

A Signal perspective:

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Not so long ago we might have asked the question in a different way. But the Joint and Allied Doctrine and Concepts Branch recently reminded us that “full spectrum” has devolved into a cliché that does not adequately describe Army doctrine and commander mission activities.

So herein we offer a tested response to the question, “How do we successfully integrate Signal functions into unified land operations?” This is

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essentially the same question previously posed in warfighting discussions, leader development sessions, and within the doctrine developers at U.S. Army Training and Doctrine Command—“How do we fight full spectrum operations?”

The experiential answer is, our units must dominate through fire and maneuver for the high intensity fight while transitioning to a wide area security mission.

The challenge is how to structure the force for follow-on training and future operational preparations. As a

first step, the 173rd Airborne Brigade Combat Team out of Vicenza, Italy recently was put to this test at the Joint Maneuver Readiness Center in Hohenfels, Germany, and we found that many of the lessons and techniques for our Army Force Generation-based deployments to Iraq and Afghanistan work well in unified land operations while others simply do not work in an austere environment. From this rotation, we were able to draw three main communications conclusions. First, we need practice in setting up initial communications into an austere environment. Second, there must be a detailed

and rehearsed plan to migrate from single channel communications to the digital. Third, we must understand that wideband network systems and expeditionary operations depend upon strong enterprise to expeditionary network synchronization.

The rotation began with a forced entry, airborne operation that sought to seize a foothold into the area of conflict. By rule airborne operations are joint, complicated, and risky. Soldiers jump into harm’s way with only the gear they can carry and the few items they can drop from the aircraft; this is a far cry from the heavy armaments and communications platforms we depend upon in the current Southwest Asia Theater.

From a communications perspective the airborne operations provided a significant departure from our normal practice. Soldiers had to rely on the Single Channel Radio network for communications; although we use single channel downrange, over the years we have begun to rely on unmanned relays, vehicle-based blue force tracker, and local cellular capabilities to communicate. Although these systems have been huge combat multipliers, they have eroded our ability to plan, support, and execute operations with the limited Multiband Inter/Intra Team Radio and Single Channel Ground and Airborne Radio System networks we are authorized. As can be imagined, the first 36 hours required significant effort to position key mission command and warfighting functions nodes to mitigate the line of site challenges; key nodes such as the Single Channel C2 HMMWV, dismounted and mounted retransmitter, and Single Channel TACSATs were key. However, many of these key items were not available as some of these platforms were not in the first chinks of airflow to re-enforce operations on the drop zone. Furthermore, the Single Channel TACSAT network used the new integrated waveform protocol—a replacement for the shared Demand Multiple Access Protocol. Although this protocol provides much more capability with the limited satellite infrastructure, it is neither well understood nor intuitive. The IW training and equipment challenge plagued the rotation for its entirety. To resolve this, the JMRC leadership borrowed a wideband satellite segment to mitigate the risk. An important lesson learned for future operations is that the initial single channel

How to fight unified land operations



(U.S. Army photo by Gary L. Kieffer)

U.S. Army Soldiers, 173rd Airborne Brigade Combat Team, conduct a dismounted patrol during a joint training exercise at the Joint Multi-National Training Center, Hohenfels, Germany. A CH-47 Chinook helicopter can be seen (background) departing the area.

communications platform is as critical as the initial Howitzers blasts on the battlefield. Great pressure emerged to migrate from Single Channel Radios to the WIN-T based, digital network as the team brought in follow-on forces. Since the force does not do this in preparation, deployment or operations downrange, this transition did not go as smoothly as necessary for the commander.

We encountered some challenges as we made the migration. First, the knowledge management and reporting completely changed when moving from one system to another. These techniques and procedures were not as well defined, trained and understood to be effective. As a result, the 173rd was receiving hodgepodge reporting from its battalions for almost a week. Second, many battalions struggled to come

up on their WIN-T equipment and Army mission command systems. The delay of a few battalions caused friction in the information sharing effort. Third, the reporting structure had to be retooled to account for the fact that battalions still maintained single channel reporting from the companies, transition the information into the digital systems, and then report to brigade. This swivel chair system at battalion is time consuming, but necessary. In the future, FSO communications require a detailed, conditions-based transition plan that is well rehearsed and understood. This plan and rehearsal must involve commanders at every level as the transition impacts more than Signal. It can be the limiting factor or major enabler for mission command.

