hub terminals, operating in the C-, X- and Ku-bands and receive-only in the military Ka-band, will be delivered in fiscal '05.



Col. Glen West, Joint Task Force, Southwest Asia Air Reserve Component liaison officer, gets a tour of a forward Ground Mobile Forces satellite terminal from Senior Master Sgt. Tracy Von Hollen, chief of the 438th Expeditionary Communications Squadron.

Tech. Sgt. Joe Springfield / JCCC

Moving Forward

By 1st Lt. Stephanie Wyatt
83rd Communications Squadron

LANGLEY AIR FORCE BASE, Va. — Communications is a top priority when preparing for a deployed location, and it plays a vital role in allowing the military to maintain global connectivity.

Ensuring technology is leveraged and teams are trained, Langley has developed a Reachback SATCOM team. The team's goal is to make sure deployable teams have all the tools needed to establish communications quickly and accurately.

Reachback SATCOM offers the opportunity for teams to assess their skills and equipment before they deploy. SATCOM offers a venue for people to train and test communications equipment so when it's time to deploy, communications are ready to go. The Reachback SATCOM provides connectivity through super high frequency systems, and the Secure Mobile Anti-Jam Reliable Tactical Terminal. This equipment can receive, transmit and process robust multi-channel secure and non-secure voice and data worldwide.

Reachback SATCOM assists customers throughout the Air Force with versatility in providing the users with what they require.

During the last year, SATCOM has

teamed with 18 customers including Global Hawk, Predator, Defense Communications and Army Transmission Systems and supported 38 missions including Operations Enduring Freedom and Iraqi Freedom. They also trained more than 300 personnel from three different combat communications squadrons in preparation for Air Expeditionary Force deployments.

The Langley SATCOM team not only prepares units for deployment, it also supports missions that test new SATCOM equipment for the military. As the Air Force progresses with the development of tactical satellite systems, the need to verify tactical suitability and capability is a high priority.

The SATCOM team is supporting the acceptance test plan for equipment, providing text and secure voice orderwire for operational use by the Defense Satellite Communications System Operations Manager, Defense Information Systems Agency and United States Army Space Command. The satellite network consists of one network controller and one or more network terminals.

The collected test data provided will determine if the system can provide continuous, reliable capabilities for effective management and control

of tactical satellite missions.

Another key mission for the future involves different vendors competing for the next generation technology SATCOM terminal. Reachback SATCOM allowed the vendors the opportunity to exercise their wares in an operationally realistic configuration with services provided by Langley as a distant-end user. The result is discovering the right equipment while maintaining an interoperable communications infrastructure.

Whether preparing Airmen to set up a tactical satellite communications link in the field or providing real world test scenarios for future satellite terminals, the SATCOM team stands ready to support the mission around the globe. In an ever-changing threat environment, the Reachback SATCOM team will ensure tactical training and equipment is provided to Air Force units and enable communications for the warfighter to move forward.



Reachback SATCOM

Langley's Reachback SATCOM team
prepares communicators, equipment for front lines



Satellites do it all

Staff Sgt. Ronald VanAusdal works on several satellite dishes belonging to the Joint Combat Camera Imagery Transmission Satellite System at Baghdad International Airport. Members of Combat Camera are in Iraq establishing a satellite imagery management system for deployed teams throughout the theater to transmit photos and video back to a central location.

Tech. Sgt. John Foster / JCCC Image



MONITOR DISPLAY: NORAD SPACE COMMAND CENTER

OBJECT ID	OBJECT NAME	OBJECT TYPE	OBJECT STATUS
101	ISS	ISS	ACTIVE
102	SHENLEI	SAT	ACTIVE
103	TIANGONG-1	SAT	ACTIVE
104	CHANG'E-1	SAT	ACTIVE
105	CHANG'E-2	SAT	ACTIVE
106	CHANG'E-3	SAT	ACTIVE
107	CHANG'E-4	SAT	ACTIVE
108	CHANG'E-5	SAT	ACTIVE
109	CHANG'E-6	SAT	ACTIVE
110	CHANG'E-7	SAT	ACTIVE
111	CHANG'E-8	SAT	ACTIVE
112	CHANG'E-9	SAT	ACTIVE
113	CHANG'E-10	SAT	ACTIVE
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131	CHANG'E-28	SAT	ACTIVE
132	CHANG'E-29	SAT	ACTIVE
133	CHANG'E-30	SAT	ACTIVE
134	CHANG'E-31	SAT	ACTIVE
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202	CHANG'E-99	SAT	ACTIVE
203	CHANG'E-100	SAT	ACTIVE



HAWAII PACIFIC

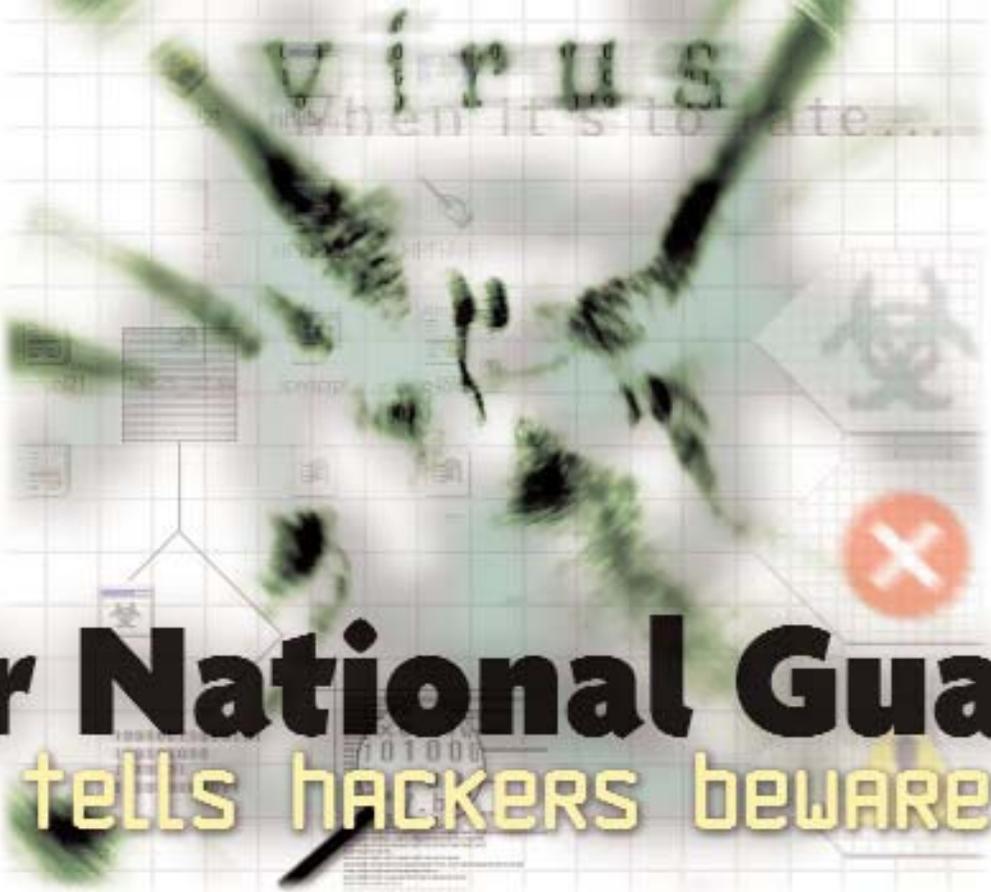




Keeping close watch

Officers work in NORAD's Command Center. The men and women of NORAD use ground-based radar, airborne radar, satellites, fighter aircraft, and intelligence capabilities to enforce an area of responsibility stretching from Clear, Alaska, to the Florida Keys, and from St. John's, Newfoundland, to San Diego, Calif.

