

ARMY COMMUNICATOR

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Voice of the Signal Regiment PB 11-10-3 2010 Vol. 35 No. 3

THE NEXT

150

YEARS

*"The future belongs to
those who live intensely
in the present."*

- Anonymous



PLUS:

BG Alan Lynn becomes the 35th Chief of Signal

Report Documentation Page

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CHIEF OF SIGNAL

Alan R. Lynn

Signal Corps preparing for dramatic change

Fellow Signaleers,

It is an honor to take the helm as the 35th Chief of Signal, and the commanding general of the U.S. Army Signal Center of Excellence and Fort Gordon, Ga. My wife, Brook and I wish to thank BG Jeffrey W. Foley and his wife Beth for the wonderful work they did at the Signal Center of Excellence for the past three years. We wish them God's blessings and all the best in their retirement.

To all of the men and women of the Signal Regiment: you serve in the finest traditions of those who have worn this nation's uniform these past 235 years. The American people, as one, are deeply grateful for your service, for the sacrifices you and your family are making, and for your unshrinking commitment to our nation. It is a great honor to serve with you as your Chief of Signal.

The Signal Corps and Fort Gordon will be the centerpiece of a dramatic change in our Army as we quickly begin to change from a combat enabler and combat multiplier to a combat weapon system where everything is tied together through networks. We will be moving from "Everything over IP" or EoIP to EhIP – "Everything has an IP." The speed and precision of our networks will be unmatched. Our cyberwar capabilities, manifested through Cyber Command, will be equally unmatched.

Get involved with what we are doing at YOUR Signal

To all of the men and women of the Signal Regiment: you serve in the finest traditions of those who have worn this nation's uniform these past 235 years... You are and always have always been the strength of the nation.

Center. GEN Martin E. Dempsey, the TRADOC commander, begins the Army Capstone Concept (TRADOC Pamphlet 525-3-0) with the following:

"Ideas matter. Emerging from specific human, historical, and technological contexts, ideas affect understanding and influence behavior. Ideas can serve as the driving force behind significant institutional change. Because the need for

change will always be with us, the exchange of ideas and conceptual development must be among our top priorities."

Your ideas matter. The TRADOC commander and the CIO/G6 have asked for my unvarnished opinions and advice, and I expect the same of you. Engage in your future.

I am thankful for your willingness to serve and participate in the development of the next phase of our Signal Corps in its 150th year.

You are, and always have been, the strength of the nation.

May God bless you all!

Pro Patria
Vigilans!



COMMAND

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Regimental Command Sergeant Major
CSM Thomas J. Clark

Regimental Chief Warrant Officer
CWS Todd M. Boudreau

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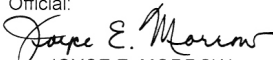
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Voice of the Signal Regiment

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A successful senior Signal noncommissioned officer lays out a primer of do's and don'ts for those who find themselves in the position of lead communications NCO.

Cover: *Army Communicator* Fall 2010 continues the year-long look back at the previous 150 years while recording the evolving history.



Cover by Billy Cheney

Your sacrifices make the Army strong

From Bull Run to Baghdad for 150 years and still today, our Regiment continues living the mantra of “Getting the Message Through” for commanders on the battlefield.

My service as a Signal Soldier in our great Army spans over 30 years. During these three decades, I have come to know the strength within the Regiment isn't from the complexity of our equipment. Throughout our history, time and time again our Regiment and the Army have been led to victory through the sheer will of our people. Our nation continues to stand strong because of the tremendous sacrifices made by the people.

For many of us, the Civil War, the Spanish-American War, WWI, WWII and the Korean Conflict seem like ancient history. Even the Vietnam War is a fading memory. Within the recent operations such as Desert Storm, Enduring Freedom and Iraqi Freedom, we are grappling with fresh, vivid images of our own brothers and sisters in arms, fighting and dying for our freedoms.

The loss of a single Soldier defies description. It weighs heavily on the mind of every leader, at every level. Not only does a fallen Soldier stress the mind with questions of what could have been done better to protect and preserve, but it etches a slice that goes far into the core of one's being. It gashes a tear that forms an indelible mark on your heart. I need not explain the piercing anxiety and anguish, if you're someone who's experienced the same. You understand the great sacrifice and have scar tissue to prove it. You know the risks and yet you still serve. This is another testament to your strength.

Today, deployment is inevitable. I've deployed twice to Iraq and have spent some time in Afghanistan. I've seen firsthand how critical to operational success are members of the Signal Regiment who demonstrate that they are exceptionally well trained, confident and faithful in carrying out complex missions.

I am a combat veteran like my grandfathers and father before me. My heart still swells with pride, just as it did when I first raised my right hand to enlist in 1980.

As we reflect over the past 150 years, I ask that we remember the oath every Signal Soldier takes upon entering into our Army. Don't just learn the words. Internalize the intrinsic meaning of this oath.

I, (NAME), do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; and that I will obey the orders of the President of the United States and the orders of the officers appointed over me, according to regulations and the Uniform Code of Military Justice. So help me God.

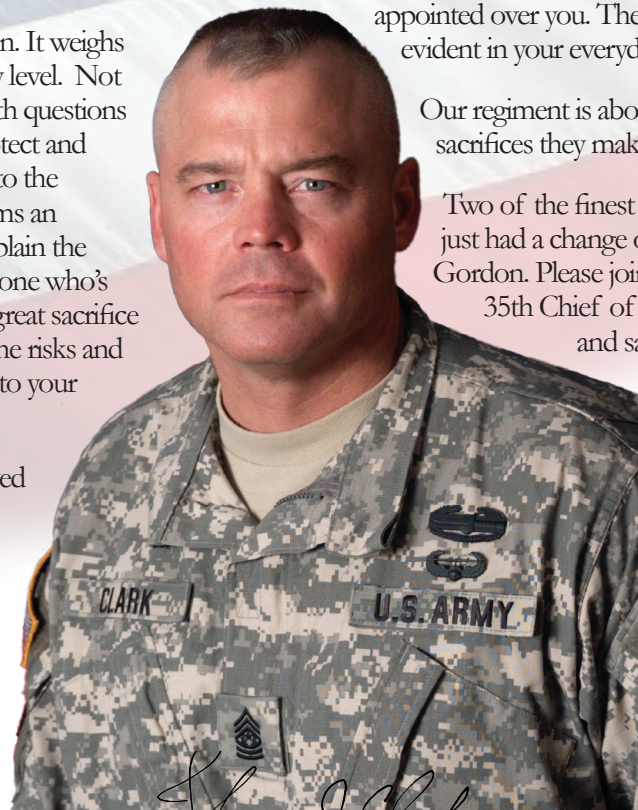
The oath exemplifies what our Soldiers do for the Regiment every day. YOU defend the same principles that make this country the greatest in the world. YOU stand as patriots to defend and protect the ideals and sentiments espoused in the Constitution of the United States. YOU bear true faith and allegiance which, in turn, causes your efforts to be chronicled in history books. Finally, YOU obey the orders of the President of the United States and the officers appointed over you. These truths remain self evident in your everyday life.

Our regiment is about the people and the sacrifices they make.

Two of the finest people on the planet just had a change of command at Fort Gordon. Please join me in welcoming the 35th Chief of Signal, BG Alan Lynn and saying farewell to my battle buddy for the last three years, BG Jeffrey Foley.

I remain proud to represent them and all of the Signal Soldiers around the world. God Bless you, our Regiment and our Army.

My name is Clark and I'm a Soldier.



Thomas J. Clark



Warrant officers providing exceptional service

Signaleers,

As I begin to craft this note using the memo pad on my Blackberry, I am sitting on a C-12 airplane, 15 minutes into a flight from Kandahar to Bagram. As I stood waiting on the tarmac for my scheduled C-130 flight, two Aviation warrant officers approached and asked where I was headed. Once they found I was headed to their destination, I was offered a seat on their aircraft. Being a warrant officer is great!

It is the third week of April and I have been on the road since mid February. It looks like I will continue at this pace for another few months, take a short break at the home of the Signal Regiment, and then head back out again. I am making my way around our Regiment endeavoring to place my boots in the same soil as the boots of our fine Signaleers.

My overall assessment at this point is that you are doing an awesome job everywhere I have visited.

I have had the honor and the pleasure of meeting many of you in your fields of operation. You are working in environments filled with complex technologies that you are leveraging to ensure

your commanders have and maintain the tactical advantage in prosecuting wartime missions.

Without exception, every commander, G6, and S6 I have spoken to has lauded your contributions to the fight. They have personally told me that our accessions and training processes are appropriate to the needs on the ground. To all of our WO1s and CW2s, I say well done. You are living up to the great reputation of the Signal warrant officer.

To all of our CW3s and CW4s, you are also to be congratulated for doing a magnificent job. While I am not implying that it is not happening, I ask that you make two immediate and thorough assessments to keep this reputation shining. First, develop and conduct proactive mentorship to junior warrant officers in your sphere of influence. Second,

encourage innovation to enhance your section's ability to think outside of the box in bringing non-doctrinal technical solutions to new problems you might encounter. Don't get caught in the technical rut of our current deployment scenario cycle. Don't limit yourself to rote memory, but maintain your ability to think critically and creatively and encourage others to do the same.

I now find myself closing this note on my laptop from my hotel room outside of Fort Meade. I safely returned from my trip to Southwest Asia and even made a quick trip to Southeast Asia where I had the privilege of meeting our fine Signaleers stationed in Korea, and attending the Signal Ball there.

With a few other trips here and there, I then attended the Signal Ball at Fort Gordon where GEN George W. Casey, U.S. Army Chief of Staff, was our guest speaker.

While the 150th anniversary edition of the Army Communicator has already been published, this still remains our 150th year. I urge individuals and organizations to maintain the pace and continue sending photos of their events to us so we can share our pride as we celebrate our 150th anniversary.

Thank you for your dedication and service in being ever Watchful for Our Country.

Pro Patria Vigilans!



Todd M. Boudreau



New Chief of Signal assumes command of the Regiment



Photos by Marlene Thompson

SSG Wilson A. Rivera

Presiding over three positions, the U.S. Army Signal Center commandant, Regimental Signal Corps' Chief of Signal, and Fort Gordon's commanding general, were transferred through a change-of-command ceremony held 21 July at Barton Field in Fort Gordon, Ga.

BG Jeffrey W. Foley, who is retiring after 32 years of service, stepped aside as BG Alan R. Lynn assumed command. To communicate commands to the formations on the field and demonstrate the Signal Corps' historic and important role in the Army and nation's history, semaphore flags were used during the change-of-command ceremony.

Presiding over the ceremony was LTG Robert L. Caslen, who is the U.S. Army Combined Arms Center and Fort Leavenworth, Kan., commanding general, U.S. Army Command and General Staff College commandant, Combined Arms-U.S. Army Training and Doctrine Command deputy commanding general, and Joint Center for International Security Force Assistance director.



(Left to right) BG Jeffrey W. Foley, outgoing Fort Gordon commanding general and Chief of Signal; LTG Robert L. Caslen, U.S. Army Combined Arms Center and Fort Leavenworth, Kan., commanding general, U.S. Army Command and General Staff College commandant, Combined Arms-U.S. Army Training and Doctrine Command deputy commanding general, and Joint Center for International Security Force Assistance director; and BG Alan R. Lynn, incoming Chief of Signal render honors during the change of command ceremony 21 July 2010 at Fort Gordon, Ga.

International Security Force Assistance director.

"One of our Army's greatest

strengths is that every time we lose an outstanding leader another steps forward to assume that role," said LTG



All units from Fort Gordon participated in the change of command activities on Barton Field. Represented units' colors were lowered as the national anthem was sung.

(Below and right) Using traditional signal semaphore, Soldiers communicate movement orders from the adjutant on Barton Field to all units participating in U.S. Army Signal Center of Excellence change of command ceremony 21 July 2010.



Caslen. "Alan is a proven leader who brings a vast wealth of operational institutional experiences with him. I'm certain he will serve this regiment, installation, and this community with honor as their new commander."

The Lynn's previous position was with the 311th Theater Signal Command at Fort Shafter, Hawaii. As commander, he brought the command to an operational capability then re-engineered and created an enterprise for all Pacific networks and systems.

Photos by Marlene Thompson

“The Signal Corps at Fort Gordon will be the centerpiece of a dramatic change in our Army as we quickly begin a change from a combat enabler and a combat multiplier, to a combat weapon system where all systems are tied together through networks,” said BG Lynn during his opening address as the 35th Chief of Signal. “The speed and precision of our weapons systems do to our networks will be unmatched, and our cyber warfare capabilities will only continue to increase as we stand up Cyber Command.”

BG Lynn is a distinguished military graduate from the Reserve Officer Training Corps at the California University of Pennsylvania, Pa., with a degree in English. In 2000, he was awarded a master’s degree in National Resource Management from the Industrial College of the Armed Forces.

He was commissioned as an Air Defense Artillery officer and served as a Chaparral and Stinger platoon leader, air defense fire support officer and C Company executive officer, 1-51st Air Defense Artillery Battalion, 7th Infantry Division, Fort Ord, Calif. He later transferred to the Signal Corps. Combat deployments include Desert Shield and Desert Storm, serving as the 1st Infantry Brigade Signal officer, with the 101st Airborne Division. BG Lynn commanded the 13th Signal Bn., 1st Cavalry Division, Fort Hood, Texas, during combat operations in Bosnia. He later took command of the



(Left to right) BG Alan R. Lynn, incoming Chief of Signal; LTG Robert L. Caslen, U.S. Army Combined Arms Center and Fort Leavenworth, Kan., commanding general, U.S. Army Command and General Staff College commandant, Combined Arms-U.S. Army Training and Doctrine Command deputy commanding general, and Joint Center for International Security Force Assistance director; and BG Jeffrey W. Foley, outgoing Fort Gordon commanding general and Chief of Signal; troop the line of service members during the change of command ceremony 21 July 2010 at Fort Gordon, Ga.

3rd Signal Brigade, Fort Hood, Texas and deployed the brigade in 2004 to 66 locations in Iraq, creating the largest communications network in Army history.

His awards and decorations include the Defense Superior Service Medal, Legion of Merit, Bronze Star Medal with oak leaf cluster, Defense Meritorious Service Medal, Meritorious Service Medal with an oak leaf cluster, Joint Service Commendation Medal, Army Commendation Medal with two oak leaf clusters, Army Achievement Medal, National Defense Service Medal, Armed Forces Expeditionary Medal, Southwest Asia Service Medal with two bronze stars, Global War on Terrorism Expeditionary Medal, Global War on Terrorism Service Medal, Armed Forces Reserve Medal, Army Service Ribbon, Overseas Service Ribbon with numeral five device, NATO Medal, Kuwait Liberation Medals, Joint Chiefs of Staff Identification Badge, Army Staff Identification Badge, parachutist and air assault badges. 

SSG Wilson A. Rivera is the Fort Gordon Signal newspaper editor.



Photos by Marlene Thompson

The U.S. Army Signal Corps band performed a full program of military marches during the change of command ceremony.

Signal Soldier presented Purple Heart Medal

By CPT Michelle Lunato

BAGRAM, AFGHANISTAN – SPC Garratt Williams, a multi-channel transmission systems operator maintainer, A Company, 392nd Expeditionary Signal Battalion, received a Purple Heart Medal and Combat Action Badge on July 16 after being injured by small arms fire while traveling in a Chinook in the southern part of Afghanistan.

SPC Williams, who was injured in his right eye with bullet fragments, was treated at the SSG Heathe N. Craig Joint Theater Hospital in Bagram and prepped for movement to Germany for surgery.

Upon receiving his medal and badge from BG Warren Phipps, deputy commanding general of support, Combined Joint Task Force 101, SPC Williams said he was feeling very lucky. "I'm just blessed to have my other eye."

The prognosis on his injured eye will not be concrete until he gets into Germany, said SPC Williams. In addition to military medical support, SPC Williams said he also has a number of connections in the ophthalmology industry in Atlanta through his civilian job as a mobile laser technician.

"Ideally, I hope I will get my vision back," he said.

Though SPC Williams said he feels very lucky considering the situation, there is still one thing that disappoints the Soldier who just requested to extend his deployment. "It upsets me that I cannot RIP [Relief in Place] with my team."

The Army Reservist deployed to Kandahar, Afghanistan in January in support of the signal mission for Operation Enduring Freedom. Originally, the Jonesboro, Ga. resident, was assigned to C Company, 324th ESB located in East Point but transferred to the 392nd ESB, a subordinate

unit to the 359th Theater Tactical Signal Brigade, for the deployment. 🇺🇸

CPT Michelle Lunato is the 359th Theater Tactical Signal Brigade public affairs officer.



Photos by CPT Michelle Lunato

(Above) SPC Garratt Williams, multi-channel transmission systems operator maintainer, A Company, 392nd Expeditionary Signal Battalion, receives a Purple Heart from BG Warren Phipps, deputy commanding general of support, Combined Joint Task Force 101. (Left) SPC Williams, expresses his appreciation to SGM Richard Williams, plans and operations sergeant major, Combined Joint Task Force 101, who pinned on his Combat Action Badge.



Newest Distinguished Member recognized as 150th anniversary observance continues

By MAJ Thomas J. Addyman

The newest inductee joined the ranks of Distinguished Members of the Regiment at the Annual Signal Corps Ball held 23 June 2010 at the Gordon Club on Fort Gordon. Mr. Craig Zimmerman was inducted into the elite circle of outstanding Signaleers on a night designed as a high point in the year-long celebration of the 150-year history of the Signal Corps.

When the Signal Corps Regiment was activated in 1986, members instituted a program for the recognition of those who have made special contributions and distinguished themselves in their service to the regiment. Distinguished Member selections are designed to recognize the individuals who have made significant contributions to the Signal Corps; to promote the history of the Regiment and foster cohesion among Regiment members. The occasion was especially momen-



Photos by Marlene Thompson

(Left) BG Jeffrey W. Foley, Fort Gordon commanding general and Chief of Signal presents an award to Mr. Craig Zimmerman, Office Chief of Signal director, recognizing him as a Distinguished Member of the Regiment during the 2010 Signal Ball 21 June 2010 at the Gordon Club.



tous because attendees at the 2010 Signal Corps Ball were commemorating the history of the Signal Corps and celebrating all who served since 21 June 1860.

On a night steeped in Signal Corps history, BG Jeffrey Foley, Chief of Signal, presented Mr. Craig Zimmerman as the newest Distinguished Member of the Regiment at the home of the Signal Corps. BG Foley shared some of the highlights of Mr. Zimmerman 37 years of service to the Regiment.

After serving close to 30 years on active duty, Mr. Zimmerman retired from active duty service and joined the civilian sector as the director, Office Chief of Signal. In this capacity, he continues to serve and help guide the Signal Regiment.

Following his induction, Mr. Zimmerman said he was honored and humbled to be chosen for the prestigious lifetime achievement award. He thanked many in the audience and indicated that his ac-



Photos by Marlene Thompson

This ice sculpture was one of several elaborate elements displayed during the 2010 Signal Ball 21 June 2010 at the Gordon Club on Fort Gordon, Ga., as the Signal Regiment continued its year-long observance of the 150th anniversary of the Signal Corps.

complishments came through the support of his wife, Jan and many others.

Mr. Zimmerman said, "I've had a lot of help over the years and am truly thankful for everyone's help and assistance all these years." He said that it was because of the assistance of others that he is able to continue serving Soldiers in a career moving toward four decades of service to this great country.

Mr. Zimmerman began his career in the Signal Corps in 1973 upon his graduation from the Citadel. For the next six years, he was assigned to field artillery units as a platoon leader, battalion S6, and commander in the 1/18th Field Artillery in Augsburg, Germany. He was given another opportunity to lead as the commander of the 304th Signal Battalion, 1st Signal Brigade

which was commanded by then COL Peter Kind. He subsequently served as the executive officer for the 25th Signal Battalion, S3 for the 11th Signal Brigade, and then commander of the 504th Signal Battalion. From 1994 to 1998, he served as the Signal personnel systems staff officer for the Army G1 and then as the chief, command and control division, Army CIO/G6. In 1998, he assumed duties as the director of the Office Chief of Signal at the Signal Center and also as the ninth Signal Regimental adjutant. In this capacity, he was responsible for the strategic human resources planning for all Signal military personnel and the U.S. Army Signal Regimental Program. In 2000, he assumed duties as the Signal Center chief of staff before retiring in early 2002.

Mr. Zimmerman returned later in 2002 as the first civilian director of the Office Chief of Signal, where he continues to serve today. As the OCOS director, he has provided extraordinary leadership over all aspects of personnel life-cycle management affecting over sixty thousand signal soldiers and leaders in both active and reserve forces worldwide.

He also serves as the Chief of Signal's primary resource leader for coordination and input to the Signal Corps Regimental Association, where he has also excelled as the SCRA executive officer since 1998. He has played a major role in the growth of the SCRA from 18 to 33 chapters. He developed and instituted the Gold Order of Mercury Program that recognizes Signal Soldiers who perish in the global fight for freedom.

(Continued from page 10)

With a solemn moment of silence and prayer amid the ceremony and celebration, the Signal Regiment and its guests took time to remember those fallen in combat, absent in battle, missing in action and prisoners of war, during the 2010 Signal Ball held 21 June 2010 at the Gordon Club on Fort Gordon, Ga.



Photos by Marlene Thompson

(Continued from page 9)

Another key event during the 2010 Signal Ball was the unveiling of a commissioned painting presented to the Signal Museum on Fort Gordon. The painting was presented to the Signal Regiment to memorialize the 150 years of Signal Corps history. This was an idea conceived and managed by Mr. Zimmerman.

BG Foley said the painting presentation was another achievement that shows Mr. Craig Zimmerman is deserving of his recognition as one who is ever watchful for this great nation and is ever watchful over the Signal Regiment. 🇺🇸

MAJ Thomas Addyman is a personnel proponent developer/FA24 working in the Officer Chief of Signal at, Fort Gordon, Ga.



(Above) COL Mike Griggs, U.S. Army Signal Center of Excellence and Fort Gordon chief of staff, describes the action depicted in the painting presented during the 2010 Signal Ball. (Right) GEN George W. Casey, Jr., U.S. Army chief of staff and BG Jeffrey W. Foley, Chief of Signal follow activities ongoing during the event.





Photos by Marlene Thompson

Guests arriving at the Gordon Club for the 2010 Signal Ball 21 June 2010 are greeted by a ceremonial detail presenting a sword arch. The event was filled with elaborate pomp and ceremony.

Faces in the crowd



BG Bryan Gamble, commanding general Southeast Regional Medical Command/ Dwight David Eisenhower Army Medical Center



BG Jennifer L. Napper, commanding general, 7th Signal Command (Theater)

In addition to traditional military honors and ceremony, the event ultimately was a huge party that included everyone eventually making their way to the dance floor. (Below) There were some surprising moments and actions from unexpected quarters, that had some asking, "Is it live or Memorex?"



BG Ronald M. Bouchard, deputy chief of staff, U.S. Army Forces Command

An American Journey



A Signal Soldier's Reason for Serving

By MAJ Lan T. Dalat

I am blessed to be an American and serve in the U.S. Army as a Signal Corps officer. My journey is a testament to the vitality of the promise that is America.

As a young boy, I often watched paratroopers landing on the hills across the field from my house near the Vietnamese National Military Academy in Da Lat. Beyond those hills off in the distance I could see huge billboard-size antennae piquing my youthful curiosity and pulling me toward my destiny to serve an organization in a distant land some 30 years in the future.

The path I followed transformed me, severely tested my will to survive and equipped me with a zeal to strive for success.

My parents sent me to French Lycée Yersin, a Catholic school where they intended for me to benefit from a good education in a war-torn country.



MAJ Lan T. Dalat

Outside of the schoolhouse, my curiosity often led me to a place where I watched the military cadets marching with their weapons and their communications equipment. I was fascinated most by the crackling human voice coming out of the radios during their marches.

At the age of nine, my formal education at the Catholic school was abruptly cut short. Instantly and radically, my life changed on April 30, 1975, when Saigon, Vietnam fell to the communists. The political fabric of South Vietnam unraveled as the core social and economic policies in which my family had thrived disintegrated.

My parents' past social status and political affiliation brought unwanted changes to our lives in the post war era. They made every effort to raise our family and adjust to life under the new regime. We were forced to move to a smaller place within the ideology of the communist doctrine inside Saigon, which was renamed Ho Chi Minh City.

These were dangerous times for my family. It was during this period that extraordinary measures were formulated to meet the daily needs of our family. It became clear to us even as children that catastrophe loomed around every corner. If we were to survive, high-risk remedies were necessary.

This period of crisis demanded a desperate response. Our radical reaction propelled us into an odyssey that began before dawn on March 8, 1981.

The bright Southeast Asian sun had not broken the still of the night when my mother, my three siblings and I crept along the edge of the Saigon River. My father remained behind to ensure our safe passage. We left everything behind for a perilous journey searching for freedom and opportunities.

In tense silence we waited at a prearranged spot on the bank of the river. After what seemed like forever, we slipped unnoticed into a fisherman's canoe.

As the sun began to break the horizon and illuminate the gray water, we crept smoothly along the river, flowing past the bank like a big bamboo reed pulled along with the slow moving current. It was a dull, monotonous trip. A few days later, our canoe reached the pickup point.

Out of the fog-shrouded dark-



MAJ Lan T. Dalat in an early photo with his parents, siblings and grandmother.



Photos courtesy of the U.S. Navy

ness, a fishing boat eased to a crawl. Once again we slipped through the twilight, climbed out of the small canoe and onto a larger boat that was packed with others.

At that moment my family and I unknowingly joined a new and growing demographic called “boat people.” We were among thousands of Vietnamese who crammed onto small wooden fishing boats and fled Vietnam. Not knowing the actual outcome or destination we set off in an unseaworthy wooden boat hoping to land on a peaceful shore somewhere in the world.

From the relatively still river we pushed off into the sea. It was rough going.

Day and night, the waves lifted the tiny boat and crashed it down again and again. The engine sputtered and the boat shuddered with each wave it survived. Day after day, the sea seemed determined to end our journey. Yet we plowed forward—our past certain, our destination unknown.

After enduring five days of the pounding waves, the small boat’s engine protested one last time and stopped.

We were without power and adrift on the open sea.

Soon the food and water supply ran low. In cloistered circles people began quietly, seriously discussing the implications of cannibalism for our ultimate survival. The remaining water was rationed down to one soft drink capful a day. Even with this severe rationing the water supply ran out two days later. Dehydration and severe hunger caused massive hallucinations among the boat people.

(Continued on page 14)

The USS Ranger CV-61 towers above the small boat packed with Vietnamese, including Lan T. Dalat and members of his family who had escaped from Vietnam in 1981.



(Continued from page 13)

"Mommy, can you buy me some water? I'm so thirsty," my little brother desperately asked my mom.

"Son, I will buy you all the water you want when we get to shore. Don't worry, we will be there soon," my mother said, attempting to comfort my little brother.

It was here on the boat that I first learned about line-of-sight communications from my mother's compact mirror. It wasn't clear if she actually saw an airplane flying above or was just hallucinating. Nonetheless, she said she saw something and pulled out her mirror attempting to communicate with the plane using the reflection of the sunlight. Nothing happened.

For the next seven days, the boat carrying 138 people remained adrift on the South China Sea. Hope for survival dwindled. Now there was no wind, no waves and no land anywhere around our boat. Fear was palpable throughout the boat. It was the dread of a painfully slow death that everyone wanted to avoid. Facing a critical juncture, some openly discussed suicide as a better alternative to dying of starvation and exposure.

Early on the morning of March 20, 1981, we were awakened by a deafening noise.

Two low-flying jets roused everyone from our miserable sleep.

Those who could speak uttered the questions aloud that some were too weak to muster. Was it a mass hallucination? From what country are those jets? Are they Russian or Chinese?

Suddenly three shots rang out from the boat's bow. A defecting soldier had fired three rounds into the sky from his rifle. He attempted to signal the aircraft to return with his SOS message.

"They are definitely real," a man shouted confidently. "Those are Americans and we are saved!" The pronouncement sparked a wild excited cheer. The hidden energy

from being near death suddenly emerged and triggered the impulse for survival.

The jets disappeared over the horizon and never returned. Anxiety quickly set in as everyone waited for the jets to return.

I forgot about the hunger. I forgot about the thirst. I was so excited about the possibility of being rescued. On that very hot and dry day on the surface of the calm sea, I vigorously scanned the horizon for any sign of the planes. The sun began to lower toward the horizon. The adrenaline rush was consumed. Our hopes for rescue faded and our morale diminished. Most of us stared blankly toward the horizon with disbelief and disappointment.

One by one we sank lower into a deep pit of hopelessness.

Suddenly, a voice cried out "I can see the ships. Over there! Over there!" It was on the opposite side from where I sat. I could not see what was causing the commotion. Everyone craned their necks trying to spot the ships. Noise inside the boat began to increase as excitement once again filled the air. In the port hole across from me I was able to see for a brief second a fleet of ships sailing slowly on the horizon. Pure excitement rushed through my body as I screamed out while looking at my mother and siblings. "I can see the ships!"

Early that evening, U.S. Navy CPT Dan A. Pedersen, USS Ranger CV-61 commanding officer, ordered his crew to rescue all 138 of us from the delapidated wooden boat drifting on the South China Sea.

At that point, I was no longer a boat person. I became a refugee. With that status granted by the United Nations High Commission for Refugees, my family and I along with other refugees were taken to the Philippines where we were placed temporarily inside a Vietnamese Refugee Camp in Puerto Princesa, Palawan, Philippines.

We arrived at the dusty camp comprised of bamboo huts housing more than 3500. There, we learned English from British volunteers. My teacher, Muriel Knox gave me great insights on the life and opportunities that I would be able to enjoy in a free country. It was there that I learned about the selfless service that volunteers had provided us.

After six months at the refugee camp, I immigrated to the United States with my mother and siblings. As a legal immigrant in America, I learned to use every tool I possessed and to apply them to every lesson I learned in order to strive in the land of opportunity. However, I quickly realized that I was not welcome in southern California.

I encountered prejudice and discrimination while trying to learn how to break away from the violent ghetto culture where we first settled. I was living among the poorest people in the lowest rent district within the affluence and abundance of Orange County, Calif. For years, I questioned the choices my mother had made and the vision we had for America. It wasn't the existence that I had dreamed of finding when we risked our lives on the open sea.

Working three jobs, my mother was able to afford the move that took us to another part of Orange County where better opportunities began to surface for me. It was at Tustin High School that I learned about teamwork and leadership. Instead of using my foot speed to avoid gang member beatings, I was able to use my running to earn a varsity letter. At Tustin I was trained and mentored



The refugee village camp in Puerto Princesa, Palawan, Philippines where Lan T. Dalat and members of his family lived temporarily after their escape from Vietnam in 1975.

by Tom Coffee, track team coach, who taught me that hard work is a key element to achieving success.

Meanwhile, my father continued facing persecution at the hands of Vietnamese officials. He had been jailed for many attempts to escape from Vietnam. He was finally released from jail and made a successful escape. His boat landed him in Malaysia where he served as the refugee camp leader for two years. He immigrated to the United States two days before my high school graduation.

After I graduated from high school, I enlisted in the U. S. Army Reserve as a way to serve and to get a college education.

As a weekend warrior specializing in logistics, I was able to find a full-time job during the day. At night, I enrolled in a local college with the determination to achieve all the promises of the American dream. My pace for success was much slower than most of my peers since I had to balance my life with a full-time job, a struggling immigrant family and school.

Eventually, I graduated from California State University-Fullerton and was commissioned through the Army Reserve Officers' Training Corps program as a second lieutenant in the Signal Corps.

Prior to that significant day, I set out to find the skipper who had rescued my family from the South China Sea. I wanted to personally thank him for giving me this opportunity to live and to excel in America.

With the help of U.S. Navy ENS Wendy Snyder, I was reunited with CPT Pedersen who had retired from the Navy several years earlier. He celebrated my success and continues to be a part of my personal and professional life. He has helped shape me to become the officer that I am today.

My first assignment in the Army as an officer was with 1st Signal Brigade, the same unit that had a communication site beyond the hills from my house in Da Lat, Vietnam. It was not until later that I learned about the significance of the Pr' Line Communications Site located in my childhood town.

Today, as a major in the U.S. Army, I returned to serve with the



MAJ Lan T. Dalat participates in a change of command ceremony.

It's an exciting time to serve in the Signal Corps where communications tools enable commanders to fight and win in real time with unlimited ways to access information that shapes sound decisions on the modern battlefield where there is no boundary.

1st Signal Brigade after serving in many capacities ranging from staff to command around the world. I have served at Fort Bragg, N.C.; Fort Gordon, Ga.; Landstuhl, Germany; Naples, Italy and Kandahar, Afghanistan.

I have had many great opportunities to serve with some of the finest Signal Soldiers, noncommissioned officers, and officers around the world providing the "Voice of

Command" to war fighters.

It's an exciting time to serve in the Signal Corps where communications tools enable commanders to fight and win in real time with unlimited ways to access information that shapes sound decisions on the modern battlefield where there is no boundary.

The key to success on this battlefield is the ability for the commander to have secure access to the right information at any-time, anywhere in the world.

It's an honor and privilege for me to have the opportunity to serve this great nation.

The United States adopted me and gave me the same equal opportunities that are available to every American. America is definitely a country with core values worth risking one's life to protect. I gladly stand and fight to ensure that future generations will have the same freedom and opportunities we enjoy today. 🇺🇸

86TH EXPEDITIONARY SIGNAL BATTALION CELEBRATES

By CPT Michelle Lunato

KANDAHAR, AFGHANISTAN – Over 300 service members, Coalition Forces and contractors, gathered on 18 June to honor the U.S. Army Signal Corps' 150th Anniversary.

The celebration, hosted by the 86th Expeditionary Signal Battalion, an element of Task Force Thunder, was similar to a military ball held in the United States, but with some war-time modifications.

In the tactical environment of Afghanistan, the ballroom was replaced with a clam-shell tent in the 86th ESB's command area, the Task Force Tiger compound.

The kitchen to prepare gourmet meals was substituted with another tent to prepare salads and grilled chicken, steaks and bratwurst. A variety of camouflaged uniforms were the replacement for the fancy dress attire traditionally worn to a dining-in.

It may have looked slightly different, but the intent and preparation were just as though we were in the states, said CPT Robert Prigmore, battalion personnel officer who served as the ceremony emcee.

