Strategy Research Project

ESTABLISHMENT OF THE CONUS SIGNAL COMMAND (THEATER): HIT OR MISS?

BY

COLONEL EDWIN M. DROSE, JR.
United States Army

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USAWC STRATEGY RESEARCH PROJECT

ESTABLISHMENT OF THE CONUS SIGNAL COMMAND (THEATER): HIT OR MISS?

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Colonel Edwin M. Drose, Jr.
United States Army

Dr. Jeffrey L. Groh
Project Adviser

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U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

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On 30 July 2007, the Vice Chief of Staff of the Army approved the activation of a Signal Command (Theater) and two subordinate signal brigades within the continental United States (CONUS). The decision to establish the 7th Signal Command (Theater) and its two subordinate brigades (93rd and 106th Signal Brigades) will mark a significant improvement in how the Network Enterprise Technology Command/9th Army Signal Command (NETCOM/9th ASC) manages the CONUS portion of the LandWarNet. This paper examines aspects of pertinent organizational change models, the principles of war, the tenets of Army operations and how the approved organizational change will enhance NETCOM's support to full spectrum network-centric operations. Specifically, this paper will address how improvements in full spectrum operations, computer network defense, LandWarNet situational awareness and how support to information enabled expeditionary operations enhances network operations within CONUS. Finally, it proposes associated recommendations to ensure success of the new organizations.

ESTABLISHMENT OF THE CONUS SIGNAL COMMAND (THEATER): HIT OR MISS?

> … guarantee that connectivity, services, applications, and data are staged and readily available at the right place, and at the right time…
>
> —Major General Carroll Pollett[1]

The 2004 National Military Strategy concludes by stating that the strategy for the armed forces focuses on "winning the WOT (War on Terror) and enhancing joint warfighting while supporting actions to create a joint, network-centric, distributed force capable of full spectrum dominance."[2] How the Military Services support the network-centric piece of that strategy varies with the obvious differences in the Military Services. For the United States Army, the task falls on the Army's senior communications organization and command, the Network Enterprise Technology Command/9th Army Signal Command (NETCOM/9th ASC). NETCOM/9th ASC is the senior operational signal command in the United States Army and has direct and indirect impact on the worldwide operation of the Army's portion of the Global Information Grid (GIG) known as the LandWarNet. To date, there has not been any single entity or organization designated or responsible for the overall operation of the LandWarNet within the continental United States (CONUS) like there are in the other major combatant command areas of responsibility (European Command, Pacific Command and Central Command).[3] The decision to establish a Signal Command (Theater) with responsibility for the CONUS portion of the LandWarNet will mark a significant improvement in how NETCOM/9th ASC manages the critical CONUS portion of the LandWarNet and provides the services, data, connectivity and applications that Major General Pollett, the Commander of NETCOM/9th ASC discusses above.

This paper will discuss the background associated with network-centric warfare/operations and the current NETCOM/9th ASC structure of the CONUS portion of the LandWarNet. It will then describe the proposed organizational changes, organizational missions and structures, then outline the initial Mission Essential Task List. Finally, the paper will discuss the four major anticipated improvements before concluding with the recommendations to ensure success of the new organization.

Network-Centric Warfare: Why all the fuss?

Network Centric Warfare terminology traces its military roots back to 1998 when the Vice Admiral Cebrowski and John Garstka linked the network-centric operations of American businesses to military applications and operations.[4] This paper is not about the overall application or promotion of the concept of Network Centric Warfare/Operations to military operations. However, it is necessary to define the concept for the analysis of how the establishment of the CONUS Signal Command (Theater) will improve the process of enabling Network Centric Warfare (NCW) within the United States Army. For the purposes of this paper, Network Centric Warfare describes the combination of emerging tactics, techniques, procedures and organizations that a networked military force can employ to create a decisive warfighting advantage.[5] Stated another way, Network Centric Warfare is about behaviors and ways of thinking at the individual and organizational levels. “Network Centric Warfare focuses on the combat power that can be generated from the effective linking or networking of the warfighting enterprise.”[6] This paper will address how this new organization will improve NETCOMs ability to support network-centric operations across the Global Information Grid and specifically within the CONUS portion of the LandWarNet.