JCCC Image



Air National Guard tells HACKERS BEWARE

By Capt. Kevin Hynes

Nebraska National Guard
Public Affairs Office

LINCOLN, Neb. — When it comes to saving government dollars and protecting against potential enemies, the Air National Guard is taking security to a completely different level — cyber level, that is.

Through an Air Guard-wide initiative, the organization is providing critical protection to its communications systems at a reduced cost. The system, known as a Regional Operations Security Center system, protects Air National Guard computers against computer-borne viruses and cyber hackers.

The system is actually the result of an Air Force directive ordering Air National Guard units to comply with beefed-up computer security system regulations, according to Maj. Carl Tesch, commander of the 155th Communications Flight in Lincoln, Neb., which hosts one of the six national ROSCs,

Major Tesch said the Air Force went to a security system in the 1990s, built around the powerful Combat Information Transport System, which was put at the network control centers at each active duty Air Force base. At the same time, the 92 Air National Guard flying wings that comprise the Air National Guard essentially built individual systems designed to suit their needs.

The Air Guard solution, however, was not up to Air Force standards in the field of computer and messaging security. So, the Air Force directed the Air National Guard to comply

with the increased security needs. Considering that each CITS equipment suite cost approximately \$250,000, the expense was too much for the Guard to handle.

The Guard's solution was to set up a series of regional centers that each of the Air Guard organizations could tie into.

Initially envisioned at 10 separate ROSCs, the system has since been downsized to six centers throughout the states.

Major Tesch said the ROSC works somewhat like an Internet provider.

"All their traffic for the (Local Area Network), e-mail and Web — anything they do that traverses through the network comes through this regional center for security purposes," he said. "We're like their Internet Service Provider on a medium to large scale."

Master Sgt. Hubert Brunk, Region 4 ROSC manager, added, "Prior to the regional concept, we had more than 90 bases that had to be notified whenever there was a problem or a possible attack on the system. Now we've only got six locations that you have to call. You can quickly prevent a virus from going bonkers on the system."

Also, by concentrating the main costs at six regional bases, the Guard has been able to not only pay for expensive hardware and software upgrades to the ROSCs, it has also enabled it to pay for smaller upgrades at each of the Guard's individual bases.

The result is a system that operates quickly and efficiently.

Bases also have newly installed T-1 circuits that have the capacity to move 5 megabytes of information every second.

World Wide Web

Air Force Portal weaves technological interface

By Staff Sgt. C. Todd Lopez

Air Force Print News

WASHINGTON — Air Force senior leaders have asked that all Airmen sign up for a new Web-based technology that promises to streamline access to information across the force — the Air Force Portal.

In a December information technology initiatives memo, Secretary of the Air Force Dr. James G. Roche and Chief of Staff of the Air Force Gen. John P. Jumper asked that all Airmen sign up for an Air Force Portal account as soon as possible.

“The Air Force Portal will be the Airman’s interface to all services and information needed to perform his or her job,” the memo stated.

Airmen may register for access to the portal by logging onto the Web site at <https://www.my.af.mil> and clicking on the self-registration link. The registration process is self-guided.

The portal is a Web-based system developed to incorporate as many Air Force information applications as possible. The result of such an integration is that systems such as the virtual military personnel flight or functional area applications, such as a munitions ordering or parts tracking system, would all be accessible from one Web site, said Lt. Col. Dan Hausauer, portal integration division chief.

The key benefit to such an integration is the idea of a single user login. Once a user logs in, the portal itself authenticates a user into the application. This means that with each new application integrated into the portal, users will have one less Web address, login name and password to remember, Colonel Hausauer said.

“People can log into the portal with a single user name and password, and from there, they can get to their applications without having to reauthenticate,” Colonel Hausauer said. “Some users within the logistics community have told me that in the past they’ve had (more than) 50 user names and password combinations, and now they need only one.”

A recent change to the portal makes it even easier for users to get access. Now, users can access the system

from any Internet-connected computer at home, at work or on the road, Colonel Hausauer said.

When users are on temporary duty, the portal makes it easy to stay in contact with co-workers at permanent duty stations in real-time. The portal now includes an instant messaging system similar to those found on the dot-com side of the Internet. The Air Force Instant Messenger was used most recently during operations in Southwest Asia, Colonel Hausauer said.

“When the war kicked off, a lot of people on the front lines had difficulty getting to phone lines,” Colonel Hausauer said. “People with network connectivity were using AFIM to do their job, like ordering mission-essential parts for aircraft or ‘IMing’ back to their home station in the United States to ask for assistance.”

During those operations, AFIM had been set up to interface with commercial messaging systems so deployed Airmen could communicate with friends and family on their buddy lists. That capability has been temporarily disabled, but Colonel Hausauer said it would return following a security review.

Besides providing an integrated interface to existing Air Force applications, the portal provides functionality of its own. The portal includes a “white pages” section that lists everybody in the Air Force. It includes personalization features that let users adjust the presentation to suit their needs. The system even allows users to upload favorites from their desktop computers, so those frequently used Web addresses are available from anywhere in the world.

As more systems are brought into the portal, the Air Force moves closer to its overall vision for a Net-centric force.

“The Air Force vision is to bring a virtual desktop to the Airman and to bring all the applications you need to do your job to that desktop,” Colonel Hausauer said. “You will have the ability to access them all with one login name and password, they will all work together seamlessly, and you will be able to access them from anywhere. That is the future.”



Service Before Self, Integrity First, Excellence In All We Do

Is the mantra for Utah's Air National Guard while bridging the gap between technology and the Navajo culture.

In this age of cell phones, the Internet and running water, it's hard to imagine a place in the United States without these things. However, in the remote town of Teec Nos Pos, Ariz., it is daily life.

The T'is Nazbas Community School is located on a Navajo reservation in the Four Corners region. Many of the people there have neither electricity nor running water. So for the community school of about 300, receiving computers three years ago was a huge leap ahead.

In the last four years, members from the Utah Air National Guard have made six visits to this small school to help update its technology and enrich the education of its students.

After a request for outdated government computers four years ago, Mr. Pat Baxtrum, the school's technology coordinator, has received hundreds of computers. Unfortunately, the amount of work required to get those antiquated machines working properly was too much work for one lone man. That's where the Utah Air National Guard

comes in.

During their most recent trip to Teec Nos Pos, Utah Guardsmen assisted Mr. Baxtrum in getting 130 computers working; something one man definitely could not do in one week.

In the Utah Air National Guard, members get on a waiting list just to go on this short TDY. It's a time filled with 12-hour workdays and no real personal time. However, each Guard member loves to be a part of this humbling experience that helps each to realize how much they really have.

The school took an even larger step into the 21st century; they acquired access to the Internet. A whole new world to explore, where few ever even leave their reservation, was opened to the school children by a few members of the Utah Air National Guard.

Also during the deployment, the airmen standardized programs on the computers, networked them, and gave the children much improved access to

the World Wide Web.

A phone system was also installed so each building of the school could call the office instead of leaving the classroom to do necessary business.

Many children travel 50 to 60 miles on a Monday and live in dormitories for the week, just so they can receive schooling in everything from mathematics to the Navajo language.

The Guard members shared some valuable and precious time in the Navajo culture and expressed their thoughts and feelings regarding the military and the world outside of the reservation. The children enjoyed seeing a culture and people who are not often seen in their world, and in return they presented their culture and their dances.