Just like in the states, the ceremony began with customary toasts upon the entrance of the official party. As there is no alcohol on military bases in Afghanistan, the attendees improvised and completed their toasts with water or soft drinks.

Following tradition, the last toast was to honor fallen comrades.

Before the traditional final toast

During the 150th Signal Corps Anniversary celebration that was hosted by the 86th ESB in Kandahar, Afghanistan in June 2010, SGT Christopher Stillwell, human resources NCO, stands beside the table honoring fallen and missing servicemembers.

could be fulfilled though, symbolic items were ceremoniously brought forward to a small table and single empty chair. A rifle represented the War of



Photos by CPT Michelle Lunato



Photos by CPT Michelle Lunato

(Above left) CSM Christopher Riley, battalion command sergeant major, 86th ESB, tests his "cable dawgs" skills as he races at rolling up a half mile of cable to standard along with his battalion commander, LTC Paul Craft, 86th ESB commander. (Below) CSM Riley tightens the roll.

Independence. An empty chair represented the thousands of family members who waited for 292,131 Americans who would never return from WWII. And a yellow ribbon represented the hopes and prayers of the families and friends who await the safe return of those currently deployed for Operation Enduring Freedom, Operation Iraqi Freedom and Operation New Dawn. As of June 11, 6,502 U.S. service members never return home - 72 of them were Signaleers.

This venerated physical display was followed by a moment of silence and the playing of taps. SFC Kerry McMillan, HHC, 86th ESB career counselor said, "Remembering our fallen comrades during a ceremony is important, and it is always an emotional event for me."

Actually holding the observance in a war zone made it even more significant than usual, said SGT Christopher Stillwell, human resource NCO, who carried the symbolic candle to the table to remind everyone of the ultimate sacrifice of those fallen comrades. "It was a unique opportunity to



do the ceremony here in Kandahar."

After the fallen Soldier tribute, the ceremony continued with a recap of Signal Corps history covering the gamut of how messages moved from signal flags and lanterns to satellites and IP addresses.

In a letter to the Signal Corps, GEN George W. Casey, Jr., U.S. Army chief of staff outlined how the dynamic developments and escalating responsibilities of the Signal Corps have contributed greatly to the success of commanders and become a fabric of the nation. "Throughout your 150 years, the Signal Corps has led our army and our nation in innovation to meet the challenges of a complex present and an uncertain future," he wrote.


Honoring the history of signal while you are here making history is an memorable twist, said SSG Gordon Turner, A Company, 392nd ESB motor sergeant, a subordinate company to the 86th ESB. "You have a more definite feeling of what the Signal Corps is when you are here serving."

For those guests who were not familiar with the Corps' historical contributions, the ceremony was very informative, said SGT Eric G. Blohm, C Company, 86th ESB shop foreman. "I didn't know signal was such a big part of the Army's history."

Historical education, entertainment and good food were not the only features of the celebration. The after-party events ranged from Wii bowling to Texas hold'em to a 'cable-dawg' race for the servicemembers to enjoy.

Most Soldiers said the highlight of the event was watching the battalion commander and command sergeant major racing to roll a half-mile of cable like the enlisted "cable-dawg" Soldiers.

"Though it took countless hours to prepare all the facets of this celebration, we really wanted to put together a first class event," said LTC Paul Craft, 86th ESB commander. "My team and I tried to make it special so the Soldiers will remember the 150th Signal Corps Anniversary."

CPT Michelle Lunato is the 359th Theater Tactical Signal Brigade public affairs officer. 

FLAGS ON THE FRONTIER

By LTC Kevin P. Romano

The history of Fort Leavenworth is one of the most storied in the Army. Founded in 1827, it has the unique distinction of being the first and oldest U.S. Army installation west of the Mississippi River.

One of the more overlooked aspects of Fort Leavenworth's history is the U.S. Army Signal School that existed at the fort from 1905 to 1920. During the early 20th century, Fort Leavenworth served as the training center for Signal Corps officers and enlisted men. It also conducted research and experimentation for the Signal Corps. The paradigm of instruction developed at Fort Leavenworth is the model for instruction that exists to this day.

The Beginnings, 1867 - 1905

From 1867 to 1885, the Signal Corps conducted its training at Fort Whipple, Virginia, renamed Fort Myer after the death of the Signal Corps' founder, BG Albert J. Myer, in 1880. There, Signal Soldiers received training in both signaling duties (primarily wigwag and electric telegraphy) and weather reporting. Budget cuts forced the Army to close the school at Fort Myer in 1885. Consequently, the Army had no separate Signal school for several years. Efforts to economize along with political controversies eventually led to the abolishment of the Signal Corps' weather service in 1891 and its transfer to the Department of Agriculture.

In the meantime, the Army's educational system was undergoing a transformation that would have a significant effect on signal training. In 1881, General William T. Sherman, commanding general of the Army, established the School of Application for Cavalry and Infantry at Fort Leavenworth. In 1888, signaling became part of the curriculum.

Beginning in 1891, some signal instruction also took place at the Cavalry and Light Artillery School at Fort Riley, Kansas. Up until the Spanish American War, the instruction of Signal Corps topics throughout the Army took place at Fort Leavenworth and at Fort Riley in a varied manner.

After the war, Signal training returned to Fort Myer for a brief period, beginning in 1899. As a result of the Spanish-American War, the United States gained overseas territories, thus greatly expanding the scope of the Signal Corps' duties. This fact, coupled with the reforms instituted by Secretary of War Elihu Root in 1903, created the impetus for the establishment of a full-fledged school solely devoted to training Signal Corps officers.

Secretary Root reformed the Army in terms of command, the National Guard, and service schools. The Root Reforms were aimed at correcting deficiencies discovered during the Spanish American War.

One of the most significant changes was the establishment of the General Staff. The Chief Signal Officer and the other bureau chiefs now had to answer to the chief of staff.



Photo courtesy Combined Arms Research Library

Signal Field Company, Fort Leavenworth, circa 1910.

Revisiting the U.S. Army Signal Corps School at Fort Leavenworth

Signal School Established at Fort Leavenworth 1905-1908

On 25 August, 1905, War Department General Orders 140 officially announced the creation of the U.S. Army Signal School as a separate and distinct school at Fort Leavenworth. The Signal School's first commandant was MAJ George Squier. Squier would go on to become the chief of signal from 1917 - 1923. Squier organized the school into three academic departments: signaling, signal engineering, and languages. MAJ Squier required all students of the Signal school to complete a thesis on a relevant topic as well as lead a pertinent technical conference. The language requirement existed throughout all the schools at Fort Leavenworth. The primary languages taught included Spanish, French, and German. Officers with proficiency in Spanish were allowed to pick either French or German as a foreign language.

The first class of nine officers reported for instruction at Sherman Hall. Sherman Hall still stands today, serving as part of the Combined Arms Center Headquarters. One officer in the first class who would later go on to serve as the Chief of Signal was then CPT Charles McKinley Saltzman. The first school year, 1905-1906, also saw the creation of a Signal Corps laboratory in the basement of Sherman Hall. With much fanfare, the Signal Corps laboratory was opened by MG J. Franklin Bell, then commandant over all schools at Fort Leavenworth. MAJ Squier devoted an entire month of training to map exercises and field training for the class.

MAJ Squier continued in his duties as commandant the following year. The 1906-1907 academic year saw eight Officers report for instruction; including CPT William "Billy" Mitchell. In September 1906, CPT Mitchell left the Signal school for duty in Cuba. Also during the second year, LT Jean Brugere, Chasseurs d'Afrique, French Army attended the school as

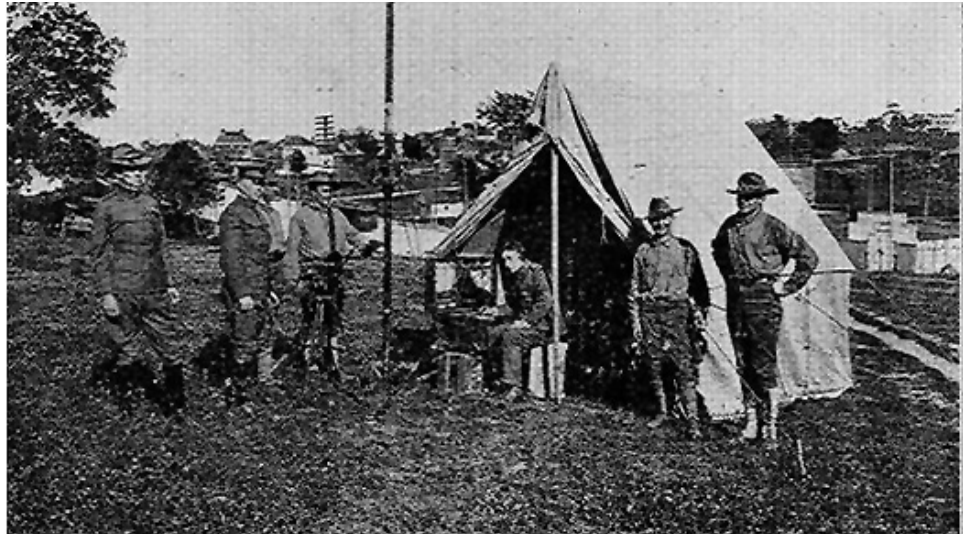


Photo courtesy Combined Arms Research Library

Signal field training near present day Merritt Lake, fort Leavenworth, circa 1908.

one of the first recorded international officers. At the end of the academic year, MAJ Saltzman replaced MAJ Squier.

MAJ Saltzman immediately sought to expand the Signal school and increase course rigor. Academic year 1907-1908 saw 15 student Officers report for instruction. Under MAJ Saltzman, theoretical training accounted for one-third of the instruction and the remaining instruction time was devoted to practical work in the laboratory or field. The varied topics taught at this time clearly reflect Saltzman's influence on technical training.

The Signal portion of the course taught field telegraph, field telephones, field buzzer, wireless signaling, and visual signaling. Signal engineering topics included: electricity, Signal Corps manuals, alternating circuits, oil engines, fire control apparatus, practical laboratory and photography.

MAJ Saltzman also expanded the laboratory in Sherman Hall, creating workstations with a telephone, telegraph, telegraph switchboard, 110 and 220 volt supplies of alternating current, battery bank for direct current and various tools. Theses submitted reflected a growing number on avia-

tion and wireless telegraphy. Research conducted at the Signal School included: Signal Corps TO&E, ciphers, and improved field message blanks. The transfer of Company A, Signal Corps, from duty as the post Signal company to the Signal school is one of the more lasting legacies of MAJ Saltzman's tenure at the Signal school. This move allowed the Signal school to conduct hands-on field training exercises for the students.

During the time MAJ Saltzman served as Signal school commandant the thoroughness of the course increased as well. The yearly examinations challenged the students with some of the following questions:

1. "A non-inductive resistance, R, of 200 ohms is connected in series with a condenser across the terminals of an alternator, which has a frequency of 60. The condenser has a capacity of 15 microfarads and the current flowing in the circuit is 5 amperes.

Required:

- (a) The reading that would be given by a voltmeter connected to the terminals of the resistance.
- (b) The reading of the voltmeter if connected to the terminals of the

(Continued on page 20)

condenser.

(c) The reading of the voltmeter if connected across the mains, i.e., the E.M.F. furnished by the alternator.

(d) The angle by which the current will lead the E.M.F."

2. "What is light? (Answer limited to 25 words)."

3. "A captain having an allowance of four rooms and 20,000 watt hours of electricity per room per month, is assigned to quarters fitted with incandescent lamps having a resistance of 220 ohms each.

(a) If the cost is \$0.035 per kilowatt hour, what is the money value of his allowance per month?

(b) If the power is supplied at 110 volts, how many lamps can the captain burn for 5 hours each day for 30 days and keep within his allowance?"

Growth and Expansion, 1908 - 1914

MAJ Edgar Russel assumed the role of Signal School commandant for academic years 1908 - 1911. The fall of 1908 saw 13 students report for instruction, including another future chief of signal, then LT Dawson Olmstead. Olmstead would lead the Signal Corps through the rapid growth and expansion during World War II. MAJ Russel formalized the responsibilities of the school to:

1. Provide instruction
2. Disseminate knowledge

3. Conduct research and experimentation

The 1908-1909 academic year marks the first year that aeronautics was added to the course of instruction. Practical aeronautics training took place at Fort Omaha, Nebraska, and St. Joseph, Missouri. Training done at these two locations involved set up and flights in balloons and dirigibles. The St. Joseph trip was completed to attend an air show held there. At this time, there was a tremendous amount of research and work taking place on wireless telegraphy, or radio. To better support the school and post, Company D, Signal Corps, arrived from Fort Omaha on May 29, 1909 for duty with the school.

The remaining years (1909-1911) of MAJ Russel's time leading the Signal School were relatively quiet. The most important accomplishments and changes at this time primarily involved the school's experimentation and training on wireless telegraphy and increasing the rigor of the course. Another future chief of Signal, then LT Joseph Mauborgne, became responsible for all wireless telegraphy experimentation and training done at the school. In 1909, the school installed a wireless station on Engineer Hill (site of the present Frontier Conference Center) that linked Fort Leavenworth to Fort Omaha. Later this wireless station made regular contact with Fort Riley, Kansas.; Fort Omaha; Fort Sam Houston, Texas; Key West Naval Station, Florida; and a mobile Army

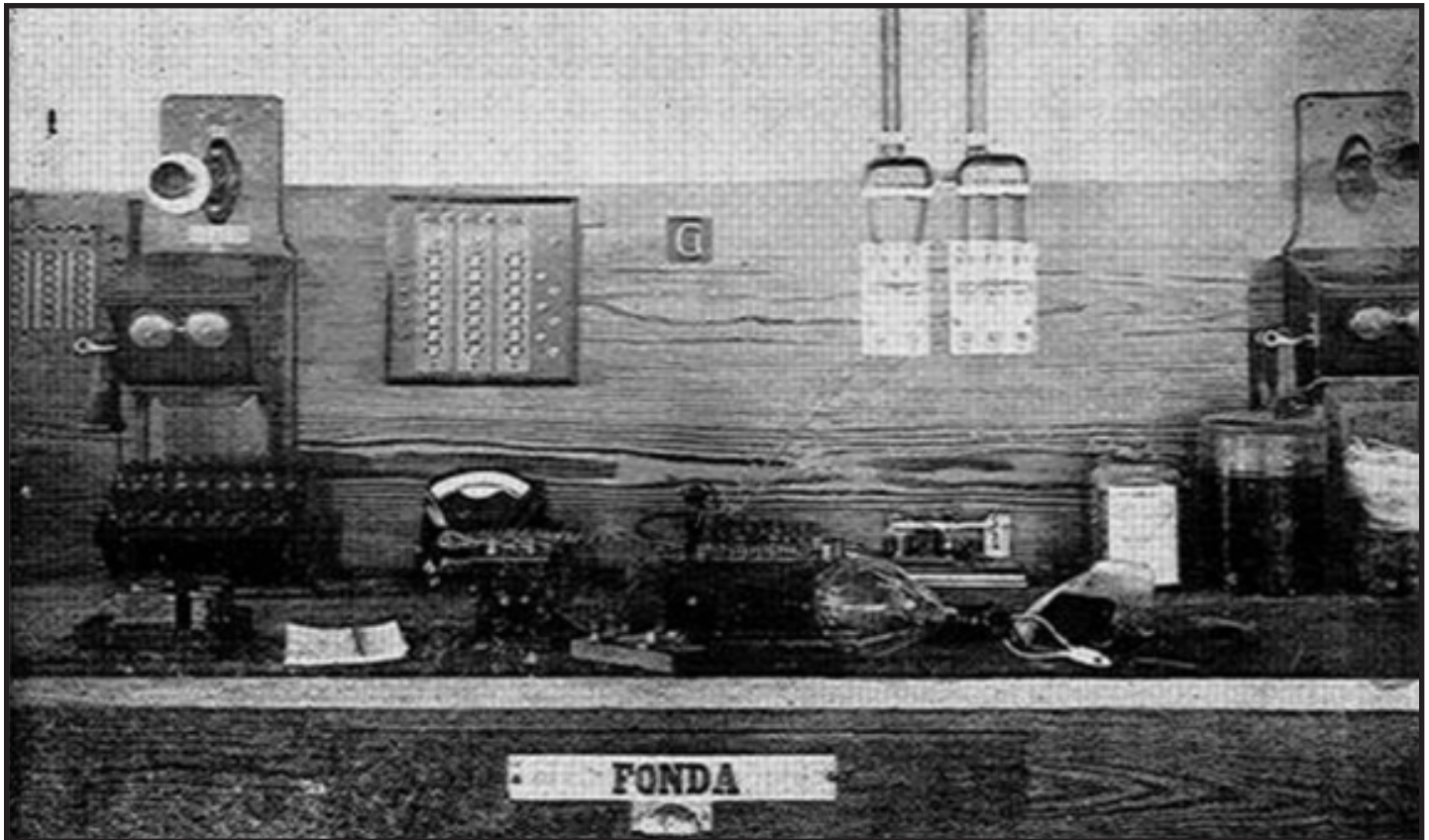


Photo courtesy Combined Arms Research Library

Signal school laboratory work station, Sherman Hall, Fort Leavenworth, circa 1908.

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site at Eagle Pass, Texas. In the 1910 – 1911 academic year, the school mandated that all students achieve mastery in visual signaling by transmitting and receiving five words per minute. This same standard also applied to Morse code. Later the Morse code requirement increased to 15 words per minute. Student theses at this time covered Signal organization, codes, automobiles and motorcycles, balloons and wireless telegraphy. During the Russel years came the first indication that the research and experimentation mission was suffering because of the lack of technically proficient officers. The average number of graduates during this period reached approximately 13 per year.

Academic years 1913 – 1915 saw MAJ Leonard D. Wildman lead the Signal school. The most notable accomplishment during this time is undoubtedly the establishment of the Enlisted Men's school. On 6 October 1913, Company B, Signal Corps, arrived at Fort Leavenworth to provide instruction at the Enlisted Men's School. In the first year, 111 Soldiers received instruction; 21 noncommissioned officers and 90 privates. The focus on the growing importance of wireless training can best be summed up in MAJ Wildman's yearly report, "A thorough grounding in radio work is now absolutely necessary for the signal officer..." Wildman went on to request the latest European wireless sets for training at the school. During MAJ Wildman's time as commandant, a number of criticisms from field commanders were leveled at the Signal School. These criticisms listed below were included in the annual report of the Signal School in 1913:

1. Graduates not competent on wireless telegraphy
2. Graduates lack initiative and self-reliance

To remedy these problems, MAJ Wildman proposed to eliminate the language requirement so that more time could be devoted to wireless telegraphy and field exercises. It was also at this time that the Signal school received its first airplane. Since no pilot was available, the students used the airplane for practical work on gasoline engines. MAJ Wildman also

assumed responsibility for administering amateur radio examinations for the post and surrounding community. The average number of graduates during this time dropped to 10 officers per year.

The Final Years, 1914 – 1920

The demise of the Signal school at Fort Leavenworth can be traced to the start of World War I in August 1914. The school would remain open in a decreased capacity for two years under MAJ Wildman before being closed for the war.

Academic year 1914 – 1915 saw eight officers report for instruction at the Signal school. This would be one of the smallest classes in the history of the school. MAJ Wildman eliminated the technical conference portion of the curriculum since there was no one trained to conduct the conferences. The curriculum did expand by adding supply training on procedures, steam engine and locomotive practice, train dispatching, internal explosion engine, automobile, storage batteries, and motorcycles. MAJ Wildman requested but was denied \$75,000 for a new three-story building next to Sherman Hall for the Signal school and the Enlisted Men's School. MAJ Wildman also requested a double yearly appropriation to the Signal school from \$2,500 to \$5,000.

The 1915 – 1916 class of the Signal school graduated 11 students early as there was no signal company available to support the instruction. MAJ Wildman dropped the photography portion of the course, but added Mechanics of Transportation. In order to teach this course MAJ Wildman borrowed \$10,000 worth of engines, trucks, and parts from local merchants. In this final year, the completion rate of the Enlisted Men's School was just thirty-eight percent.

Following World War I the Signal school opened for one year, 1919 – 1920, under the direction of LTC Arthur S. Cowan. The school reopened Sept. 1, 1919 with 14 Officers. The school's new mission statement dropped research and experimentation from its core missions. The Signal school now covered only military art and signal communication.

Following 1920, all Signal train-

ing and education would take place at Camp Vail, later named Fort Monmouth, N. J. Training at Camp Vail had begun during World War I based on the immediate need for trained Signal Corps officers, Soldiers, and units to support the American Expeditionary Forces. Necessity dictated the move to Camp Vail. The Fort Leavenworth school turned out only a handful of trained officers and enlisted men each year, which did not meet the needs of a wartime Army. Camp Vail, on the other hand, turned out thousands of trained officers and enlisted men in months. Additionally, the research and development mission was facilitated by Camp Vail's location closer to where most of the important work on radio was being carried out, at commercial laboratories and universities along the East Coast. In 1917 and 1918, Camp Vail trained 11,729 enlisted men and 1,531 officers. To carry out this same amount of training would have taken the Fort Leavenworth Signal School almost a century.

The Legacy

The legacy of the Fort Leavenworth Signal School is more lasting than one would imagine. The significant accomplishments of the school include: 1. The Signal school was unique in that it formalized and standardized professional education in the Signal Corps. The model developed then is strikingly similar to what was used throughout most of the 20th Century. It is also valuable to examine at how rigorous the instruction was:

- a. 15 wpm Morse code proficiency
- b. Five wpm of visual signaling proficiency
- c. Examinations, 75% mandatory, later dropped
- d. Thesis requirement to contribute to the body of knowledge
- e. Technical conference requirement

2. The mission of the Fort Leavenworth Signal School is very close to that of the current mission statement of the Fort Gordon Signal Center.

- Compare Fort Leavenworth's mission:
- a. Provide instruction
 - b. Disseminate knowledge
 - c. Conduct research and experimentation

Compare this with the current Signal

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(Continued from page 21)

Center Mission: The U.S. Army Signal Center of Excellence provides world class Soldiers and leaders; trains, educates, and develops adaptive information technology professionals; and plans, synchronizes, experiments, and implements Future Network capabilities.

3. The concept of a field training exercise replicating a wartime scenario

or campaign was developed at Fort Leavenworth, which in turn became a standard in signal training throughout the Army.

4. Technical training and expertise reinforced through laboratory work and practical exercises.

5. There was really no formalized organization for the Signal Corps to support the division. CPT William

“Billy” Mitchell developed some of the first force designs to support the division.

6. The research and development portion of the Army Signal School is significant for a number of reasons. Some of the initial work on radio was done at Fort Leavenworth under the auspices of the Army Signal School.

7. It is also important to look at the

FORT RUCKER, FORT MONROE ETCH AN NEC SUCCESS STORY

By Ronald L. Bowens

Network Enterprise Centers have been using automated tools to improve productivity for years. Limited resources, increased security requirements, and complex systems have pushed NECs to develop innovative solutions to provide LandWarNet services.

Fort Rucker's Brian Woodall and Shawn Foist maximized the use of Microsoft's Systems Center Configuration Manager 2007, a NETCOM 6+1 tool; to improve security, reduce touch labor, and facilitate the Vista migration. Brian and Shawn spent the last year perfecting their SCCM system, first by identifying SCCM capabilities then by implementing a cost effective solution.

SCCM has allowed Fort Rucker to automate system builds, software installations, operating system updates, and user migrations with almost no IT staff intervention and no elevated privileges for unit information management officers. Staff members explained the deployment process.

“It did not happen overnight,” Mr. Woodall said. “We worked for over a year to develop a successful process. Through weeks of intensive research and troubleshooting we found undocumented steps, as well as security patches that were causing the whole process to fail. But we continued to tweak the system until it worked.”

After navigating the maze of technical issues Fort Rucker emerged with a simple, efficient solution that allows them to apply patches, group policies, update applications, reimage machines, and migrate user files.


“Our IMOs can do an entire Army Gold Master build on a user's machine by pushing F12 twice,” said Mr. Barrett.

The Fort Rucker team is expanding their use of SCCM to include TRADOC classroom image files. If successful, TRADOC Instructors will be able to reimage entire class-

rooms in minutes rather than the hours it takes today.

Fort Rucker's success story has impacted other NECs as well. Fort Rucker worked with the Fort Monroe NEC to address some of the undocumented problems Fort Monroe encountered in development of their SCCM Vista migration process. Their partnership enabled Fort Monroe users to finalize their solution and enabled Fort Rucker personnel to expand their use of the Microsoft User State Migration tool. Fort Rucker managers published a draft SCCM guide designed to help other NECs to maximize their use of SCCM, and Fort Monroe IT managers have also published helpful tips on using Microsoft USMT 4.0 to reduce network traffic and improve the customer Vista migration experience.

Fort Rucker and Fort Monroe NEC managers' innovation and willingness to share have had a dramatic impact on NEC operations. Because of their efforts, NECs throughout the Global Network Enterprise Construct now have the knowledge to incorporate SCCM into their environments. The 93d Signal Brigade is applauding the Fort Rucker and Fort Monroe NEC managers for their efforts.

Ronald L. Bowens is an information technology specialist assigned to the Network Enterprise Support Team #1 with the 93d Signal Brigade. He served 10 years in the U.S. Army as a 25-U. 

ACRONYM QuickScan

GNEC - Global Network Enterprise Construct

IMO - Information Management Officer

IT - Information Technology

NEC - Network Enterprise Center

SCCM - Systems Center Configuration Manager

TRADOC - U.S. Army Training and Doctrine Command

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way the post Signal company was aligned under the commandant of the Signal School to assist/support instruction of the Officers going through not only the Signal School but other college courses? as well. This is very similar to the way the 442nd Signal Battalion is organized to support instruction at Fort Gordon.

8. Aeronautics portion of the curriculum was important in that it already was an indicator of the Army's emphasis on air power.

9. The idea of map exercises and field problems to prepare Signal officers to support an Army on campaign was also very important since it was the first time something like this was done.

Throughout its early history, the Signal Corps struggled with the task of providing relevant technical training in a timely manner. The current model used at the Signal Center is, undoubtedly, one that works not only for the Soldier, but also the Army and the na-

tion. The successful training model the Signal Corps uses today can trace its beginnings back to that first class of nine Officers who reported to Sherman Hall in the fall of 1905. The Fort Leavenworth Signal School's legacy is undoubtedly one of the most enduring of the many locations where Signal Corps training has been conducted.

LTC Kevin P. Romano attended the University of Utah, graduating with a bachelor's degree in Mathematics in 1992. In 1992, he was commissioned into the Regular Army as a Signal Corps officer. He has served in the 11th Signal Brigade, 2nd Infantry Division, 93rd Signal Brigade, and 160th Signal Brigade. LTC Romano has served as a platoon leader, company executive officer, assistant battalion S3, company commander, battalion executive officer, battalion S3, and brigade S3. In his career, he has deployed to Operation Restore Hope, Bright Star, and Operation Enduring Freedom. LTC Romano holds a master's degree in Applied Mathematics from the Naval Postgraduate School. He taught at the U.S. Military Academy in the Department of Mathematics and at the U.S. Army Command and General Staff College Fort Leavenworth, Kan. Presently he is U.S. Army Training and Doctrine Command capability manager for electronic warfare integration. 

Current Fort Leavenworth unit remembers Signal Corps legacy

By LTC Frank Polashek

The year 2010 will prove a busy year for the 35th Division at Fort Leavenworth, Kan., especially for the G6 section and the signal Soldiers of A



Photo courtesy U.S. Army Signal Center of Excellence archives

Featured is a 1910 photo of training on a wireless set at Fort Leavenworth, Kan. Note the handcrank used to power the set.

Co, 35th STB with fieldings of both Warfighter Information Network-Tactical and Standard Integrated Command Post System. Fieldings of this size and scale are a significant event. The last fielding of this magnitude to the division

occurred approximately 20 years ago with the integration of the Mobile Subscriber Equipment to the force.

Prior to and at the turn of the 20th century, a portion of the U.S. Army Signal School was located at Fort Leavenworth.

Mr. Dan Brown, historian/archivist at the U.S. Army Signal Center at Fort Gordon provided historical images to the Division G6 from a rare scrapbook of the Class of 1911-1912 of the U.S. Army Signal School at Leavenworth. Times have changed, but the challenges of learning the technology of the day have not. Santa Fe!



Enabling Battle Command with the Wideband Global SATCOM

By LTC Stefanie Horvath, MAJ Michelle Isenhour, and CPT Karl Olson

The January 2010, communications relief-in-place between the 34th Infantry Division “Red Bulls” and 1st Infantry Division “Fighting First” validated new satellite transmission capabilities within the CENTCOM AOR.

With the assistance of the Warfighter Information Network-Tactical Program Manager, the Signal leaders of the 34th Infantry Division and 1st Infantry Division applied the facets of Battle Command – understand, visualize, describe and direct – to plan, coordinate and execute a division RIP and simultaneous satellite migration from commercially controlled Ku-band to military controlled Ka-band within Southern Iraq. The RIP allowed the 1st Infantry Division to control the first-ever

division-level network on the newly activated second Wideband Global SATCOM satellite.

The pre-RIP United States Division – South network, under the control of 34th ID, consisted of the Division MAIN Command Post communication network, along with brigade level networks belonging to the 12th Combat Aviation Brigade; 3rd Brigade, 3rd Infantry Division; 17th Fires Brigade; and 4th Brigade, 1st Armored Division. In all, the tactical network contained approximately 40 assemblages, consisting of Joint Network Nodes and Command Post Nodes belonging to the Division Headquarters, the four brigades, and the 67th Expeditionary Signal Battalion, operating on a commercially controlled Ku satellite.

Usage of the commercial satellite posed significant challenges for the satellite terminal operators. Soon after assuming control of the USD-S network in May 2009, 34th ID encountered several Master Reference Terminal crashes. At the time, the USD-S transmission plan allocated 40 Mega-Symbols per second for the approximate 45 JNN and CPN terminals. Researching the cause of the MRT crashes, the 34th ID Unit Hub Node and Division Network Operations personnel observed completely saturated Time Division Multiple Access network loading charts (Figure 1). NetOps and network engineers examined several Burst Time Plans over several weeks, continuously showing heavy traffic bursts completely filling bandwidth on all carriers.

The saturated network contributed to the crash of the MRT on several occasions creating short term outages on the TDMA network. Aside from a saturated TDMA network, terminal operators had to rigorously maintain polarization to ensure a stable link. The potential of cross polarization causing interference with adjacent transponder channels created a need to “peak and pol” several times each day.

In April 2009, the U.S. Air Force launched the WGS-2 satellite. Ka-band was activated in August 2009, thereby enabling military satellite

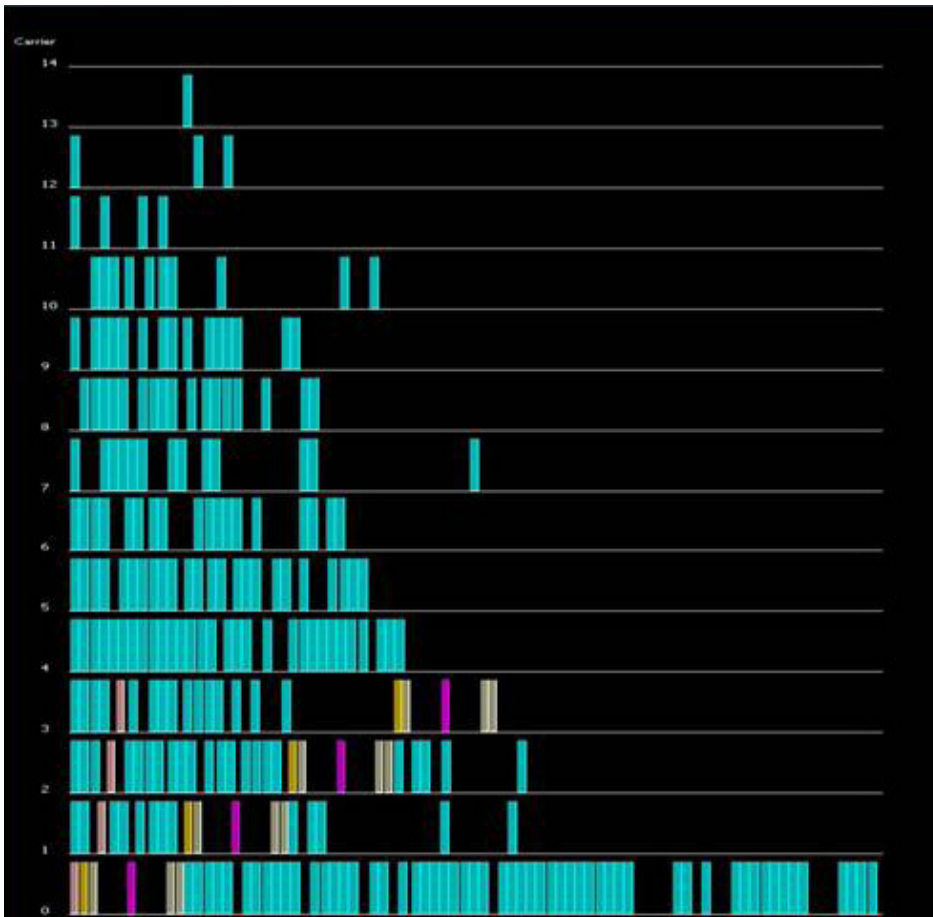


Figure 1 Burst Time Plan

operations within the CENTCOM AOR. Supporting both X-band and Ka-band satellite communications, the newly-activated WGS-2 satellite provided CENTCOM with improved capacity. CENTCOM immediately began planning for the transition of a Theater Satellite Communications Architecture from commercial satellite leases (Ku-band) to military owned WGS (Ka-band).

In October 2009, the Joint Network Control Center - Iraq approached 34th ID to propose migrating the USD-S network from Ku-band to Ka-band during their upcoming RIP with 1st ID.

Considering all factors, the 34th ID/1st ID RIP seemed the perfect opportunity. 34th ID still had more than two months to plan the migration to Ka-band, the commercial Ku-band satellite was not meeting transmission needs, and they had previously conducted a successful division wide satellite migration in September 2009. Recognizing the administrative, logistical, and technical challenges involved, 34th ID asked for time to conduct a feasibility assessment in order to better understand the problem in the context of the Iraq Theater of Operations.

Understand

In their attempt to understand the problem, the 34th ID G-6 staff identified several friction points.

