

307th Expeditionary Signal Battalion demonstrates operational capabilities

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Even though taking control of Mazar-E Sharif (Afghanistan's fifth largest city and Northern Afghanistan's Capital) was the first major U.S. victory following the start of Operation Enduring Freedom in October 2001, the U.S. communications infrastructure in Northern Afghanistan was the most immature communications network in the theater after more than eight years of ongoing combat operations. This lack of established infrastructure led to the deployment of the 307th Expeditionary Signal Battalion.

In mid-2010, the 307th ESB deployed to the northern region of Afghanistan as part of the Presidential Force Uplift. The battalion was identified to provide tactical command and control and information system communications support to the International Security and Assistance Force Regional Command (North) and U.S. Forces-Afghanistan.

Prior to deploying, the battalion recognized that it needed to develop a communications campaign plan that focused on developing Soldiers' skills and that utilized all available resources to increase the coalition, command and control, communications, computers, intelligence, surveillance and reconnaissance capabilities of commanders across RC (N).

The battalion quickly learned that there are no cookie cutter solutions when conducting initial entry operations and that innovative solutions would be required for this mission. Immediately upon arrival in the region, the battalion was able to establish full spectrum tactical communications support while simultaneously beginning to establish strategic communications capabilities in support of the RC (N) Headquarters.

This hard work and expeditionary mindset earned the respect of the warfighter, even leading a senior commander to comment, "I am a fan of the ESB, they are truly an expeditionary enabler" COL Willard Burleson, 1-10 Mountain, Infantry Brigade Combat Team commander.

Forming a Signal Task Force

Along with being expeditionary, ESBs are also modular. The 307th ESB deployed to RC (N) with only its organic HHC. Two expeditionary Signal companies-- B Company, 44th ESB and A Company, 151st ESB were assigned to 307th ESB to provide communications

support throughout RC (N). To effectively command and control this task organization, 307th leaders organized in theater into a Signal task force to maximize personnel potential and equipment capabilities. TF Dragon was formed to efficiently meet the needs of the customers in RC (N).

Although the formation of TF Dragon occurred in Afghanistan, the preparation for the mission started in late February 2010, when the 307th ESB received notification of deployment and was given four short months to train, prepare and deploy to theater.

During the preparation for this short notice deployment, the battalion was also fielded the latest expeditionary information systems in the Army's Inventory. Project manager, WIN-T arrived in Hawaii and fielded the battalion's entire compliment of ESB systems including battalion command post nodes, joint network nodes and satellite traffic terminals. Concurrently with the fielding of this equipment, the battalion began mission oriented training that focused on providing rapid and reliable communications in an austere environment. This was no easy feat to accomplish and this high operations tempo environment began to develop the Soldiers' and leaders' expeditionary and innovative mindset, a foundation that would be critical in accomplishing their upcoming mission.

With the fielding of equipment and the Soldiers' training complete, the battalion deployed into theater and began to focus on supporting customers with an array of communication solutions. The Task Force was immediately able to show its expeditionary prowess by developing the initial tactical and strategic networks in RC (N).

Expeditionary Area Support Mindset

Building the networks in the region began with the identification of the units and organizations communications requirements. The battalion recognized it was critical to understand the specific requirements of these customers and prioritize the limited assets that were available to support the strategic objectives of the ISAF commander. The battalion's primary role, along with supporting the U.S. brigades in RC (N) was to provide connectivity to the

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disadvantaged users. This ensured that all units, down to the company and detachment level, had access to enterprise services. To fulfill these functions, TF Dragon took on the role of communications integrator in RC (N). Using lessons learned from Operation Iraqi Freedom, the battalion developed a process to discharge this responsibility, and to focus the efforts of the COMS-I on gathering the customers' requirements, validating operational needs, engineering solutions, tasking available assets, procuring material, installing solutions and providing service to the customer. Because of the underdeveloped state of the communications infrastructure, supporting the customer often meant seeking creative solutions and solving problems not seen in other areas of the theater. The criticality of the mission meant taking on a "never say no" philosophy of support and facilitated the Task Force's drive to quickly find innovative solutions to provide service to the customer no matter the location or element's size.

This mindset also applied to operating and managing the tactical WIN-T network across the region. The battalion and all of the RC (N) tactical communication assemblages were required to utilize the Combined Joint Task Force 101st Unit Hub Node on Bagram Air Base, Afghanistan and the 160th Signal Brigade's Regional Hub Node on Camp Arifjan, Kuwait in order to interconnect into the Afghanistan domain (i.e. afghan.swa.army.mil). This required many hours of coordination and planning with the 101st Infantry Division CJ6 to manage the network efficiently and effectively. This required the Network Operations and engineers to delineate the respective responsibilities and establish procedures and procedures between TF Dragon and CJTF 101, CJ6. This collaboration promoted

a cohesive relationship between the newly established Regional Network Control Center - North and CJ6 which facilitated the continued growth and maturation of the network, maintained network stability and ultimately ensured that the customers received the best quality of service possible.