The school is a part of the Bureau of Indian Affairs which is jointly administered by the federal government and the tribal council, which makes them eligible to receive excess government computers.

The next scheduled visit to the school is in May.

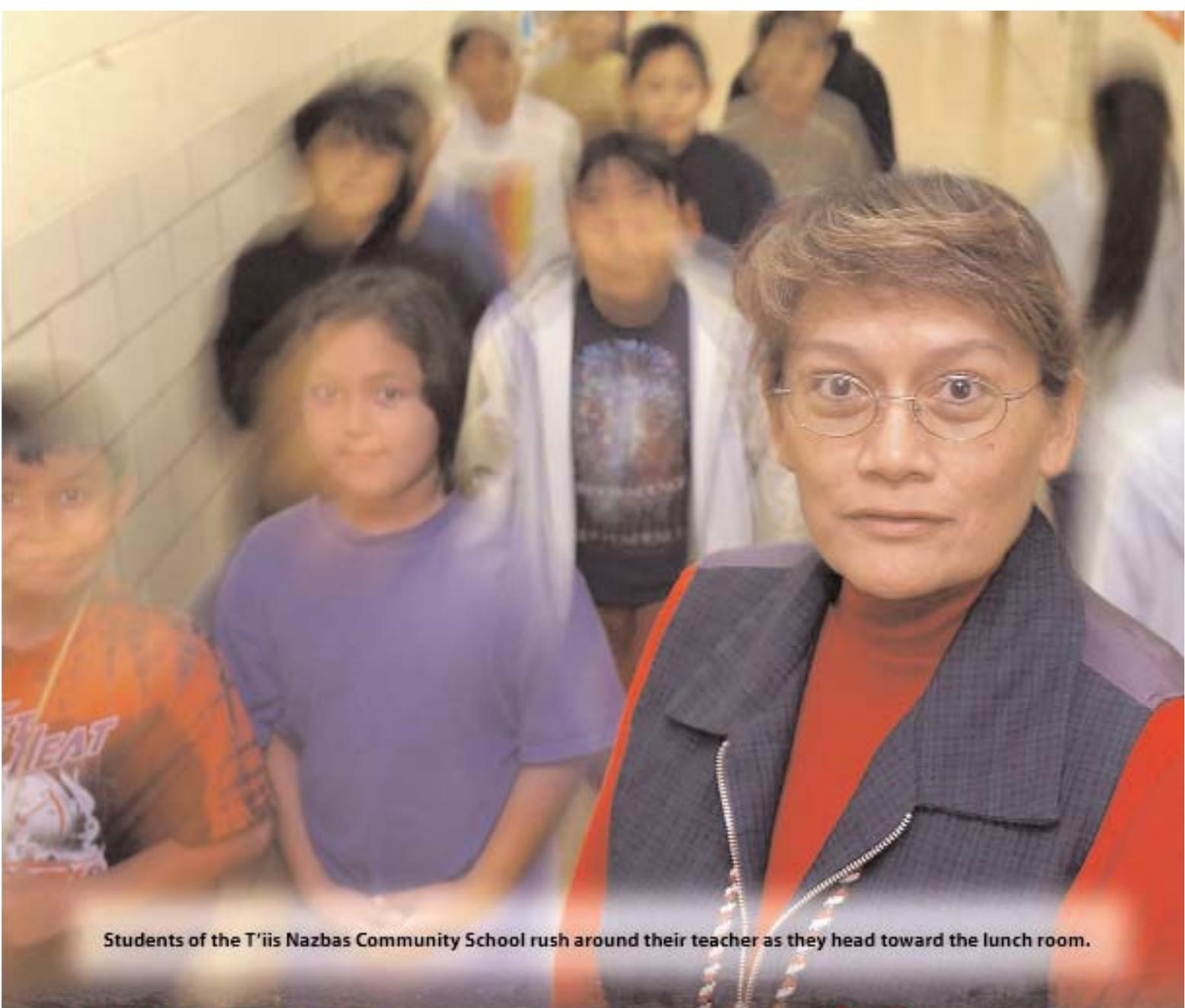
By Airman 1st Class Christiana Elieson 151st Air Refueling Wing Public Affairs

BRIDGING

Photos by Tech. Sgt. Brad Leiter / 151st Air Refueling Wing

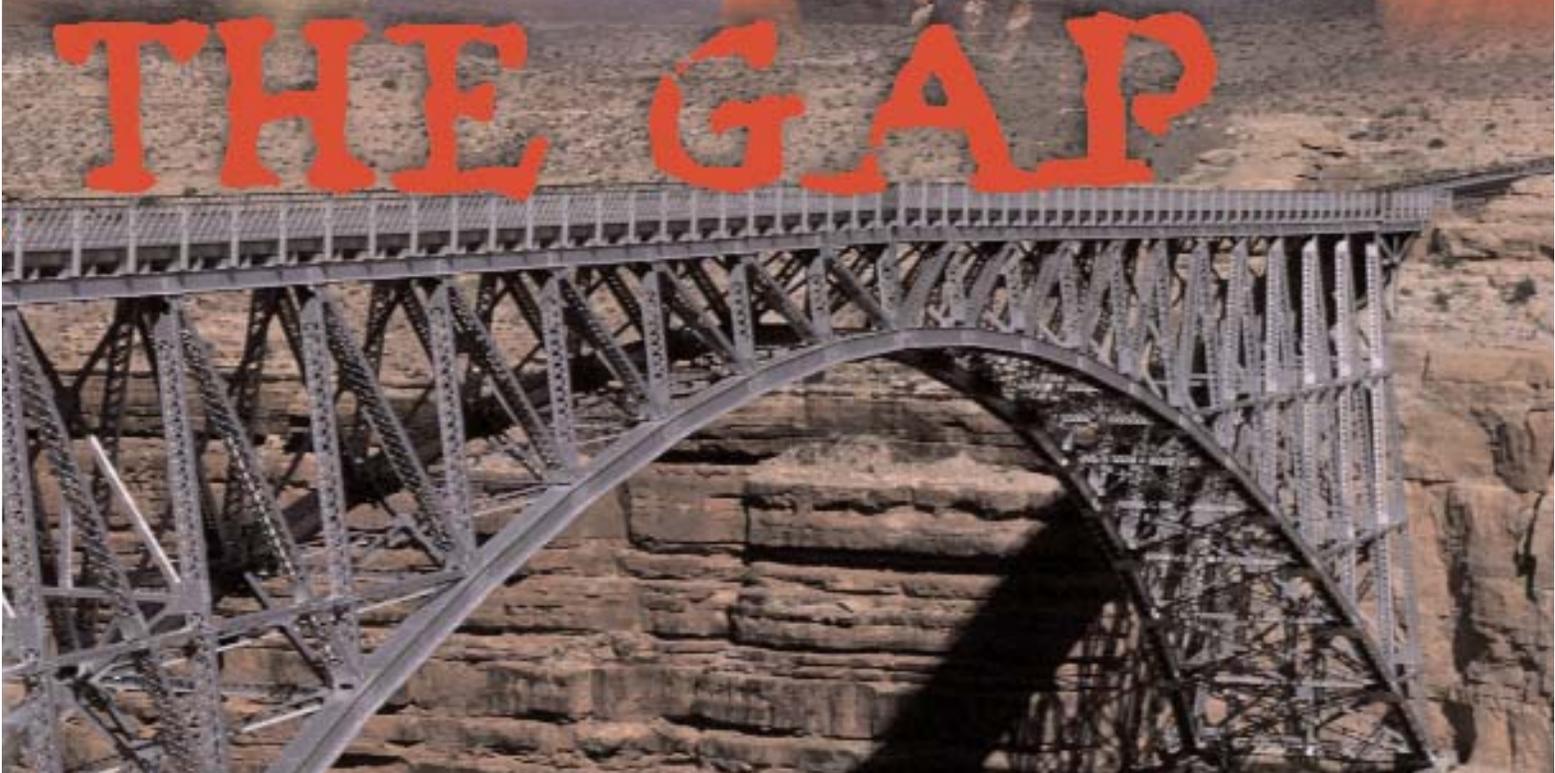


Tech. Sgt. Dave Fernelius verifies new phone connections, Tech. Sgt. Dean Peterson enjoys lunch with the children, children give high fives to the members of the comm team and Staff Sgt. Crystal Carsey searches for computer parts.