The third major lesson learned from the rotation is that there is a significant need to synchronize the efforts of the tactical, imbedded Signal formations with the enterprise network organizations. This synchronization spans three major areas: Technical training oversight, network operations and integration, and problem resolution. In CONUS the division headquarters regularly performs the training readiness oversight portion of these tasks and as needed integrates with the program managers and Signal commands to resolve large-scale issues for the BCTs; however, in Europe or even in CONUS when the divisions are gone, this task often times falls

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tactical signal brigade and its expeditionary signal battalions as they have the skill sets and reach into the enterprise to resolve larger issues.

Brigades have a very low density of Signal Soldiers and even lower density of the key technicians to keep a network running. This low density creates a problem when separated; as an example if one member of a four man command post node team isn't trained to standard, it creates huge impacts on the overall mission. To mitigate this problem, MG Alan Lynn, U.S. Army Signal Center of Excellence commanding general, as part of the Signal Functional Area Assessment, has developed a concept to co-locate and integrate



(U.S. Army photo by SSG Tyffani L. Davis)

U.S. Army Pfc. Taylor Cardinale, from 1st Platoon, Charlie Company, 2nd Battalion, 503rd Infantry Regiment, 173rd Airborne Brigade Combat Team, calls in grid coordinates over a tactical satellite radio in the Kunar province of Afghanistan 20 March 2008.

the efforts of like skills to conduct what he calls, "Intellectual Pooling." To accomplish this task, imbedded BCT communications companies and teams are given general support from an ESB. By combining training efforts, deployment preparatory tasks, and maintenance training, the imbedded organizations can better sustain technical proficiency in their small population. Over time, this concept may expand to the movement of Soldiers between organizations based on ARFORGEN and need. Currently, the 72nd ESB is working to synchronize the 173rd Signal Company's training with its preparation of an expeditionary signal company.

The second network support task the BCT requires is a higher level command to integrate network operations reporting and network health management. The BCT never fights on its own network as it must plug into the rest of the Force. More often than not this requires integration between the enterprise connections and network services with the BCT's Army Battle Command Systems and network services. This integration is complicated and requires a broader view while having someone focused on their problems. In other words the Higher Level NETOPS organization must be able to see into the larger enterprise and down into the BCT to aid in resolving problems. For this rotation, the 72nd ESB, who was re-enforced with strategic assets from the European Theater Network Operations and Security Center and 69th Signal Battalion, performed this task; however, that role was not a part of the original plan. For follow on rotations we should codify the relationships, reporting, and HICON strategy to more effectively support the BCT.

Finally, building on the HICON point, the BCT needs someone who can organize and integrate all communications stakeholders from the Army and Joint community to resolve higher level issues. These stakeholders span Defense Information Systems Agency, the Signal Command, the Program Executive Office for Command, Control and Communications-Tactical, and Communication Electronics Command. By having units reach out on behalf of the BCT, we were able to integrate all the greatest minds to resolve problems for the BCT. Without this integrating function, the BCT would not have been able to resolve critical routing issues that limited the effectiveness of data flow up and out to its higher headquarters. At the end of the day, the PM, Regional Hub Node, 5th Signal Command, 72nd ESB, and the 173rd resolved a complicated routing issue, provided lessons learned to the Army, and created new world-wide configurations to preclude other instances

of the problem. It is that level of teamwork that is necessary to effectively integrate these experts.

The 173rd BCT's full spectrum rotation was a difficult one; it came early after the brigade redeployed from Afghanistan. However, it was an important learning opportunity as it highlighted many training and equipping issues that the Army must face as we move to full spectrum operations. To be effective, we must relearn the single channel fight, develop new procedures to move from single channel to the digital, ABCS-based mission command, and we must more effectively integrate the expeditionary with the enterprise.

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commander of 5th Signal Command's 72nd Expeditionary Signal Battalion. Khatod brings a varied set of experiences to operations as has worked tactical assignments in Signal battalions spanning platoon leader through battalion executive officer, Infantry battalion and brigade S6 jobs, and combat developer duties in TRADOC where he helped develop the modular Signal Force that shaped both the ESB and BCT. He holds an MSIT from University of Maryland University College, Master of Human Resource from the University of Oklahoma, and a Bachelor of Science from the U. S. Military Academy.

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