The first point concerned equipment resourcing and distribution. Thirty of the terminals required installation of Ka-band hardware to support Ka-band transmission. This shortage led to the second friction point: how to transport the "Ka-kits", consisting of a High Power Amplifier, Low Noise Block down converters, and Feed Assembly, to the 20 sites spread throughout USD-S in less than two months. Not only did the need for Ka-band equipment present a concern, the majority of the operators also lacked Ka-band training revealing a third friction point.

The final friction point identified was a failover/fallback plan to Ku-band in the event the transition was not successful. Understanding that a "simple plan

combined with continuous coordination might moderate the effects of friction" [FM 3-0, pg. 1-18], 34th ID applied key design principles and collaboration to compose the technical solutions and procedures for these friction points in order to successfully transition the entire Division network from Ku-band to Ka-band.

The WIN-T PM office resolved the immediate equipment and training friction points by coordinating the shipment of the "Ka-kits" to the Regional Support Center in Baghdad, which included one kit for every terminal involved in the transition along with one operational spare kit per terminal.

Since the majority of the operators were not trained on Ka-band installation, operation, or maintenance, WIN-T PM responded with a surge of 12 General Dynamics and Rockwell Collins FSRs to cover both Lot 9+ and Lot 10 versions of WIN-T within the USD-S Area of Responsibility

To address the remaining friction points, the Network Engineering section conducted weekly technical working group teleconferences to review the synchronization matrix and refine the migration plan. These working groups included representatives from WIN-T, United States Forces - Iraq JNCC-I, the 1st Cavalry Division Unit Hub Node at Camp Victory, the 67th Expeditionary Signal Battalion and Network Engineers from both the 34th ID and 1st ID. During these TWGs, 34th ID led the agenda whereas all participants contributed discussions on several aspects of the migration.

Early TWG conversations established fundamental information on Ka-band to include the lessons learned from the activation of WGS-1 satellite over the PACOM AOR such as frequency clearance and host nation approval.

Each week additional topics evolved through the work group collaboration, enabling the formulation of a shared understanding on topics such as terminal operator reporting and military satellite access procedures. The TWGs were most effective in addressing

a series of underpinning technical requirements such as the satellite database approval, satellite access request and satellite access authorization. The cyclical and repetitive approach during the TWGs enhanced situational understanding. The exchange of the most relevant and accurate information during the collaboration and coordination sessions yielded the solutions required to visualize the satellite migration.

Visualize

As a means of visualizing the nature of the operation and desired end state, the 34th ID G-6 staff developed a synchronization matrix in order to assemble the technical solutions and procedures to resolve the friction points (Figure 2).

Aligning the sequence of events, projected against a timeline, afforded each G-6 staff visibility on the prerequisite and simultaneous tasks required to complete the transition. The continuous coordination, using the synchronization matrix as a reference point, reduced numerous unexpected and unforeseen challenges by weighing the tasks against operational constraints in a collaborative effort.

Key design principles considered in visualizing the Ka-band transition scheme were network size, assumed risk, and FSR support. The Ka-band brigade migrations were staggered in order to disrupt only one brigade network at a time.

Size was also a factor. The smallest sized brigade with the highest availability of strategic communications assets would assume lesser risk. The 12th CAB network would migrate first because of their small network with zero isolated sites. The 17th FiB network would be the second to migrate because their network, being the second largest, also contained no isolated locations.

The 3/3rd ID network was the last to migrate because it was the largest, with two sites that could

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potentially be isolated during the conversion. Although isolated, every site would still possess alternate means of communications including BFT and Iridium phones.

The synchronization matrix and corresponding transition scheme aligned the sequence of events. The relationship between the numerous interconnected actions required the production of detailed operational products in order to facilitate integration and synchronization. These products were used to describe the transition in terms of time, space, resources, purpose and action.

Describe

Resourcing, time and space were depicted through detailed FSR and equipment distribution plans. The FSR schedule established one primary and one alternate instructor for each of the

three identified training locations within USD-S.

In addition, the schedule explicitly directed at least one FSR to support Ka-band installation at each of the 20 locations based upon the RIP timeline. This schedule proved an effective base reference to synchronize Air Movement Requests for the 12 FSRs as they traveled to the 20 locations within USD-S. Similarly, the Ka-kit distribution plan outlined the plan to distribute the "Ka-kits" to each of the three brigades from the RSC in Baghdad. Once in their possession, each brigade distributed the kits to their outlying sites.

Concurrent with the development of the FSR and equipment distribution plans, the 34th ID G-6 conducted information briefs to the Division Command Group to gain approval on the timeline and concept of operations. Following these briefs, the original three month migration timeline was

condensed to just 30 days in order to avoid disrupting the network during the Iraqi Parliamentary Elections. Information briefs were also conducted with the Commander of MNC-I, Commander of 1st ID, WIN-T PM, and CENTCOM engineers to review, refine, and disseminate the plan. The purpose of the operation and the migration plan of action were outlined in an operational FRAGO published by 34th ID in early December, more than 30 days prior to the first brigade transition.

Still at home station and only two months away from deployment, the 1st ID Headquarters and Headquarters Battalion Signal Company commander arranged for the WIN-T PM to travel to Fort Riley and prepare the equipment and operators for the Ka-band migration. The WIN-T PM provided 14-hours of Ka-band training to the satellite terminal operators, the Unit Hub Node network techni-

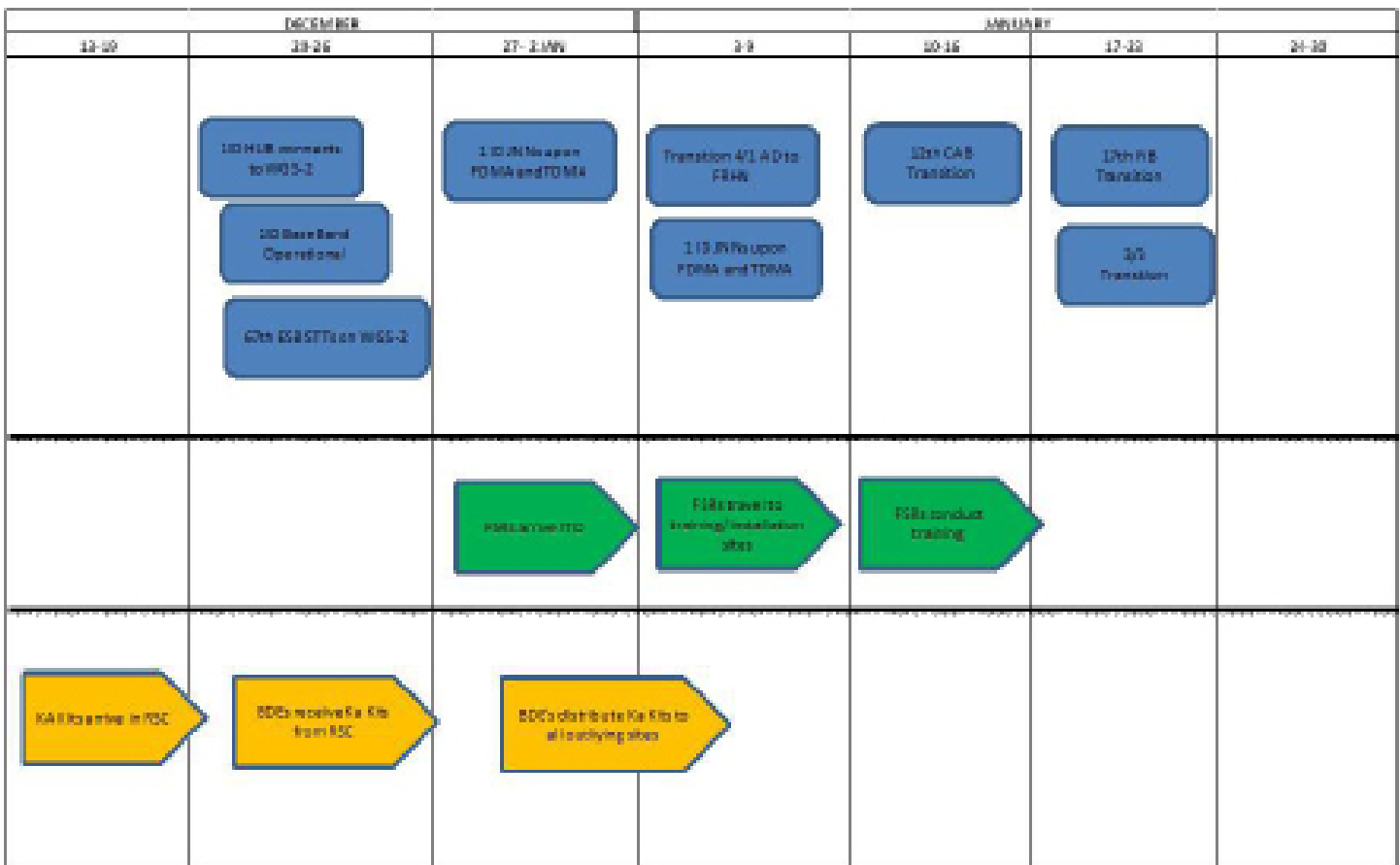


Figure 2 Timeline

cian, and Electronic Maintenance technician. In addition, the PM supported the Ka-band refit of two Unit Hub Satellite Trucks and three Satellite Transportable Terminals at Fort Riley, Kansas. The UHSTs required a Modification Work Order upon conversion to Ka-band. Once converted, the PM provided a Ka-band satellite simulator to test the systems while still in CONUS since Ka-band satellite coverage was not available at the time. Finally, the PM provided 1st ID with 100% spare Ka-kits for the Unit Hub Node and Joint Network Nodes. Immediately following the training, the 1st ID operators stowed their equipment and packed for their upcoming deployment.

Direct

With all necessary preparation complete, the 34th ID Network Operations Center, with the 1st ID Network Controllers by their side, started directing the transition around mid-December 2009. The execution period of the migration began by testing Ka-band capability and the Ku-band failover plan. Once 1st ID established their UHN at Camp Arifjan, Kuwait, two JNNs with Ka-band equipped satellite terminals from the 67th Expeditionary Signal Battalion tested Ka-band feasibility during the first few days of the migration. The 67th ESB's participation in the migration testing stage allowed the 1st ID HUB operators, NetOps controllers, and Wideband Satellite Operations Centersatellite controllers to validate, test and refine access procedures, transmission settings, and reporting requirements. Following the successful Ka-band test, the 67th ESB then tested the Ku-band failover through the Fixed Regional Hub Node cross connected to the 1st ID UHN baseband truck. The intent of the Ku-band failover plan was to establish redundant Ku-band satellite connectivity in the event of a Ka-band technology failure.

On 30 December 2009, the 1st ID JNNs arrived in Basrah and after four days of setup they were carrying the majority of the DMAIN traffic over the WGS-2 satellite.

Following a 36 hour burn-in period, the 34th ID JNNs powered down, leaving the 1st ID JNNs in system.

The final test occurred on January 5, 2010, when a 67th ESB Command Post Node successfully entered the 1st ID mesh via WGS-2 into the 1st ID Unit Hub Node. After successfully executing this 20-day test period on the WGS-2 satellite, 1st ID received Satellite Access Authorization to execute the Ka-band satellite migration throughout the USD-S AOR in place of the normal network RIP.

On the evening of 9 January 2010, the 1st ID network controllers, under the watchful eye of their 34th ID counterparts, began migrating the 4/1st AD network off the 34th ID Ku-band satellite truck and onto the FRHN Ku-band satellite terminal.

Due to the Spring 2010 re-deployment of the 4/1st AD, the 34th ID G-6 decided to leave 4/1st ADs two JNNs and eight CPNs on the Ku-band satellite utilizing the Ku-band satellite terminal capabilities of the FRHN. To support this migration, the Hub operators installed an MRT "push package" inside the regional hub node facility. This operation was a first for FRHN - 1st ID utilized the FRHN for satellite reception, but retained control of the network through a fiber cross-connect between the FRHN and the 1st ID baseband truck. The actual migration took approximately eight hours and validated that the RHN could support an entire brigade mesh on a Ku-band satellite connected to a tactical baseband.

From the 10th through the 12th of January, the 12 General Dynamics and Rockwell Collins FSRs from the WIN-T PM trained the satellite terminal operators within the AOR on the proper installation, operation, and maintenance of the Ka-kits in preparation for the Ka-band transition. Concurrently, each Brigade received satellite terminal operator training, an in-depth 14-hour course which provided both classroom and hands-on training. The training was specific to both Lot 9+ and Lot 10 versions of WIN-T. Upon completion of the training, all sat-

ellite terminal operators returned to their site awaiting their opportunity to transition.

On the evening of 12 January 2010, the Ka-band transition to WGS-2 officially started with the migration of the 12th CAB network. Forty-eight hours prior to this transition, the Division NetOps conducted a conference call with the 12th CAB NetOps cell and all the operators from the JNN and CPNs involved in the transition. The evening of the transition began with a second Division NetOps conference call to confirm operational understanding and coordinate any last minute changes to technical data. Once given permission to proceed with the transition, each assemblage went offline, made necessary software and hardware upgrades, accessed the WGS-2 satellite and waited for their opportunity to be brought into the network by the 1st ID UHN. From start to finish the entire migration for the 12th CAB network took nine hours.

At 0900 the morning of January 17, 2010, 17th FiB started their migration. The same sequence of events occurred, with only the time changing as directed by the 17th FiB Commander. The conference call with NetOps initiated the transition and by 1600 that day, all but one terminal successfully migrated - due to a bad Antenna Control Unit and Rack Mounted Reference. Feedback from the terminal operators stated the feed assembly swap was easy to complete and most importantly WGS-2 was easy to acquire - taking only 15 minutes as opposed to two hours with the commercial satellite.

The 17th FiB commander's decision to migrate on a Sunday during a period of low OPTEMPO was a significant advantage for the operators executing the steps of the transition during daylight hours, the only unit to do so.

The last brigade to migrate was 3/3rd ID starting at 2200 on January 20th. Although the largest brigade, they proved to be the smoothest transition, finishing in ten hours. Advantageous to this brigade transition, the FSRs trav-

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elled from previously migrated brigade sites to 3/3rd ID sites to provide supplemental support. Again, they noticed that the Ka-band equipment exchange and subsequent satellite acquisition were relatively simple when compared with previous experiences.

Lastly, the cumulative information garnered from the previous Brigade transitions, such as JNN operator procedures and WSOC reporting requirements, yielded indispensable lessons learned which greatly benefited the 3/3rd ID transition.

Assess

Overall, from the satellite terminal operators' perspective, the transition was simplified with the assistance of the FSRs and the accurate technical data in the Technical Service Orders. Operators completed a succession of hardware and software changes from the ACU upgrade, Ka-band Feed Assembly replacement and Linkway Modem software upgrade. A good transition per terminal took from 2-3 hours whereas a transition that encountered hardware issues required 6-8 hours of troubleshooting. It was humorously noted, in the consolidated AAR from the terminal operators, that acquiring the WGS-2 satellite was much easier than previous satellites - "about a million times faster" quoted one Signaler.

The key contributions from the NetOps to ease the transition were in the form of effective information management and rehearsals. First, the NetOps published accurate, timely, detailed TSOs containing all necessary technical data to establish the terminals (e.g., Long, Lat, Tx Freq, Rx Freq, polarization, router configs) distributed four days prior to the transition. Several AAR comments compliment the TSOs on being helpful, clear and relevant. Second, the conference calls held 48 and two hours prior to each brigade migration reinforced procedures and addressed last minute questions. AAR comments also noted the conference calls were productive,

thorough and informative. More interestingly, the conference calls inspired the operators, almost like a contest, to see which terminal would be the first to successfully transition to WGS-2.

Lessons Learned

The transition to WGS-2 vastly improved the USD-S tactical network from the previous eight months - the network FDMA bandwidth increased almost 90% and TDMA bandwidth increased 88%.

Another benefit of migrating to WGS-2 and improving network stability has been the use of circular polarization. Operators no longer need to proactively maintain the link to prevent cross polarization, a daily requirement on many commercial satellites supporting theater. In contrast, operators have found that the Ka-band is more susceptible to rain and weather related outages occur. The dB drop on Ka-band is rapid in adverse conditions, making it hard to proactively maintain a link. Continued experiential understanding of operating off of WGS-2 will improve responses to maintain strong links in poor weather conditions.

This dynamic satellite transition afforded several lessons with operational significance and insight to effectively manage technology implementation in a fluid environment. Operational benefits from the USD-S transition to WGS-2 reached throughout the CENTCOM AOR. Not only has the USD-S network migration to Ka-band validated the operational capabilities of the WGS-2 satellite, success allowed the immediate reallocation of commercial bandwidth in support of expanding Operation Enduring Freedom requirements. FM 3-0, paragraph 6-21 states, "Effective collaboration enables assessment, fosters critical analysis, and anticipates adaptation." The early collaboration with 1st ID, 67th ESB, 160th SIG BDE, MNC-I and WIN-T afforded dynamic responsiveness and adaptation to unanticipated issues. One week late, 1st ID JNNs arrived in theater, delaying the start of the transition timeline and cutting short the WGS-2 Ka-band

testing period. Everyone agreed on the importance of testing the JNN terminals on WGS-2, USD-S NetOps worked with 67th to test their JNNs and immediately start assessing Ka-band connectivity.

Further evidence that proper planning would provide flexibility and prepare for contingencies in the execution of the satellite transition focused on a common factor with new technology implementations- versions and compatibility. Missed earlier, initial Ka-band testing identified that all Lot 10 ACUs required a software upgrade to version "G" which recalibrated GPS timing, added a GUI interface to see the circular polarization, and provided the ability to receive alarms from the WGS-2 satellite. Also, to be compliant with the Satellite Access Authorization, all Linkway modems required a software upgrade to version 8.3 in order to allow Global SATCOM Support Center to monitor the end terminals. NetOps successfully prepared by adjusting the transition checklist steps to include operator tasks to upgrade the ACU to revision "G" and Linkway Modem software to version 8.3. FM 3-0, paragraph 5-102 states, "Preparation consists of activities performed by units to improve their ability to execute an operation." Conducting rehearsals with all participants enabled a decentralized execution, even in the event of additional upgrade requirements and unforeseen transportation problems.

A final lesson learned lies in the support from both 34th ID and 1st ID command groups. The G-6 is responsible for advising and directing the communications plan in support of the commander's intent, but at the end of the day the division commander decides what will happen within his AOR.

Transitioning the entire USD-S network to a new, unused, military satellite required the command group's support. Understanding the outages incurred at every site in USD-S required the commander's confidence. The 34th ID G-3 supported the planning and preparation, while the 34th ID COS reviewed and polished information briefs to the CG.

The CG's guidance further refined the plan and adjusted the timeline to minimize disruptions to the Iraqi Parliamentary Elections. From an ocean away, the 1st ID CG accepted, with great tolerance, the plan to transition the entire Division network supporting the AOR he would soon command. Without the incoming Commander's support, the benefits of the Ka-band transition may have never been realized.

Conclusion

At the cusp of understanding the operational use of a Ka-band satellite, the real work begins capturing energy per bit to spectral noise density ratios and bit error rates in order to assess link reliability, especially during inclement weather.


As with all new technology implementations, this transition required great collaboration, hardware and software upgrades and authorized interruption to

services. With the significant improvements the transition greatly benefited USD-S and the CENTCOM AOR. Like other facets of technology, once the code is initially broken, it can be applied again and again. The procedures developed and the experiential understanding of WGS-2 will only improve exponentially as other terminals and networks transition to Wideband Global SATCOM. The Signal Communicators from the 34th Infantry Division and the 1st Infantry Division were honored to take part in this historic transition to the newest military satellite.

LTC Stefanie Horvath was the Multi National Division-South (MND-S) G-6 while deployed with the 34th Infantry Division Main Command Post in support of OIF from May 2009 to February 2010. Her previous signal assignments include Signal staff officer for an infantry battalion and aviation brigade. Her previous automation positions include trainer, active server page/database programmer, and current

position as the Information System Support Branch chief. She holds a bachelor's degree in Criminal Justice.

MAJ Michelle Isenhour is assigned to the Division G-6, 1st Infantry Division and is currently serving in Operation Iraqi Freedom as the chief of Signal operations for USD-S. Her previous assignments include assistant professor, Department of Mathematics, USMA; company commander, B Co., 51st Signal Battalion (Airborne), 35th Signal Brigade (Airborne); and brigade Signal officer, 44th Medical Command (Airborne). She holds both a bachelor's degree and master's degree in Applied Mathematics.

CPT Karl Olson is currently serving as the USD-S telecommunications systems engineer in support of OIF. His previous assignments include Engineer Captain Career Course instructor; aide-de-camp, 130th Engineer Brigade; executive officer, HHC 130th Engineer Brigade; executive officer and platoon leader, 320th Engineer Company (Topo). He holds a bachelor's degree in Mechanical Engineering and master's degree in Environmental Engineering. 

ACRONYM QuickScan

AAR - After Action Review
ACU - Antennae Control Unit
AMR - Air Movement Request
AOR - Area of Responsibility
BER - Bit Error Rate
BFT - Blue Force Tracker
BTP - Burst Time Plan
CAB - Combat Aviation Brigade
CENTCOM AOR - Central Command Area of Responsibility
CG - Commanding General
COB - Contingency Operating Base
CONUS - Continental United States
CPN - Command Post Node
DHHB - Division Headquarters and Headquarters Battalion
Eb/N0 - Energy per Bit in relation to Spectral Noise Density
EB-4A - Eutelsat EuroBird 4A Satellite
ESB - Expeditionary Signal Battalion
FDMA - Frequency Division Multiple Access
FiB - Fires Brigade
FRHN - Fixed Regional Hub Node
FSR - Field Service Representative
GSSC - Global SATCOM(Satellite Command) Support Center
HPA - High Power Amplifier
ITO - Iraq Theater of Operations
JNCC-I - Joint Network Control Center - Iraq
JNN - Joint Network Node
LAT - Latitude

LNB - Low Noise Block
LONG - Longitude
MRT - Master Reference Terminal
MSps - Mega-Symbols per second
MWO - Modified Work Order
NetOps - Network Operations
OEF - Operation Enduring Freedom
PACOM - Pacific Command
RIP - Relief-in-Place
RMR - Rack Mounted Reference
RSC - Regional Support Center
RxFreq - Receive Frequency
STT - Satellite Transportable Terminal
TDMA - Time-Division Multiple-Access
TSO - Technical Service Order
TWG - Technical Working Group
TxFreq - Transmission Frequency
UHN - Unit Hub Node
UHST - Unit Hub Satellite Truck
USD-S - United States Division - South
USF-I - United States Forces - Iraq
WGS-1 - Wideband Global SATCOM (Satellite Command) - Launch 1
WGS-2 - Wideband Global SATCOM (Satellite Command) - Launch 2
WIN-T - Warfighter Information Network - Tactical
WIN-T PM - Warfighter Information Network - Tactical Program Manager
WSOC - Wideband Satellite Operations Center

Battlefield commander highlights communications challenges downrange

By MAJ Jay H. Anson

Toward the end of Operation Iraqi Freedom 09-11, I had the opportunity along with my battalion's command and staff to get some feedback from BG James C. Nixon III, Multinational Division - North deputy commanding general for operations.

BG Nixon is no stranger to both conventional and unconventional warfare, at the tactical, operational and strategic levels. His previous assignments include commander of the 75th Ranger Regiment and deputy director of operations, J-3, U.S. Special Operations Command.

As a career infantryman who has commanded at all levels, he is also familiar with the importance of command and control and the challenges that commanders face in adapting technology to needs on the ground.

During OIF 09-11, "Tropic Lightning 8" was well-known for his tireless circulation of the vast and dynamic MND-N battlespace. He was constantly communicating with leaders at all levels, often talking directly with convoy commanders over the radio or tracking and sending messages to combat patrols via the Blue Force Tracker system in his C2 bird. Following some brief comments of his own, BG Nixon opened up the officer professional development session for any questions from the and comments from the audience.

BG Nixon expressed concern in response to the question: "What was your perception of communications support throughout the deployment?"

Efficiency vs. Effectiveness

He said, Signal officers tend to put too much emphasis on equipment efficiency as opposed to equipment effectiveness. Signal officers' efforts often failed to focus on whether or not the equipment worked for the operational commander. He suggested that Signal officers must consider C2 systems effectiveness when developing a briefing format for the next command update brief.



U.S. Army photo by Spc. Jesus J. Aranda

BG James C. Nixon, deputy commanding general - operations, 25th Infantry Division, speaks to an audience at Sills Field, at Schofield Barracks Hawaii 25 May 2010. Nixon planned and helped to execute the operations for three brigades in three provinces during the division's deployment to Iraq.

BG Nixon specifically mentioned the spreadsheet-on-a-power point slide that Signal officers use to brief equipment and network statuses. We are briefing that everything is "green" when just hours earlier his e-mail wasn't working, SIPRNET was slower than usual, or there are delays and heavy static during telephone calls. We need to keep in mind that we are "distributing the ability to command and control, not just systems." When information technology doesn't work in a combat zone, it delays or hinders the commander's ability to maintain a common operating picture, achieve information superiority and fully exercise command and control. Our briefings should focus more on quality of service and the impact on C2. To this end, the only way to know what our users think about the quality of service is to ask the user. Intangible and seemingly arbitrary colors on a slide tell the commander nothing without a measurable and meaningful metric.

One of my tasks throughout the week as a CJ6 battle captain in Afghanistan was to call all task force, brigade, and battalion TOCs, PRT headquarters, and other such command posts where a tactical node (either JNTC-S, traffic terminal, or SIPR Point of Presence) was providing communications. I would ask a NON-SIGNAL user, preferably the battle captain, NCOIC, or commander the status of their communications. Was the internet slow? Were all of the phones working? Was there any type of delay or static on the line during phone calls? I applied this same technique as a company commander in Iraq.

The brigade network technician and network controllers were able to get ahead of most issues and were constantly looking for ways to make communications better. But we never would have known if we didn't ask.

Ensure Information Technology SOP-driven

BG Nixon's second point was that Signal officers need to concentrate on making communications work for the operational commander instead of changing standard operating procedures and techniques, tactics, and procedures to match IT. IT must be SOP-driven, not the other way around.

This is especially frustrating for commanders when new equipment installs, software upgrades or other modifications to existing systems are conducted in the middle of an operation. If not carefully employed, information IT can be a hindrance to effective combat operations. Any new IT should have a purpose and support the overall mission goal, SOPs and TTPs as opposed to being "nice to have" or the "latest and greatest."

Whenever change is essential, the greatest amount of care and due diligence must be taken to avoid interrupting ongoing operations. The alteration should be seamless and the system must be fully operational and integrated prior to advising a commander to rely on it as a means of viable command and control.

Moreover, true systems integration goes beyond physical and technological compatibility with other existing systems. Too often, IT is fielded without proper training or a deliberate implementation plan, leaving operators to have to figure it out while in a combat zone. This delays the commander's ability to establish a common operating picture, achieve information superiority and fully exercise command and control.

Signal officers must ensure that all systems are not only compatible and operational, but that they provide a useful command and control function. Included in the screening criteria for the procurement of any new IT must be whether or not the IT will support SOPs, TTPs, or doctrinal war fighting methods. Signal officers should also determine whether or not any desired new IT can be incorporated into a unit's PACE (P- Primary; A- Alternate; C- Contingency; E- Emergency) plan for communications. IT that does not meet these criteria should not be procured, much less implemented into a tactical operations center while deployed.

Put more time into preparing

BG Nixon's final point was that many Signal officers were not putting enough time into preparing. He stressed the importance of over emphasizing PCCs and PCIs, and not just physical preparations such as packing a year's worth of CAT-5 cable into the S6 section's shipping container while packing for a deployment. He referred to a lack of knowledge signal officers tend to display on technical specifications and capabilities of the signal systems in their units, not knowing their unit's Tactical Operations Center SOP and not knowing how the unit's IT systems are used for command and control.

A common pitfall among the ranks of Signal officers at all levels is to succumb to the temptation


of becoming a technician, as opposed to a manager of information systems. Information systems management requires deliberate, educated, and careful planning.

Simply planning to execute and react to whatever arises during an operation places the Signal officer, and often times the commander and the rest of the unit, in constant crisis management. Signal officers must be master communications planners and systems integration experts – not technicians. Additionally, intimate knowledge of unit TOCSOPs and awareness of the ways your unit's communications systems support C2 are essential to success.

There is no other way to establish the credibility with commanders and other staff members necessary to effectively recommend courses of action for communications support.

Conclusion

One of our core competencies as Signal officers is customer service and customer support. It is important to know how the commanders and Soldiers we are providing service for perceive the support we are providing. I wrote this article in the hopes that many of the readers, signal officers such as myself, will take away some lessons from the guidance of one of the operational commanders we are supporting. I definitely did.

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ACRONYM QuickScan

BG – Brigadier General
C2 – Command and Control
CJ6 – Combined Joint 6
IT – Information Technology
JNTC-S – Joint Network Tactical Capable – Spiral
MND-N – Multinational Division – North
NCOIC – Noncommissioned Officer In Charge
P-A-C-E – Primary, Alternate, Contingency, Emergency
PCC – Pre-Combat Check
PCI – Pre-Combat Inspection
PRT – Provincial Reconstruction Team
SIPRNET – Secure Internet Protocol Routed Network
SOP – Standard Operating Procedures
TOC – Tactical Operations Center
TOCSOP – Tactical Operations Center Standard Operating Procedures
TTP – Techniques, Tactics, and Procedures

Fury ring addresses knowledge management and dynamic information flow process

By CW2 Jason Cord

Until we understood and implemented the fury ring, knowledge management was a huge puzzle.

It's like this.

You are about to build your dream house and have been working with an architect to bring this vision to reality.

You know exactly how this house is to be designed--the layout and number of rooms that will best facilitate traffic flow throughout. From the size of the basement to the shelving in the garage. It's all mapped out.

A building contractor has reviewed your plans and created a material listing of all hardware, lumber, electrical, plumbing and other materials required for the house.

Now you have a clear plan of what the house will look like and know all of the required materials to build it.

However, there is one major problem.

What if you do not know what tools to use to build your house?

This is how it seems to be when presented with the challenges of knowledge management. There is a lot of material that explains the theory behind knowledge management, but it often leaves you scratching your head when considering how to actually implement KM.

Undoubtedly the hardest part of the BCT S6's job is walking the tightrope of knowledge management. Mike Dean, 4th Brigade Combat Team S6 said, "Everyone tells you how important it is. Many experts descend on your unit to consult with you about why it is needed, but no one - including experts at the combat training centers or Fort Leavenworth - can show you any practical ways to actually do it. The minute you say 'show me,' everyone turns into a pumpkin..."

Knowledge management is defined in FM 6-01 as, "... the art of creating, organizing, applying, and transferring knowledge to facilitate situational understanding and decisionmaking."

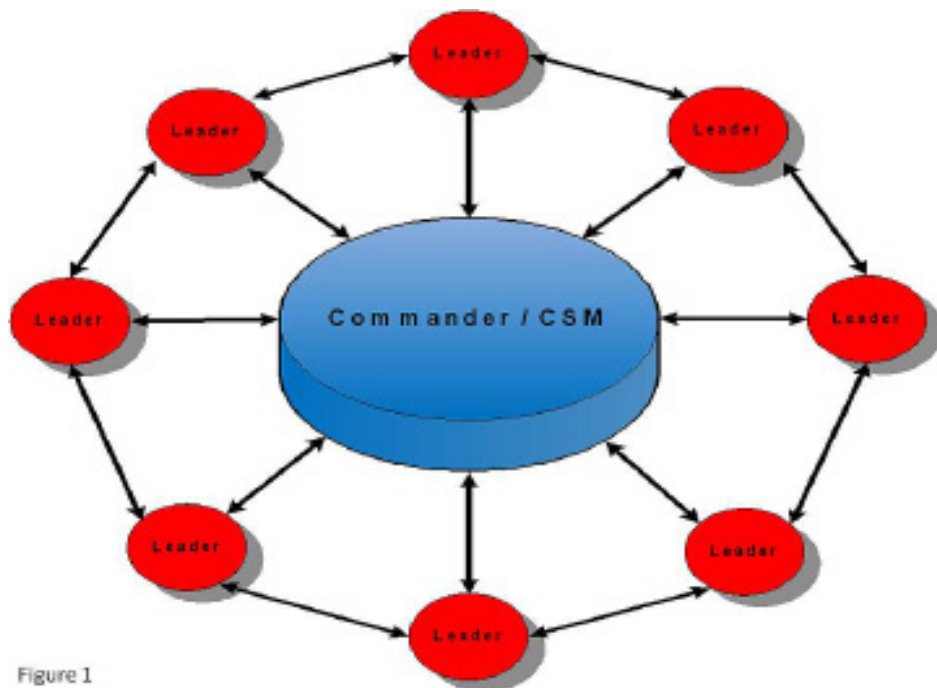


Figure 1

For the purpose of this article I will refer to information management instead of knowledge management as it more accurately defines my attempt to create a system to facilitate information flow. The definition of information management is, "...the science of using procedures and information systems to collect, process, store, display, disseminate, and protect knowledge products, data, and information. (FM 3-0) But again, how do I accomplish this for our organization?"

If you have also been given this task and found yourself pondering the same question you may find this article a useful solution to aid with information management.

A Commander's Vision on KM

COL Brian Drinkwine, 4th Brigade Combat Team commander, places high command emphasis on KM. He said his vision is to create a flattened organizational environment that allows information to flow more horizontal than vertical.

Instead of his messages flowing down through the chain of command and receiving acknowledgment back up; the desired end is to foster the ability to quickly project guidance and receive confirmation. He also defined key concepts of the BCT's mission within CJOA, including the ability for leaders to share created products and collaborate within these forums.

COL Drinkwine said "After a 10-day battlefield circulation trip I returned to my main TOC and opened up my SIPR e-mail and saw 545 unread e-mails in my inbox. With 16 subordinate O6 and O5 commands within Task Force Fury and working under two separate regional commands - I quickly realized I had become the BCT battle captain and critical knowledge was stopping with me. In my next circulation trip I asked every commander officer, commander and first sergeant when was the last time they talked with a fellow commander/first sergeant from a separate task force within Fury. Everyone said they had not held any such dialogue since leaving

“Knowledge sharing in a BCT is when you can adjust a TTP or seize an opportunity or avoid a mistake, because your organization learned from someone else. The Fury Ring was our method to rapidly share the most important lessons and opportunities.”