Students of the T'iis Nazbas Community School rush around their teacher as they head toward the lunch room.

THE GAP



Useful Air Force Web Sites

Air Force Portal

The **Air Force Portal** is a Web-based system developed to incorporate as many Air Force information applications as possible. The result of such an integration is that systems such as the Virtual Military Personnel Flight or functional area applications, such as a munitions ordering or parts tracking system, would all be accessible from one Web site.

Log on to: <https://www.my.af.mil> to register.

Virtual MPF

In the **Virtual Military Personnel Flight**, users can access various online personnel applications. The most popular applications are: Assignment notification briefings; Out processing; Awards and Decorations review; Data Verification Brief; and a review and update of the Record of Emergency Data.

Log on to: <https://www.afpc.randolph.af.mil> to register.

AMS

The **Assignment Management System** lets all Airmen view their personal information, lets commanders weigh in on officer assignment preferences and provides a platform for eVector, an online mentoring tool. Enlisted people can view and volunteer for quarterly assignments and officers can fill out and update their preference worksheets.

Log on to: <http://www.afpc.randolph.af.mil/afas/> to register.

AFSPC Feedback

Direct feedback on the chatroom to the AFSPC Internal Information organizational mailbox: afspc.pai@peterson.af.mil.



Tech. Sgt. Ken Bergmann / HQ AFSPC

Gen. Lance W. Lord, AFSPC commander, fields questions on force development and space professional issues in what is believed to be the first use of the Air Force Portal for a command-wide Internet chat.

AFSPC pioneers chatroom

By Ms. Jenna McMullin

Air Force Space Command
Public Affairs

PETERSON AIR FORCE BASE, Colo.

— Though challenged by a few technical difficulties, the first chatroom hosted by AFSPC Commander Gen. Lance W. Lord recently was a foreshadowing of a new communication venue between the commander and AFSPC personnel.

“I like it, and I think we should do it as often as we can,” General Lord said. “Let’s work on the technology and do it again.”

For several hours, AFSPC personnel worldwide were invited to join in a virtual meeting with General Lord to ask him questions on force development and space professional issues. The chatroom was operated via the Air Force Portal, using the Bantu Instant Messenger program. Users began logging in around 10:15 a.m., and by the time General Lord logged in at 11:15 a.m. to begin the discussions, approximately 150 users were logged in.

Once the amount of users approached 200 in both the room where General Lord was answering

questions and the room where AFSPC personnel were posing questions, the server stopped responding, causing the program to freeze. From approximately 11:30 a.m. on, it was impossible for General Lord and most AFSPC users to communicate, limiting viewing and responding capabilities during that time.

AFSPC logistics and communications personnel are working with the Air Force Chief Information Officer, Air Force Portal officials from Headquarters Standard Systems Group and the Bantu team to determine the system problems.

Due to the program difficulties, General Lord was unable to officially conclude the chatroom session, leaving many participants wondering what happened. He said he appreciated all the interest in the first chatroom and looks forward to the next session.

“As soon as the technical glitches get worked out, this is going to be something great,” said Master Sgt. Juan Rocha, an information technology implementation manager with AFSPC who assisted in the set-up and design of the chatroom.



AMC theater deployable communications

Transformational Communications Architecture combines space, ground networks

By Ms. Lavonna Csutoras
Air Mobility Command

SCOTT AIR FORCE BASE, Ill. — When it comes to providing communications capability to Air Mobility Command's deployed warfighters, nothing performs like Theater Deployable Communications.

TDC proved to be a critical component of the deployed communications architecture during Operations Enduring and Iraqi Freedom, performing with unprecedented success by providing common user command, control, communications, computers and information capabilities in a bare-base environment with commercial technology. However, lessons learned during OEF and OIF validated the need for tailored packages that fit in between the small INMARSAT flyaway kits and the basic TDC package. Operationally, these packages increase bandwidth for lower cost enabling critical command and control and in-transit visibility during the opening of the air base.

During this phase, airlift is usually only available for small communications packages. Because a limited number of trained communicators are deployed during the opening of the air base, the equipment must be easy to set up and use, requiring little or no formal training. The solution provides the bandwidth required for initial reachback communications, in a smaller, easier to operate package. It uses voice over Internet Protocols to eliminate the need for more complicated telephone switches during this initial deployment stage. In an effort to select a standardized communications package based

The TDC package

The TDC package consists of a Tri-Band, high capacity satellite terminal, an Integrated Communications Access Package, and a Network Control Center-Deployed package. Tri-Band satellite terminals, including the Lightweight Multiband Satellite Terminal and the Flyaway Tri-Band Satellite Terminal, provide reachback into the Global Information Grid, while ICAP provides voice, data, video, and message traffic user services. The NCC-D package provides network management and information assurance, similar to fixed base NCCs. Collectively, the three parts of TDC provide the same services in deployed locations as in garrison.

on this IP-centric architecture, the TDC program office, located at Electronic Systems Center, Hanscom AFB, Mass., is currently evaluating several SATCOM architectures to meet Tanker Airlift Control Element requirements.

The primary precursor to this small, first-in communications package is the AMC Inter-Theater Communications prototype architecture, which supports a near-term strategy for transitioning to the DoD Transformational Communications Architecture even before the projected date of 2010. This initiative creates a new national space program architecture that attempts to tie together space-based and ground networks to meet the military's growing demand for bandwidth. Synchronizing new technology into major acquisition programs is never easy. Fortunately, there's an emerging consensus on the technical approaches within the community of interest. *(Craig Agne, MITRE Corporation, contributed to this article.)*

Lt. Gen. Carl G. O'Berry

By Mr. Don Gasper

AFCA Staff Historian

During his 38 years of service as an Air Force communicator, Lt. Gen. Carl G. O'Berry developed a passion for harnessing the power of information technology to benefit airmen. Today, General O'Berry continues to be directly involved in this important operational endeavor as a guiding figure in industry.

During his military career, General O'Berry contributed to numerous advancements in communications. He became architect and chief crusader for Horizon, a conceptual plan for development, modernization, and integration of joint and global communications and information systems to ensure compatibility and interoperability across the services. His retirement from the Air Force hardly marked an end to his technological pursuits. "I spent 38 years in uniform serving this

great country. Although I no longer wear the uniform, I see my work today as a continuation of what was begun with the advent of the Air Force Horizon initiative, and I plan to see it to completion."

Of historical note, General O'Berry was the last person on active duty to have served in the Airways and Air Communications Service. In addition, while a communications lieutenant stationed at Holloman AFB, N.M., during the early 1960s, he was one of 24 participants in the Acceleration/Deceleration testing program conducted at the base for the Apollo space program. The young father of four decided to participate to supplement his income, and in experiencing as many as 35 Gs during several "sled rides," earned hazardous duty pay during his 15-month involvement in the program.