Since 1 October 2002, NETCOM/9th ASC was charged with the responsibility of acting as the Army-wide operational executive agent for network operations and security. In addition, it is the single point of contact for Army network development and protection in support of Global Combatant Commanders and Army Service Component Commanders.[7] Over the last two decades, there was overwhelming growth in the networks and practices that rely on information-age technologies. Due to the massive growth of the CONUS information technology structure and anticipated transformation initiatives, NETCOM/9th ASC realized that they must make an organizational change in order to better support the CONUS portion of the LandWarNet. NETCOM/9th ASC realized that the CONUS LandWarNet lacked the signal command and control and organizational structure resident in the major regional combatant commands.[8] All three of the current major regional combatant commands (European Command, Pacific Command and Central Command) have a General Officer signal command assigned to their theater that is dual-hatted as the G-6 for the Army Service Component Command within the combatant command. These commands are responsible for operating, developing and protecting the LandWarNet within their area of operation in support of the Army Service Component Command and Regional Combatant Commander. Yet within CONUS, by far the largest and most complex

Theater	Users	Servers	End Devices	Installations	GOs CMDs
USAREUR	63,729	324	79,031	30	GO-25 CMD-14
USARPAC	22,880	190	20,990	10	GO-15 CMD-10
Korea	60,843	37	22,120	36	GO-15 CMD-12
SWA	33,225	825	Evolving Daily	50	GO-57 CMD-52
CONUS	386,896	3,527	524,827	112	GO-275 CMD-65

Figure 1 – CONUS LandWarNet Comparison[9]

portion of the LandWarNet, the Army does not have a single entity or organization that has the capability or authority to synchronize and integrate this disparate network that consists of over 19 different commands and agencies spread across 447 locations. As of FY07, the CONUS LandWarNet consisted of over 500,000 end devices, 3500 servers, and served over 350,000 users. In addition to these predominantly garrison requirements, the CONUS based expeditionary units often establish additional internal networks to support their operational training and requirements and there was no single entity within the operational forces to integrate their efforts.[10]

The lack of a dedicated commander with the responsibility and authority to manage the CONUS LandWarNet was the genesis for getting the decision approved and resources allocated to activate the new theater signal command organization. NETCOM briefed the Army's Deputy Chief of Staff for Operations (Army G3) in the fall of 2006 and laid out some of the unique challenges of operating and provisioning the complex CONUS LandWarNet. As a result, the Army G3 tasked NETCOM/9th ASC to come up with a proposal to solve the unity of effort and command concerns they raised with respect to the CONUS LandWarNet. The outcome of that tasking was to develop a signal support structure similar to those found in every other major regional combatant commands. Specifically, a Theater Signal Command for CONUS commanded by a General Officer with two regionally based signal brigades was the solution. On 30 July 2007, the Vice Chief-of-Staff of the U.S. Army approved the plan and directed the implementation. NETCOM could start a phased implementation of activating an Active Component CONUS Signal Command (Theater) with two active component strategic

signal brigades as the subordinate units. These activating units are the 7th Signal Command (Theater), the 93rd Signal Brigade and the 106th Signal Brigade.[11]

New Organization

The development of the organizational structure and command and control structure is critical to the accomplishment of the objective. Just as the Army is transforming while at war, the new signal command will have to establish itself while the CONUS LandWarNet is supporting the Global War on Terror. It is imperative that the activation and command and control changes are phased and executed in conjunction with ongoing operations. The Army cannot afford to have any lapse in the availability or LandWarNet security because of this transition.