Fort Bragg. For 14 months in our training path we had worked hard to share TTPs or good ideas across the BCT’s leaders and sharing knowledge. After 90 days of combat - we had become a vertical knowledge organization. We had to change! Knowledge sharing in a BCT is when you can adjust a TTP or seize an opportunity or avoid a mistake, because your organization learned from someone else. The Fury Ring was our method to rapidly share the most important lessons and opportunities.”

Conceptualizing the Commander’s Vision

We agreed upfront that our organic SharePoint portal would host any attempt to build a system to meet the commander’s vision on KM.

Many solutions were suggested to accomplish information management. Some of these solutions included: blogging, wiki-environment, as well as, a Facebook-type application.

Whatever the solution, the system was required to share information laterally with one singular injection point. The system would have to allow quick data posting. The system also required leaders to

have quick visibility of what their counterparts were experiencing across the battle space, with little data mining to achieve this. Information needed to be intuitive and easily accessible.

Finally, the system had to be accessible for a leader with little bandwidth and high latency; this was unfortunately common among company CPs.

Figure 1 represents the basic information flow topology on which the Fury ring model is constructed.

The name Fury Ring was adopted for the project as the circular model for information flow developed. The first part of the title, “Fury” was based on 4/82’s deployed task force designator, TF Fury. The second part of the title, “Ring” fit nicely based on the desired information flow. The Fury Ring would become an even more appropriate title as additional applications evolved to facilitate this circular information flow.

Designing the Fury Ring

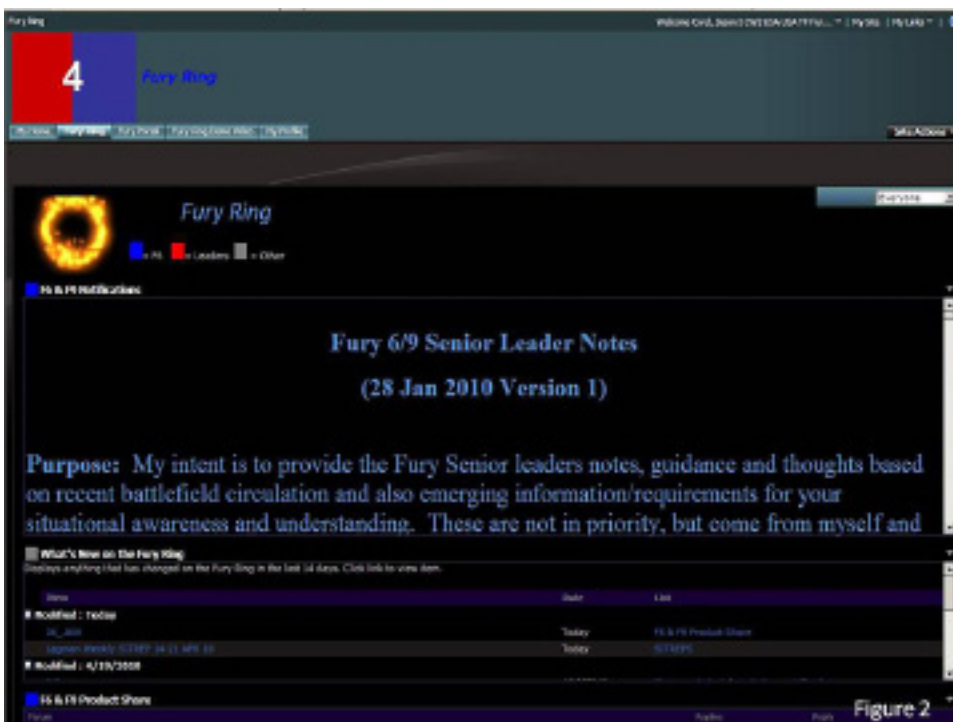
We chose to use the My Site feature of MOSS07 to host the Fury Ring. The My Site feature suited our requirements for creating the feel of a separate portal, while bringing in a personalized look and feel inherent in My Site to address the desired Facebook environment. My Sites has a default with both a private page (My Home) and public page (My Profile). The My Profile page provided the foundation that hosted the Fury Ring.

The My Home site acts as a feeder to the My Profile page, providing personalized information such as, the user picture, contact information, and other general information they choose to make available about themselves. For example, a discussion board can be adjusted to allow a user’s picture to display every time they post a comment, creating that personalized Facebook feel.

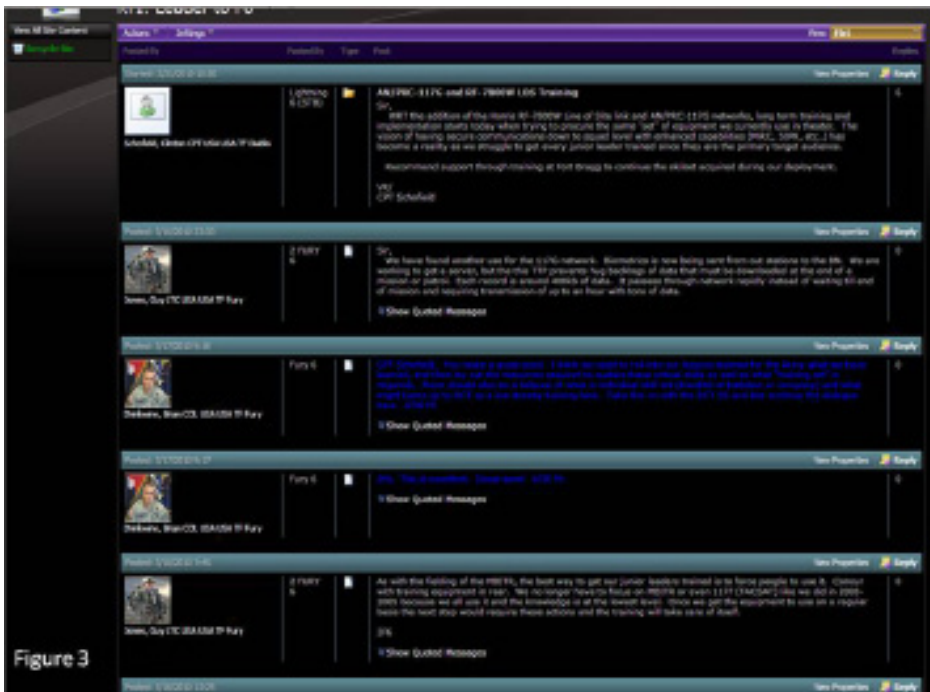
The My Profile page possesses an interesting design feature: every user essentially points to the same My Profile public page. This sets the condition where any modification made to the public page “My Profile” is replicated to all other users’ public pages. This made the My Profile page the perfect host as the centerpiece for information flow or the injection point for the Fury Ring.

The Environment

It was important to give the Fury Ring a separate feel different from that of the main portal which is used for common tasks. It needed to set the stage as a separate tool that would provide users a sense of community for collaboration. The site theme, “Reflector” was chosen based on its black background which cre-



(Continued on page 34)



easily accessible with minimal data mining. Figure 3 (at left) provides an example of a typical discussion within a forum.

Instant Messaging Integration

One of the more difficult tasks was integrating a feature that allowed users to identify other users' presence on the page and to instantly dialogue if necessary through the use of instant messaging. We contacted Bantu after extensive research on IM and presence tools. Bantu is the same XMPP technology utilized by both AKO and AKO-S that allows web IM without the need of client-side software. Bantu integrated nicely into our environment; it was not intrusive to the rest of the domain as was other solutions researched, such as Office Communicator Server that required domain level permissions for Schema modification.

The Bantu solution consisted of a virtual Linux server which I used in conjunction with VMware on our physical SQL05 server supporting the portal's databases. We were able to move from local Bantu user accounts to Active Directory LDAP authentication, which makes management almost none existent. See Figure 4 (below) for IM with presence embedd using Page View web part.

(Continued from page 33)

ates a distinctly different feel than that of the regular portal. A flash image of a ring on fire was also added to give more credence to the theme of the Fury Ring.

Figure 2 (at left) demonstrates a portion of how the Fury Ring was presented.

F6 and F9 Notifications

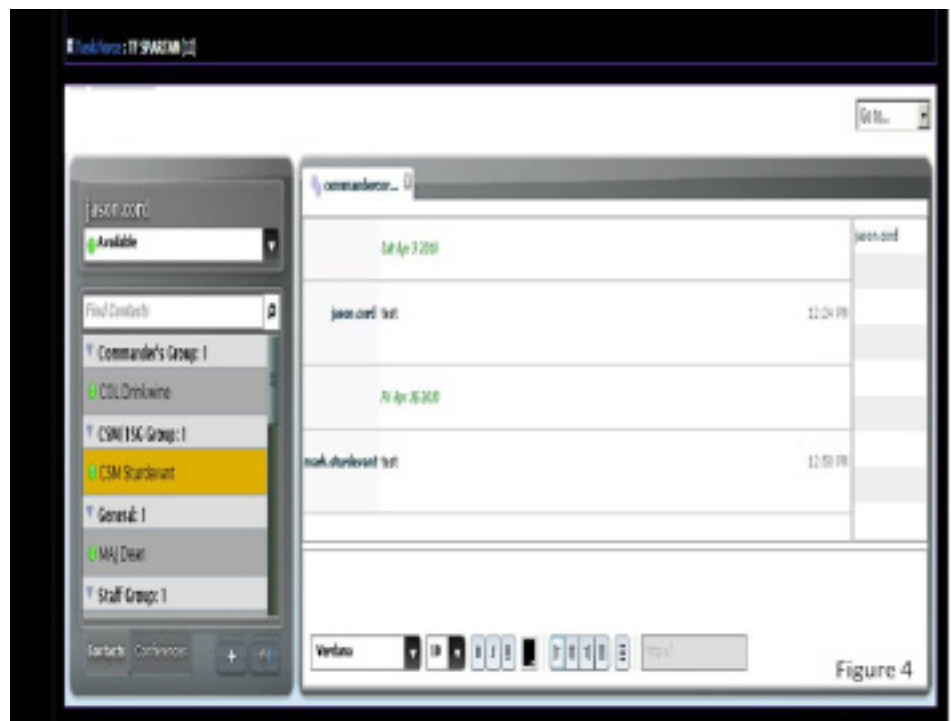
The first thing you will see on the Fury Ring site is the F6 and F9 Notifications area. This notification area is direct text embedded in the web page. Directly embedding text is better suited than embedded documents because it doesn't require the loading process of opening a document. Opening a document requires transfer of data across the WAN that leads to a potential slow down in web access.

Another interesting feature was the addition of an "acknowledge" button placed at the bottom of the message. This button was directly linked to a Leader Acknowledgement list grouped by unit and call sign. It gave senior leaders quick access to view message receipt.

Forums and Blogging

A key element requested by commanders was "creating an atmosphere where leaders could post products and share information and/or lessons learned."

We chose to use Discussion Board web parts to facilitate this requirement. The discussion board created a condition for cross collaboration, allowing a blog type threading discussion. This also allowed product postings similar to that of a Document Library. The design called for limited topic range/forums based on the commanders' main themes. This strategy was implemented to keep the web page clutter free, thereby making data more manageable and



Let the Information Flow

How did we go about moving data to and from the Fury Ring? Fortunately, Really Simple Syndication or RSS is a feature available within discussion boards.

A user will most likely check their e-mail multiple times a day, but only visit the portal a couple times a day. RSS solves this problem by bringing the portal to the user's e-mail. This is especially helpful for the user that relies on a tactical assemblage that commonly experiences abnormal latency. Once a discussion board's RSS feed is established in the user's Outlook notification is sent to the user of any new postings to the Fury Ring, as well as, notifications from the commander or command sergeant major. Also, a document posted to the Fury Ring can be opened directly from Outlook's RSS. RSS fits notification of new dialog and products nicely, but what about sending or posting information to the Fury Ring?

Fortunately this too is easily answered as an available MOSS 07 solution. Discussion boards can be set with their own e-mail addresses once the proper adjustment of adding a send connector to relay e-mail traffic to the portal has been made in the Exchange topology. A few minor adjustments give the end user the ability to quickly e-mail attachments or discussions to the discussion board. Again, this is a huge advantage to a user that has slow web page access time. The user simply attaches documents and sends to the proper forum's e-mail address.

The combined effect of RSS and discussion board e-mail addresses set the condition for rapid information flow from Outlook to the Fury Ring and back to Outlook again. These tools keep users up-to-date on all information that takes place on the Fury Ring. Figure 5 depicts the circular information flow created by RSS and e-mail enabled discussion boards.

One of Many Possible KM Solutions

LTC Guy Jones, 2nd Battalion commander, 508th Parachute Infantry Regiment summed up how he uses the Fury Ring. "The major concern within the Army over the last 10 years is how to get lessons that are being learned out of an archive file and into the hands of the users. The Fury Ring allows commanders from company to brigade and others to view real-time lessons learned and to validate them across the formation quickly. The key to COIN is staying ahead of the threats' inventive ideas with counter measures or with better inventive ideas to limit enemy influence.

The Fury Ring allows TTPs to be quickly spread across a formation and disseminated. The Army mentorship program has not progressed with technology. Company commanders and even battalion commanders seek advice from those they personally trust. However with the advent of social media, Army leaders now have a means to change their mentoring program and allow numerous points of input on problems or issues to all levels. The Fury Ring is the first step toward modernizing the Army mentorship programs from the ground up."

A Fury Ring type solution may not fit every organization's effort to practice knowledge management; however, it suits well for 4th Brigade, 82nd Airborne's attempt to create an atmosphere of real collaboration among leadership.

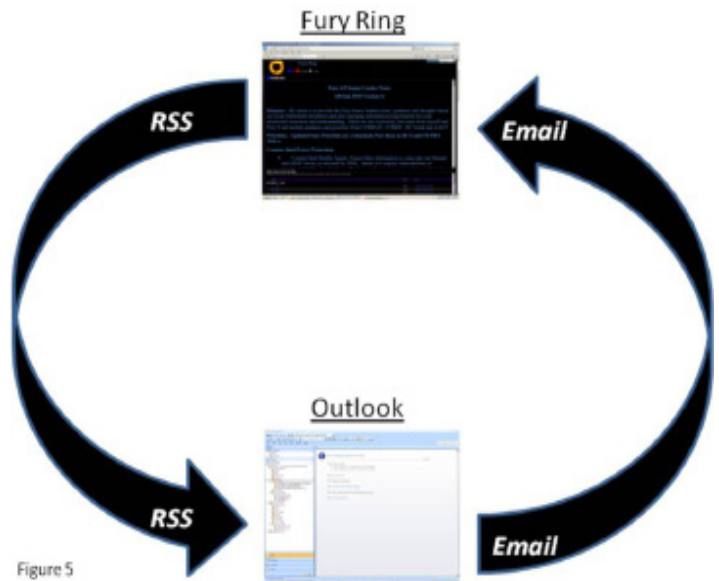


Figure 5

This is just one answer to many possible practical solutions that are designed to allow leadership to quickly leverage knowledge management for rapid transfer of training, techniques and procedures, lessons learned and other critical data, with the final goal of ultimately outwitting enemies across the battle space.

CW2 Jason Cord entered Army service in 1999 as a 31C, radio operator/maintainer. Assignments as enlisted included, RTO with the 1/75 Ranger Regiment; assistant team leader with LRSD, 313th MI BN, 82nd ABN DIV - deployed with units in support of OEF III; team leader with LRSD, 125th MI BN 25 INF DIV - Deployed with unit in support of OEF V. CW2 Cord reached the rank of staff sergeant before crossing over to warrant officer in 2006. As a Signal systems support technician he has served with G6, 82nd ABN DIV - deployed with units in support of OEF VIII and supported full motion video platforms. He is currently assigned to 4/82nd ABN DIV supporting a wide range of Signal assets, enterprise services and knowledge management duties while deployed in support of OEF X.



ACRONYM QuickScan

- AKO - Army Knowledge Online
- AKOS - Army Knowledge Online SIPRNET
- CJOA - Combined Joint Operations Afghanistan
- COIN - Counter Insurgency
- CP - Command Post
- IM - Instant Messaging
- KM - Knowledge Management
- LDAP - Lightweight Directory Access Protocol
- MOSS - Microsoft Office SharePoint Server
- RSS - Really Simple Syndication
- TTPs - Techniques, Training & Procedures
- TOC - Tactical Operations Center
- WAN - Wide Area Network
- XMPP - Extensible Messaging and Presence Protocol

ACENET achieves enterprise efficiency for improved Global Network effects

By LTC Jan Norris

A Signal task force has broken-through to produce monumental time savings in network enterprise project implementations.

Task Force ACENET was formed in February 2010 within the 311th Signal Command using an enterprise project management construct combining automated tools and collaborative processes with theater network subject matter experts across all echelons of Signal organizations throughout the USARPAC AOR (see figure 1-1 at right).

The initial intent of the task force was to reduce the time required for implementing on-going tech refresh and CENTRIX architecture projects by synchronizing and focusing priorities across the enterprise in each regional network enterprise center. With such a large number of IT projects being managed and resourced at every echelon of Team Signal (USARPAC G6, 311th SC(T), brigade and battalion), the need for a centralized planning and execution process was critical. ACENET began with 24 subprojects ranging from Active Directory/Exchange migration to COOP, SAN, NAS, and Tape/Tapeless back-up. Projects that would normally require several months to a year to complete when processed separately among various staffs were realized in just four months or less under the meshed ACENET umbrella.

Sharing the success of this matrixed task force concept is important for all network enterprise formations across the Army as it offers a model for making the network operational and clearly aligns with the CIO/G6 GNEC objectives looking ahead. ACENET also incorporates the principle of economy of force in a resource constrained operating environment.

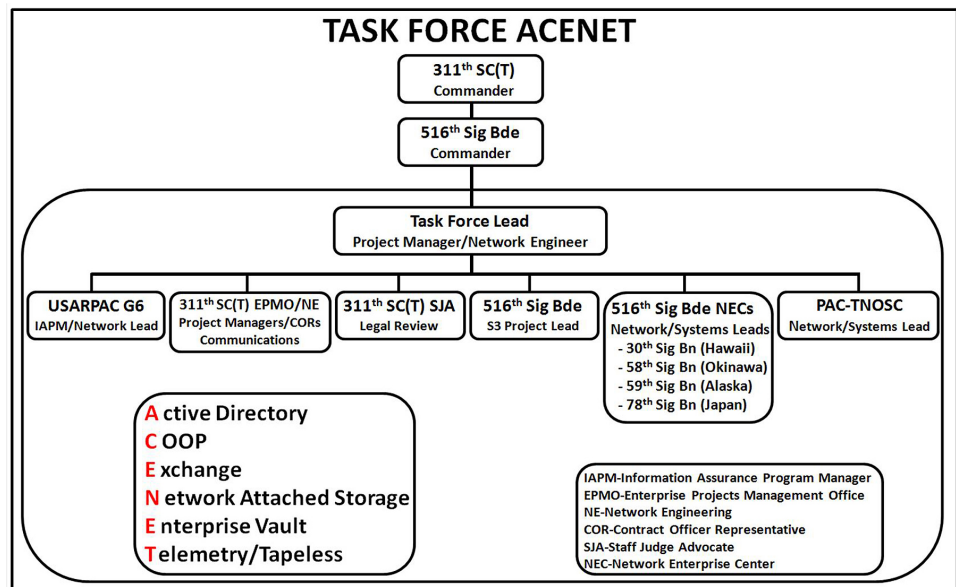


Figure 1-1 TF ACENET Task Organization

Why ACENET

Approaching the second quarter of FY10, several IT tech refresh contracts were in jeopardy of not being completed on time, potentially resulting in fiscal penalties to the government. ACENET was formed to expedite and properly sequence enterprise projects to ensure timely contract completion with minimal impacts on network users while improving enterprise responsiveness. ACENET completed its initial chartered objectives (24 tech refresh projects) much earlier than expected and then expanded to include additional high priority projects. The TTPs associated with ACENET quickly became 'the process' and implementation arm for executing enterprise initiatives in the Pacific theater.

ACENET in Motion

The ACENET process began with an official order tasking units to identify key technical experts and leaders in each signal unit or staff element. The task force was envisioned to leverage subject matter experts (primarily network engineers and technicians) across all echelons of the network

enterprise to include USARPAC G6, 311th Signal Command, 516th Signal Brigade and each regional Network Enterprise Center. IT contractors were also an integral part of the task force design and specifically for completing the sizable DELL tech refresh contract. Once formed, the task force commenced in early February 2010 with conference calls (IPRs) twice daily to discuss enterprise work plans and associated topics to include project engineering, sequencing, logistics, transportation, installation, testing, remediation, ASIs, de-confliction and implementation. The collective expertise amassed enables ACENET to leverage all seven layers of the OSI model when planning, engineering and executing a task.

The IPRs held twice daily also served to accommodate organizations in Japan and other time zones across the AOR. A weekly key leader update to the 516th Signal Brigade commander and each NEC commander is a critical piece of the battle rhythm to provide situational awareness and gauge leader feedback to guide and prioritize work efforts. In conjunction with the weekly IPRs, a comprehensive web portal was developed

for battle tracking the sequence of projects and completion of critical tasks. "One of the keys to TF ACENET is it allows us to quickly coordinate, synchronize, and focus the entire theater enterprise in support of each individual network task executed, thus assuring success. It brings the entire enterprise to bare on a specific task/event," said COL Dana Tankins, 516th Signal Brigade commander, who provided direct commander oversight of TF ACENET.

The ACENET portal (see figure 1-2 below) includes all 200+ coordinating instructions issued to date and provides status on completion of instructions for each network enterprise center. Also of note on the portal are links to the weekly commander's update brief, the ACENET weekly schedule and a link to recognize the weekly

exceptional performer within the task force.

Efficiency for Responsiveness

The efficiency of Task Force ACENET cannot be overstated. In just 5 months from February through July 2010, 24 enterprise projects were completed across the USARPAC region to include theater wide implementation of:

- Exchange 2007 and Active Directory 2008
 - for NIPR/SIPR (19,000 users), CENTRIXS-Japan/Korea/FE
- Bandwidth Upgrades
- Circuit Redundancy
- Dual Homing
- Telemetry
- Virtualization
- Simple Synch (Joint GAL)
- CAC-OWA
- Enterprise Common Operating Picture (COP)

- Upgraded HVAC at Ft. Wainwright APC
- Tapeless Backup
- CENTRIXS-Japan
- CENTRIX-ISAF

The speed and effectiveness of ACENET has served to produce an improved and responsive network for users while realizing cost savings. To date, the efforts of the task force have resulted in well over \$3 million dollars in cost avoidance alone from completion of the DELL tech refresh project ahead of schedule and implementation of COOP and CENTRIX networks. The enterprise team building momentum and synchronization established by ACENET created a synergy to enable the task force to expand beyond mere project management and execution to rallying forces in remediation of nearly any network

(Continued on page 38)

Task ID	STATUS	On Track	Delayed	Suspended	Pending	Closed	Other	Notes
10-001	On Track							
10-002	On Track				Y			100 days BBT
10-003	On Track	Y		Y				
10-004	On Track	X			X			100 days BBT
10-005	On Track							
10-006	On Track	X		X		X		100 days BBT
10-007	On Track	X	X					100 days BBT
10-008	On Track							
10-009	On Track							
10-010	On Track		X					100 days BBT
10-011	On Track	X						100 days BBT
10-012	On Track							
10-013	On Track	X	X	X	X	X		100 days BBT
10-014	On Track							
10-015	On Track	Y	Y	X	Y	Y		100 days BBT
10-016	On Track				Y			100 days BBT
10-017	On Track				Y			100 days BBT
10-018	On Track				Y			100 days BBT
10-019	On Track	X		X		X		100 days BBT

Figure 1-2 ACENET Portal

(Continued from page 37)

issue surfacing on any segment of the LandWarNet. When APC relocation occurred in Alaska and associated workstation latency problems arose in May 2010, ACENET immediately engaged its task force to coordinate bandwidth upgrades with DISA Pacific and resolved the issues in a matter of days once the root cause of the problem was determined. Network responsiveness improved dramatically at Forts Richardson, Wainwright, and Greely, Alaska as a direct result of ACENET driven upgrades from 200 Mbps to 825 Mbps. Most recently, ACENET coordinated implementation of an initial presence (or kiosk) of the CENTRIXS-ISAF Afghan Mission Network (AMN) to 1-25 brigade combat team at Fort Wainwright in just under 10 days. When first proposed, top level organizations predicted 6 months or more to realize the capability. ACENET proved what focus and synchronized team work can achieve.

Mr. Dave Millard, TF ACENET lead government project manager, said there are three important impacts of ACENET on the enterprise. "First, when we started this, the Pacific LandWarNet was a federation of 18 networks that were individually managed. Now we are managing the PLWN efficiently as a single network combat system under ACENET. Second, with implementation of COOP, both the USARPAC three star and USARAK two star headquarters' data processing centers can completely fail and services will be restored by COOP sites in Alaska and Okinawa respectively.

And third, for the first time, the four USARPAC Regional Network Operations Security Centers have the Enterprise Common Operational Picture for classified and unclassified networks. This enables redundancy and failover of the theater NetOps and network management mission should the Pacific TNOSC be required to hand off to any one of the RNOSCs," Mr. Millard said.

GNEC Compliance

When framing ACENET accomplishments against GNEC objectives, the parallels are quickly apparent. In addition to the previous discussion for achieving the GNEC objective of efficiency and effectiveness, ACENET has specifically met the other primary objectives as noted below.

- Operationalize LandWarNet: ACENET transformed a federation of garrison based networks into a single operational expeditionary network by matrixing regional network enterprise organizations
- Improve LandWarNet Defense Posture: ACENET included completion of tech refresh and associated software/hardware upgrades which served to improve the overall defense posture of the Pacific LandWarNet
- Enable Joint/Coalition Interoperability and collaboration with mission partners: ACENET accelerated the implementation of four distinct CENTRIXS networks in just 6 months, and also facilitated integration of Joint Force GALs using Simple Synch.



Photo by Alisa Imamura

Figure 1-2 Members of TF ACENET participate in the daily theater In Progress Review session.

ACENET Way Ahead

ACENET is now institutionalized as the enterprise implementation process in the Pacific. With 24 projects completed, the current focus and way ahead emphasis is on the following projects moving into FY11:


- Enterprise Bandwidth upgrades and Dedicated Transport Circuits
- Continued Expansion of CENTRIXS networks (Japan/Korea/ISAF)
- TLA Stack Upgrades/Port Expansion
- Enterprise Storage Upgrades
- Workstation Optimization (AGM Configuration Management)
- Communications on the Move
- File System Layering
- DHCP (Plug and Play)
- Continued Upgrades to HVAC and Power infrastructure
- Integration of ACENET into the Enterprise Service Management Framework

During the course of executing the task force, ACENET accentuated the lack of and need for an established change management/configuration process for the enterprise. During numerous phases of implementation of projects, configuration issues (i.e. no spare ports available on TLA stacks) were discovered and often delayed execution timelines. To resolve this challenge, the enterprise service management framework is currently at IOC in the Pacific and will achieve FOC in early FY11. ESMF is modeled on ITIL standards and will include integration of Remedy ITSM change and asset management modules. Within ESMF, ACENET will continue to serve as the implementation agent once a project is approved by the ESMF release manager.

Epilogue

Far above the automated tools, software, routers, servers and GBIC cards comprising the physical and logical components of the network enterprise are the tireless and dedicated people that have and continue to be the essence of the Pacific LandWarNet. A LandWarNet enabling battle command daily for warfighting forces is all about the individuals who sustain it and do so in a resource constrained environment.

“Having served in 5th Signal Command in Europe where there is a significantly larger pool of personnel inside that command headquarters, I have quite frankly been amazed at the ability of various echelons and organizations across the Pacific Network Enterprise to matrix together and achieve overwhelming results in such a short period of time despite limited resources,” said COL Tankins. “Task Force ACENET serves a model process for other network enterprise formations to emulate as we move toward a global construct in a resource constrained age.”

LTC Jan C. Norris is currently serving as the S3, 516th Signal Brigade, Fort Shafter, Hawaii. His recent assignments include S3, 30th Signal Battalion, Wheeler Army Airfield Hawaii, chief, current operations (G33), 335th Signal Command (Theater) (Provisional), Camp Arifjan, Kuwait, and chief, current operations (G33), 311th Signal Command (Theater), Fort Shafter, Hawaii. LTC Norris holds a master's degree in Applied Linguistics from Old Dominion University ('97). He is a 1990 graduate of Virginia Commonwealth University with a bachelor's degree in Journalism. 

ACRONYM QuickScan

AAFES - Army Air Force Exchange System
ACENET - Active Directory/COOP/Exchange/NAS/Enterprise Vault/Telemetry-Tapeless
AGM - Army Gold Master
AOR - Area of Operations
APC - Area Processing Center
ASI - Authorized Service Interruption
CAC - Common Access Card
CENTRIX - Combined Enterprise Regional Information Exchange
CIO - Chief Information Officer
COOP - Continuity of Operations Plan
COP - Common Operational Picture
COTM - Communications on The Move
CSC - Customer Service Center
DHCP - Dynamic Host Configuration Protocol
DISA - Defense Information Systems Agency
DTC - Dedicated Transport Circuit
ESMF - Enterprise Service Management Framework
FE - Four Eyes
FOC - Full Operational Capability
FSL - File System Layering
FY - Fiscal Year
GAL - Global Address List
GBIC - Gigabit Interface Connector
GNEC - Global Network Enterprise Construct
HVAC - Heating, Ventilation and Air Conditioning
IOC - Interim Operational Capability
IPR - In Progress Review
ISAF - International Security Assistance Force
IT - Information Technology
ITIL - Information Technology Infrastructure Library
ITSM - Information Technology Service Management
NAS - Network Attached Storage
NEC - Network Enterprise Center
NetOps - Network Operations
PLWN - Pacific LandWarNet
RNOSC - Regional Network Operations Security Center
SAN - Storage Area Network
TNOSC - Theater Network Operations Security Center
TF - Task Force
TLA - Top Level Architecture
TTP - Tactics, Techniques, Procedures
USARAK - United States Army Alaska
USARPAC - United States Army Pacific

C Company 392nd ESB enhancing Gateway to Freedom

By SSG Lisa Garcia

CAMP ARIFJAN, KUWAIT – Envision a technologically advanced environment - *e.g.*, New York City - where society revolves around high tech devices such as laptops, iPods, phones, video players and other gadgets. Now, picture all of this in a war zone environment.

The Warfighter Information Network-Tactical makes this advancement possible, bringing modern technology to the Armed Forces.

According to an article entitled “**Sharpening the Communications Edge**” by SPC Bryan Randolph, BG Gen Geoff Freeman, 359th Signal Brigade’s former commanding general describes WIN-T as “a commercial system in a tactical environment.”

In January, Charlie Company, 392nd Expeditionary Signal Battalion became the first reserve unit to field WIN-T, enhancing the high speed communication. Charlie Company’s mission is to mobilize and deploy in order to engineer,

support and maintain and to protect command, control, communications, and computer systems in support of the warfighter.

A four-month cycle was conducted to obtain facilities for training and storage of assemblages. Being the first reserve unit to field the WIN-T equipment sets Charlie Company apart from other units. The fact that the unit was able to carry out its functions well in such a vigorous and time-compressed training period (compared to a regular training time-span) was impressive.

WIN-T is the transformational command and control system that manages tactical information at theater through company echelons. While the system provides high speed, high capacity voice, data and video communications it enables the network and satellite connectivity to be established within 30 minutes of arrival at a new location. Charlie Company has been able to thread together the tactical and strategic work force.

According to SGT Bryce Mecusker, 392nd fills the role of a support unit, constantly training on new equipment, and serving as a stand-by in case a current system should falter.

Although the members of this Reserve unit have occupations in the civilian sector of technology which added in the unit comprehension of the high-tech devices, the unit still conducted an intense 11-week training.

According to SSG Edger Hernandez, switching from the civilian sector to active duty was a smooth transition. His occupation-working for cable and wireless organizations in the civilian world allowed him to incorporate his skills in accomplishing Charlie Company’s missions.

“Since I do the same thing in my civilian job I have an upper hand on working with the equipment and going on mission and being successful” says SGT Matthew Hazzard, Charlie Co 392nd ESB.

The WIN-T improves the communication systems for all users in the Armed Forces. As technology becomes more advanced, Charlie Company 392nd ESB ensures that warfighter resources are up-to-date and capable of handling the changes and ready and equipped to sustain in necessary to sustain and win the fight.

SSG Lisa Garcia is the lead public affairs office noncommissioned officer in charge for the 54th Signal Battalion Public Affairs Cell.



SSG Hiram McCarroll starts up the SST.



Task Force Raven elements filling critical roles

By SSG Lisa Garcia

UMM QASR, IRAQ – The 392nd Expeditionary Signal Battalion, Task Force Raven, has been deployed in theater for five months and have filled a vital role in strategic Signal support throughout Operation Iraqi Freedom operations.

B Company 35th Signal Battalion based out of Puerto Rico, is one company in Task Force Raven that plays a critical role in mission success and is based in the city of Umm Qasr. Umm Qasr is a port city that has significant importance to the nation of Iraq. B Co, 35th Signal Battalion Soldiers have been working to upgrade the existing communications infrastructure in their area of responsibility to better support the Iraqi training and advisory mission.

Task Force Raven's efforts in upgrading the communications infrastructure is fundamental to ensuring that the Iraqi government can operate successfully in the future. For the past three months, Soldiers and civilians have been working to set-up a fully functional Technical Control Facility to better support the growing needs of this critical site.

Some previous communications equipment is being significantly upgraded to adapt to the harsh weather conditions of Iraq. The effort of upgrading equipment and structures hasn't just been a multi-unit process. U.S. Navy Sailors and British allies have helped in the construction of needed structures and power requirements to get this mission accomplished.

The mission has been accomplished despite significant transportation and configuration hurdles.

Another Task Force Raven unit, Delta Detachment, is headquartered at Al Asad Air Base, Iraq providing base communications for Al Asad, Camp Ramadi and COB Speicher. Here on Al Asad Air Base Soldiers coordinate the helpdesk, TCF and activities inside and outside the plant.

Unit cohesion and leadership are fundamental to success of the Delta Detachment mission. The detachment's cohesion is evident both on and off the job. The civilian, Navy and Army personnel regularly participate in joint functions such as cookouts and athletic competitions. The units have formed a softball team and take pride in playing just as hard as they work.