Another achievement was in 1961, when, nearly five years after he enlisted and became a communications specialist, he applied for and was commissioned through one of the final classes of Officer Candidate School. Since then, General O'Berry has had the honor of performing the commissioning ceremony for his three sons who entered the Air Force.

As the father of five, General O'Berry said he will never forget the tremendous pride he felt seeing all three sons follow in his footsteps and dedicate a part of their lives to the service of their country.

A few months after his military retirement in 1995, General O'Berry joined Motorola Space and Systems Technology Group in Phoenix, Ariz., as vice president and director of planning and information technology. In 1998, he left industry to spend time

Airman 2nd Class Carl O'Berry accepts a \$10 check from Maj. Peter E. Shook, commander of the 1926th Airways and Air Communications Service Squadron, for being Airman of the Month, June 1959.



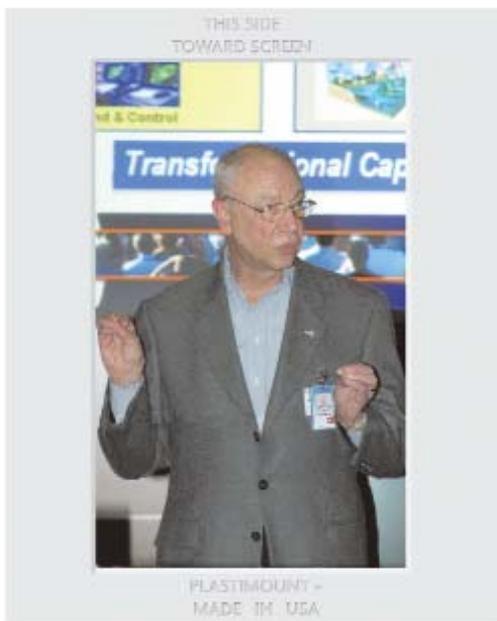
with his family. However, his continuing interest in developing technology to transform the way people interact in various operational environments led him in 2000 to join Boeing as vice president of Boeing Strategic Architecture. In this role, he is charged with developing technology that will create a network-centric global operational environment to encompass a wide array of military applications.

"My work today is vitally important to the nation and to the people of America. I believe that industry must develop the technology that puts relevant, accurate and secure information into the hands of those who fight for peace."

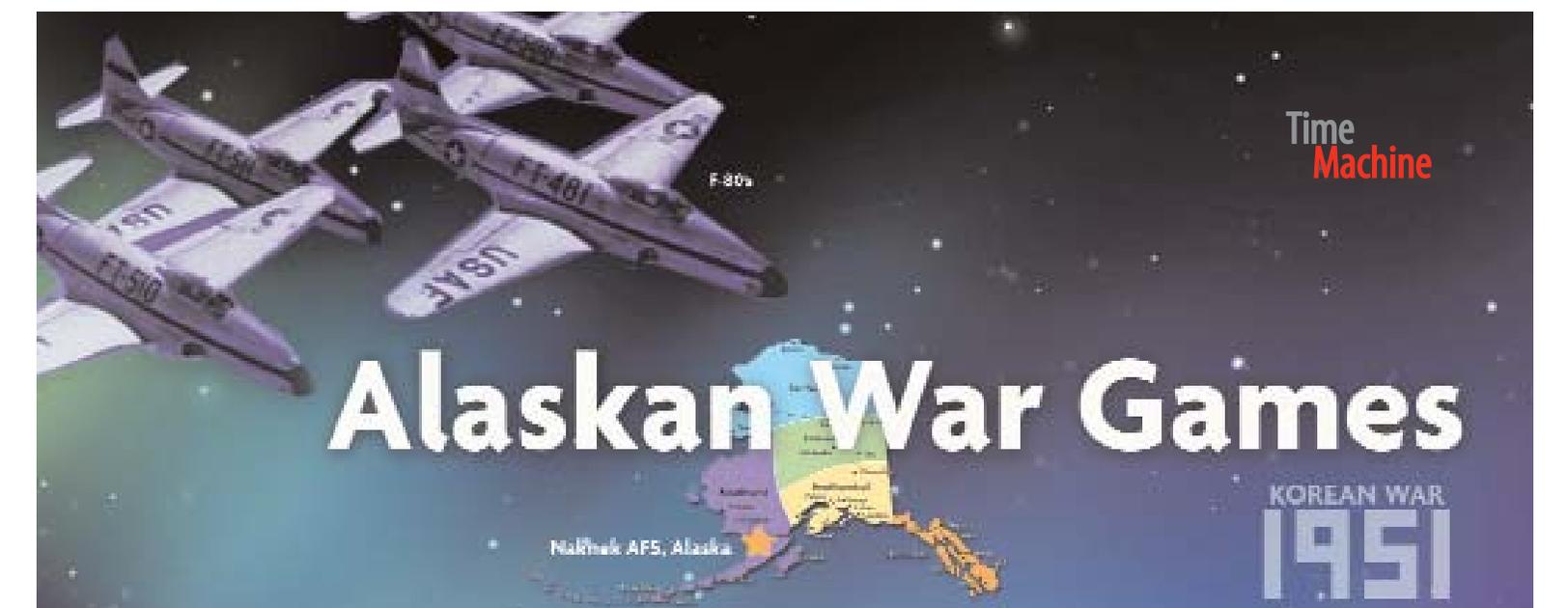
As might be expected of a close family headed by an information technology guru, he and Charlene, his bride of 45 years, along with the rest of their crew remain connected through e-mail and a family Web site. General O'Berry loved to fly airplanes and drive fast cars when he was younger, but has little time for either pastime today.

Instead, he keeps his eyes to the future. He said he's intensely proud to support those who will make the world a better and safer place for all.

"A love for country and family is in the heart of every service man and woman. I was no different; I wanted a better world so that my children, and children everywhere, might one day live in peace and realize the full potential of the democratic way of life." (*Ms. Diana Ball of the Boeing Company contributed to this article.*)



As vice president of Strategic Architecture of the Boeing Company, the retired general addresses members of the media during a tour of the Boeing facility.



Alaskan War Games

Naknek AFS, Alaska

KOREAN WAR
1951

By Mr. Charles Christian

Air Force people assigned to duty in Alaska during the Korean War worked a portion of the Korean Air Lift that went via Alaska, and were told to always be on alert for any threats or intrusions upon the Territory of Alaska (not a state then) by the Soviets.

One way to stay alert was to have occasional area war games. In the spring of 1951 "Operation Firestep" took place with a detachment of four F-80s from the 64th Fighter Interceptor Squadron. We were staged out of the old WWII Naknek AFS for this exercise.

The base consisted of an old Quonset hut on the flightline that was the detachment commander's office, an ops room at one end and the ready room at the other end for the pilots, a small two story FAA station, and a group of Quonset huts used for quarters, messing, etc.

The game plan was that Naknek would be a friendly base and they would be subject to attack by other (aggressor) elements of the three squadrons of F-80s of the 57th Fighter Interceptor Group at Elmendorf.

I was a 1931st Airways and Air Communications Service Squadron cryptographer and sent for two weeks TDY with my combat gear, weapon, and two M-209 crypto machines (which were soon declared obsolete, and I heard were given to the Boy Scouts). My duties were to send back encrypted mission reports to Elmendorf.