The activation schedule of the 7th Signal Command (Theater) and the two subordinate brigades is a three phased operation starting with establishment of Cadre level by July 2008. Phase two is the establishment of interim operational capability (IOC) by January 2009. Phase three is the implementation of full operational capability (FOC) by January 2010. The initial mission statement of the Signal Command (Theater) is:

> Extend LWN capabilities to operating and Generating force in support of CONUS based information-enabled expeditionary operations. Provide integration, security and defense of the CONUS portion of the LWN. Establish information management capabilities and enable the Global Collaborative Environment.[12]

The supporting Signal Command Mission Essential Task List is: command and control the CONUS portion of the LandWarNet; execute NetOps; provide operating and generating forces rapid and reliable access to the network, network services, data, and applications; enforce the LandWarNet interoperability and security policies, procedures

and standards; plan, engineer, integrate and rehearse CONUS LandWarNet information systems and networks, to include capital planning; and sustain and protect the force.[13]

The two activating signal brigades have nested mission statements and Mission Essential Task Lists. The initial signal brigade's mission statements are:

> Synchronize LWN capabilities ISO operating and generating force requirements. Execute network and information systems integration. Enable 24x7 access to LWN capabilities and the Global Collaborative Environment. Exercise oversight of Directorate of Information Management LWN operations and synchronize integration of network service providers.[14]

Likewise, the initial signal brigade Mission Essential Task Lists are closely nested. They are to: "integrate, synchronize and rehearse generating and operating force networks; coordinate rapid and reliable access to network connectivity, services, applications, and data through all operational phases; provide technical support and incidence response to ensure network interoperability, availability, capacity, and security; enforce LWN interoperability and security policies, procedures and standards; sustain and protect the force."[15]

There are four main elements to the command's organization: the headquarters for the command and each regional brigade; the Network Security and Operations Center (NOSC) at the command level and a Regional Support Center (RSC) within each brigade; the Installation Management Command (IMCOM) Regional Chief Information Officer (RCIO) office; and the Brigade Support Teams. The headquarters elements will consist of the command groups and administrative support elements for the three organizations. The 7th Signal Command (Theater) will activate at Fort Gordon, Georgia and the two regional signal brigades will activate at Fort Eustis, Virginia and Fort Sam Houston, Texas as the 93rd Signal Brigade and 106th Signal Brigade

respectively. The CONUS Theater NOSC (CTNOSC) already exists and is currently performing the CONUS NetOps functions from Fort Huachuca under the control of the NETCOM G-3. After activation, the 7th Signal Command assumes command and control of the CTNOSC and begins assuming responsibility for daily operation, maintenance and security of the CONUS LandWarNet. In addition, the two regional signal brigades begin to establish their Regional Support Centers as they move toward IOC in January 2009.

Three major events initiate in conjunction with or shortly after IOC. First, the assumption of command and control of the existing 21st Signal Brigade under the 7th Signal Command (Theater) will become effective when conditions permit. The 21st Signal Brigade has the mission of providing worldwide information services and battle command capability from the President of the United States and the Secretary of Defense/Joint Chiefs of Staff to the combatant commanders. Assumption of this mission will obviously mark a key point in the history and establishment of the 7th Signal Command (Theater). Second, the establishment of the command and control of the Installation Management Command (IMCOM) Regional CIOs (RCIOs) with the regional signal brigades will be a critical task. The assumption of the RCIO positions will mark the official transition of the command relationship of the major DOIMs within the CONUS LandWarNet under the operational control of a NETCOM/9th ASC unit instead of under IMCOM. Third, the regional signal brigades will begin building the capability of the Brigade Support Teams. This will mark the start of dedicated assets whose mission is to facilitate the connectivity of expeditionary network forces into and out of the CONUS portion of the LandWarNet. At FOC, the 7th Signal Command accepts the full

mission requirements and becomes the senior signal headquarters responsible for the command and control of the CONUS Theater LandWarNet.

Anticipated Improvements

Like any new organization, the establishment of the new signal command will not be without problems and issues. However, the payoff has great potential for organizational and operational improvements within the CONUS LandWarNet. There are many possible improvements that will materialize after this organizational change but this paper will limit discussion to four anticipated improvements: the fundamentals of full spectrum operations; computer network defense; LandWarNet situational awareness; and support to expeditionary network centric operations.