Team building events are encouraged to demonstrate and build camaraderie between the civilian contractors and the servicemembers. This past month there were many reasons to celebrate a promotion and a re-enlistment. SPC Ruiz-Lopez of

B Co. 35th Signal Battalion re-enlisted to continue his career in the military. The Battalion commander and the command sergeant major paid a visit to the Soldiers at Al Asad to award much deserved combat patches of the 359th Signal Brigade.


The Soldiers of Delta Detachment are working hard every day to leave a lasting impression on the overall mission success of Iraq. The days are growing hotter but the Soldiers work just as hard as the day they first embarked on this journey. As the time grows closer to an end the Soldiers stay focused on the present mission and keep their morale up by remembering the motto "work hard; play hard."

At another Task Force Raven element, Echo Detachment, personnel are also hard at work contributing to the success of the overall mission in Iraq of providing secure and non-secure internet services to Contingency Operating Sites Marez and Diamondback in Mosul, Iraq.

Outside plant technicians, SGT Hector Rodriguez and PFC Jose Valdez are providing direct support to the fiber infrastructure that supports the military and contractors who rely on the U.S. Army Central Command network to accomplish their missions. The outside plant team, commonly referred to as "OSP," regularly respond to remedy tickets, which consist of new service requests, site surveys, fiber damage assessments and fiber restorals. Military units of COS Sites Marez and Diamondback have commended the OSP team on many occasions for their quick response to restore fiber damages at any time of the day. The OSP team consists of Army, Air Force, and ITT civilian personnel who have experience installing fiber optic infrastructure, providing aerial and buried fiber installation, and have been certified to operate man baskets to install fiber infrastructure on telephone poles.

Both military and civilian personnel who work for Task Force Raven have made great strides in their support of the OIF mission. They play an essential role in the safe and secure transition of Iraq during this important turning point in history.

The deployment of the Task Force is just over halfway complete and the Soldiers and leaders stationed in Iraq are working diligently to ensure they contributing to a stable Iraq and that their mission success will positively impact the Iraqi people and U.S. mission long after returning to the United States this Fall.

SSG Lisa Garcia is the lead public affairs office noncommissioned officer in charge for the 54th Signal Battalion Public Affairs Cell. 

Self-healing Waveform

By Edric Thompson

FORT MONMOUTH, N.J. — A team of Army researchers concluded a three-week assessment of a waveform designed to help separated squads maintain communications despite terrain and obstructions.

During its annual integrated capabilities event at Fort Dix on 25 June, the U.S. Army Research, Development and Engineering Command's communications-electronics center conducted a 36 node assessment of the Soldier Radio Waveform in a relevant field environment. This was done to gauge the waveform's ability to support platoon-level data and voice traffic from the rifleman up to the squad leader.

When squads spread out, they can potentially lose communications due to obstructions in the terrain. SRW is exciting because the network self-heals its fragmented connectivity by leveraging other squad radios using the waveform, said Mr. Eric Williams, assessment lead for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance On-the-Move - or C4ISR OTM.

"This waveform looks for other radios from the same squad and hops back through these nodes," Williams said. If the most distant radio operator can't talk directly to the squad leader, this waveform will use the other radios to create a path that enables squad communication.

The assessment focused on the program of record SRW waveform from the Joint Tactical Radio System, Joint Product Executive Office information repository, said Mr. Glenn Briceno, C4ISR OTM chief architect.

"This was a good opportunity to see if it could grow to support a large number of nodes and meet the stated requirements. If it turns out that the waveform has no issues, we'll see if there are any bugs on the hardware side that need to be flushed out so we can get the best possible solution to Soldiers in the field," Mr. Briceno said.



Rodney Smith (left), and Ted Krainski of C4ISR OTM set up radios as static nodes, representing stationary Soldiers. Live dismounts in the field interacted with the stationary nodes, passing scripted voice and situational awareness traffic from the squad leader down to the lowest level rifleman.

The assessment used 36 nodes to represent a typical platoon-sized element of four squads. Live dismounts in the field interacted with each other and stationary nodes, passing scripted voice and situational awareness traffic from the squad leader down to the lowest level rifleman and back, Briceno said.

C4ISR OTM is an R&D program within the Communications-Electronics Research, Development and Engineering Center that evaluates technical applications and maturity for emerging networking, sensors and C4ISR-enabling platforms on a year-round basis.

Its annual C4ISR system-of-systems, integrated capabilities event, C4ISR OTM Event 2010, is aligned with the Army Network Modernization strategy and explores leap-ahead capabilities that can augment and enhance the foundation of network modernization while identifying technology acceleration opportunities into the current force.

The 36 node SRW assessment is one of approximately 25 critical activities that directly support the C4ISR OTM E10 campaign goals, said Mr. Jason Sypniewski, C4ISR

OTM Integrated Event Design and Analysis branch chief.

"The results of this activity support the JTRS program by investigating how we can build an SRW network to meet its scalability requirements in the field," Mr. Sypniewski said.

C4ISR OTM will build on the assessment results by integrating these efforts with the E10 architecture in order to support the capability assessments and other SRW-related tests for this year, Mr. Briceno said.

"The next phase will be to take the network we've stood up and integrate it with other system-of-systems that are in line with the Capability Sets 2013-2014 and the future force architecture. We're looking at integrating this JTRS waveform with a surrogate Warfighter Information Network-Tactical type element that will notionally flush out architectures for Stryker brigade combat team and a heavy brigade combat team-based force structure," Mr. Briceno said.

C4ISR OTM supports milestone decisions for programs of record, helps to mitigate risk for Army Technology Objectives, facilitates R&D

technology transition to programs of record and aids in developing those technologies through technical readiness levels, Mr. Sypniewski said.

During C4ISR OTM E09, the Army was able to evaluate the complete future force network stack. This marked the first time that the Soldier Radio Waveform, the Wideband Networking Waveform, the Highband Network Waveform and Net Centric Waveform, were integrated with respective Battle Command and ISR assets and assessed as one network.

"There's no pressure on the technology providers when they bring a capability here because this isn't a

pass-or-fail venue: this is a test, assess, analyze and fix type environment," Mr. Sypniewski said.

"We build a little, test a little and see if we can break it because that's critical information in terms of the capability's development. Once we get to that breaking point, we start taking steps back to assess what went wrong, we work with the developer to fix it and we test it again," Mr. Sypniewski said.

E10, which began 1 June, is scheduled to continue execution through 15 September at Fort Dix, N.J. Upon its completion, C4ISR OTM will begin assembling key results and lessons

learned for its final report, which is a formal deliverable to a wider Army and Department of Defense audience.

To learn more about C4ISR OTM, visit <http://bit.ly/agO7nR> or contact CERDEC Public Affairs, (732) 427-1594. You can follow CERDEC on Twitter and Facebook for more information concerning events taking place throughout E10. Those sites can be found at www.twitter.com/cerdec and www.facebook.com/cerdec.

Mr. Edric Thompson is a member of the Communications-Electronics Research, Development and Engineering Center Public Affairs staff. 

Regimental CWO visits troops in Kuwait

By SFC Tyrus Wheeler

CW5 Todd Boudreau, the Chief Warrant Officer of the Signal Regiment, arrived in Kuwait on 4 April 2010 for a three-week visit to the CENTCOM Area of Operations. Kuwait was one of three stops where he met with Soldiers and senior leaders.

CW5 Boudreau's focus areas during this trip included: analyzing computer network defense capabilities, conducting senior communicators' briefs, updating signal warrant officers, conducting warrant officer recruiting briefs, and discussing various topics with senior leaders throughout the AO.

On 5 April, CW5 Boudreau conducted a warrant officer recruiting brief at the Zone 1 Theatre at Camp Arifjan, Kuwait.

The briefing, hosted by the 160th Signal Brigade, attracted many eager servicemembers desiring information about the warrant officer program.

COL Ronald R. Stimeare, 160th Signal Brigade commander,



offered his support to those seriously considering undertaking the challenge. COL Stimeare asked the service members to indicate whether they were truly interested in becoming warrant officers. In response, hands flew high all over the theater. "One of the things I need to consider as a senior leader is everyone's individual needs." COL Stimeare said, "Once you make your decision and are willing to commit, you come back to your leadership and let us know this is what you really want to do and we will assist, mentor and guide you along the path that will ultimately allow you to achieve success in the warrant officer corps."

CW5 Boudreau spoke about the

role of the warrant officer. "A warrant officer is obviously a Soldier and obviously technical because that is the niche they put us in but we are also leaders," he said. Boudreau also emphasized the importance for Soldiers to understand what they like doing or what makes them happy. "You can move through the military and do things that get you promoted, but if it is not heading in a direction

that makes you feel good about what you are doing, and if you are not happy doing it, then you need to ask yourself why you are doing it," said Boudreau.

Additionally, CW5 Boudreau talked about some of the benefits in being a warrant officer such as, better pay and retirement, faster promotion potential, training and education, and a variety of challenging assignments. In his concluding remarks, CW5 Boudreau thanked everyone for their service on behalf of the Signal Corps Regimental command team, BG Jeffery Foley and CSM Thomas Clark at Fort Gordon, Ga.

5th Signal Command implementing revolutionary new training regimen

By Kristopher Joseph

The U.S. Army 5th Signal Command is implementing a revolutionary new concept called 'Full Spectrum' designed to deliver comprehensive communications support to warfighters and military custom-



Photo by Kristopher Joseph

MAJ Neil Khatod, a member of 5th Signal Command's G3 concepts team, leads a rehearsal of concept drill in the Joint Multinational Simulation Center during a Full Spectrum signal summit 3-5 November 2009, in Grafenwoehr Training Area, Germany, hosted by 5th Signal Command.

ers.

Full Spectrum is a prototype solution to an ongoing signal issue revealed during Operation Enduring Freedom and Operation Iraqi Freedom. Currently, 5th Signal's two expeditionary signal battalions, the 44th and the 72nd are on a constant deployment rotation to Southwest Asia.

This leaves a less than desirable amount of tactical signal capability to support the ever-growing number of exercises and coalition-building activities and to address ongoing and potential contingency operations in the greater region.

It also creates silos of skill sets between those who are assigned to tactical units and those assigned to fixed-based units.

Leaders of 5th Signal are challenged with the means to leverage its six other battalions in Europe that are only organized and equipped to provide fixed-based garrison signal support.

This question for resolution was, 'What happens if you give tactical assets and capability to the operational fixed-based signal units and give operational-based assets and capability to the tactical signal units?' The answer is you get multi-capable signal units that can execute the "Full Spectrum" of signal operations whether they are at home station or deployed.

"These units are able to support their customers' requirements from end to end, in garrison, in certification to deploy or while deployed," said BG Jeffrey G. Smith, Jr., 5th Signal commanding general.

The end result would theoretically give 5th Signal eight full spectrum battalions and in turn the command would also transform its two signal brigades (one operational-based, one tactical) into two FS brigades.

One of the arguments for the FS concept is that expeditionary

Full Spectrum training implementation will provide more available and ready Signal units into the Army force generation pool.

signal units are currently performing FS operations downrange due to changing requirements and phases on the battlefield. Besides providing tactical communications to warfighters in austere areas, they also are called upon to provide stability signal support to forward operating bases with large concentrations of Soldiers, civilians and contractors, much like the signal resources on a typical garrison.

"Prior to deploying, it was key that my Soldiers received signal training in those fixed-based strategic skill sets because we knew we would have to perform those types of missions even as a tactical unit," said COL Randall Bland, 5th Signal Command 7th Theater Tactical Signal Brigade commander, currently deployed to Afghanistan in support of OEF.

Leaders of 5th Signal agree that often signal Soldiers downrange are performing skills outside their occupational specialties and have to learn 'in the middle of the fight' how to conduct fixed-based network operations and how to operate and maintain commercial-off-the-shelf equipment in order



Photo by Kristopher Joseph

Soldiers from the 43rd Signal Battalion participate in a Full Spectrum field training exercise near Coleman Barracks in Mannheim, Germany on 20 October 2009. The “Full Spectrum” concept is U.S. Army 5th Signal Command’s effort to combine garrison-based signal units with tactical, expeditionary signal units and create a new hybrid force capable of providing the “full spectrum” of communication services to any warfighter or customer within their area of operations.

to sustain FOBs and headquarters. Under the FS concept, signal Soldiers, regardless of their location or mission, will be able to perform all assigned tasks sooner and simultaneously handle the broad range of signal support from help desk services on a large multinational FOB or garrison to extending a tactical network and internet to a remote location with only a handful of warfighters.

BG Smith said that the implementation of FS into the Signal Regiment will also provide more available and ready signal units into the Army force generation pool because, under FS, even the traditional garrison-based signal units will have expeditionary assets and capability. ARFORGEN is the structured progression of increased unit readiness over time resulting in recurring periods of availability of trained, ready and cohesive units for operational deployment, according to <http://www.army.mil/aps/07/addendum/h.html>.

One of the key aspects of the ARFORGEN process is that the Army will organize modular expe-

ditionary forces by tasks tailored to joint mission requirements. The FS concept is designed to complement the Army’s shift toward modularity in that, when needed, a FS signal unit can deploy its expeditionary assets forward and still maintain fluid signal operations on a garrison with its civilian workforce.

Functional Area Assessment

During the first week of November, 5th Signal Command invited distinguished visitors from military organizations such as U.S. Army CIO/G6, U.S. Forces Command, U.S. Army Network Enterprise Technology Command/9th Signal Command and the U.S. Army Signal Center to view the FS concept in action. The timing of the visit is noteworthy since the Army Signal Regiment is currently involved in a Functional Area Assessment that will reassess and realign signal forces in order to better support the Army’s new modular and expeditionary stance.

“What we are challenged with here is to define who does what in the (signal) regiment,” said BG Jef-

frey Foley, U.S. Army Signal Center of Excellence and Fort Gordon commanding general. “We’ve got to determine the linkup between responsibility and authority.”

On the first day of the visit, guests were taken to Coleman Barracks and the Lampertheim Training Area in Mannheim, Germany to view 2nd Signal Brigade’s current implementation of the FS concept. The 2nd is one of two brigades under 5th Signal. The 2nd’s traditional role is to command and control six operational or fixed-based battalions throughout Europe. What the visitors viewed was anything but fixed-based operations. Through a video teleconference, the commanders from the 102nd and 509th Signal Battalions gave a tactical update from their deployed locations. The 102nd reported from the Republic of Georgia supporting exercise Immediate Response and the 509th from Israel supporting exercise Juniper Cobra.

Both battalion commanders reported that their civilian counterparts and staff were running the day-to-day garrison mission while they were away commanding and controlling a tactical mission.

The guests then visited the 2nd’s 43rd Signal Battalion at the LTA. A normal visit to the 43rd would have mostly included seeing Soldiers sitting behind desks working on computers or monitoring their local network. On this visit, they saw 43rd Soldiers in full battle mode, cross-training on tactical signal equipment such as the Joint Network Node, which is the Army’s current solution extending the network to warfighters in a deployed environment.

“I think the strategic (operational-based) Soldiers need to know the field craft just like the tactical (expeditionary) Soldiers do,” said BG LaWarren Patterson, 9th Signal Command deputy commanding general. “That way, no matter where they go it will all be a blur – strategic and tactical won’t matter, they’ll be able to do it all.”

The final part of the FS signal summit brought the hosts and

(Continued on page 46)

(Continued from page 45)

guests together at the Joint Multinational Simulation Center in Grafenwoehr, Germany. All participants were shown a two-day FS rehearsal of concept to get an all-encompassing understanding of FS and how it could benefit the signal regiment in the future.

A key theme in the discussions was that under FS, a signal brigade, for example, would be able to tailor itself (modularize) to a given mission. It was brought up that many times a signal brigade gets an order to deploy and has to send all of its troops and assets into a well-established operation only to find that the communications infrastructure is mature enough that it doesn't require as many Soldiers to accomplish the mission.

In a FS brigade, a commander could assess the scope of a mission and only send the appropriate tactical module of his or her assets to support exercises, contingency operations or a deployed corps-sized joint task force. The other modules of the FS brigade would be available for conducting home base network operations, headquarters support and training signal elements of brigade combat teams for deployment.

"This concept is all about a modular construct," said BG Smith. "The FS brigade is a fundamental shift in how we support operations and we have to tailor a brigade headquarters based on the event."

"Anything that adds flexibility and agility to our operations is an important thing," said COL Jacinto Santiago, Army CIO/G6 - Archi-

ecture, Operations, Networks and Space.

BG Smith, during deliberations made it clear that FS "is not just a Europe thing." Some of pushback with the FS concept is that it may not be feasible across the entire signal regiment.

"All we are here to do is to set the table of possibilities for the future," said BG Smith.

"The Full Spectrum concept is a viable option for us here in Europe, but the overall intent is to help the whole signal regiment transform in a way that supports every warfighter from any location."

Kristopher Joseph is the public affairs officer, 5th Signal Command. He can be contacted at 0621-730-5167 (commercial), 380-5167 (DSN), or Kristopher.joseph@eur.army.mil.

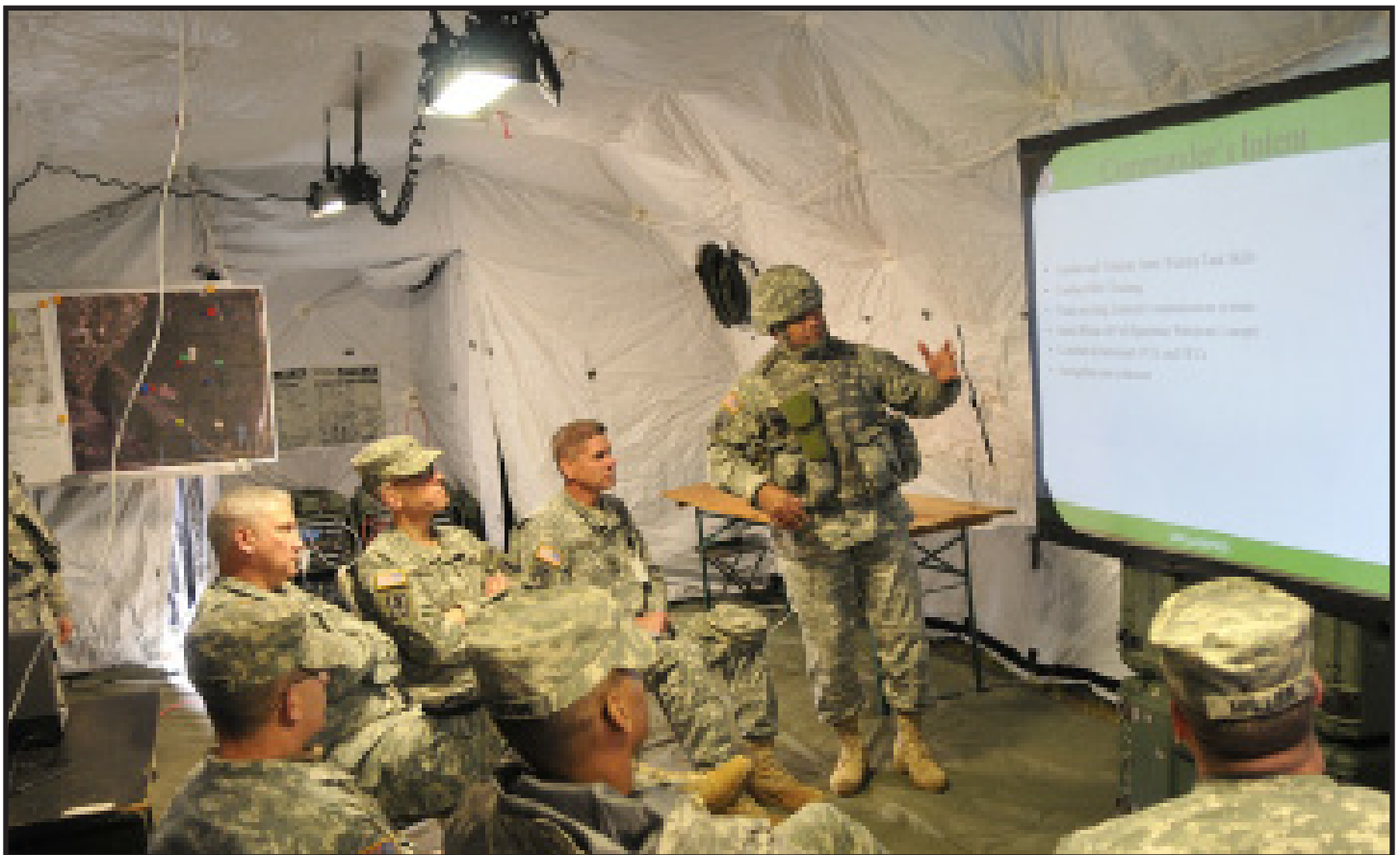


Photo by Kristopher Joseph

LTC Laroy Peyton, 43rd Signal Battalion commander, briefs distinguished visitors at the Lampertheim Training Area in Mannheim, Germany during a Full Spectrum Signal summit 3-5 November 2009 hosted by 5th Signal Command.

Versatile, secure radios valuable mission tools

By CPT Michelle Lunato

There is a fine line between mission success and failure, where success can depend on the reliability of a single one-pound radio.

Back in the Civil War, citizen-Soldiers communicated with their commanders on the battlefield with signal flags during the day and lanterns by nights. As messaging moved from flags to satellites over the last century, so have the demands of the servicemembers fighting for peace.

The warfighters' needs for communication have become almost instantaneous, and without it, the results can be devastating, said Army SSG. Tommy L. Andrews, Microwave Line of Site noncommissioned officer, Joint Network Communication Center-A, 359th Theater Tactical Signal Brigade. "You can have the greatest Army in the world, but without good communications, you will fail."

With new things developing every day, "it is hard to keep up with technology," said SSG Andrews.

In its efforts to deploy new technology, the Army has been fielding Netted Iridium Radios to the warfighters in Iraq and Afghanistan under the Distributed Tactical Communications Systems program.

The radios are a combination of "walkie talkies," cell phones, and tactical phones, said Andrews. The encrypted channels are similar to the security features of the heavy tactical phones, but keep a continuous "call" like cell phones. However, the radios function like a "walkie talkie," where each user within a secure talk group can hear all the other members of that group.

Only one user can talk at a time by pushing a button. "It is like the new CB [Citizen Band radio] of the Army," said Andrews.

These radios have layers of security and are lightweight, said Aaron Chudosky, a representative of Solutions Development Corporation, who works with JNCC-A, C4 section on distributing and training Soldiers on the radios in Afghanistan. "Being a former Marine, I like that this is secure and I can take it with me everywhere."

The one-pound, 6-inch antenna radios, use the 66 Iridium, low-orbiting satellite system to create a nearly seamless transfer of coverage, said Chudosky. "The satellites are always moving, so if you can't reach one satellite,

it is only a matter of a few minutes before you can get another one."

The time to reach a satellite footprint is significantly less than when geosynchronous satellites were used, said Chudosky. "The advantage of the DTCS system is that unlike geosynchronous satellites, the Iridium Satellites come to you."

When time is of essence, this fact can be critical in the combat environment of Afghanistan, said Chudosky. "In a firefight, you don't have time to figure out where the satellites are. With the Iridium System, they come to you."

This ability to get a signal faster is just one of the benefits though, said Chudosky. The radios are compatible with other military equipment and can be mounted in tactical vehicles, taken on patrols, set up in a Tactical Operations Center, and be used as a data modem for location tracking. "It's tactical, it's mobile, it's lightweight, it's secure, and it's multipurpose."

For the past few months, radio teams under the direction of CW2 David Mauriello, JNCC-A Chief, HHC, 359th TTSB, have been distributing hundreds of these tactical radios to a variety of units throughout Afghanistan. As of June 15, over 800 radios have been issued in Afghanistan as part of Phase 2 of the DTCS program, said Army LTC John H. Phillips, JNCC-A director, HHC, 359th TTSB. From Army security forces to Marine units to Coalition Forces,

there has been a lot of positive feedback, said Andrews.

"With these radios, I can actually have a conversation, not just bits of one," said an Army platoon sergeant with a security forces unit that is in the radio-fielding program. "Having voice communications with my TOC is invaluable," said the platoon sergeant.

The capabilities of the fielded radios should take away some of the Taliban's advantages in the mountainous area of Afghanistan, say a number of military leaders involved in the DTCS program.

Taking away any enemy advantages can only help a unit that is outside the wire, and that is the purpose of the program, said Chudosky. "We are supplying a means of reliable communications to the warfighters in the harshest of terrains, and that can only help save lives."


CPT Michelle Lunato is the 359th Theater Tactical Signal Brigade public affairs officer. 



Photo by CPT Michelle Lunato

Soldiers from the 359th Theater Tactical Signal Brigade work with a civilian contractor to ensure all their radios are ready for action.

SIGNAL SOLDIERS WIN MEDIA AWARDS

By SGM Carrie F. Stevenson

The Defense Information School recently announced the results of the 2010 Military Graphics Competition and two Signal Soldiers are among the winners. Their success is a huge

accomplishment for our Soldiers who competed against their peers in all Services. I hope this motivates others to participate and demonstrate the high level of skills and training our Soldiers attain.

According to their Web-

site, MIL-GRAPH, is a component of the Visual Information Awards Program, which is designed to recognize, reward, and promote excellence among



SSG Amy L. M. Brown military

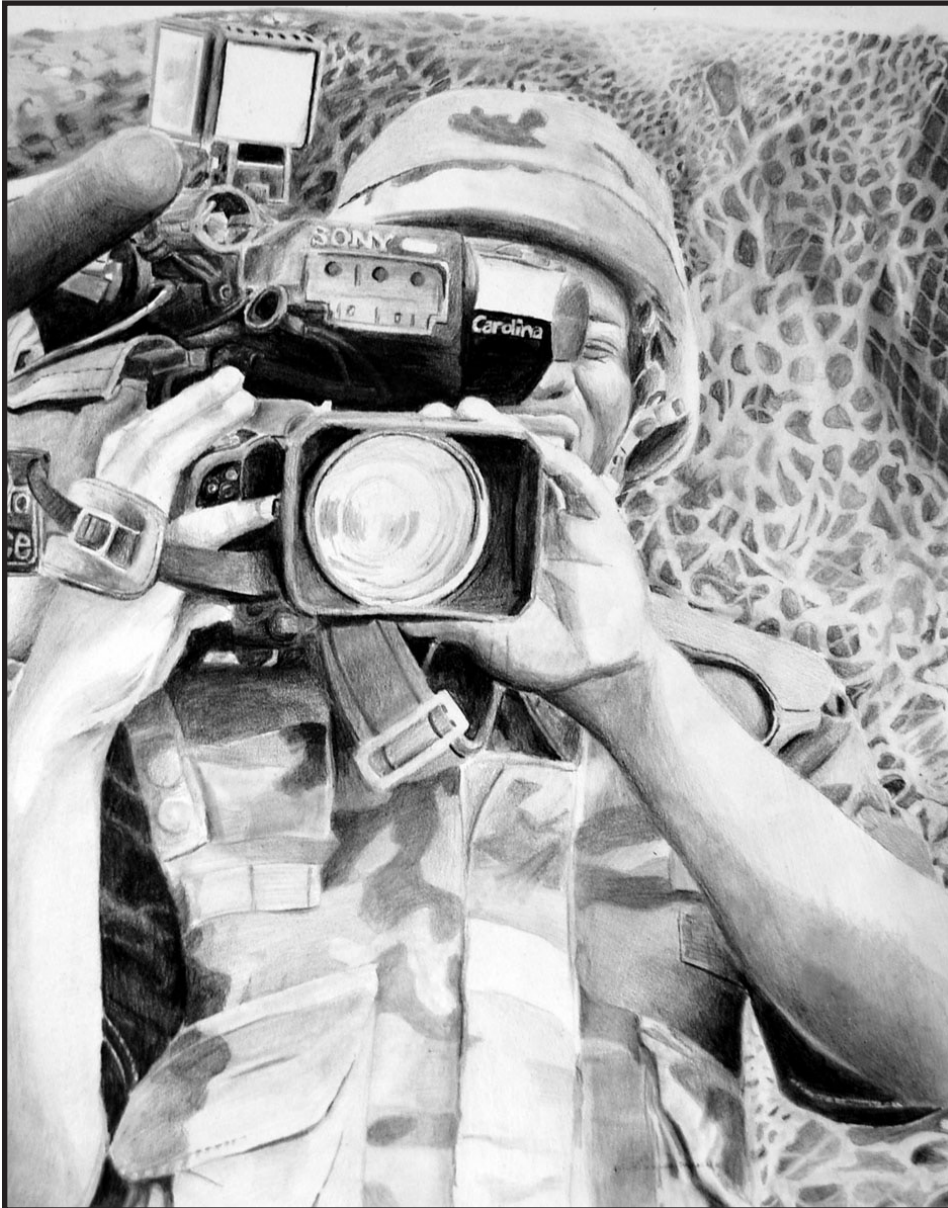
photographers, videographers, journalists and graphic artists for their achievements in furthering the objectives of military photography, videography and graphic arts as a command information and documentation media within the military."

SSG Amy L. M. Brown is a DINFOS Basic Multimedia Illustrator Course instructor and team chief that placed first in the competition, fine art category with her presentation of "Civilians on the Battlefield."

This category consists of two-dimensional artwork that is created by freehand using wet-based mediums such as water color, oil paint, pastels, and air-brush.

Each DINFOS BMIC instructor entered and competed against their peers in the various categories. SSG Brown took the competition to the next level by encouraging 15 of her students to submit their professional work in this year's competition. Her leadership and support of the program directly affected an increase in submissions from more than 175 in FY08 to more than 375 in FY09.

SSG Brown also placed third in the Illustration category with her submission, "World War II Gas Mask." SSG Brown commented, "This has really motivated me and next year I will do

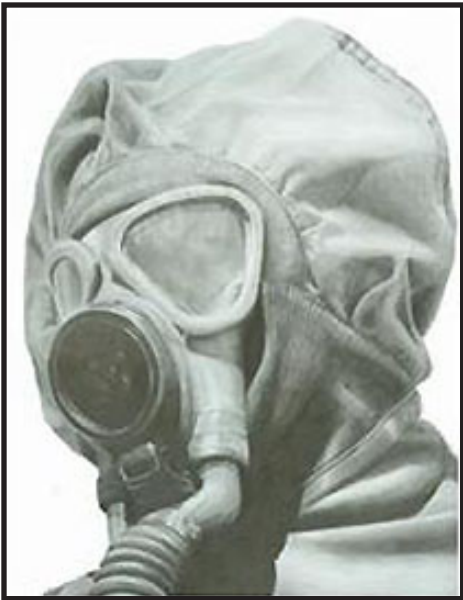


This graphite work was created from SSG L. M. Brown's original photography depicting a civilian camera man in a field training exercise at Fort Bragg, N.C. This drawing was created at the Defense Information School using the grid method to render forms and value with photo-like accuracy and correct proportion.

my best to make sure Army wins Artist of the year!"

SFC Jason A. Philip, former 25M, Multimedia Illustrator small group leader for the Advanced Leaders Course located at the Regimental Noncommissioned Officer Academy, Fort Meade, Md., demonstrated his talents to a world class standard by placing first in Webpage design. "This is my first win and my first time entering any type of military competition," said SFC Philip. He has earned the distinction of becoming the first ever noncommissioned officer to place in this prestigious competition while serving at the RNCOA.

He is currently deployed to Afghanistan and said he is humbled by this experience. He is encouraging others to participate in this annual event and to receive recognition for their work. The competition is open to



This graphite drawing by SSG Amy L. M. Brown was created at the Defense Information School using the grid method to render forms and value with photo-like accuracy and correct proportion. This category contains self-playing movies of computer-generated animation. Animation category entries must be submitted in one of the following formats: MPEG, AVI, QuickTime, Shockwave or Flash. To view the winning images or learn more about this event, see the DINFOS webpage at <http://www.dinfos.osd.mil/events/viap/index.asp>

military artists anywhere in the world.


The Defense Information School's Visual Information Awards Program provides a great opportunity for Soldiers to compete professionally against their peers (photographers, journalist, photo-journalist, videographers, broadcasters, graphic artists, mass communication specialist) from four other Armed Services. According to the DINFOS Website, "The competition is judged by professional graphic artists and multimedia specialists from nationally acclaimed art institute and design studios outside of the military environment and is intended to promote excellence and professionalism in the military graphics arts and multimedia community."

SGM Steven Caffee, former

RNCOA, deputy commandant said, "This is once again a true testament and verification of the professionalism and talent serving in the RNCOA. NCOs leading the way in everything we do! Train to Lead, Lead to Train!"

Signal Soldiers and leaders participation in the VIAP program helps to further the objectives of military photography, videography, and graphic arts as a command information and documentation medium within the military.

This year's winners are featured on the Defense Information School Website at <http://www.dinfos.osd.mil/events/viap/index.asp>

SGM Carrie F. Stevenson is the chief, Visual Information Staff NCO in the Office, Chief of Signal, 15th Signal Brigade at Fort Gordon, Ga. 



SPC Jason A. Philip



SPC Jason A. Philip former 25M, Multimedia Illustrator small group leader for the Advanced Leaders Course located at the Regimental Noncommissioned Officer Academy, Fort Meade, Md., placed first in Webpage design.

Army exercise instantly provides decentralized network information

By Joshua Davidson

During raids as an infantry company commander in Iraq, MAJ Bill Venable experienced frequent 45 minute drives to receive detailed mission orders from battalion headquarters.

Through the unprecedented combination of three separate waveforms, Soldiers at the White Sands Missile Range in New Mexico received similar information instantaneously with the click of a button.

"Within a minute, we were already talking about the mission," said MAJ Venable, assistant project manager, Infantry Brigade Combat Team of the Program Executive Office for Integration.

The Brigade Combat Team Integration Exercise which concluded last week brought together engineers from the Army acquisition community, Soldiers from the Army Evaluation Task Force and the Army's senior leaders who each experienced firsthand the Army's future tactical network at White Sands and Aberdeen Proving Ground, Md.

Lessons-learned during the exercise will yield future programmatic decisions in the Warfighter Information Network-Tactical Increment Two program, said Mr. Pat DeGroot, its deputy product manager.

"The exercise was very powerful," he said. "I think it has a lot of potential to change the Warfighters' tactics and techniques."

The AETF maneuvered through White Sands along improvised explosive device routes, performed air assault missions, conducted raids of homemade explosive-making facilities and used PEO Integration's Small Unmanned Ground Vehicle robot to identify and remove simulated IEDs from a cave. The mountainous terrain of White Sands closely mirrors that of Afghanistan where Soldiers perform similar missions today.