Upon my arrival, the detachment commander, Maj. Van Bebber, informed me that no such thing was going to happen. He said I could go back on the next available C-47 leaving for Elmendorf, or he was short one each Fighter Operations Clerk, and if I wished I could have the job for the next two weeks. Being a quite young (18), a corporal and ready for any new adventure, I replied quickly: "Sir, I accept your offer." After a few hours training, I started out the next day on the sun-up to noon shift. For the next few days I would prepare mission reports, go get the weather

from the FAA, do radio checks on the radio console which connected the ops room with the FAA tower aircraft radios, and other minor duties. There was a hand cranked field phone that went to the radar site and upon their sighting of any "bogeys" they would ring me up and tell me to "scramble two or four" depending upon their sightings.

I would then hit the klaxon horn for one long or two long blasts to launch one or two flights of two aircraft each. This was definitely the best part of my duties. I would also talk to the aircraft when needed during their flight, though most of their talk was between themselves and the radar site. Usually they would be able to intercept the aggressors before they got to the base, and then they would call it a game and return home.

One morning, while still pitch dark, our pilots and crews were driving on the perimeter road headed to the flightline when suddenly there was a swoosh just above our heads. Our parachute flare lighted the area above us, and immediately another swoosh came over our heads. Then we heard .50 caliber machine guns being fired and as the second jet flew over us, our truck was showered by empty hot brass coming out of the nose of the jet.

Then the jets were heard coming around again to have another pass at us. Instead of pulling a lever to drop a flare, the lead pilot pulled the lever that ejected his canopy. Not wanting to fly back home in the freezing weather, he decided to land and surrender to us. We had a further unexpected surprise when he turned out to be the famous West Point football player of the mid-1940s "Doc" Blanchard.

He had helped lead Army to three undefeated seasons, won the Heisman Trophy and the Sullivan award, and was three times All-America during his time at West Point. Taking into consideration the injustices that we had been subjected to, we all felt it was proper restitution. We also felt we won that game even if it was by default. Felix "Doc" Blanchard obviously overcame this incident and went on to fly in Korea and retired as a colonel in 1971.

Policy changes affect civil service employees

AIR FORCE PERSONNEL CENTER— The 2004 National Defense Authorization Act put in to motion changes to civilian pay, overtime and leave. The legislation also launched the National Security Personnel System, the biggest overhaul of the government's civilian personnel system in decades.

Defense Secretary Donald H. Rumsfeld called the changes transformational and some of the changes include:

National Security Personnel System

The Secretary of Defense and the director of the Office of Personnel Management are now provided with the authority to establish a new human resources management system, including a new labor relations system, for Department of Defense employees.

The act also provides the SECDEF with the authority to establish separation and retirement incentives and additional staffing flexibilities. For more information on NSPS, visit the Department of Defense Civilian

Personnel Management's NSPS Homepage at <http://www.cpms.osd.mil/nsps/index.html>.

Senior Executive Service Pay

The act establishes a new performance-based pay system for members of the Senior Executive Service, ends locality-based comparability payments for senior executives, and changes the threshold for imposing post-employment restrictions on certain senior executives. See <http://www.opm.gov/oaca/comp-memo/2003/2003-19>.

Modification of the overtime hourly pay cap

The act modifies the hourly overtime pay cap for certain federal employees who are exempt from (not covered by) the overtime pay provisions of the Fair Labor Standards Act.

For FLSA-exempt employees entitled to receive overtime pay, the hourly rate of overtime pay is either the greater of one and one-half times the minimum hourly rate of basic pay for GS-10 (including any applicable spe-

cial salary rate, locality rate of pay, or special pay adjustment for law enforcement officers), or the employee's own hourly rate of basic pay (including any applicable special salary rate, locality rate of pay, or special pay adjustment for law enforcement officers). The Office of Personnel Management is amending its regulations to reflect this new provision in the near future.

Military leave for mobilized federal civilian employees

Employees who perform full-time military service, as a result of a call or order to active duty in support of a contingency operation, are now entitled to 22 days of military leave each calendar year.

An employee is entitled to the greater of his or her civilian or military pay, not both. However, an employee may choose to take annual leave instead of military leave in order to retain both civilian and military pay. The amendment applies to military service performed on or after Nov. 24, 2003.

New avenue available for civilian information



AIR FORCE PERSONNEL CENTER—Civilian appropriated fund employees and prospective applicants can now get answers to questions about employment opportunities, benefits and entitlements, and more online at the Air Force's Customer Service Center.

A new database, located at www.afpc.randolph.af.mil/cst, includes questions and answers allowing users to find explanations personally rather than waiting on the phone or reviewing long documents on the various Web sites. For employment online inquiries, users who don't find an answer to their specific question can submit a query online through the "Ask-A-Question" tab at the top of the page.

People who need to speak to someone directly about their employment opportunities or benefits can call (800) 616-3775.

News Briefs

New Developments

AFSPC MILESTONES: The transition of Milstar to full initial operational capability, along with the stand up of an operational cadre of communication and information specialists at 14th Air Force, under the 614th Space Communications Squadron, marks a milestone for Air Force Space Command in providing space capability to warfighting.

AFSPC has championed higher data rate space communications to the warfighter for well over a decade now. From sponsoring and developing the Milstar Extremely High Frequency satellite system and developing the command's EHF Satellite System's Expert office, to supporting the Space Warfare Center's operational demonstrations of space capabilities, AFSPC/LC has had a leading role in developing space communications capabilities for the warfighter. All of these capabilities paid off in the execution of combat power in our recent operations in Iraq and Afghanistan.

Milstar's Initial Operational Capability declaration is a milestone ensuring the operator's needs are truly being met. The stand up of the 614th SCS will ensure operational and engineering support of SATCOM to the warfighter. New space systems advocated by AFSPC are being developed that will augment current systems in use by the Air Force and its sister services.

As the command embarks on the development of systems and capabilities to support the coming Advanced EHF systems, continued engineering and operational support will be required to bring these systems fully to the warfighter's hands.

Just as the weapons systems officer in the cockpit of the F-4G was the data provider in his day, future warfighting applications will depend heavily on effectively provisioning data that is global in scope. The 14AF operational SSE, along with the 614th comm and info experts, will provide data and information for 21st Century warfighters. (Mr. Jon Sercel, AFSPC)



SCOTT AIR FORCE BASE, Ill.—Everyone's in for a wild ride regarding the future of information technology, according to the Air Force's deputy chief of staff for Warfighting Integration during an annual IT conference here Feb. 19. The conference was hosted by the St. Louis Chapter of the Armed Forces Communications and Electronics Association.

Lt. Gen. Tom Hobbins' briefing to industry, military and civilian leaders showed the Air Force's game plan for increasing secure and reliable connectivity of space and ground communications assets through fiscal year 2020. He outlined a 10-step process of how the vision becomes reality by working tough issues of timing new capabilities with the government's acquisition and funding process.

His vision is to have what he calls a "self-forming, self-healing network that uses government, not commercial, satellites." That's because with communications, there are always competing interests for bandwidth and frequencies, and DOD needs to own its own resources in space to meet military requirements.

The general spoke about satellites that send 6 gigabytes of information per second, communications using laser technology, and communications traveling over dedicated Internet Protocol lines—a secure Internet between customers.

The general also outlined the need to integrate communications platforms between aircraft, sister services and America's joint partners. He explained how the Air Force is continuing to transform to network centric

warfare that challenges the communications and information world to solve the dilemma of getting timely, quality information to commanders so they can have what he terms "decision superiority."

"It's an ambitious forecast," said Master Sgt. Greg Bunce, an encryption specialist with the 805th Communications Squadron. "I liked seeing what the future will bring with the idea of having a common network among us (Air Force and DOD), and to see how we can work the challenge of not having a single point of failure for our resources."