The Fundamentals of Full Spectrum Operations

Implementing this organizational change is in keeping with the underlying fundamentals of Full Spectrum Operations as described in United States Army Field Manual 3-0, Operations. Full Spectrum Operations is the operational concept that is the foundation for Army operations. "The goal of full spectrum operations is to apply landpower as part of unified action to defeat the enemy on land and establish conditions that achieve the joint force commander's endstate."[16] This operational concept relies on seizing, retaining and exploiting the initiative, simultaneity and synchronization of lethal and non-lethal actions using decentralized mission command.[17] In addition, three of the nine longstanding Principles of War[18] support this organizational change. This organizational change within NETCOM/9th ASC supports all of these elements of Full Spectrum operations. The primary Principles of War supported by this change are Unity of Command, Unity of Effort and Simplicity. The current CONUS Theater network is by

far the most technically complex within the LandWarNet. It has over twice as many users, servers and end devices of United States Army Europe (USAREUR), United States Army Pacific (USARPAC), Korea, and Southwest Asia (SWA) combined. There are 264 CONUS Directorate of Information Management (DOIMs) supporting 19 different commands and agencies at 447 different locations.[19] The current command relationship within CONUS has all the DOIMs taking technical direction from the CONUS T-NOSC which is not a doctrinally defined command relationship within current Army doctrine.[20] The new organizational change provided an opportunity to clarify the issue. However, the specified command relationship does not remedy the previous ambiguous command and control relationship. The order establishing the new organization does not clearly define command and technical relationships. It directs the development of a Memorandum of Understanding (MOU) between IMCOM and NETCOM/9th ASC describing rating schemes and resource synchronization.[21] Although it does not dictate an official command relationship between the 7th Signal Command and the Army elements with DOIM and DOIM-like activities, it does attempt to accomplish the intent. It tasks the Army elements with DOIM or DOIM-like activities to do the following:

> Support NETCOM/9th Signal Command (Army) during execution. Ensure all CONUS-based subordinate DOIM and DOIM-like activities support the 7th Signal Command and subordinate brigades for execution of DOIM LWN operations, NETOPS, LWN situational awareness, synchronization of IT projects at installations, enforcement of IA/CND policy, and Generating and Operational force LWN operations.[22]

The order falls short of the original concept to provide a clear, doctrinally accepted command relationship of operational control (OPCON) between the IMCOM

DOIMs and “technical control over all other IT service provider organizations in CONUS.”[23]

Putting the IMCOM DOIMs under the doctrinally defined OPCON relationship to the new command would immediately clear up much of the previous command and control ambiguity at the major IMCOM bases. In addition, although it is not a doctrinally defined term in the joint publications dictionary, NETCOM’s position is that the technical control relationship provides the policy authority (not command authority) to direct and enforce the network enterprise policy, procedures, standards, and configurations to accomplish network-wide functional tasks and missions over the remaining non-IMCOM LandWarNet providers within CONUS.[24] Clearly specifying the command relationships and policies will lead to a much more streamlined and simplified authority to direct activities in support of Network-Centric Operations and the CONUS portion of the LandWarNet.

The addition of the 7th Signal Command (Theater) headquarters and staff will establish a dedicated, focused organization with the responsibility and authority to operate the CONUS LandWarNet and achieve better unity of effort, synchronization and initiative across the theater. Currently, within NETCOM, there are a myriad of world-wide LandWarNet responsibilities that do not allow the entire staff to focus solely on the operation of the CONUS LandWarNet. In addition, activating the regionally-based Signal Brigades with their organic staffs and Network Service Centers (NSCs) allows them to further break down the massive CONUS LandWarNet into more reasonably sized regional areas, with smaller spans of control, achieving the unity of command and effort on a more manageable scale. There will clearly be more network guidance,

synchronization, simultaneity and ability to coordinate on issues and challenges with the establishment of these regionally focused commanders, staffs and NSCs. This consolidated and streamlined regional concept will allow the CONUS Signal Command to simplify the technical direction, achieve better synchronization and maintain the initiative with respect to the support to Network Centric Operations within the CONUS LandWarNet.