In addition to having the challenges of a remote tactical hub and an underdeveloped communications network, the battalion was required to operate a majority of its systems on a Time Division Multiple Access network. This TDMA network was the workhorse of the RC (N) tactical network with over 60 satellite terminals supporting over 8000 customers on seven 5 mega-symbol TDMA Carriers. The number of TDMA terminals combined with user demands saturated the TDMA mesh due to the limited number of TDMA satellite carriers available to the battalion upon arrival in Afghanistan.

These limited resources along with the ever increasing demand for access to enterprise services made it essential that the battalion leverage every available asset, begin the building of the strategic communications architecture in RC (N), and establish TTPs to ensure that the battalion was both good stewards of available equipment and bandwidth.

Building the Strategic Communications Support from the Ground Up

Prior to the battalion's arrival in Afghanistan, a USC-60 and C4DP (Promina Node 200) had been transported to Camp Marmal to meet the growing communications needs of the USFOR-A customers on Camp Marmal, specifically in the RC (N) HQ. 307th began the development of the strategic network the day it hit the ground with the installation of Node 200,

additional satellite terminals and a Microwave Line of Sight circuit to provide service to the RC (N) Headquarters. This data package consisted of a Promina and a full complement of enterprise servers designed to provide full strategic enterprise services for each of the required security domains to the customers on Camp Marmal. These assets are not native to an ESB equipment set and presented significant challenges during the installation phase.

The battalion literally learned the engineering and installation process for this node through trial and error. In light of these challenges the battalion quickly leveraged the economies of Soldiers previous experiences and backgrounds on strategic nodes. In addition, the battalion received technical assistance from engineers in the Joint Network Command Center - Afghanistan who controlled the strategic communications in the theater. This process required building the strategic signal infrastructure in RC (N) from the ground up.

The battalion was tenacious in finding solutions to the various challenges associated with doing an initial network installation and ways to improve the quality of service available to the customers in the RC (N) Headquarters. But the unit's persistent efforts paid off, the outcome was access to a full complement of enterprise service and an increase of available bandwidth to the customer by over 4000% and which greatly increased the quality of service to the regional headquarters and the 4th Infantry Division's Combat Aviation Brigade Headquarters.

Once the installation of the data package supporting the RC (N) Headquarters was complete, TF Dragon took on the task of extending the enterprise services from N200 to other customers on Camp Marmal and across the

region. Using all the assets the unit could acquire, the network engineers designed a black core network that would be the backbone transport layer of the RC (N) strategic network that could extend enterprise services to customers throughout the region. This black core transport layer enabled TF Dragon to create a standard network topology to support the rapid growth in the region and to emplace internally designed Area Distribution Nodes to extend services to geographically separated customers while maintaining information and network security. These ADNs were connected back to strategic services using a variety of equipment and anything that was available. TF Dragon used Harris 7800W line-of-site IP radios, fiber optic cable, microwave line-of-sight and Orthogon radios. The disadvantaged users that required services on Camp Marmal and various other FOBs exceeded the capability of N200, and the number of CPNs and JNNs that 307th had in its inventory. Operating in an economy of force environment, the battalion required additional resources and material to install the networking components necessary to provide service to all of the customers in the region. While extending the network, TF Dragon remained flexible to meet mission requirements and ensure that all the customers who needed support were provided full access to enterprise services.

Maintaining a Tactical and Expeditionary Mindset

The “never quit” expeditionary mindset was absolutely critical in the accomplishment of the mission during the battalion’s time in Afghanistan. The skills needed to

support the customer were often outside the traditional tasks of an ESB and required Soldiers and Leaders in the battalion to understand the science of communications installation and the art of communications management. From the training the battalion conducted while at home station to the non-organic equipment used and solutions that were implemented in theater, the battalion’s Soldiers and leaders never quit, never lost sight of supporting mission and earned the respect of the warfighter along the way.

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ACRONYM QuickScan

ADN - Area Distribution Nodes
CAB - Combat Aviation Brigade
CJOA-A - Combined/Joint operations Area-Afghanistan
CJTF 101 - Combined Joint Task Force 101st
CPN - Command Post Node
COM-I - Communications Integrator
C4DP - Command, Control, Communications and Computers Data Package
C5ISR - Coalition Command and Control, Communications, Computers, Intelligence, Surveillance

and Reconnaissance
ESB - Expeditionary Signal Battalion
ESC - Expeditionary Signal Company
HHC - Headquarters and Headquarters’ Company
ISAF - International Security and Assistance Force
JNCC-A - Joint Network Command Center - Afghanistan
JNN - Joint Network Node
MLoS - Microwave Line of Sight
MRT - Master Reference Terminal
NETOPS - Network Operations
OPCON - Operational Control

PM WIN-T - Project Manager Warfighter Information Network - Tactical
RC (E) - Regional Command (East)
RC (N) - Regional Command (North)
RHN - Regional Hub Node
RNCC-N - Regional Network Control Center - North
STT - Satellite Traffic Terminals
TDMA - Time Division Multiple Access
TTP - Tactics Techniques and Procedures
UHN - Unit Hub Node
USFOR-A - U.S. Forces-Afghanistan