Having the general outline the vision during an IT conference is valuable because the military and industry are tightly knitted in this process, said Col. David Kovach, Air Force Communications Agency commander. "As we're explaining what the future will look like, they're the ones developing much of the hardware and software that's going to get us there."

The general also spoke about having quality training for people to perform these missions and make the decisions no matter how high tech the operation becomes. In addition, the conference hosted a panel of experts who addressed issues raised in the general's article printed in the November issue of the intercom magazine, which can be viewed at <http://public.afca.af.mil/Intercom/2003/Nov/031101.html>. Along with the panel discussion, conference members also received training in operations security.

(Master Sgt. Karen Pettit, AFCA Public Affairs)

Security concerns

PREVENTING CMIs: During 2003, the Air Force experienced a significant increase in the number of classified message incidents, or CMIs, caused by users generating or receiving e-mail messages with classified content while using unclassified networked

systems. The Air Force needs your help to prevent future occurrences of CMI, not only because it compromises classified information and puts individuals in line for disciplinary action, but because recovery actions are not only costly and time consuming, they hinder e-mail services supporting the

command's warfighters.

You can help stem the tide of CMIs by verifying none of the contents of a message are classified before composing the e-mail on an unclassified workstation. This is true for the information by itself, or when associated with other information to be included

in the same e-mail.

Never send sensitive deployment, Unit Type Code, or other highly sensitive mobility information in an unclassified e-mail. Use the SIPRNET, the Secret Internet Protocol Router Network, or other secure means, such as secure fax, to send such information, just as you would for other classified information.

If you have sent or received an e-mail message through the unclassified network and later discover there might be classified content, contact your workgroup manager immediately. Swift corrective actions can prevent a CMI from spreading further and keep the number of affected systems to be purged to a minimum.

If a CMI is suspected or confirmed, your workgroup manager should contact the AMC Network Operations and Security Center crew commander by secure phone at DSN 576-8007 or by

other secure means. The crew commander will then coordinate actions needed to purge the classified e-mail content from all affected unclassified e-mail servers and workstations.

(Senior Master Sgt. Alan McClellan, 805th CSS)

Training

COMPUTER BASED TRAINING:

When looking for a federal or other job, computer skills are a necessity. There are relatively few positions in any sector that don't require an applicant to come equipped with basic desktop skills. That usually means if the terms Excel Spreadsheet, Office Wizard or Windows XP send chills down your spine, it's time to take the bull (or computer) by the horns.

Approximately 700,000 Air Force military and civilian personnel have electronic access to Computer Based Training's desktop applications library

called "Books24x7." However, only 3,000 of the more than 400,000 registered employees have taken advantage of this service.

"Books24x7" can be used to read an entire book from cover to cover, or read a section at a time, leaving bookmarks as a person goes. People can search for solutions to an immediate computer problem and jump right into the answers. The USAF CBT system is free to use. Take the time to gain the tools necessary to make the grade.

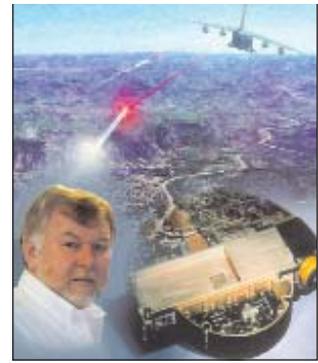
Visit <http://usaf.smartforce.com>.

(Master Sgt. Wayne Repke, AFCA)

KUDOS

SCIENCE & ENGINEERING AWARD:

Ray Linville, an engineer with the Manufacturing Technology Division, of the Materials and Manufacturing Directorate at the Air Force Research Laboratory, is the recipient of the 2003 Air Force Science and Engineering



Courtesy photo

Award (Manufacturing category).

He won for personally defining, leading and managing programs in support of Laser Eye Protection and the Viper™ Laser. The Viper™ Laser is one of the primary components in the Large Aircraft Infrared Countermeasures system, designed to protect C-17s, C-130s and other large aircraft from IR-guided surface-to-air missiles. Mr. Linville also brought in cost reductions and yielded enhancements for the Viper™ that will result in more LAIRCM systems being made available to the fleet, increasing air-



Staff Sgt. Verlin Collins / 1st CTCs

Testing iridium

Airman 1st Class Eric Pangburn, a satellite communications technician with the 447th Expeditionary Communications Squadron, prepares to test iridium satellite communications equipment at Baghdad International Airport. Iridium delivers essential communications services to and from remote areas where terrestrial communications are not available.

craft and flight crew survivability in hostile threat scenarios.

One of the major obstacles that were overcome through the efforts of Mr. Linville and his team was that high value electronics, optics and other materials were only available from a single supplier. Multiple supplier sources were made available, creating more competition and driving the cost down, by substituting standardized components for the specialized ones.

(Mr. Gary Cunningham, AFRL)

RADIO COMMUNICATORS: Two NCOs have learned new skills and adapted to the environment around them, all while delivering expert radio-communications support to Operation Enduring Freedom customers.

Staff Sgts. Vincent Bess and Andre Locust were deployed to Bagram Air Base, Afghanistan, to manage the 455th Expeditionary Communications Flight's land-mobile radio section. They said they knew they were in for a challenge. Despite their technical training backgrounds and a quick equipment overview before leaving the United States, "this was the first time we've ever had to program and support (land-mobile radios)," Sergeant Locust said. "Back home, you do quality-assurance checks and write reports," he said. "Here, I'm actually out climbing towers and warehouses or going 50 feet up in bucket trucks, installing antennas."

While maintaining day-to-day responsibility of more than 400 LMR

assets has been their official duty, it's their side jobs that have made an indelible mark on the entire area of operations here.

In Kabul, Afghanistan's capital, the two installed a repeater system for another personal security detail element with the Army's Criminal Investigative Division there. Repeaters are designed to increase the range of portable and mobile radios by receiving a signal from low-powered units

on one frequency, then amplifying the signal and retransmitting it at a higher-power level on another frequency.

Their efforts expanded radio communications in the area by up to 10 miles, and increased coverage from the Kabul Army compound to the U.S. Embassy in the capital.

After the 455th Expeditionary Operations Group command post moved to the air terminal operations center, radio contact with incoming aircraft was cut in half. The sergeants were called upon to restore the communications capability.

"We had contractors install a 40-foot concrete pole, usually used for telephone and power lines, and put up one antenna with two ports—a dual band antenna for VHF and UHF frequencies," Sergeant Bess said.

Instead of having to install two antennas, one for the command post and another for the combat weather team, the two ports allowed them to re-establish communications for both units with one antenna. The added range allows more time for support people on the ground to prepare for

incoming flights, since the command post can establish contact sooner.

(Master Sgt. Jeff Szczechowski, 455th EOG)

CC COMMENDS AIRMEN: During operations in Iraq, the Air Force experienced some of the highest mission-capable rates in recent history, said the service's vice chief of staff.

Gen. T. Michael Moseley spoke before a Senate Armed Services Committee subcommittee on readiness and management support March 9, directly crediting Airmen for the extremely high rates during Operation Iraqi Freedom.