As it relates to support for Network Centric Warfare, achieving enhanced unity of command and effort also supports the initiative, agility and synchronization tenets within the operational concept of Full Spectrum Operations. Along with unity of command and effort, the result is a simpler organizational structure therefore requiring less time and coordination to achieve synchronization. The combined effects of these Principles of War, organizational concepts and tenets will all lead to a much more agile, synchronized and simplified signal command structure. The synergy of these combined effects will facilitate efficient and effective execution of day-to-day operations of the CONUS LandWarNet.

Computer Network Defense

As the size and complexity of US military networks increase, so do the network vulnerabilities. Computer network incidents have been on a steady rise with incidents numbering over 26,000 in FY07.[25] As the reliance on the communications networks increase for Department of Defense Network Centric forces, there is nothing more important than the defense of the supporting networks to ensure the users of those networks maintain our informational dominance and quality of service. The current organization has little or no unity of command or effort conducting the important task of

Computer Network Defense. These diverse organizations and architectures have created potential seams in the LandWarNet defense. These seams introduce multiple varieties of vulnerabilities and reduce the protection and overall operability of the CONUS LandWarNet. Since any network is only as secure as the weakest access point, it is imperative that all agencies and departments do their part of the overall network defense or the entire Global Information Grid is at risk. The requirements for specific cyberspace security come from *The National Strategy to Secure Cyberspace* which requires every governmental agency to comply with three broad processes. The three broad processes are to identify and document the enterprise architectures, continually assess threats and vulnerabilities, and implement security controls and remediation efforts.[26] The Department of Defense complies with these three processes by executing Computer Network Defense. Joint Publication 1-02, *Dictionary of Military and Associated Terms,* defines Computer Network Defense as "actions taken to protect, monitor, analyze, detect and respond to unauthorized activity within Department of Defense information systems and computer networks".[27] Establishment of the CONUS Signal Command directly enhances the Department of Defense's ability to fulfill their agency requirements of securing cyberspace and computer network defense. The improvement is largely through enhancements in unity of command and unity of effort with respect to security policies, tactics, techniques and procedures. The establishment of a fully supported, doctrinally based chain of command will allow better planning, management, and enforcement of DoD and Army enterprise architectures, configuration management and business practices by consolidating the reporting and tracking within the regional signal brigade NSCs. The ability to conduct day-to-day Computer Network

Defense activities and execute a viable CONUS theater defense-in-depth network architecture will also improve purely from the point of another command and control node with monitoring capabilities and responsibilities in the network.[28] Just as critical to the defense of the network and prevention of incidents is the response to successful attacks or negative incidents. Again, unity of command and or effort and smaller span of responsibility will enhance the ability of the smaller, multiple, regionally focused NSCs to prepare for and react to Computer Network Defense incidents. Their smaller areas of operation and focused LandWarNet responsibilities will enhance their ability to quickly and more effectively take corrective actions on identified risks, such as Information Assurance and Vulnerability Assessments, monitor the computer network defense status of the CONUS LandWarNet and react to emergent incidents and successful attacks. This enhanced, regionally-based computer network defense capability will be a valuable asset to ensure the protection and availability of the CONUS LandWarNet.

LandWarNet Situational Awareness / Operational Focus

The ability to link the needs of the operational commanders to support of the CONUS LandWarNet is critical. The underpinning of Full Spectrum Operations relies on operational initiative and synchronization.[29] It is difficult to achieve synchronization and initiative when there is a large organizational separation between generating forces and the units enabling their network centric operations. The actual linkage between the operational commander (USARNORTH) and the 7th Signal Command (Theater) is as critical in CONUS as it is in the overseas combatant commands. Likewise, the direct linkage between the two regional signal brigades and IMCOM will establish the other critical linkage with the installation side of CONUS operations. Under the current