At White Sands, engineers repeatedly launched the Shadow unmanned aircraft system with a Rifleman Radio

attached to each of its wingtips. Equipped with these, the Shadow, which presently can reach a ceiling of nearly 15,000 feet above sea level

and endure six hours of air time, allowed two separate Rifleman Radios on the ground to communicate beyond line of sight. This enabled individual Soldiers in separate companies to pass messages without seeing one another. In most cases, beyond line of sight

data sharing is not possible below the battalion level. Today, WIN-Increment One provides battalion level and above Warfighters with the ability to connect to the Army's digitized systems, voice, data, and video via satellite connections. WIN-T Increment Two will build upon Increment One's capabilities by extending satellite communications down to the company level while providing increased bandwidth while on-the-move.

Leaving a rail-based runway at 70 knots or nautical miles per hours, Shadow can maintain speeds between 65-110 knots. It typically flies at 90 knots. In addition to the Shadow, Apache and Black Hawk helicopters also maneuvered across the White Sands skies, serving as aerial communications nodes during the exercise.

"We took a hard look at how we could get physics to work for us by getting an aerial layer in place," said LTC James McNulty, an exercise trail boss.

Many radios used in this exercise, such as the Rifleman Radio, were surrogates for radios which will be used in the final, deployable waveform solution. In future months, the Army will examine each of the capabilities demonstrated and determine which will be included in the 2017 network.

The exercise was a "team sport" which involved PEOs Integration; Command, Control and Communications-Tactical; Aviation; Soldier; Joint

Tactical Radio System; Intelligence, Electronic Warfare and Sensors; the Army Evaluation Test Command and its Operational Test Command; Training and Doctrine Command; AETF; the Central Technical Support Facility, Fort Hood, Texas; the Future Force Integration

The exercise demonstrated that this future network will be operationally relevant and functional. We left with a sense of: we made the impossible possible...but this is just the beginning.

Directorate and personnel from the White Sands and APG installations, said MG John Bartley, the PEO for Integration. The exercise was designed to help the Army continue to formulate its tactical network strategy by seeking to prove the concept of an integrated tactical network available to Soldiers at all echelons of the Brigade Combat Team.

Testing waveforms/stressing the network

At White Sands, Soldiers maneuvered various platforms at vast distances away from one another to see if they could maintain network connectivity. The network was stressed during numerous operational vignettes and experienced the diverse temperatures, environmental factors and altitudes of White Sands.

The Army's three network waveforms were established based on the amount of information passed across each, said Mr. Rick Cozby, PEO Integration's associate director for C4ISR testing. Smaller echelons share less information, which lessens bandwidth requirements. This allows Soldiers to operate successfully with smaller, more portable radios than those needed at higher echelons.

In today's tactical environment, the Soldier Radio Waveform operates at the lowest level echelon, providing information to individual Soldiers or teams within a company. As echelon levels increase, more tactical data is shared and the large communications pipe of Wideband Network Waveform is a necessary provision.

With the WNW, Soldiers use the Network Integration Kit which integrates radios with computer-based applications and can be mounted directly into a platform. Connectivity is achieved through an aerial layer using the Joint Tactical Radio System attached to unmanned aerial vehicles and other components such as airships and Rapid Aerostat Initial Deployment towers. The final Network Centric Waveform is the satellite layer, which allows Warfighters to access the Internet and share voice, video and data across the globe. Today, these capabilities are achieved through WIN-T Increment One. A backbone air tier will be fielded in WIN-T Increment Three, which will bring a network backbone which can maintain connectivity at all times, regardless of whether a platform is moving or stationary.

The three separate waveforms were integrated to provide connectivity from the lowest to highest echelons, which was the point of the exercise. Mr. Cozby said that acquisition programs of record exist to build the various waveforms and the associated radios but there is no program of record designed to integrate them with each other. This was accomplished by the Army's new PEO for Integration, which was created as a result of an acquisition decision memorandum in December 2009 laying out the networks for 2011 and 2017. In conjunction with that memorandum GEN Peter Chiarelli, the vice chief of staff of the Army, required a demonstration of the Army network intended for 2017 during the year 2011.

The exercise demonstrated that this future network will be operationally relevant and functional, Bartley said.

"These emerging technologies will provide vital capability to our deployed forces and ensure that we keep our Soldiers equipped with best kit available," said BG N. Lee S. Price, program executive officer for C3T.

Though the future WIN-T network will use either commercial

KU-Band or military Wideband Global Satellite Communications satellites, only mercantile satellites were used in the exercise, DeGroot said.

Operational relevance from the company to the world

As units in Afghanistan and Iraq maneuver in a dispersed fashion, the exercise demonstrated that the Army will be able to connect higher echelons to the rifleman and vice versa. Doing so, will empower the company commander, LTC McNulty said.

"Providing the company commander with situational awareness and real time actionable intelligence is critical to allowing the rifleman to conduct their mission," he said.

The future network was demonstrated during the past week, by connecting the SRW to WNW, which was then connected to the NCW. This capability will allow individual Soldiers to speak and share information with the battalion level and above commanders and vice versa. In this case, information was passed from a brigade tactical command post at Aberdeen Proving Ground, Md. to White Sands.

This marked the first time these technologies interoperated together, said Mr. Robert Wilson, director of tactical radios for PEO C3T. It also is the inception of many other exercises which will build upon the established network thread, so that this solution can be incorporated in the future.

McNulty cited an example of how a battle captain at APG was able to use WIN-T Increment Two to send a nearly six megabyte operations order to a company commander at White Sands. This company commander was able to share information with adjacent companies and their platoon leaders via WNW and SRW. He explained how this will increase the speed of operations and prevent casualties, as a Soldier today might have to drive 50 miles to deliver this information.

At White Sands, the Soldiers within a company could communicate to their own platoon and even at the battalion level, MAJ Venable said. Inside their Command Posts, company commanders exchanged text messages and e-mails, tracked

simulated IEDs and collaborated on the battle with Command Post of the Future and planned fires with the Advanced Field Artillery Tactical Data System. They tracked automatically populated friendly forces' movements and manually added enemy and hazard locations with Force XXI Battle Command Brigade-and-Below/Blue Force Tracking. They also used WIN-T Increment Two; the NIK; other Army Battle Command Suite 6.4 applications; JTRS Handheld, Manpack Small Form Fit radios and shared intelligence through the Distributed Common Ground System-Army.

Today, the majority of this information is only accessible at the brigade and battalion levels, said LTC John Matthews, also a trail boss for the exercise. Pushing this data to lower echelons allows the company commander to share the information with his platoon and team leaders and coordinate the battle during direct enemy contact. Information was also exchanged digitally by aviation platforms, a critical tactical advantage for rapid and accurate close air support.

At White Sands, one Soldier used the Land Warrior system to request a medical evacuation to the Company Command Post. Using the Shadow-connected system, which allows Soldiers to see battlefield information through an eyepiece attached to a helmet, Soldiers initiated calls for a medic and pushed information almost instantaneously to medical evacuation crews.

"That nine line request for a medivac...was sent back to the battalion and then to the brigade in Aberdeen Proving Ground, Md.," LTC McNulty said.

Developing the future network

Throughout the exercise, engineers from across the separate PEOs and TRADOC, met in working groups to determine how to integrate the terrestrial waveforms with the satellite communications capabilities of WIN-T Increment Two, said Clifton Basnight, a system of systems engineer with PM WIN-T. In just a few days, they carefully developed a "straw man's architec-

(Continued on page 52)

(Continued from page 51)

ture" laying out how each would interoperate, he said. The group held technical interchange meetings once per week, where they discussed and developed solutions for routing challenges. Solutions were carefully discussed and decisions were made as a team, he said.

"Before we went down a path we had some level of consensus," Mr. Basnight said.

Engineers like Mr. Basnight forged new relationships with those from sister PEOs. Many traveled to separate geographical regions, providing their expertise at each stop.

"We put into play things that even though they might not have been the total solution they were vetted and had engineering rigor to them," Mr. Basnight said. "It wasn't done in a vacuum."

The Army leadership will use data from the exercise which culminated over the past three months to lay out what the mature network will look like in 2017, Mr. Bartley said.

"It was really a fantastic exercise of teamwork," DeGroodt said. "Everybody was out to make the exercise successful."

This integrative effort demonstrated the importance of diminishing stand alone developmental efforts, Basnight said.

"We left with a sense of: we made the impossible possible," he said. "But this is just the beginning."

Joshua Davidson supports the PEO C3T Chief Knowledge Office at Fort Monmouth, N.J. He holds a Bachelor of Arts Degree in journalism and professional writing from the College of New Jersey (formerly Trenton State College). He previously worked as a municipal beat reporter for the Ocean County Observer.



ACRONYM QuickScan

AETF - Army Evaluation Task Force
AFATDS - Advanced Field Artillery Tactical Data System
APG - Aberdeen Proving Ground
CPOF - Command Post of the Future
DCGS-A - Distributed Common Ground System-Army
FBCB2/BFT - Force XXI Battle Command Brigade-and-Below/Blue Force Tracking
IED - Improvised Explosive Device
JTRS - Joint Tactical Radio System
NIK - Network Integration Kit
PEO C3T - Program Executive Office Command, Control and Communications-Tactical
PEO I - Program Executive Office for Integration
PEO IEW&S - Program Executive Office Intelligence, Electronic Warfare and Sensors
RAID - Rapid Aerostat Initial Deployment
SRW - Soldier Radio Waveform
SUGV - Small Unmanned Ground Vehicle
TRADOC - U.S. Army Training and Doctrine Command
WGS - Wideband Global Satellite
WIN-T - Warfighter Information Network-Tactical
WNW - Wideband Network Waveform

Feedback

Dear Sir:

The current issue of *Army Communicator* is really a splendid piece of work. You outdid yourselves in providing an issue to be long-savored, treasured, studied and reread. I save all issues, but this deserves very special care.

Perhaps some interest is the fact that Geneva College became Hobart College in 1852. We Hobart alums are proud to claim General Myer as one of our own. More importantly, a quick glance at the content of that "classical course" explains much of his later success. The reference to Plybius and the sometimes dizzying, "Rules of Permutations..." (BG Albert J. Myer, *A Manual of Signals*, 1868) are, one might suggest, the product of a very thorough classical "pre-med" course!

Again, my thanks and congratulations on a particularly good issue of an always excellent publication.

Sincerely,
Richard Lyon Stinson
Chaplain (COL) U.S. Army (RET)

Dear Editor:

I want to congratulate you and your team for a fine 150th Anniversary commemorative publication!

But I feel compelled to ask if the photo depicted on page 57 was a test for the Signal community.

The caption reads, "In this photo, a Signal Corps Soldier erects a satellite dish, 2010." The photo is actually a Signal Corps Soldier erecting a Band III Line-of-Sight Radio Antenna atop a 15-meter mast...an entirely terrestrial transport capability.

It really is a very minor error in an otherwise exceptional publication. I trust that I'm not the only Signal Corps Soldier who noticed it, but if I am... God help the Signal Corps!

v/r

LTC Timothy M. Smith
Assistant Chief of Staff, G-6
Texas Army National Guard
Network Enterprise Center

Correspondence on any subject matter relevant to the Signal Regiment is cheerfully accepted and considered for publication.

Managing Signal Corps potential

By MAJ Jeremy Rutledge

The Signal Branch has been inundated with several manning issues within the officer ranks for the past several years. The Signal Regiment has been hard pressed to maintain the operational tempo in two theaters of operation, while fielding several new systems to keep pace with increased demands. And while we've done well enough in these endeavors, we must develop a coherent doctrine for our strategy. The final portion of this "trinity" is to develop the sound and relevant doctrine to support the way we intend to operate.

Nothing new needs to be addressed, but the Signal Regiment should reevaluate its educational requirements - retention - and career progression.

Officer Management has been an issue across the Army, but in recent years even more so for the Signal Regiment. Within the S6 community specifically, it has been especially devastating due to the unique requirements of our leaders to be balanced in technical and leadership skills. In the noncommissioned officer ranks, the experience tends to be proportional to the rank - it is very disproportional for the officers.

One way to reduce the time to gain the experience, without tasking the already overburdened schoolhouse, is to require science or technology undergraduate degrees from our junior leadership.

This ensures that the personnel have a basic understanding of the theory and fundamentals of technology, and negates the training requirement in the basic courses. That time can now be applied to other blocks of instruction. By compelling our junior leadership to be technically competent through specialized degrees or certifications prior to entry into service, we can thereby focus more on the leadership aspect of their military education and development.

The Signal Corps spends untold thousands of dollars per person in training and development of our young and agile leaders, only to lose them to the lure of the private sector.

You can't just promote people early within our branch; they truly have to be "grown" - in every sense of the word. In the same fashion as the way we support the war fighter, we have to prepare our

After almost eight years at war and billions of dollars spent, the military instinctively begins to brace itself for the inevitable draw down. In the face of huge operating costs, how will the Signal Corps retain its relevancy for the next fight? Will the Regiment retain its identity, or find itself doled out piecemeal to the other branches?

leaders now for the next "deployment." Retention could be defined as a bonus, but it could also be taking a vested interest in that service member's career as well. An example could be something such as paying for technical certifications or education, something that easily translates into the corporate world once retired or separated.


By taking a more active personal interest in our greatest commodity, our people, we can improve the regiment and our respect with the other branches.

The final aspect is one that affects everyone at

some point, that of career progression. As we have seen in the Infantry and Armor branches, in order to assure a balanced understanding of maneuver warfare, they require their officers to alternate between assignments in heavy & light units. The Air Defense branch also has the same split, between the HIMAD (long range) and SHORAD (short range). Within the Signal Regiment, either your part of the S6 Community or the Strategic Community.

By alternating between assignment types we would be "sharing" the deployment load more evenly across the regiment, as well as ensuring a more robust developmental curve in the experience level of our leadership. Not to mention several other acknowledged shortcomings within the Regiment, such as the decline in senior mentorship, could also be solved as well.

In the end, it's not about the glass being half full or half empty. I believe it's about what's in the cup that matters the most. We can ensure our relevancy (and fight complacency) to the war fighter, by continuing to manage our educational requirements - retaining experienced leadership - and improving career management.

MAJ Jeremy Rutledge is currently a student in the ILE Class 2010-01. He has been assigned as an S6 for nine of his last 10 years in service. He has served as an S6 at the battalion and brigade levels, in an infantry battalion and as a combined arms battalion observer/controller. MAJ Rutledge received his undergraduate in Computer Science, and is currently working on his master's degree in leadership while attending ILE. 

Making relevant training available worldwide

By Directorate of Training Staff

The Signal Center of Excellence Directorate of Training has made great strides in making relevant, cutting edge training available throughout the Armed Forces and Interagency partners at home and abroad.

The LandWarNet eUniversity has expanded its sphere of influence in the area of on-line training through a local platform whereby resident course students receive superior battle command training and a variety of virtual/PC-based simulators and simulations to assist with equipment operations training.

LandWarNet eUniversity

LWN eU is the Signal Regiment's on-line training capability that supports training for Soldiers anytime, anywhere. This premier on-line training resource provides training materials for the profession-

al development of Army personnel, Joint, Interagency and Multinational students. The web portal consists of two on-line resources: The LandWarNet Portal and the LandWarNet Blackboard Server.

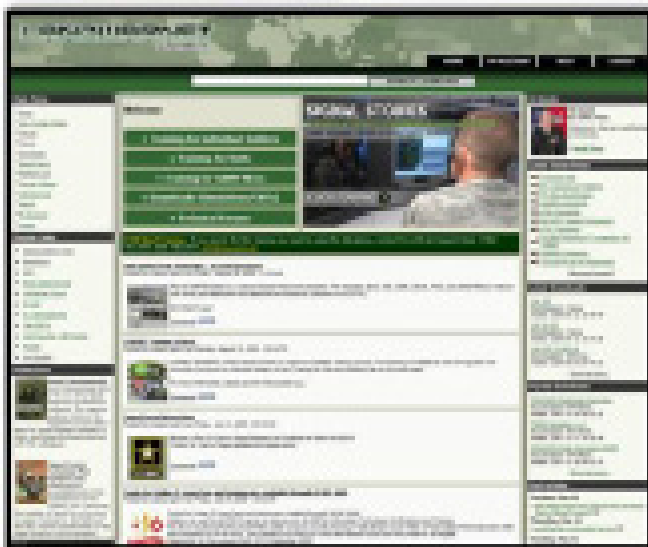
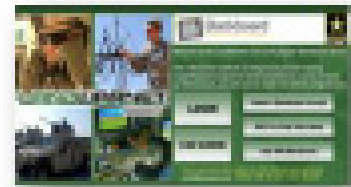
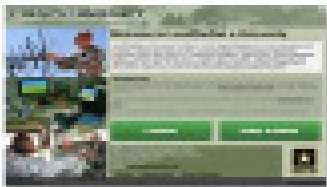
LandWarNet Portal and Blackboard Server

- The LandWarNet portal is the gateway for all LWN eU training resources.
- The LWN eU Blackboard learning content management system hosts Signal courseware and many other training resources

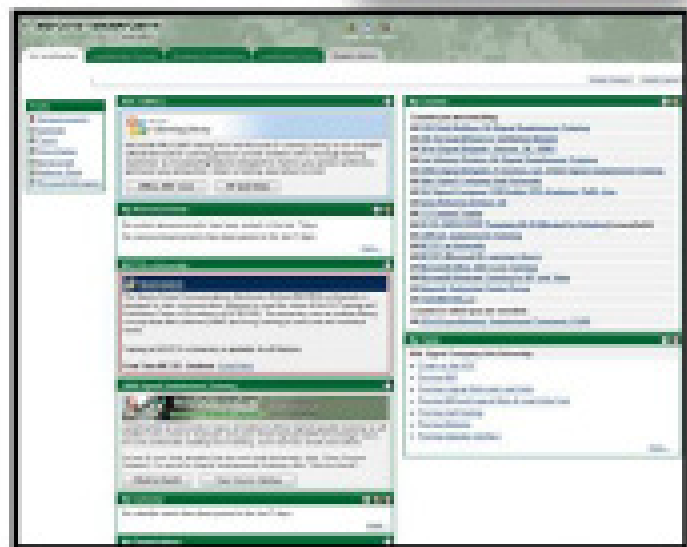
You can access the LWN eU Portal by going to <http://lwn.army.mil> and logging on with your Common Access Card or Army Knowledge Online User Login.

The LandWarNet Portal is the on-line training portal for Soldiers and leaders to access training, train-

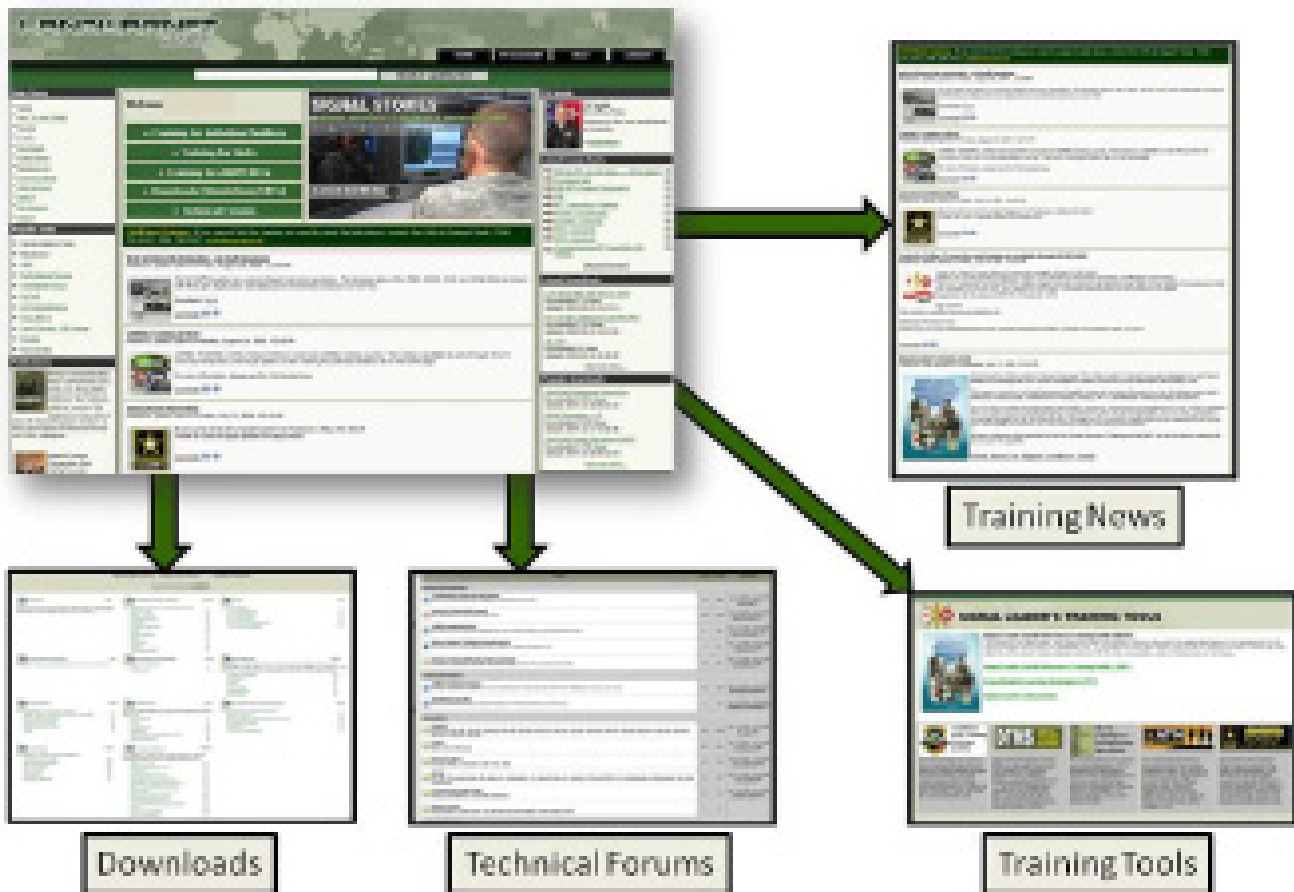
LandWarNet eUniversity



LandWarNet Portal
"Main site"



LWN eU Blackboard
"Courses"



ing support materials, simulations, reference material, forums, and news and information. The LWN eU Portal provides the following services to the total force:

- Central home for the Army to access on-line Signal training.
- Information and links to what's new in Signal digitized training.
- Access to Simulation, CBTs and IMI downloadable training materials.
- Access to Technical Forums for collaborative discussion with peers and subject matter experts.

LWN eU Blackboard contains 90% of all LWN eU training including: MOS producing training, individual sustainment training, unit specific training and commercial and government Information technology training. You can access this training from the LWN eU Portal main menu.

The LWNeU "Training for Individual Soldiers Area" is available for any Soldier or DA Civilian to use. The training area contains Signal MOS training, Signal equipment training, commercial and government Information technology training, and new equipment training for Signal mission support.

The training contained in the Individual Soldier Training material is categorized by equipment assemblage and subject topic. Currently, there are 24 main

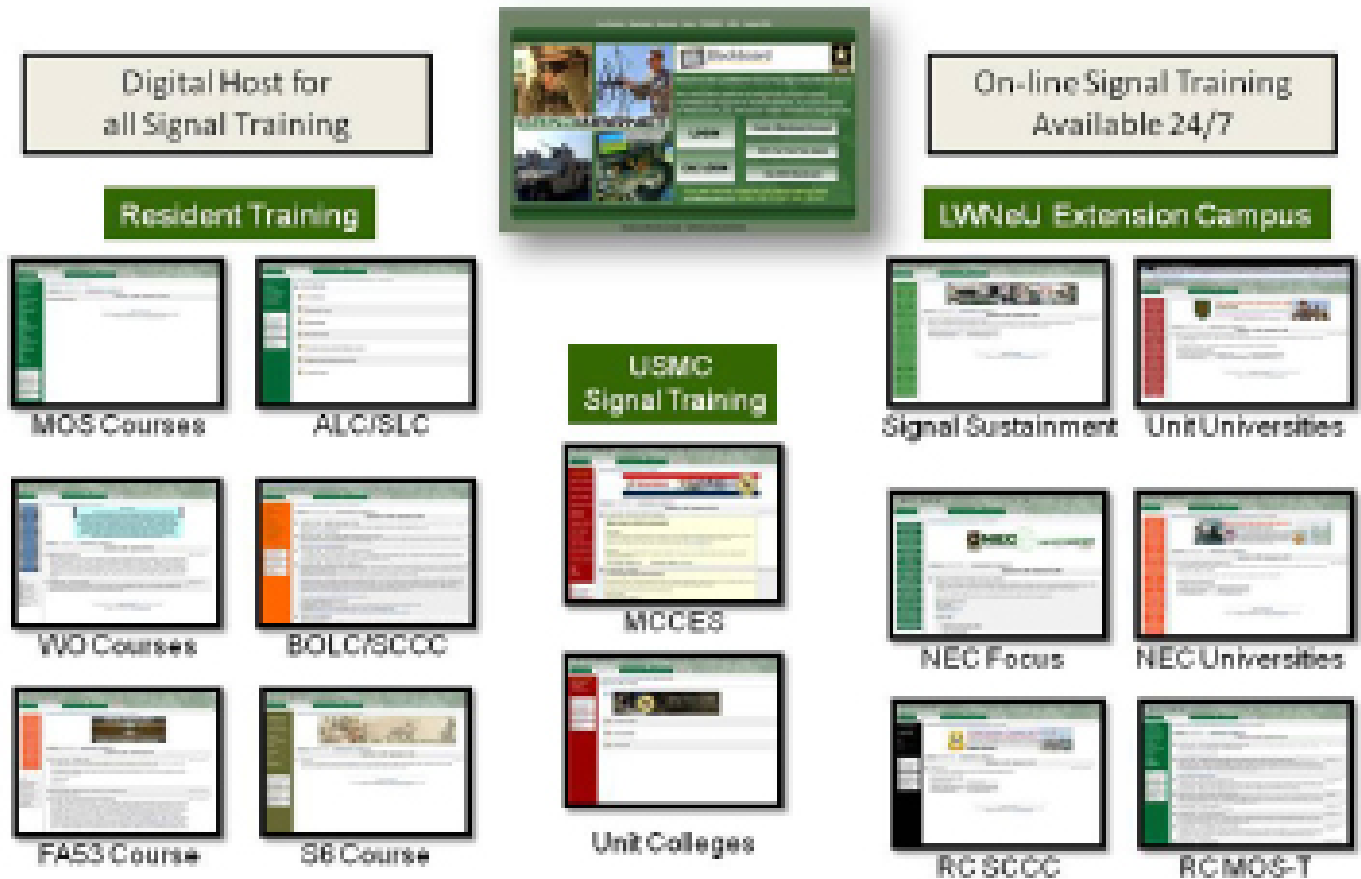
categories of training for you to access. New training is added or updated within these categories every week.

LWNeU creates on-line Unit Universities for units which contain requested courses and training products that are tailored to each unit's training requirements. LWN eU currently has over 500 Unit Universities, supporting signal and NEC activities across the world.

- Unit Universities contain Signal MOS sustainment, information technology, communications equipment and Battle Command System training.
- Your Unit training staff has full control of their University and can also load training created by their Unit onto their University.
- Incorporated into every Unit University are tools for leaders to manage and monitor the progress of their unit's training.
- Click on Training for Units to access your Unit's training page.

It only takes two days for the LWNeU staff to create a Unit University and fully populate it with training for your unit. If your unit does not have a training page - call the LWNeU staff.

(Continued on page 56)



(Continued from page 55)

Battle Command Training

Implementing Battle Command Training at the SIGCoE and Fort Gordon Signal Soldiers and Officers who come to the Signal Center of Excellence for training now receive more hands-on equipment instruction than ever before. This instruction is led by experienced, combat-tested, instructors featuring equipment currently being fielded to operational units in tactically-oriented, strenuous environments that replicate conditions found in the field.

The success of this venture at Fort Gordon can be attributed to the partnerships that have been nurtured among the SIGCoE training departments and the creation of a System of Systems Battle Command Training Facility.

As a result of the local training departments and training support organizations working together and sharing valuable talent and information, the training programs at the

SIGCoE have become more realistic, tactical and technologically challenging for the Signal Soldiers in our armed services.

Over the last two years the Program Managers for Battle Command Equipment and the relationship between the Fort Gordon Training Department and Tactical Battle Command Representatives support has created not only the training requirements, but also a learning environment with the latest go to war equipment and simulations.

The 15th Signal Brigade is the lead for junior enlisted Soldier training. All MOS's receive Battle Command equipment training such as Force XXI Battle Command Brigade and Below. The 25B Soldiers install and configure operating systems, servers, routers and switches necessary to operate in a modern tactical operations center.

During the Modern Matrix Module phase of training, Soldiers integrate Army Battle Command Systems from the ground up in a classroom environment. Soldiers in the 25U MOS receive over 40 hours of training on Battle Command equipment and

enabling Battle Command for the units they will support upon completion of training. Soldiers receive training in classrooms for their individual training on systems, such as FBCB2 and Maneuver Control System. Soldiers validate their training during a Capstone exercise called Mercury Fusion at one of the three FOB's that provide Soldiers with all the tactical communications equipment that they will see in their future assignments. Soldiers install, operate and sustain these systems in an environment similar to those found in Iraq or Afghanistan.

The Regimental Noncommissioned Officer Academy leads the senior enlisted training with realistic, battle-focused training on specific Battle Command systems and the integration of these systems within the Standardized Integrated Command Post Systems, which was recently provided by PM Command Post and Systems Integration. Senior leaders going through the Advanced Leader Course or Senior Leader Course receive the most advanced training available on Battle Command Systems that are currently fielded to Army

units worldwide. This enables our senior enlisted leaders to step directly from training here at Fort Gordon, into an operational unit with minimal equipment training time.

The Leader College for Information Technology has also incorporated realistic Battle Command Systems training into Officer professional development and functional courses. Both departments at the LCIT (442nd Signal Battalion and School of Information Technology) utilize the System of Systems Training Facility to integrate cutting-edge Battle Command training scenarios in resident course instruction. The 442nd Signal Battalion trains initial entry Officers in a newly redesigned Basic Officer Leaders Course, providing them with invaluable training that they can immediately use upon arrival at their first unit of assignment. Training provided includes FBCB2, Harris Radio and the Standardized Integrated Command Post System. The Signal Captains Career Course and S-6 Officers are provided advanced training on Army Battle Command Systems, in a virtualized environment along with an end of course CAPSTONE exercise, featuring the use of green box systems.

The S-6 training is conducted in a classroom, where instruction is provided to students on systems that are virtualized on servers. Machine images of Command Post of the Future, MCS, and FBCB2 are virtualized to provide students with an efficient "white box" system training opportunity. The SIT provides Digital Tactical Operations Center training for Warrant Officers, NCOs and Functional Area 53 and 24 Officers with training on the integration of ABCS.

Training starts with the Military Decision Making Process, a review of the system architecture and signal flow. Students then receive hands-on training on each piece of ABCS equipment in the DTOC, which is followed by the setup and integration of all the systems in the DTOC, from the Battle Command Common Services, to the VOIP phone located in the TOC.

The Soldier's training is validated with the complete setup and functionality of all the ABCS sys-

tems and incorporation of scenario-based outages for the students to troubleshoot.

Fort Gordon training organizations are also able to tie together their training venues through the Fort Gordon Signal Training Network. The STN is currently a closed training network composed of realistic communications links utilizing VLAN's, STT's, EPLRS, Harris radios and Secure Wireless LAN. The network connects the various training areas/classrooms/DTOCs to provide students with a realistic Multi-echelon TOC Centric training environment.

The SIGCoE has also recently worked with PM NETOPS to develop the first Center of Excellence Lightweight Data Interchange Format and Data Products. The creation of an LDIF allows the SIGCoE Training Departments to utilize existing ABCS training assets to connect to war fighters training in the field via the Network Service Center - Training. This will bring the

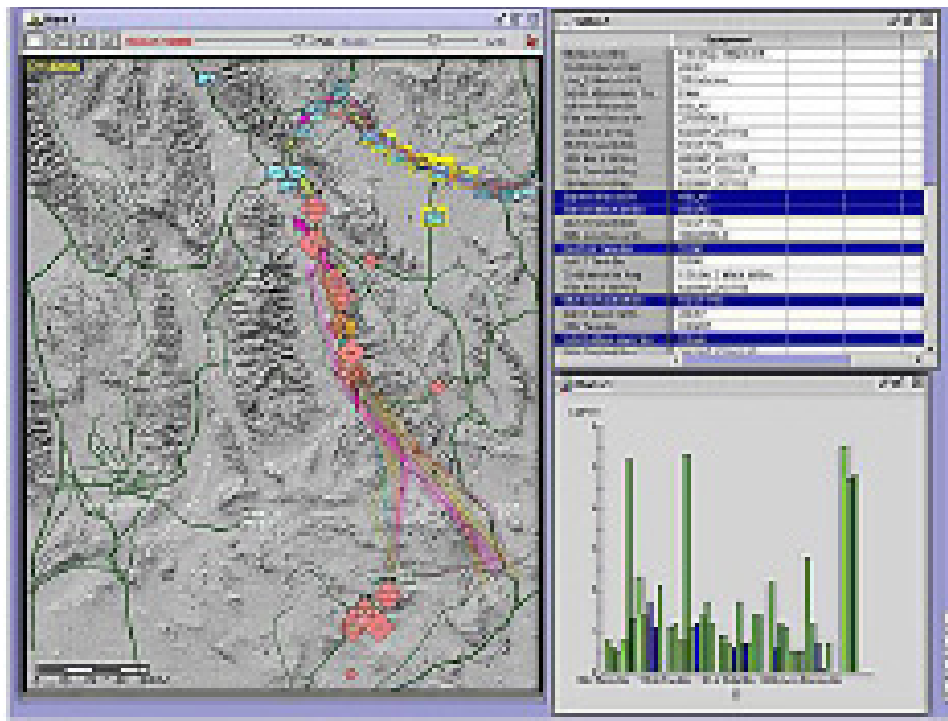
SIGCoE Training Departments one step closer to connecting with units training at the Joint Readiness Training Center, or the National Training Center; making a live, virtual and constructive integrated training environment a reality.