"During the conflict last year, we enjoyed our highest active overall mission-capable rates in six years," he said. Now the Air Force is working to reconstitute after intense operations in Southwest Asia, which involves not only the replenishment of munitions and equipment, but also the maintenance and readiness of the service's No. 1 weapons system: Airmen. See the full text on www.af.mil. (Staff Sgt. C. Todd Lopez, AFPN)



Senior Airman Jonathan Pomeroy / 86th CS

Wiring harness repair

Staff Sgt. Robert Jelley, 86th Communications Squadron, repairs a wiring harness in a 52 Medium Up Converter of a Satellite Stadium, Jan. 7, at Ramstein Air Base, Germany. The Up Converter is used to change an intermediate frequency signal into a radio frequency signal.



Tech. Sgt. Brian Davidson / 445th EOG

Staff Sgts. Vincent Bess and Andre Locust install a radio-communications antenna for a secondary repeater for the security forces squadron at Bagram Air Base, Afghanistan.



What is Milstar?

Milstar is a joint service satellite communications system that provides secure, jam resistant, worldwide communications to meet essential wartime requirements for high priority military users. The multi-satellite constellation links command authorities with a wide variety of resources, including ships, submarines, aircraft and ground stations. The operational Milstar satellite constellation consists of five satellites positioned around the Earth in geosynchronous orbits. Each mid-latitude satellite weighs approximately 10,000 pounds and has a design life of 10 years.

How does it work?

Each Milstar satellite serves as a smart switchboard in space by directing traffic from terminal to terminal anywhere on the Earth. Because the satellite actually processes the communications signal and can link with other Milstar satellites through crosslinks, the requirement for ground controlled switching is significantly reduced. Milstar terminals provide encrypted voice, data, teletype or facsimile communications.

A key goal of Milstar is to provide interoperable communications among the users of Army, Navy and Air Force Milstar terminals. Geographically dispersed mobile and fixed control stations provide survivable

and enduring operational command and control for the Milstar constellation.

The ongoing process

The first Milstar satellite was launched Feb. 7, 1994, aboard a Titan IV expendable launch vehicle. The second was launched Nov. 5, 1995. The third launch on April 30, 1999, placed the satellite in a non-usable orbit. The fourth through sixth satellites have an increased capacity because of an additional medium data rate payload and were launched Feb. 27, 2001, Jan. 15, 2002, and April 8, 2003.

Components of Milstar

The Milstar system is composed of three segments: space (the satellites), terminal (the users) and mission control. Air Force Space Command's Space and Missile Systems Center at Los Angeles AFB, Calif., is responsible for development and acquisition of the Milstar space and mission control segments. The Electronics Systems Center at Hanscom AFB, Mass., is responsible for the Air Force portion of the terminal segment development and acquisition. The 4th Space Operations Squadron at Schriever AFB, Colo., is the front line organization providing satellite platform control and communications payload management.

Source: AF Fact Sheet

The strength of the team is each individual member...

JOINT OPS

...the strength of each member is the team.



ARMY

The path to greatness is along with others.

NAVY



AIR FORCE

A successful team beats with one heart.



Teams share the burden and divide the grief.

MARINES

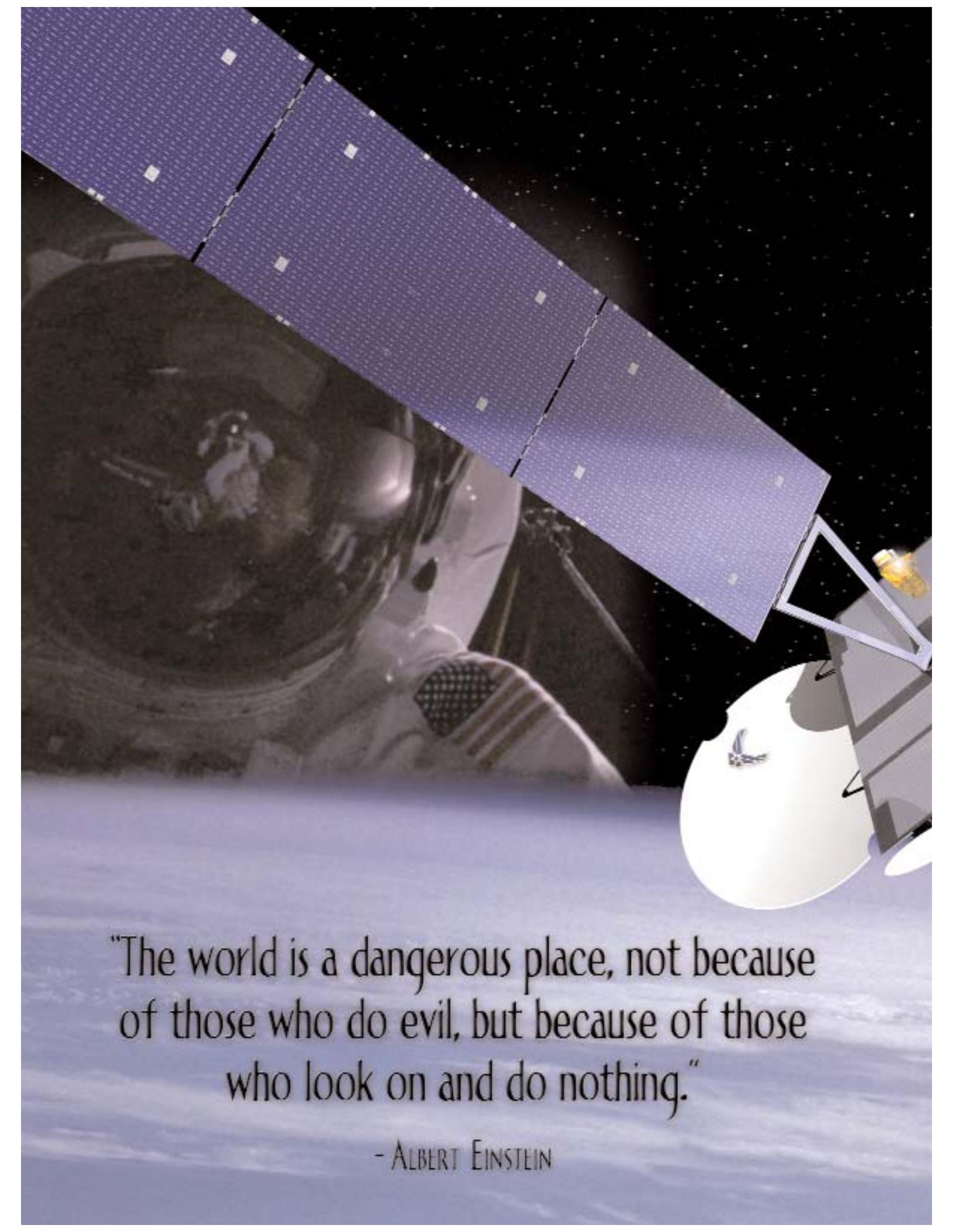


Teamwork divides the task and doubles the success.

COAST GUARD



By Master Sgt. Karen Pettitt, USAF

A composite image featuring a satellite in space, a close-up of an astronaut's helmet, and a view of Earth from space. The satellite is a large, rectangular structure with a grid of solar panels, positioned diagonally across the upper half of the frame. The astronaut's helmet is shown in a close-up, with a reflection of the Earth visible on its surface. The background is a deep black space filled with stars, and the lower portion of the image shows the blue and white curves of the Earth's atmosphere and surface.

"The world is a dangerous place, not because of those who do evil, but because of those who look on and do nothing."

- ALBERT EINSTEIN

intercom

Journal of the Air Force C4 community ★ April 2004



Satellite Comm

- ▶▶ Space leadership in the 21st century
- ▶▶ Communicators leverage future technology
- ▶▶ ACC Wideband: SATCOM in transition
- ▶▶ Moving forward with Reachback SATCOM