organization, there is a large organizational separation between guidance given by the Army Service Component Commander in CONUS - U.S. Army North (Fifth Army) (USARNORTH), and the current "commander" of the CONUS LandWarNet – the NETCOM/9th ASC Commander. Whereas the NETCOM/9th ASC Commander is a direct reporting unit to the Department of the Army Chief Information Officer/G6, and responsible for the operation of the entire world-wide LandWarNet, the CONUS Signal Command organization calls for the Commander to be "dual-hatted" as the Senior Mission Commander G6.[30] This would call for the 7th Signal Command (T) to assume the role as the USARNORTH G6 just as the USARPAC and USAREUR G6's are the senior Army Service Component Signal Commands within their Combatant Commands. This direct staff relationship between the 7th Signal Command (T) Commander and the Commander, United States Army North (Fifth Army) will greatly improve the synchronization between the enablers of the CONUS LandWarNet and the Senior Mission Commander's priorities and requirements for LandWarNet support to the operational force. It will allow for the Signal Command (Theater) to better prioritize and react to guidance by both the Army Service Component Commander and the Joint Force Commander at Northern Command. Likewise, the inclusion of the IMCOM RCIOs into the regional signal brigades will accomplish the same objective at the major post, camp, and station level across the major installations within CONUS. This dual connectivity between the operational command and the installation command will enhance the situational awareness of the major requirements of the LandWarNet within 7th Signal Command (Theater).

Support to Expeditionary Network Centric Warfare

Support to expeditionary Network Centric Warfare units will improve once the Brigade Support Teams become operational within the regional Signal Brigades. The Brigade Support Teams are responsible to ensure proper configuration of expeditionary and generating forces as they move in or out of the CONUS LandWarNet architecture. Previously, no dedicated assets were responsible for assisting expeditionary Network Centric Forces with LandWarNet architecture and policy compliance. NETCOM elements did make an effort to assist where possible, but support came from organic assets on an ad-hoc basis and varied from location to location.[31] The new structure calls for the Brigade Support Teams to have three types of teams established: Battle Command Assistance Teams; Remediation and Mitigation Teams; and Infrastructure Support Teams. These teams are the basis of the framework to be exceptional network centric enablers if properly staffed, equipped and trained. There are numerous examples of expeditionary forces that train and rehearse using one battle command/network topology and having to totally redesign and architect that topology as they move into their area of operations. During Operation Iraqi Freedom, as late as 2006, both the V Corps headquarters and division forces had to rework their battle command/network topologies for training in their home theaters as well as within the Iraqi area of operations.[32] The future Battle Command Assistance Team within the regional signal brigades will be the link to enable expeditionary network centric forces interoperability across the LandWarNet and Global Information Grid (GIG). The ability of the Battle Command Assistance Teams to deploy and provide on-site expertise would have been an important capability to previously deployed forces. Between the Battle Command Assistance Team and the Regional Network Service Center, the CONUS

Regional Signal Brigades will integrate all technical expertise and provide a conduit to define and coordinate LandWarNet support requirements for the expeditionary forces. They will be responsible for synchronizing information system capabilities for access to the LandWarNet and the Global Information Grid across the multiple theaters and commands. They will provide deployable, technical expertise that can act as the conduits of user requirements, troubleshooters of technical issues and security and or access policy guidance, interpretation and responsibilities.[33] The second type of Brigade Support Team is the Remediation and Security Team. These teams will greatly enhance the capability of the new Signal Command to assist and react to computer incident requests for assistance and emergent threats and events. The concept for these trained and rapidly deployable assets holds a lot of promise to enhance the security of the LandWarNet.

Recommendations

Command Relationships

One of the key weaknesses of the current structure is the lack of a clearly defined, doctrinally accepted command relationship between the CTNOSC and the myriad of DOIM and DOIM-like entities across the commands and agencies within CONUS. The establishment of the 7th Signal Command (Theater) provides the opportunity to remedy the problem but does not capitalize on the opportunity. It will be imperative that U.S. Army North (Fifth Army), NETCOM/9th ASC and Installation Management Command all come to an agreement that establishes clearly defined and doctrinally supported command relationship between the 7th Signal Command (Theater) and the primary DOIM activities within IMCOM. The establishment of the 7th Signal

Command (Theater) provides an opportunity to eliminate any ambiguity about the relationship between the major DOIMs or DOIM-like activities and the 7th Signal Command (Theater). Without relying on a doctrinally defined and accepted term like OPCON, there will always be the possibility of misunderstanding or confusion about which organization is in charge of the different aspects of various network daily operations.