With the realistic environments created here at Fort Gordon's SIGCoE's training programs, Signal Soldiers and Officers are receiving instruction by experienced instructors on the latest equipment that ensures complete readiness for their future assignments.

Virtual/PC-Based Simulators and Simulations

Interactive multimedia instruction greatly enhances and standardizes instruction for Active Component and Reserve Component units throughout the Force when self-development, sustainment, refresher and remedial training are conducted.

(Continued on page 58)



(Continued from page 57)

The following Virtual/PC-based simulators are available via the LWN-eU (<https://lwn.army.mil>) web portal to facilitate communications equipment operations training:

Fielded Simulations

1. WIN-T INC 2
Fielded: JUN 09
Target Audience: 25N10
2. SSS (v3) Transit Cases
Fielded: MAR 09
Target Audience: 25N10, 25F10
3. WIN-T INC 1
Fielded: DEC 08
Target Audience: 25N10, 25F10
4. SSS (v3)
Fielded: JUN 08
Target Audience: 25N10, 25F10
5. Phoenix Upgrades (Alpha Version)
Fielded: JAN 08
Target Audience: 25S10
6. Phoenix Upgrades (Bravo Version)
Fielded: JAN 08
Target Audience: 25S10
7. JNN Upgrades v2 (Spiral 5-7)
Fielded: DEC 07
Target Audience: 25N10
8. STT Upgrades JNN-N v2 (Spiral 5-7)
Fielded: DEC 07
Target Audience: 25Q10, 25S10
9. CPN Upgrades JNN-N v2 (Spiral 5-7)
Fielded: DEC 07
Target Audience: 25B10
10. Baseband Upgrades (Spiral 5-7)
Fielded: DEC 07
Target Audience: 25N10
11. JNN-N v3 Upgrade Lot 9 (Spiral 8)
Fielded: DEC 07
Target Audience: 25N10, 25B10
12. CPN Upgrades Lot 9 (Spiral 8)
Fielded: DEC 07
Target Audience: 25B10
13. JNN-N v3 Baseband Upgrades Lot 9 (Spiral 8)
Fielded: DEC 07
Target Audience: 25N10
14. AN/TSC- 85/93
Fielded: MAY 07
Target Audience: 25S10
15. Phoenix (Version A)
Fielded: APR 07
Target Audience: 25S10
16. LAN/WAN
Fielded: APR 07
Target Audience: 25B30 TATS-C, C, F, L, P, Q, S, U, W, 250N, 251A, 53A, 25A LT/CPT
17. SATCOM Hub Upgrades (S 5-7)
Fielded: MAR 07
Target Audience: 25S10
18. JNTC-S- INC 2
Fielded: FEB 06
Target Audience: 25N10, 25B10
19. JNN (S 1)
Fielded: OCT 05
Target Audience: 25N10
20. JNN-1 (Spiral 5-7)
Fielded: OCT 05
Target Audience: 25B10
21. JNN-1 (Spiral 5-7)
Fielded: OCT 05
Target Audience: 25Q10
22. DTOC
Fielded: OCT 05
Target Audience: 25B10
23. TIMS (ISYSCON)
Fielded: OCT 05
Target Audience: 25B10
24. HCLOS
Fielded: OCT 05
Target Audience: 25Q10
25. GSC-52
Fielded: JAN 04
Target Audience: 25S10
26. BSN
Fielded: OCT 04
Target Audience: 25F10, Q10, P10
27. FBCB2
Fielded: OCT 03
Target Audience: 25U
28. TRC-173
Fielded: NOV 01
Target Audience: 25P10, Q10
29. S6 Staff Simulation
Fielded: : AUG 09
Target Audience: 25A, FA53, 254A, 250N, 25U50
30. Nodal Network Simulation
Fielded: APR 10
Target Audience: 25B, 25N, 25Q, 25S

For more information on the status of virtual/PC-based simulator training products, contact Mr. Patrick Baker, chief, Digital Training Division, DOT at DSN 780-0221 or commercial at (706) 791-0221.



On-line Training Site
Dedicated to Your Unit

Organized by MOS

Organized by Assemblage

The screenshot shows the LANDWARNET eUniversity website. On the left is a vertical navigation menu with buttons for various training categories. In the center, a large arrow labeled "Training Categories" points to a grid of 30 buttons, each representing a specific training category. The grid is organized into three columns and ten rows.

IA Training	JNN	BVTC
COMSEC	Swf / Multiplex	Spectrum Manager
IT/Networking	Basic Electronics	Data Tools
MeLL	Fiber/Cable/Wire	ISYSCON v4
WIN-T Gateway	Battle Command	IID Defeat
Tactical Radios	SKL Training	External Links
Satellite Systems	Simulations/CBTs	Army eLearning
Multichannel Sys.	Logistics Info Sys	MOS Training



ACRONYM QuickScan

BSN - Brigade Subscriber Node
BCCS - Battle Command Common Services
BVTC - Battlefield Video-Teleconferencing Center
CAC-T - Combined Arms Center - Training
CBT - Computer Based Training
CPOF - Command Post of the Future
COMSEC - Communications Security
CPN - Command Post Node
DTOC - Division Tactical Operations Center
FBCB2 - Force XXI Battle Command, Brigade-and-Below
GSC - Ground Station Control
HCLOS - High Capacity Line of Site
IA - Information Assurance
IMI - Interactive Multimedia Instruction
JNN - Joint Network Node
JNN-N - Joint Network Node-Network

JNTC-S - Joint Network Transport Capability Spiral
LAN/WAN - Local Area Network/Wide Area Network
LLC - Lifelong Learning Center
LWN eU - LandWarNet eUniversity
MCS - Maneuver Control System
MOS - Military Occupation Skill
NEC - Network Enterprise Center
SATCOM Hub - Satellite Communications Hub
SIM - Simulator/Simulation
SSS - Single Shelter Switch
STT - Satellite Transportable Terminal
TIMS (ISYSCON) - Tactical Internet Management System
TRC - Tactical Radio Communications
VOIP - Voice Over Internet Protocol
WIN-T - Warfighter Information Network- Tactical

Information Grid, LandWarNet. LandWarNet is the instrument that enables, enhances, amplifies, and broadens mission command and other war fighting functions.

Much more than just a conduit for information, LandWarNet instantaneously projects the commander's presence – through voice, video, and data – throughout their areas of operation. For this reason the network should always be viewed as a commander's asset. It should always be understood that the network is owned by the operational commander and installed, operated, maintained and defended by signal organizations and personnel. It is incumbent upon all signal commanders, signal staff and every signal support organization to keep the engineering, installation, operation, maintenance, and defense of the network aligned with and in full support of the operational maneuver chain of command.

LandWarNet, as FM 6-02 makes clear, is the primary capability by which the Signal Corps supports Army operations. It is not just a continental United States network, nor is it essentially an outside the continental United States network. It is simply the Army's portion of the GIG. It is the Army's portion of the Commander, U.S. Strategic Command's worldwide networking capability and therefore supports both the generating force and the operational Army at all points on the globe where the Army operates. LandWarNet is an operational asset to CCDRs. In this light, signal operations, ultimately, support the CCDRs, for signal operations are largely defined by the operation and defense of the Army's portion of the CCDRs' network – the GIG.

Through the installation, operation, maintenance, and defense of LandWarNet, the Signal Corps provides network-enabled capabilities to operational maneuver commanders at each echelon and, by extension, to each of the CCDRs, to CDRUSSTRATCOM, and to the Commander in Chief.

Network-Enabled Operations

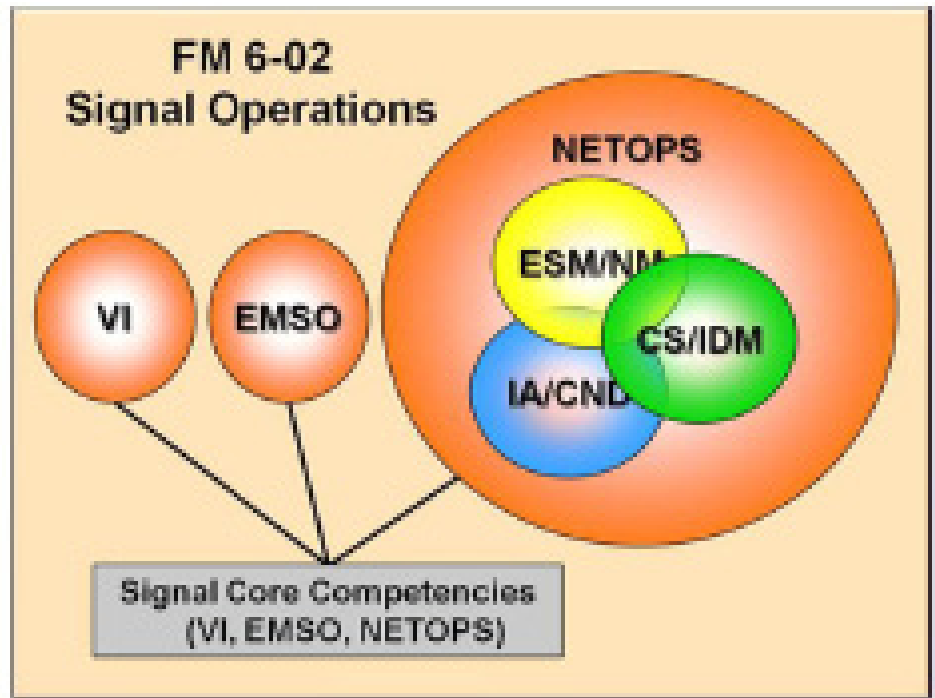


Figure 2 Signal Core Competencies

Against the backdrop of this global operational context, FM 6-02 provides a high-level overview of the framework of signal support. It describes Signal Regiment's core competencies and its support to the Army Modular Force, either via capabilities embedded within maneuver units or through pooled resources from which requiring organizations may draw. It explains the expeditionary tenets that guide signal support, emphasizing that signal operations enable a range of operations –

- Operational maneuver from strategic distances.
- Shaping and entry operations.
- Decisive maneuver (especially, direct attack at decisive points).
- Simultaneous, distributed operations.
- Continuous operations and controlled operational tempo.
- Stability operations.
- Intra-theater operational maneuver.
- Distributed support and sustainment.

All these are core Army force operating capabilities. All of them are network-enabled. Most are network dependent.

This is why the network operations "framework" must be

aligned to the operational maneuver chain of command.

For the purpose of the network is to provide a common operational picture to all echelons that informs and enables mission command and supports the operational maneuver chain of command as these operations are executed – across all operational phases.

FM 6-02 documents how the Signal Corps is employed across the full spectrum of operations. To do this, the Joint Phasing Model from JP 3-0 is utilized to demonstrate the application of signal capabilities by phases.

Figure 1 illustrates this paradigm of mapping signal capabilities to the phases of an operation. It shows, for example, that main and supporting efforts differ between the earlier, expeditionary phases, and the latter phases which tend to be more campaign oriented. It shows that, as an operation progresses, the supported NETOPS commander changes according to phase. Moreover, it indicates the requirements-driven evolution of the NETOPS framework as the operation progresses by phase.

(Continued on page 62)

The Great Raid

Book Review

By MAJ William McDowell

The Great Raid by William B. Breuer. New York: J. Willey & Sons, 1994, 258 pp., Potomac Books, 2009, paperback: \$11.90, hardcover: \$25.80 on Amazon.com. William B. Breuer is an author of thirty-four books, focusing on World War II, the CIA, the FBI, and the Korean War.

The Great Raid provides an excellent tactical study of a daring World War II raid on a prisoner of war (POW) camp executed on January 29, 1945 by 121 men from the 6th Ranger Battalion and an 80 man guerrilla force commanded by LTC Henry A. Mucci. As American forces were retaking the Philippines in January 1945, intelligence reports indicated that Japanese forces were going to execute the remaining prisoners of war being held at the Cabanatuan prison camp. LTC Mucci and his Rangers were charged with infiltrating 30 miles of enemy controlled territory

without being detected, executing a raid on a numerically superior and well armed force at Cabanatuan, rescuing the 511 POW's, many of whom were weak, injured, and immobile from nearly three years of captivity, and evacuating them by any means available. LTC Mucci's raiding force was able to plan, execute, and complete this mission within three days of receiving the mission order.

William Breuer begins setting the stage and conditions for the raid by describing the situation in Washington D.C. and the Philippines on 14 December 1941, just one week after the bombing of Pearl Harbor and the Japanese invasion of the Philippines. The United States finds itself in the position of having to recover from these devastating Japanese surprise attacks, develop a response, and somehow find a way to support GEN Douglas MacArthur's overmatched forces in the Philippines. GEN MacArthur's forces are desperately trying to defend the Philippines with antiquated weapons, poor supplies of ammunition and rations, cut off from resupply and support from the United States and in

Different battle orders dictate new doctrine

(Continued from page 61)

Core Competencies

Each of the regiment's core competencies, NETOPS, Visual Information Operations, and Electromagnetic Spectrum Management Operations are introduced in FM 6-02. An overview of the purpose for which these capabilities are employed is provided along with a synopsis of associated organizational roles and responsibilities. (Each of these core competencies is more extensively covered in supporting doctrine: FM 6-02.71, Network Operations; FM 6-02.40, Visual Information Operations; and FM 6-02.71, Army Electromagnetic Spectrum Operations). Figure 2 illustrates the Signal Regiment's core competencies.

The Tactical Environment

FM 6-02 also illuminates the strategy of signal operations within the tactical domain. It focuses on signal support to the brigade combat team and expeditionary signal battalion support to the larger force. Linking current operations to ongoing transformation, the FM provides an overview of current and planned communications and information systems programs of record that support or enable BCT operations. It explains how the S-6 section and the brigade signal companies are organized and sets forth the ESB's role as a theater-level "pooled" asset in providing signal support to Army operations. The ESB's primary communications and information systems capabilities are previewed and a look at expeditionary signal companies is included.

Appendices to FM 6-02 walk readers through signal operations in terms of mission command, covering specifically identified, network-enabled, mission command essential capabilities; acquaints them with heretofore

unrecognized (doctrinally) signal capabilities furnished to combatant commanders by the National Guard for purposes of homeland defense and civil support missions; and examines the on-going Army transformation from a signal operations point of view.

FM 6-02 is emerging at a critical time. Its publication coincides with the latest revisions of key Army and joint doctrine. It is up to date on recent lessons learned, the current threat environment, and the latest fielded capabilities. Moreover, as the Signal Corps reaches the milestone of its 150th anniversary, FM 6-02 demonstrates that the Signal Corps has never been more relevant, more necessary, or more capable.

Mr. Tony Howard is employed by RLM Communications, Inc. supporting the Doctrine Section of the Signal Center of Excellence, Capabilities Development and Integration Directorate. He is a retired Army sergeant first class having served for more than 23 years in Signal units at echelons above and below corps.



ACRONYM QuickScan

BCT - Brigade Combat Team
CONUS - Continental United States
CCDR - Combatant Commander
CDRUSSTRATCOM - Commander U.S. Strategic Command
COP - Common Operational Picture
EMSO - Electromagnetic Spectrum management Operations
ESB - Expeditionary Signal Battalion
FM - Field Manual
GIG - Global Information Grid
NETOPS - Network Operations
OCONUS - Outside the Continental United States
VI - visual Information

the face of a large, well trained and well equipped Japanese invasion force. GEN MacArthur is ordered to leave the Philippines for Australia and shortly thereafter, the American and Filipino forces are forced to surrender. Using interviews from survivors, William Breuer lays out the conditions of the fighting, the brutality of Japanese forces, and the brave resistance of American service members such as MAJ Alvin C. Poweleit and CPT Sidney Stewart.

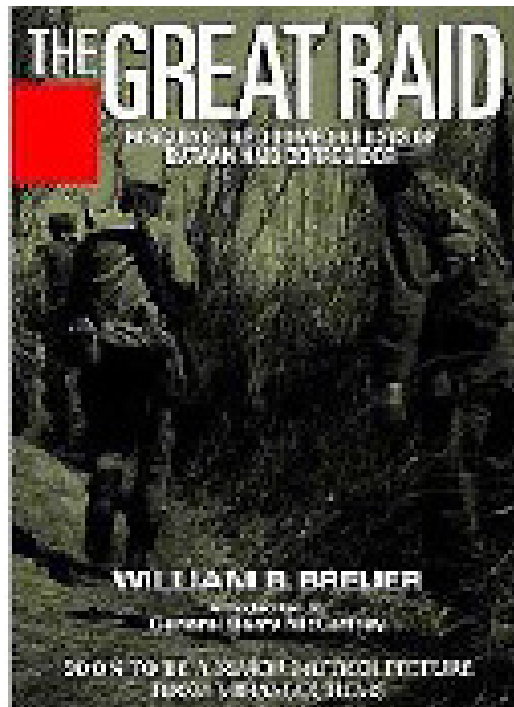
Throughout the book, William Breuer details the brutality and harsh conditions the POW's in the Philippines had to endure. He also details successful resistance techniques employed by the POW's. An example of this included their efforts to maintain situational awareness. They took advantage of opportunities unwittingly provided by the Japanese that allowed them to gain access to radios and parts needed to build additional radio sets. This contact with the outside world was a way to sustain the hope and determination required to survive. Along with the plight of the POW's, William Breuer details the efforts of the Philippine underground to support the POW's.

Through a diligent and well coordinated effort the underground successfully gets small amounts of extra food, medicine, and clothing into the Cabanatuan camp that prove helpful to sustaining the remaining POW's. William Breuer also provides a description of the resistance to Japanese occupation through guerrilla warfare efforts by outfits like the Alamo Scouts and other efforts lead by Americans that either escaped capture at Bataan or Corregidor or were inserted after the surrender. William Breuer uses this to set the stage for the 6th Ranger Battalion's raid.

In the final chapters of *The Great Raid*, William Breuer provides an account of LTC Henry Mucci and the 6th Ranger Battalion's effort to move through 30 miles of enemy patrolled terrain without detection, coordinate reconnaissance efforts critical to forming an assault plan, coordinate efforts to seal off the camp from reinforcement, and get 511 weak and wounded POW's to safety before Japanese forces can reinforce the camp. In a near minute by minute account of events, William

Breuer provides great detail in outlining how the Rangers, the Alamo Scouts, and Filipino guerillas executed this daring raid and brought the POW's at Cabanatuan home after surviving the Bataan Death March and nearly three years of brutal captivity.

I recommend that this book be a part of any leader's reading list. *The Great Raid* tells the story of a successful special operations mission. It offers detailed lessons and examples applicable to all soldiers and those that lead them. Given the technological advances in weapons, soldier equipment (body armor, night vision, radios....), infiltration capabilities, and C4ISR that we have today, this book provides an invaluable insight into what incredible feats the American Soldier is capable of even when these modern advantages are not available. It also provides an insight into what the code of conduct, the current Army values, and the Soldier's warrior spirit are founded on and the extent to which the American Soldier is willing to go to aid his fellow warrior. These values were not only understood by the men who suffered on the Bataan



Death March, the survivors at Cabanatuan, the guerilla and resistance fighters, and the men of the 6th Ranger Battalion, but all these values were put on the line and into practice in the most extreme of situations well before they were written down and taught. As you read this book you will gain an invaluable understanding of what being a leader is all about and what leadership, a sense of duty, and determination can accomplish.

MAJ William C. McDowell is currently a student at the Naval Postgraduate School in Monterey, Calif. MAJ McDowell has served in the 82nd Airborne Division, the 35th Signal Brigade, and JSOC. MAJ McDowell has a bachelor's degree in Criminology from the University of South Florida and is currently working on a master's degree in Defense Analysis. MAJ McDowell has completed the Infantry Officers Basic Course, the Infantry Captains Career Course, Combined Arms and Services Staff School, Airborne School, and Ranger School. 🇺🇸

Army Communicator Magazine book review guidance: A book review's format is narrative, preceded by a paragraph stating the book's title, its author, city where published, publisher, year published, page count, price per copy, paperback or hardback, and sources if the book isn't readily available at the local bookstore. The publisher's website address is optional. Include two or three sentences of biographical information on the reviewer at the review's end: present position, highlights of previous assignments, military and civilian education. Word count should not exceed 1,000 words.

Agencies working jointly to field technology

Joint Tactical Radio System/ Airborne-Maritime-Fixed Site

The Joint Tactical Radio System AMF program currently is on track to meet Joint Warfighters Requirements.

Significant actions for AMF this past year include the conduct of Platform Integration Working Groups, Airborne testing of the Soldier Radio Waveform, the AMF Critical Design Review, beginning the development of the Capabilities Production Document, ongoing test and evaluation development with the prime contractor Lockheed Martin, and the establishment of a JTRS Airborne-Maritime users sub-working group. Work on the CPD intensified during the third Airborne PIWG, beginning with the formation of a review meeting and the formation of a CDP development working group. The CPD working group's goal is to provide a final CPD for Joint Requirements Oversight Council consideration by 2011.

Partners in the working group include representatives from several agencies and all of the U.S. military branches.

TCM-TR was designated responsible for writing the AMF CPD with participation from representatives from JPEO, SPAWAR, GCIC/RINR, SigCoE-AIMD. The agreed strategy for writing the CDP is to develop a single baseline or core CPD with inclusive annexes for maritime and small airborne radios with further development of service specific appendices as needed.

JTRS Ground Mobile Radio

The JTRS GMR program is ending its engineering and manufacturing development phase this year with the testing of the Engineering Design Model radios. The first technical test for the system was the Production Qualification Test. This test validated compliance with the contractual specification requirements by the appropriate method of test, demonstration, or analysis. These are system-level tests designed to qualify the GMR to move to operational testing. Dates for the test were 9 May to 10 June 2010.

Next in line was the Systems Functional Validation Test. SFV is a major system

level test event used for requirements verification of the JTR System. Lower level test results may be used when applicable to satisfy system level requirements. This is a critical event that demonstrates the functionality of the EDM JTR sets and the final increments of each Software Product Configuration Item. Dates for the test were March to 10 May. Once the GMR completed PQT and SFV, it went through a Systems Integration Test. SIT is a developmental test to validate critical technical parameters, a precursor to the Limited User Test. Think of this as a risk reduction test prior to the LUT. Dates for the test were June to August 2010.

Once the system has completed all of the technical tests, the next tests are the Operational Tests. The first such test is the LUT. LUT will help determine the operational effectiveness, suitability, and survivability of the JTRS GMR and the associated network management system to support a Milestone "C" Low Rate Initial Production decision and will support an OT to determine the potential operational effectiveness and suitability, as well as Risk Burn Down for a Multi-Service Operational Test and Evaluation. Dates for the test are October to December 2010.

Following after the LUT is the MS-C decision in February 2011. The LRIP 1 design will be created from the EDM design, based on potential issues discovered during the various technical tests. This decision will give the official approval to move from the engineering and manufacturing development phase into the production and deployment Phase.

JTRS Handheld-Manpack Small Form Fit

The Joint Tactical Radio System has moved a few steps closer to delivering its first networking radios to the force. In fact, during the U.S. Army Brigade Combat Team Network Integration Exercise held in July at White Sands Missile Range, New Mexico, the JTRS Handheld, Manpack, Small Form Fit Program demonstrated they are even prepared to make giant leaps. GEN Peter Chiarelli, the Army Vice Chief of Staff, visited the exercise site 13 July and was excited by the progress.

During a speaking event in Washington on 15 July GEN Chiarelli spoke about the exercise. He said the Rifleman Radio, using the Soldier Radio Waveform, was able to talk out to a range of 35 to 50 kilometers. It was "absolutely amazing," Chiarelli said. "And that's not just talking, that's passing data." The Rifleman Radio (AN/PRC-154) is designed specifically to provide individual Soldiers within a squad, secure multi-hop voice communications for fire and maneuver. The radio also provides beaconing of Position Location Information used to enhance individual situational awareness. The Rifleman Radio brings dismounted Soldiers into the network thus enhancing the on-the-move battle command capabilities for current and future combat units. Currently, Infantry Soldiers and their leaders are operating as part of a networked-enabled force but do not have the resources to conduct operations as part of that force. The lack of intra-squad communications and situational awareness is a significant gap within the BCTs. RR represents a significant step forward in filling that gap by providing them a voice and data networking capability. Currently, the JTRS HMS program is preparing for a RR Verification of Corrected Deficiencies exercise to address shortfalls identified in the Limited User Test conducted April 2009. The performance of the RR at the BCT Network Integration Exercise in July provides much needed momentum and enthusiasm for the VCD event currently scheduled from January through February 2010 at Fort Benning, Ga. The results of the VCD will be included in the Defense Acquisition Board's documentation for review to be used in determining the RR Milestone "C" decision. Although RR seemed to turn the most heads during the BCT Network Integration Exercise, overall the exercise successfully demonstrated an early look at an integrated BCT Network operating across a three tiered architecture (Terrestrial, Aerial and Space layers).

For the JTRS HMS program however, the exercise also provided an opportunity to showcase its next stand-alone product; the JTRS Manpack (AN/PRC-155) Radio. The JTRS Manpack is a two-channel, software-defined radio that provides

Warfighters the ability to operate in tactical voice and data networks simultaneously. The radio operates and provides route and retransmission of voice and data for both legacy (SINCGARS, UHF SATCOM) and advanced networking waveforms (SRW, Multi-User Objective System [MUOS]). It also provides geographically separated Warfighters the ability to pass critical battle command information to the appropriate echelons of command to enable timely tactical actions.

The networked line-of-sight and beyond line-of-sight (UHF SATCOM, MUOS) capability of the Manpack helps mitigate the terrain troubles associated with the full Spectrum of conflict for joint warfighters involved in mounted and dismounted combat operations. The Manpack is an essential element in extending the tactical-level network, vertically and horizontally, while also providing the beyond line-of-sight capability in one box. The JTRS Manpack CPD is currently at TRADOC for final validation prior to entering Army Requirements Oversight Council staffing. AROC staffing, as part of the Joint Capabilities Integration and Development System validation and approval process, is a critical step toward gaining final Joint Requirements Oversight Council approval. A JROC approved Manpack CPD is required for a Milestone "C" decision which will authorize the HMS program to award a contract for Low Rate Initial Production radios. The delivery of the RR and the Manpack to the force represents the initial move to connect dismounted Soldiers on the battlefield in a net-centric way that supports the Department of Defense's movement toward network-centric operations and warfare at all tactical levels. It also signifies the Department's continued commitment to support disadvantaged Warfighters. The success of both radios during the BCT Network Integration Exercise highlights the flexibility and adaptability of JTRS products to support extension of the Network from the lower tactical edge to the appropriate echelons of command.

JTRS Network Enterprise Domain

The Brigade Combat Team Network Maturation Demonstration took place at White Sands Missile Range N.M., 12-15 July 2010. The purpose of the demonstration, directed by the Vice Chief-of-Staff of the Army was to leverage the Army's development of the Network Integration Kit Sensors and Unmanned Systems, and past integration initiatives to illustrate the ability to connect and integrate the tactical

edge Soldier and systems into the JTRS (Rifleman Radio, GMR, HMS), WIN-T Increment 2, and Command Post of the Future-enabled network.

The demonstration was conducted in both desert and mountain environments at WSMR to replicate the operational environment that challenges and stresses network connectivity in Afghanistan. There were more than 100 people involved in the BCT Integration Demonstration. Soldiers from the Army Evaluation Task Force represented two platoons during company level exercises and staffed Tactical Operations Centers. The AETF was supported by civilian white coats (engineers, data collectors, and technicians), who all played various roles during the exercise. The planning, coordinating and execution of the overall exercise, was led by cadre from ASA (ATL), focusing on the following objectives:

- 1) Demonstrate the ability to extend (surge) the network (sensors and Soldiers systems-voice and data) by adding an aerial layer
- 2) Connect Soldiers Leaders with Controller Sensors within individual platoons and between geographically dispersed platoons operating in complex terrain - maintaining connectivity to Company Command Post and BN TOC
- 3) Provide the Company Command Post with capabilities found at Battalion level
- 4) Demonstrate Battle Command Capabilities (Collaboration - CHAT, WHITEBOARD and Limited office products to support the TDMP and mission execution - orders)
- 5) Demonstrate the maturation of the WNW and SRW networks (JTRS GMR/ WNW, JTRS HMS/SRW - Rifleman Radios, Manpacks and SFF-B) surrogates
- 6) Demonstrate connectivity and reach back (JTRS radios) to WIN-T Increment 2 at the battalion TOC and at the company command post.

A total of seven tactical vignettes were executed during the demonstration. The vignettes exercised various use cases for the Soldier Radio Waveform (SRW) waveform in ground and aerial layer scenarios, using the Rifleman and HMS Radios for Soldier and sensor connectivity, and for range extension. The increment 1, NIK system, consisting of the GMR radio (SRW, WNW, and SINCGARS waveforms), the ICS, and the FBCB2 BC platform, was showcased and rigorously exercised during the demo to provide vehicle-to-vehicle node WNW connectivity, to integrate Soldiers and unmanned systems and sensors, provide a unified COP for improved Situational

Awareness/Understanding, and as an inject point into the WIN-T network via the Soldier's Network Extension. Operations within the vignettes followed a tiered capability approach - which increased and extended network complexity by adding additional layers (example: Aerial layer, company command post, etc), executed across tier 1 through tier 3 operations. The majority of the operational vignettes and threads worked properly, but there were some problem areas. Some of the problems were due to the ways the waveforms and capabilities were exercised, which were not indicative of how these systems would be leveraged in a true tactical environment.

Limited data (PLI, still images, C2 (from FBCB2, CPOF, LW ...etc) and voice traversed the network, the performance analysis of WNW and SRW was not thoroughly analyzed, the SRW waveform may have been excessively used in overly optimistic scenarios, and the networks were not planned, optimized, and utilized to simulate true tactical conditions.

Overall, the test participants seemed very pleased and expressed enthusiasm for the development of these fully integrated capabilities. The exercise was an overwhelming success, based upon the creative use cases to support the integrated network based on random user feedback. However, the demonstration could have been even better by involving the entire stakeholder community and by exploring more operationally representative use cases, end-to-end architecture options, along with more in-depth test metrics and performance analysis. The BCT Network Maturation Demo was a very worthwhile exercise that highlighted promise in future integration and capability development endeavors. The entire integration effort is moving in the right direction.

Multi-User Objective System

MUOS, the replacement for Legacy Ultra High Frequency Satellite Communications, consists of five geosynchronous satellites that will increase UHF SATCOM capabilities worldwide. With a total system throughput of 40MB, this new system will allow for as many as 16,000 simultaneous accesses (normalized at 2.4K). MUOS can also support data rates up to 64kbps with reach back to the WIN-T network and GIG via the TELEPORT sites, thus allowing for networking on-the-move. Current IOC is set for the first quarter of FY-12.

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Positioning, Navigation and Timing Capability

PNT is a Joint capability comprised of three distinct components; positioning (the ability to accurately and precisely determine one's location and orientation), navigation (the ability to determine current and desired position) and timing (the ability to acquire and maintain accurate and precise time from a standard). The primary provider of PNT capability for the Army is the Global Positioning System. There are a number of other means for obtaining PNT information such as map and compass, Inertial Navigation Systems, and terrestrial Radio Frequency navigation aids. However, GPS has become the most commonly used system for combat operations as well as the day-to-day lives of Soldiers. The GPS system is comprised of three separate segments: space, control, and user equipment. These segments require close synchronization and integration for the GPS to provide reliable PNT information to both Department of Defense and civilian end-users. The primary difference between the civilian and DoD users is the use of encryption to enable a security architecture that provides electronic protection features (anti-jam, anti-spoof) and in the near future will enable Over-The-Air Key Distribution and Over-The-Air Re-Key. GPS User Equipment for Army forces has evolved significantly over the last several years from the 15-pound man-packs of the 1980's to a much improved one-pound Defense Advanced GPS Receiver for stand-alone operations and Ground-Based GPS Receiver Application Module for embedded applications.

There are a number of initiatives currently being supported

by TCM-TR to improve GPS user equipment and to assure access to PNT information when access to GPS is degraded or denied. Micro-DAGR is a material solution being implemented through the Rapid Equipping Force in response to Operational Needs Statement 09-9151. The Micro-DAGR provides streamlined functions making it simpler to use than DAGR. It can be carried in a breast pocket, using a lanyard, or mounted on the wrist. Other features include color display, moving maps, and digital compass. Operational Testing is expected to be completed by September 2010 and 150 devices provided to OEF theater in December 2010. The Tactical Assured GPS Regional is PNT Assurance capability which will augment PNT information delivery from space-based GPS signals to assure unhindered access to users in RF constrained environments. An Initial Capabilities Document was approved April 2010, and currently, a Material Development Decision is being pursued. Military GPS User Equipment is GPS-User Equipment that will receive the new Military-Code signal from space. The Capability Development Document is being prepared for a Milestone "A" Decision in March 2011.

Ultra High Frequency Tactical Satellite

UHF TACSAT is progressing toward implementing Integrated Waveform this fiscal year. IW will be the replacement to Demand Assigned Multiple Access, providing up to three times the voice networks on a channel as DAMA

Project manager completes marathon

By Stephen Larsen

FORT MONMOUTH, N.J. - In January 2009, COL Jeff Mockensturm, Defense Communications and Army Transmission Systems project manager, implemented a program called "Choose Health" to encourage his DCATS workforce to turn the TV off and instead take a walk or to eat more nutritious foods and exercise. On 2 May 2010, COL Mockensturm showed he practices what he preaches by running in - and completing - the New Jersey Marathon in sweltering 90 degree heat with 78 percent humidity.



COL Jeff Mockensturm, Defense Communications and Army Transmission Systems project manager, competes in the New Jersey Marathon.

Mockensturm said he was inspired to train for and run in the New Jersey Marathon - his first - by the examples of Army leaders, such as GEN David Petraeus,

GEN Stanley McChrystal, GEN (RET) Barry McCaffrey and Dr. Malcolm O'Neill.

"Also, at a recent acquisition conference, I ran into two other colonels, also PMs (project managers), who have been running marathons," said COL Mockensturm. "We're all in our mid- to late-40s, travel all over the world, have busy schedules... I thought if they can do it, maybe I should go for it, too."

COL Mockensturm started training last November, following the Intermediate I marathon training schedule developed by Hal Higdon, the renowned runner and writer for Runner's World magazine. "In preparation, I ran about 600 miles total, including two 20-mile distances and one 18-mile distance in the past few weeks," said Mockensturm.