Support to Full Spectrum Operations

The ability to enhance support to full spectrum operations hinges on the principle of unity of command. Establishing a clearly defined, doctrinally supported chain of command is critical for success. It is clear that the CONUS Signal Command and two brigades cannot assume direct control over the vast array of posts, facilities and agencies within CONUS. However, providing for operational control of the IMCOM DOIMs by the Regional Signal Brigades must happen. Without establishing the command and control relationship on the doctrinally accepted OPCON relationship with the primary IMCOM posts, camps and stations, the command and control relationships remain ambiguous and basically maintain the status quo.

Computer Network Defense

The ability to defend and protect the CONUS LandWarNet gets more difficult as the LandWarNet continues to grow and diversify. Successful defense of the LandWarNet requires dedicated 24x7 operations that focus on compliance with the policies, procedures and threat warnings issued. Establishment of the Regional Support Centers with a dedicated Computer Network Defense monitoring capability adds a clear level of visibility and responsibility to the overall network defense system. Continuing

with the establishment of the Mitigation and Remediation Support Teams within the regional signal brigades adds another clear enhancement that focused specifically at the improvement of the defense of the LandWarNet. It is imperative that the personnel assigned to the Mitigation and Remediation Support Teams have the proper training, credentials, equipment and experience to add value to the process. These teams will have to act before, during or after security incidents have happened and it is of the utmost importance that they have the skills and experience to immediately provide the appropriate assistance.

LandWarNet Situational Awareness

Integrating the new command within the supported commands is also critical to maintain linkage between the supported commanders and the LandWarNet. As proposed, the assignment of the 7th Signal Command (Theater) Commander as the senior Army Service Component Commander's G6 is critical. Likewise, assignment of the Installation Management Command Regional Chief Information Officers within the Regional Signal Brigades is crucial to improve the linkage between the LandWarNet enablers and the Operational Force within United States Army North. Without clearly defining the role of the new command as integrated into the Army Service Component Command and the Regional Installation Management Commands, there will not be a clear linkage between the operational users of the LandWarNet and the lead enabling signal command.

The Brigade Support Teams

The success of the improved support to expeditionary network centric operational forces hinges largely on the establishment and capabilities of the Brigade Support

teams within the regional signal brigades. The development of a dedicated element of deployable experts to manage and synchronize LandWarNet requirements and policies will be a vast improvement over the current support structure. Success for the Brigade Support Teams will rely primarily on the manning and training of the personnel assigned to the support teams. The requirement for high quality, trained and experienced personnel are critical for the teams to succeed. Without a concerted effort to assign the most qualified and experienced personnel to the teams, they will not be able to enable expeditionary network centric operations. In addition, the synchronization and linkage between the regional signal brigade support teams and the various program manager teams provided across the Army Battle Command Systems will be crucial. Since these elements come from different communities and to some degree have different objectives, synchronized and complementary objectives are imperative. Without proper coordination, their effects could easily become counter-productive.

Conclusion

The ability to conduct Network Centric Warfare is critical to the United States of America's ability to wage war in the 21st century. Without a valid, reliable, efficient and protected sustaining base network in CONUS, the Army will have diminished ability to project global military landpower. The work by NETCOM/9th ASC to establish the 7th Signal Command (Theater) will pay great dividends to the operation, defense and availability of the CONUS LandWarNet. The 7th Signal Command's ability to ensure the protection, operation, availability and maintenance of the CONUS portion of the LandWarNet is crucial to the U.S. Army's mission. Proper adherence to specific engineering and applicable DoD and Army guidance and policies make the support

provided by the CONUS LandWarNet essential to our Army and the DoD. The simplified chain-of-command will improve unity of effort, unity of command, synchronization, computer network defense, improved LandWarNet situational awareness, and support to the expeditionary network centric forces across the Army foundations. There can be no doubt that the importance of assuring the availability and security of the CONUS portion of the LandWarNet validates the need to establish the CONUS Signal Command headquarters and subordinate brigades. With the right emphasis and focus, the 7th Signal Command (Theater) will improve the capabilities, operation and protection of the CONUS LandWarNet.

Endnotes

[1] Carroll Pollett, "LandWarNet Transformer: Strengthening Operational Responsiveness and Security," Military Information Technology Online, 20 August 2007 [journal on-line]; available from http://www.military-information-technology.com/article.cfm?DocID=2142; Internet; accessed 1 March 2008.

[2] U.S. Joint Chiefs of Staff, *National Military Strategy of the United States of America: A Strategy for Today, a Vision for Tomorrow* (Washington, D.C.: U.S. Joint Chiefs of Staff, 2004), 23.

[3] U.S. Army NETCOM and 9th Signal Command (Army), CONUS C2 Plan, *Concept Plan to Establish 7th Signal Command (Theater)*, United States Army Network Enterprise Technology Command and the 9th Army Signal Command (Fort Huachuca: 23 October 2007), 1.

[4] Arthur K. Cebrowski and John J. Garstka, "Network Centric Warfare: Its Origin and Future," *Naval Institute Proceedings* (1998): 7.

[5] John J. Garstka, "Network-Centric Warfare Offers Warfighting Advantage," *Signal* 57 (May 2003): 58.

[6] David S. Alberts, John J. Garstka, and Frederick P. Stein, "Network Centric Warfare – Developing and Leveraging Information Superiority," 2d ed.; available from http://www.dodccrp.org/html4/research_ncw.html; Internet; accessed 2 March 2008.

[7] U.S. Army NETCOM and 9th Signal Command (Army), "Brief History of the United States Army Network Enterprise Technology Command and the 9th Army Signal Command," available from http://www.netcom.army.mil/about/NETCOMhistory.aspx; Internet; accessed 15 December 2007.

[8] Elizabeth J. Patten, e-mail message to author, 25 January 2007.

[9] CONUS C2 Plan.

[10] Ibid.

[11] U.S. Army Chief of Staff General George Casey Jr. "(U) FY08 Activation of HQs, 7th SIG CMD (T); HQ, 93d SIG BDE; and HQs, 106th SIG BDE,": Department of the Army Execution Order (Washington, D.C., 21 September 2007), 1.

[12] CONUS C2 Plan, 5.

[13] Ibid.

[14] Ibid., 6.

[15] Ibid.

[16] U.S. Department of the Army, *Operations*, Field Manual 3-0 (Washington, D.C.: U.S. Department of the Army, February 2008), 3-1.

[17] Ibid., 3-1 to 3-6.

[18] Ibid., A-1 to A-3.

[19] U.S. Army NETCOM and 9th Signal Command (Army), "CONUS LANDWARNET C2 CONSTRUCT", briefing slides, Fort Huachuca, 30 July 2007.

[20] U.S. Department of the Army, *Operational Terms and Graphics,* Field Manual 1-02 (Washington, D.C.: U.S. Department of the Army, 21 September 2004) lists the abbreviation for technical control as TECHCON but does not provide a definition of the term.

[21] Casey, 7.

[22] Ibid., 4.

[23] U.S. Army Network Enterprise Technology Command and the 9th Army Signal Command CONUS Signal Command, Theater, *NetOps Conceptual Overview*, (Fort Huachuca: 28 September 2007), 3.

[24] CONUS C2 Plan, 4.

[25] CONUS LANDWARNET C2 CONSTRUCT Briefing, 4.

[26] George W. Bush, *The National Strategy to Secure Cyberspace* (Washington, D.C.: The White House, February 2003), 45.

[27] U.S. Department of Defense, *Dictionary of Military and Associated Terms*, Joint Publication 1-02 (Washington, D.C.: U.S. Department of Defense, 12 April 2001, amended through 17 October 2007), 111.

[28] CONUS Signal Command, 4.

[29] Field Manual 3-0, 3-1 to 3-2.

[30] CONUS C2 Plan, 4.

[31] Maureen J. O'Connor, e-mail message to author, 17 January 2007.

[32] LTC David Acevedo, Student, U.S. Army War College, interview by author, 19 January 2007, Carlisle Barracks, PA.

[33] CONUS Signal Command, 5.