The New Jersey Marathon course, 26 miles and 385 yards long, began and ended on the boardwalk in Long Branch and looped the approximately 10,000 runners - 2,300 full marathon runners and 7,700 half-marathon runners - twice through the towns of Long Branch, Monmouth Beach and Oceanport. And while experts say the ideal conditions for running a marathon are cool temperatures of approximately 55 degrees with overcast skies, the temperature on the day of the New Jersey Marathon started in the 80s and reached 90 degrees very quickly under a blistering sun.

provides. In addition, due to the increase in available bandwidth through the use of Carrier Phase Modulation, data rates for passing data will increase, providing up to 56 kilobits per second, based on demand, look angles, and available bandwidth when others are not using their resources. The normal at this time will be approximately 19.2 kbps vice the current 2.4 kbps of DAMA and the 16 kbps of a dedicated 25-kHz satellite channel. Operational Demonstrations have been conducted on IW Phase I over the past year, and the user feedback from all services is outstanding. Ease of use is their number one accolade for IW.

In addition, the forced use of Mixed Excitation Linear Predictive Voice Encoder at 2.4 kbps increases the clarity of understanding conversations to the point all are enthusiastic about employing IW. Phase I is made even easier due to the preplanned, preassigned networks on the channels. It allows for limited input on behalf of the operator in programming and access to the satellite is well within fifteen seconds of bringing up the radios.

The final OPDEMO is scheduled for 26-30 Jul 10 at MacDill Air Force Base with many Army units throughout the United States and Europe participating. Upgrades to the radios are being closely monitored, by serial number,

within the Army. Software is available through many sources to include the IW Help Desk, <http://arpassoc.com/support>.

Phase II IW should be available approximately one year after implementation of Phase I. Phase II will allow even more access to the limited resources on the satellites through preplanned, on demand network, and on demand point-to-point and conference calls while maintaining the preplanned, preassigned capabilities for higher precedence users. There will still be dedicated and DAMA channels but they will be reduced as terminals migrate to IW. Currently, the following radios (not all inclusive as others come on board) are in the process of upgrading to IW: AN/PSC-5C (Army standard radio), AN/PSC-5D (SOCOM standard radio), AN/ARC-231 (Army Aviation), AN/PRC-117F (commercial off the shelf for the Army), AN/PRC-148 Joint Tactical Radio System enhanced Multiband, Multimode, Inter/Intra Team Radio known as the JEM hand-held radio, AN/PRC-152 (COTS hand-held radio), AN/PRC-117G, AN/ARC-210.

Point of contact for IW is Ms. Cori Braswell, TCM-TR, 706-791-7934 (DSN 780). 

ACRONYM QuickScan

AIMD - Architecture Integration Management Division
AETF - Army Evaluation Task Force
AROC - Army Requirements Oversight Council
ASA ATL - Assistant Secretary of the Army for Acquisition, Logistics, & Technology
AMF - Airborne-Maritime-Fixed Site
BN TOC - Battalion Tactical Operations Center
BCT - Brigade Combat Team
CDD - Capability Development Document
CPD - Capability Production Document
CPM - Carrier Phase Modulation
CPOF - Command Post of the Future
COS - Commercial off the shelf
CDR - Critical Design Review
DAGR - Defense Advanced GPS Receiver
DAMA - Demand Assigned Multiple Access
Demo - Demonstration
DoD - Department of Defense
EDM - Engineering Design Model
GEN - General
GCIC - Global Cyberspace Integration Center
GPS - Global Positioning System
GB-GRAM - Ground-Based GPS Receiver Application Module
GMR - Ground Mobile Radio
HMS - Handheld-Manpack-Small Form Fit
INS - Inertial Navigation Systems
IW - Integrated Waveform
JCIDS - Joint Capabilities Integration and Development System
JPEO - Joint Program Executive Office
JROC - Joint Requirements Oversight Council
JTRS - Joint Tactical Radio System
LUT - Limited User Test
LRIP - Low Rate Initial Production
MDD - Material Development Decision
MS-C - Milestone "C"
M-Code - Military-Code
MGUE - Military GPS User Equipment

MBITR - Multiband, Multimode, Inter/Intra Team Radio
MOT&E - Multi-Service Operational Test and Evaluation
MUOS - Multi-User Objective System
NED - Network Enterprise Domain
NIK - Network Integration Kit
OPDEMO - Operational Demonstrations
OT - Operational Tests
ONS - Operational Needs Statement
OTAD - Over-The-Air Key Distribution
OTAR - Over-The-Air Rekey
PIWG - Platform Integration Working Groups
PLI - Position Location Information
PNT - Positioning, Navigation and Timing
PQT - Production Qualification Test
RF - Radio Frequency
REF - Rapid Equipping Force
RR - Rifleman Radio
SATCOM - Satellite Communications
SigCoE - Signal Center of Excellence
SINCGARS - Single Channel Ground and Airborne Radio System
SPCI - Software Product Configuration Item
SRW - Soldier Radio Waveform
SNE - Soldier's Network Extension
SPAWAR - Space and Naval Warfare Systems Command
SFV - Systems Functional Validation Test
SIT - Systems Integration Test
TAGR - Tactical Assured GPS Regional
TSCSAT - Tactical Satellite
TCM-TR - U.S. Army Training and Doctrine Command Capability Manager for Tactical Radios
TDMP - Training Development Mission Plan
UHF - Ultra High Frequency
UE - User Equipment
VCD - Verification of Corrected Deficiencies
VCSA - Vice Chief-of-Staff of the Army
WIN-T - Warfighter Information Network-Tactical

You are the new communications chief

By MSG James Ghent

Based on personal experience and knowledge gained from others at the Joint Readiness Training Center, this article is designed to show a new communications chief some techniques, tips and procedures to succeed on the job.

I invite you to share your good ideas with the rest of us. Unshared knowledge is knowledge wasted.

Over the years we have seen many articles about how to be a better battalion or brigade communications officer but not a communications chief. There is neither a commo chief course, nor a formalized way to become one. There is no metric to measure against as to what would make a Signal noncommissioned officer a good commo chief. Most commo chiefs either inherit the job through promotion from within the unit or are assigned by the Department of the Army.

In most cases the new commo chief arrives after the previous commo chief has left the unit.

The best advice I can give to any NCO, but especially a commo chief is to gain practical understanding of your role as soon as possible. I define practical understanding as: "Knowledge or familiarity with a particular thing; skill in dealing with or handling something." It's what usually happens when we bring the combination of our knowledge and experience to bear upon a situation to affect a positive outcome.

As NCOs we apply practical understanding all the time. The hand receipt is a good example. Knowledge teaches us that the primary hand receipt holder is responsible for all equipment on the hand receipt, whether the holder has inventoried it or not. Experience shows us to sign for only the items that we have physically inventoried. Practical understanding requires the primary HR holder to generate a shortage annex to absolve liability for any item not found on the HR.

Now that you have a basic frame of reference, let's consider how a new Sig-

nal NCO develops practical understanding in the commo chief role. Notice I used 'role' and not 'duties and responsibilities.' The dictionary defines duty as: "Responsibility of conduct, function, or performance that arises from an express or implied contract, or from the fact of holding an office or position." It goes on to define responsibility as: "Duty or obligation to satisfactorily perform or complete a task (assigned by someone, or created by one's own promise or circumstances) that one must fulfill, and which has a consequent penalty for failure."

The dictionary defines role as: "Prescribed or expected behavior associated with a particular position or status in a group or organization." As a commo chief you are considered part of the staff.

Leaders have duties and responsibilities, while staff personnel perform roles in addition to their normal duties and responsibilities.

You are still a leader but you have just added tasks associated with executing your 'role' as a staffer—the commo chief. This is where most commo chiefs struggle. There is a distinct thought level differential between a line NCO and staff NCOIC.

The new staff NCOIC must internalize the dual function of line leader and coordinator for others outside their team or section. The commo chief has to empower units over which he or she does not have direct contact or control; providing information, resources and when necessary equipment.

In essence this is called thinking and performing at an organizational level. It is the process of considering the needs of the organization as a whole; not their squad, section, platoon or even company.

Here are a few TTPs to help meet this process:

Understand Your Communication Assets

There are numerous communications platforms and systems available to units, and we understand that no two units are the same. Each unit will either

get fielded or purchase additional equipment to meet its needs. No matter what the equipment is, it will fall into four basic categories...Combat Net Radio Systems (SINCGARS, HF, TACSAT, etc...), WIN-T (JNNs, CPNs, SNAPs, S-POPS, etc...), Digital Applications (TIGR, Exchange, JABBER, MS Portal, etc...) or ABCS Systems (MCS, AFA-TADS, BCS3, etc...). I have included CPOF and CIDNE under ABCS because they have limited communication to other ABCS systems via a data bridge that allows them access to a PASS server. The first hurdle you'll face as a commo chief is locating all the equipment that the unit owns and operates. You should know where everything on your hand receipt is.

Not every piece of communications, ABCS and/or computing equipment in the unit is on your HR (or at least it shouldn't be), but you can bet the unit expects you to know how many it has and how it operates. For now we'll focus on "Know what you have." Your own HR as the commo chief is a good start. Chances are most of the serious communication equipment has made its way to your HR for 'safe keeping' over the years.

Complete a thorough inventory and immediately identify what's outdated. Set aside the defunct gear for turn-in. As soon as possible find out who the primary user is for the rest of the inventory and get it on their HR. This may not win you many friends in the unit, but better they look after and carry their equipment than you. As for what the unit has...start with your company supply sergeant. Then move to the battalion/brigade S4. If these fail, try this website:

<https://webtaads.belvoir.army.mil/unprotected/splash/welcome.asp>

You'll need to login with AKO or your CAC. You'll also need your Unit's Identification Code. This will show you what "big Army" says you have in your unit. It is best to start internally first. The more interpersonal relationships you build within your unit, the better you'll be able to execute your role in the future. You will have built a level of trust and understanding.

Once you get a good start on what you have, build your Technical Manual library. I kept a digital copy of all my TMs, but maintained a paper copy for those frequently referenced TMs also.

I also suggest that you build a software library to maintain back copies of all your PC and printer software and drivers. Building your library also helps you have ready access to know to the best of your ability how systems operate.

You can't know everything about everything. As 25Us there are just too many communications platforms and systems to gain expert level knowledge on all of them. So learn what you can handle and leave the rest to be referenced.

As a commo chief it would be great if you were expert on everything in your unit. But the reality is that your knowledge is superior on a few items and at best above average on others. There is no shame in this as long you know where you're weak and know how to reference it or develop a talented Soldier in your shop to make it work.

One of my favorite TTPs as a battalion commo chief is when I get new Soldiers, have them study the troubleshooting flowcharts for the major systems in the battalion. SINCGARS, HF, TACSATs, MBITRs and vehicle intercom systems can only break in so many ways. Once you've learned all the basic problems for these systems, the rest pretty much fall into place.

PCs and ABCS systems were a different thing though. The issue with these is that there are about seven ways to diagnose the problem and another seven ways to fix it. The best TTP I've found for this is to find the three best diagnosis and solution procedures that matched your Soldiers' personalities and then master them. I know it sounds far-fetched, but don't knock it until you've tried it. It's also a good TTP to build and maintain a 'how to' book/computer files for PC problems. None of us can do it all, but as a team we can make it happen.

Understanding Your Communications Assets

Knowledge teaches us, "there are numerous communications platforms and systems available and assigned to units."

Experience shows us, "There are too many communications platforms and systems for any one person to be an

expert on all of them."

Practical Understanding requires, "Keeping a set of ready reference materials on hand and having Soldiers trained on the communications platforms and systems within your unit is a must."

Effective Use of Information

Everyone wants to either control or master the flow of information these days. If anyone could ever have total control or mastery of all the information that flowed in and out of their organization, communicators would be out of a job. The best you can ever hope for is the effective use of the information that flows through your unit.

Most organizations spend so much time trying to control and master what information comes through their area that they forget to effectively use it.

How many times have you been so concerned with when the COMSTAT is due or the format it's supposed to be in that you've forgotten to actually see what the information on the COMSTAT is telling you about the Signal assets in your unit?

The lesson here is: "Don't just collect the information, but analyze it." See what it's telling you about your network, systems and resources.

As a commo chief you should be able to do the following:

- Identify your information requirements
- Know the information requirements of the other warfighting functions
- Establish and enforce reporting requirements, procedures and formats

These are the bare minimums (not an all inclusive list) and there may be subcategories to each. I've heard the phrase "We don't know what we don't know" and it's a true phrase, but you can limit what you don't know by applying what you do know. Once you do this, you can identify your gaps and work toward closing them. Useless information is more than just un-analyzed information. It's also information that you've collected that has no bearing on your operations. If you don't need it, then don't collect it. Effective use of information means more than just asking the right questions, you have to apply the answers and continue to refine the responses you get back to ask even more in-depth questions. You'll have to continue doing this until you've satisfied that particular information need.

Effective Use of Information

Knowledge teaches us, "Information is an integral part of a situation and drives all aspects of daily operations."

Experience shows us, "Too much information can cause a system/team to become overwhelmed; causing it/team to miss critical data or even grind to halt trying to process it all."

Practical understanding requires, "The information relevant to daily operations and critical to mission accomplishment is identified and prioritized for action."

Assessing Your Team

Knowledge teaches us, "We must assess our team to know how to best utilize strengths and limit weaknesses."

Experience shows us, "The best person for a job/task may not necessarily have the MOS for that position, but has the knowledge/skills for it."

Practical understanding requires, "You place personnel within your team to sustain smooth and continuous operations throughout a variety of missions."

Probably the hardest, and yet the most necessary action that any leader has is to assess the team. There are several ways to do this and any one of them may do. My TTP is the following:

- Review past counselings/ERBs/NCOERs - These documents give you a quick overview of your Soldier. Granted they can be inflated or skewed based upon their last supervisor, but they can be used as baseline for attitude, maturity and skill level
- Provide a Signal specific survey to all personnel - This is a 'for your eyes only' document that asks questions about the Soldier's knowledge on key systems organic to all units in the Army. It also asks them to list their strengths/weakness as well as the training/career goals. (See Fig. 1)
- Illicit peer/leader feedback from personnel outside the section, but within the unit - Doing this gives you outside input on how your Soldier(s) interacts with others and allows you to gauge the level of support being provided by the section.
- Observe daily activities and work ethic (minimum 15 days, maximum 45 days) - Doing this allows you several things:
 - o Gives you a chance to integrate yourself into shop operations

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Assessing Your Team

Signaler Survey									
Administrative									
Last Name, First Name, MI									
Rank	DOB		2nd MOS						
Time in Service (yrs)	Time in Grade (yrs)		Time in Unit (mos)						
Unit & Duty Station									
AKO Email									
Training Schools									
MJC		BHCOC		ABCOC					
Spectrum Management		Battle Staff		COMSEC					
Experience									
Duty Position	Duty MOS	Rank	Time in Job (mos)	Deployed		# months Deployed			
				OET	OP				
Communications Equipment Knowledge									
System	Na	Fair	Good	Superior	System	Na	Fair	Good	Superior
Retrans Operations					DCGS-A				
SMBGARS (ASIP)					CBHE				
Ham-152					WC5				
PRC-117					AFATAGS				
SC TACSAT					BCE3				
HF (Ham-150)					TGR				
SatPhone					CPDF				
PRC-148 (MSTR)					VeriBe				
CPP					Breeze				
LOS/HCLOS					Portal				
JHR					Exchange				
CPH					Basic Automations				
SFT					Basic Networking				
PCB2					System Tabling				

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- o Gives you a firsthand look of how your shop members work together
 - o Lets you see how your team performs without direct guidance
 - o Helps you identify friction points within and without your section
 - o Allows you to see which internal SOPs are being followed and which may need to be adjusted
 - Make position/personnel changes as necessary - This is always hard. Some Soldiers are either too comfortable in their position or just don't fit the new shop dynamic. Where possible these changes need to be made to effect smooth operations.
 - Engage in an open group and individual discussion about expectations, goals and your vision for the team - Finally this allows you to give your team insight to the "road ahead" for the section. This allows them to provide input into changes that may need to be made in operations and what their role(s) will be in effecting those changes.
- Part of assessing your team is training. Getting personnel into needed training will always offer challenges. If as part of your team assessment you deem it necessary to rearrange positions and/or personnel, the best TTP I can recommend is to try to make those decisions based upon the least amount of "training cost" moves possible. You may have to "dual hat" an individual or two with certain responsibilities until you can get someone trained to take over. The end result of assessing your team is to have them assigned as best you can to fill the critical positions within your shop.

Structuring Your Shop

Knowledge teaches us, "The Army has prescribed a basic organization of personnel and functions to all units."
 Experience shows us, "Build a shop that facilitates daily operations."
 Practical understanding requires, "Implement a shop structure that maximizes the effective flow of information and

daily operational awareness to meet mission needs."

Everyone has an opinion of how the 'perfect' S6 Section should be organized. Most people build their team and then struggle with how information will flow within it; how it will be tracked, organized and ultimately reported. The best model for a comms shop that I've seen, has started with two inject points - the Helpdesk (initial contact - customer interaction/support) and the S6 (top tier management- sets policy/establishes mission). Everyone and everything in between these two inject points has a distinct duty/responsibility or function/role that supports the actions of those two inject points, by effectively utilizing the flow of information that travels between them; quickly defined their function as follows:

Help Desk

This is the first line of support, the initial contact into the S6/Comms Shop. This is the primary user interface, everything starts here. It's responsible for trouble ticket processing and routing. It also compiles and scrubs RFIs from subordinate units. A good Help Desk is manned by personnel from every section (Automations, NETOPS, and CNR) and feeds/retrieves information to/from every section. They are responsible for verifying the physical connections of all machines on the network. In addition the initial troubleshooting team for ALL PC and PT Signal issues resides here.

Signal Operations

- Automations: Handles all computer systems - ABCS and Enterprise ("Windows boxes") computer systems to include LDIF Management. Oversees user services such as: Portal access, Exchange, shared file services and Sys admin. It enforces IA, virus scans and updates. Their authority starts at the transport layer and extends to the application layer of the OSI model. This team is responsible for the physical connections of all Enterprise servers.
- CNR: COMSEC, Freq Management, CPPs, PT systems (FM, HF and SC TACSAT nets). Maintains and monitor the tactical LAN (CPPs inward). Issues/receives COMSEC. Deals with frequency assignment and deconflicts.
- Network Management: Maintain and monitor the WAN (CPPs outward, to include LOS/HCLOS and JNN/CPN Links), assist in troubleshooting the LAN. Manages, troubleshoots and mitigates external routing/switching issues. Compiles COMSTAT from subordinate units and other S6 sections. Authority encompasses the network and data link layer of the OSI model.
- DSE: Manages/Coordinates BCT FSRs. Monitors/coordinates BCT Signal related Maintenance. Primary contact to Higher HQs for Signal contractor/maintenance support.

Command and Control (C2) OPS:

- Comms Chief: Enforces Shop work ethic, priorities and SOPs. Monitors daily shop activities. Oversees the internal shop sync meetings. Coordinates w/subordinate units and w/ other WFFs within the BCT HQs for operations/support. Proofs the COMSTAT. Compiles information from all sec-

tions for the internal Signal sync meeting.

- A/S6: (If available –If not then requirements are spread amongst all the sections with the Commo Chief as the ‘gatekeeper’ for all reports produced) Compiles and proofs FRAGO entries. Coordinates with subordinate units. Oversees the formation of the Signal Common Operating Picture. Proofs the information for the internal sync meeting. Compiles information from subordinate units for the external sync meeting. Oversees the external sync meeting with subordinate units. Deconflicts daily operations between sections.

- S6: Primary planner for BCT Signal operations. Provides the Signal vision. Defines the mission (daily, weekly, by operation). Sets priorities (of work, of effort, of support). Proofs information for the external sync meeting. Coordinates with the Signal company, commander, adjacent and higher headquarters for Signal operations/support.

Whether you use the basic Army model, this model or creates your own is irrelevant, the key is that you find a structure that works for you and maximizes the effective flow of information within your shop. Building a good team should also take into account the experiences and personalities of its team members. MTOE dictates the MOSs we need to have and where they’re supposed to be; but individual skills, experiences and personalities will determine where they’re assigned and what they’ll ultimately be doing. Don’t ever think that personality doesn’t come into the build of a team, it does. The teams I built and operated during my last two deployments operated best because of who I had on my team and how we interacted.

Identify/Validate Thru-Puts

Knowledge teaches us, “Information is never static. Every piece of information gleaned by one source can be used somewhere else.”

Experience shows us, “In order for information to be useful it has to be understood and used to take action.”

Practical Understanding requires, “Using relevant information to create products that help shape, define and take action on critical tasks that support daily operations and unit missions.”

Thru-puts are the initial actions or products produced from the information that moves through your shop that requires you to track, consolidate, or react upon. The products or actions that are produced usually go into someone else’s input process or plan; since it doesn’t stop and continues to move along in some form...I define them as “thru-puts.” There are several ways that information enters the S6 Shop. It seems like a lot of information to keep track of, and for one person it is, but you have a whole shop to assist you. Each subsection has a role/function that you can use. Assign each subsection to a thru-put or set of thru-puts that falls within that section’s role/function.

Here is where the rubber will meet the road. This is where you’ll be developing and refining your daily reports. By this stage you’ve already assessed your team as to their strengths/weaknesses and have assigned them to their subsections. Each section should understand what it needs to do (their roles/functions). At this point it’s all about the products produced and actions taken to re-enforce and support shop operations based upon the roles/functions.

Your team should be producing products such as:

- Unit Comms Card
- Maintenance Reports

- Network Diagrams
- Unit COMSTAT
- Trouble Ticket Logs

Running Estimate

Knowledge teaches us, “A running estimate is the compilation of the top level reports created in your shop.”

Experience shows us, “A running estimate is a snapshot of the Signal arena and delivers ‘where we stand’ for comms assets across the AO.”

Practical understanding requires, “The running estimate be a briefing tool that in two-four minutes gives anyone an overview of the unit’s communications assets and their statuses.

A running estimate can be either a useful tool or a thorn in your side. It all depends upon how you view and go about building and maintaining it. If you take the approach that is a static product that only needs to be updated in the event of a crisis, then it’ll be a pain. If you tie its update to your unit’s battle rhythm, such as the CUB then, it’ll be a pain to build (at first); but it’ll give your team a briefing tool that will offer the commander an accurate picture of communications assets and the status in a quick two-four minute brief.

A good TTP for validating if your running estimate is worth the paper it’s printed on, is if you can brief it to an individual in 2-4 minutes and that individual walks away with a good grasp of the Signal situation for your unit.

If it does that, hold what you have and just make minor refinements. If your brief leaves the individual confused about what’s going on with comms in your area of operations after you’ve briefed them, it’s time to rethink your design. The running estimate is just an ESTIMATE. It’s the compilation of what your team – the section leaders, yourself and the S6 consider to be the top level reports created in your shop. These reports when combined should give a snapshot of what’s going on in the Signal arena for your unit. Its helps deliver the “this is where we stand” for comms assets across the unit’s AO. An average of five to seven PowerPoint presentation slides is sufficient. A good running estimate baseline would include:

- COMSTAT/Slat Report
- Network Status (SNMPC Screenshots)
- Map/chart showing current status and locations of the CDR’s critical comms assets
- Latest current operations (CUOPS) storyboard with the most current/planned operations (out to 72 hrs if possible)
- List of the S6 priority support actions for the 72 hrs.
- Open priority FSR Trouble Tickets (know their status)
- Current Signal maintenance update (w/ 02 priority jobs over 7 days highlighted w/ statuses and 05 priorities jobs over 15 days also highlighted w/ statuses)

Of course you can add more than the ones listed here as your unit dynamic dictates and changes, but these should offer a good baseline. The most important factors are to ensure that you know your commander’s critical information requirements and expectations for communications support. Once you know these, ensure your slides can support your team’s ability to deliver those answers. Everything is based upon your commander’s and unit’s needs. Find out what they want, expect and need. Then tailor your running estimate to those requirements.

(Continued on page 72)

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Some call a running estimate a “Staff Estimate.” I was trained to understand that a staff estimate is more detailed. It’s more than just a snapshot. It’s the micro-tuned data that your shop collects. You use your staff estimate when you go into a deliberate planning process to help develop in-depth COAs. Your running estimate is for a situational awareness brief to the staff or the commander.

Situational Awareness Picture

Knowledge teaches us, “Everyone wants to know what is going on, especially with the current mission or planned operation.”

Experience shows us, “WFFs always want/need a definitive overview of communications assets for a specific mission/operation.”

Practical understanding requires, “Knowing enough about

current missions/operations and being able to display the Signal resources, assets and priorities against them.”

This is a TTP that I gleaned from my current operation section during my Iraq days. It like a Signal storyboard. The SA picture is designed to be a part of a mission packet that in a single slide, gives the WFF a definitive overview of the following:

- Map with current mission graphics
- The overall mission statement
- The Signal assets assigned to the mission
- Signal priorities for the mission
- Specific unit Signal objectives
- Location of critical Signal assets
- Mission PACE plan(s)

The objective of the SA picture is to give the user in one slide a snapshot of what Signal assets are available, where they are located and what their focus is contingent to the current mission.

Unlike your running estimate

this is a “one-time” production document. You only have to produce this as part of mission planning packet or upon request. It is linked to the information that is in your running estimate though. So it’s imperative that you keep your estimate current or your SA picture is worthless to anyone who uses it.

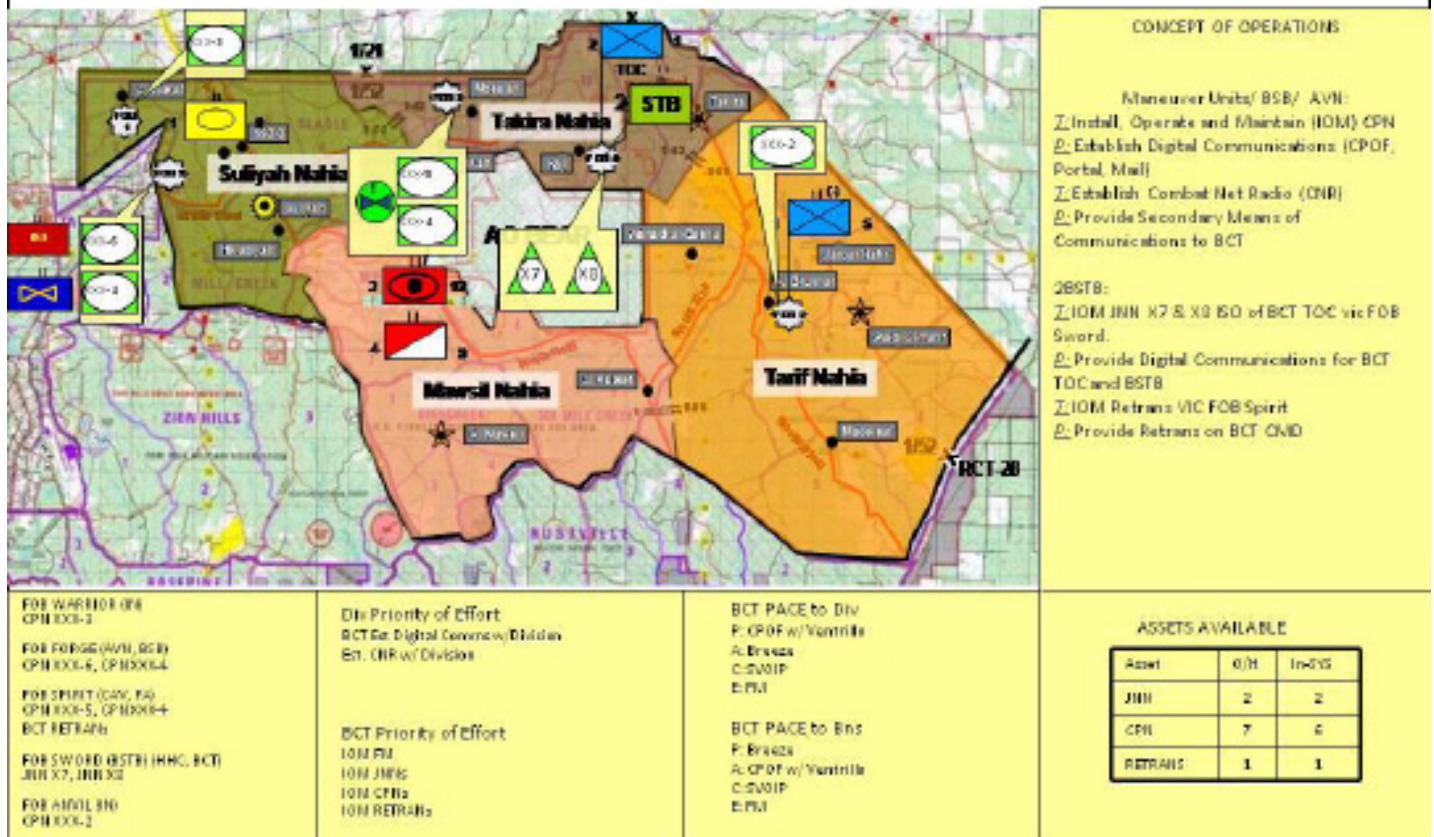
Making It All Work For You

So far everything I’ve shared has been in a stand-alone mode with each TTP presented as a separate issue unto itself. Here’s where we bring it all together:

- Understanding Your Comms Assets – Allows you to better plan comms asset emplacement on and throughout the battlefield to support your unit’s mission.
- Effective Use of Information – Means that you can further refine critical systems and personnel emplacement to provide continuous Signal support for unit operations.

Situational Awareness Picture (Communications Set)

Fig. 2



- **Assessing Your Team** - Gives you the ability to create a “depth chart” of necessary technical/management skills for your team to be initiated as needed.
- **Structuring Your Shop** - Lets you put the best people in critical positions to analyze and action on the information coming into your shop.
- **Identify/Validate “Thru-Puts”** - Ensures that information relevant to the smooth operation of the unit’s network architecture is captured, analyzed, reported and actioned upon. as necessary by the appropriate personnel or sections.
- **Running Estimate** - Allows you to brief the current Signal architecture of your unit and can also be used in a limited capacity as a quick planning tool to generate COAs for on the spot network adjustments.

- **Situational Awareness Picture** - Immediate overview of the current Signal architecture of your unit to include communications and mission specific information that may prove invaluable to other WFF as part of mission planning/execution packet.

Each step although separate, is fed by the step before it. All the steps together give you SA, both personally and something you can export to other WFFs, units or to members within your team.


Once you’ve achieved a necessary level of SA, you’ll need to constantly update and validate your information to make necessary adjustments to your operations; which is a good thing. This is where you want to be - where you have a valid SA picture that meets your needs. Now

all you have to do is maintain it. You maintain it by enforcing the information gathering, analysis and reporting procedure that you used to achieve your SA.

This is the key to making it all work for you once you’ve built your organization.

Enforce the information gathering, analysis and reporting procedures that you used to achieve your SA.

Everything after that should fall into place.

MSG James Ghent is the senior Signal NCO O/C at JRTC. He is the O/C for the BCT commo chief. 1SG Ghent is a 25U with 22 yrs of service; He has three combat deployments, two to Iraq - as an Infantry TF commo chief, Infantry BCT commo chief and TF S6. He can be reached via e-mail: james.young.ghent@us.army.mil 

ACRONYM QuickScan

A/S6 - Assistant Communications Officer
ABCS - Army Battle Command Systems
AFATADS - Advanced Field Artillery Targeting and Direction System
AKO - Army Knowledge Online
AO - Area of operations
ASAP - As soon as possible
BCS3 - Battle Command Sustainment and Support System
BCT - Brigade Combat Team
BN - Battalion
C2 - Command and Control
CAC - Common Access Card
CCIR - Commander’s Critical Information Requirements
CDR - Commander
CIDNE - Combined Information Data Network Exchange
CNR - Combat Net Radio
Co - Company
COA - Course of Action
COMSEC - Communications Security
COMSTAT - Communications Status Report
COP - Common Operating Picture
CPN - Command Post Node
CPOF - Command Post of the Future
CPP - Command Post Platforms
CUB - Commander’s Update Brief
CUOPS - Current Operations
DA - Department of the Army
DSE - Digital system Engineer
ERB - Enlisted Record Brief

FM - Frequency Modulation
FRAGO - Fragmentary Order
FSR - Field Service Representative
HCLOS - High Capacity Line of Site
HF - High Frequency
HQ - Headquarters
HR - Hand Receipt
IA - Information Assurance
JAG - Judge Advocate General
JNN - Joint Network Node
JRTC - Joint Readiness Training Center
LAN - Local Area Network
LDAP - Lightweight Directory Access Protocol
LDIF - LDAP Data Interchange Format
LOS - Line of Site
MBITR - Multiband Inter/Intra Team Radio
MCS - Maneuver Control System
MDMP - Military Decision making Process
MiRC - Multi-user Internet Relay Chat
MOS - Military Occupational Specialty
MTOE - Mission Table of Organization and Equipment
NETOPS - Network Operations
NIPR - Non-Secure Internet Protocol Router
NCO - Noncommissioned Officer
NCOER - Noncommissioned Officer Evaluation Report
O/C - Observer Controller

OSI - Open System Interconnection
PACE - Primary Alternate Contingency Emergency
PASS - Publish and Subscribe Server
PC - Personal Computer
PTT - Push-to-Talk
RFI - Requests for Information
S4 - Battalion/Brigade Logistics Staff Officer/Section
S6 - Battalion/Brigade Communications Staff Officer/Section
SA - Situational Awareness
SC - Single Channel
SGT - Sergeant
SINCGARS - Single Channel Ground to Air Radio System
SIPR - Secure Internet Protocol Router
SNAP - SIPR/NIPR Access Point
SNMPC - Simple Network Management Protocol Console
SOP - Standard Operating Procedures
TACSAT - Tactical Satellite
TF - Task Force
TiGR - Tactical Ground Reporting
TM - Technical Manual
TTP - Tactics, Techniques and Procedures
UIC - Unit Identification Code
VIS - Vehicle Intercom System
WAN - Wide Area Network
WFF - Warfighting Function
WIN-T - Warfighter Information Network-Tactical

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“The goal of the corps of NCOs, whose duty is the day-to-day business of running the Army so that the officer corps has time to command it, is to continue to improve our Army at every turn. We want to leave it better than we found it. Regardless of the kind of unit you're in, it ought to be an "elite" outfit, because its NCOs can make it one.”

*- William G. Bainbridge
Sergeant Major of the Army
1975-1979*

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