Logistics Evolution at the National Training Center

Sustainment in a Communications-Constrained Environment

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"Amateurs talk about tactics, but professionals study logistics."

This maxim — once spoken by Gen. Robert H. Barrow, onetime commandant of the U.S. Marine Corps in the late 1970s — holds true on today's battlefield. No other place on Earth reinforces this sentiment more than the National Training Center (NTC) at Fort Irwin, California, an 1,800-square-mile battlefield that stresses all facets of the sustainment warfighting function (WfF). Recently, the 1st Armored Brigade Combat Team (ABCT), 1st Armored Division, faced a unique logistics challenge in its training rotation at NTC, which laid bare both the challenges and opportunities associated with sustainment in large-scale combat operations (LSCO). More specifically, the BCT fought sustainment without server-based upper tactical internet (Upper TI) to reduce the physical and electromagnetic signature of its command posts. In this communications-constrained environment, units at echelon communicated only through frequency modulation (FM) and the Joint Battle Command-Platform (JBC-P).

The successful adaptation of the sustainment WfF's systems and processes to a lower tactical internet (Lower TI) apparatus proved that BCTs can operate and sustain without the more cumbersome and signature-heavy Upper TI systems that were hallmarks of the last decade. This article aims to detail the BCT's

approach to sustainment planning and execution in a communications-constrained environment and to offer organizational lessons learned to inform future efforts.

The Mission Support Site

With respect to sustainment organization, it is important to start with the mission support site (MSS), a mission command node well beyond the brigade's area of operation. Simply stated, BCTs must have an Upper TI tether to their higher headquarters to succeed in LSCO. This reality was reinforced time and again during 1st ABCT's NTC rotation. Based on this fact, coupled with the tactical imperative to shrink command posts and improve mobility, 1st ABCT removed its Joint Network Node (JNN), Command Post Node (CPN), and Satellite Transportable Terminal capabilities from command posts and placed them at the MSS, making JBC-P, FM, and high-frequency systems the primary methods of communication. Importantly, the BCT MCP employed limited client-based Upper TI systems to preserve a stable link to both the MSS and its higher headquarters; however, this capability did not extend to lower echelons.

In an Upper TI-constrained environment, the MSS is an essential node because it provides a brigade's connection to its higher headquarters, ensuring that the information necessary to fight and win is readily accessible. More specifically, the MSS provides real-time information and analysis to forward-deployed formations through a unique mix of personnel and equipment such as the JNN and CPN. The BCT quickly realized that a sustainment personnel package at the MSS was critical to mission success, and therefore assigned leaders to the JNN to preserve uninterrupted communications with both the division headquarters and echelon-above-brigade (EAB) assets. Moreover, aligning sustainment expertise at the MSS enabled the BCT to aggregate battalion logistics status reports (LOGSTATs) and to conduct the analysis necessary to regenerate combat power; these two functions could otherwise be slowed without Upper TI integration in forward command posts.

With respect to technical capabilities, the MSS was equipped with the Secret Internet Protocol Router Network (SIPRNet), the Non-classified Internet Protocol Router Network (NIPRNet), and the JBC-P, thus allowing sustainment personnel to quickly transition between Upper TI and Lower TI systems, which ultimately increased information dissemination. In summary, the MSS's technical and personnel capabilities enabled the BCT to develop a sustainment common operational picture (COP) through LOGSTAT aggregation and to facilitate combat power regeneration through accurate Class VII reporting. These two core sustainment missions are vital to success on the fast-paced and dynamic battlefield that is the NTC and should be retained at the MSS in a Lower TI-dominant environment.

The Brigade MCP

While necessary attention was given to sustainment roles and responsibilities at the MSS, the BCT prioritized the main command post (MCP) as the central hub for sustainment activity. Given the nature of communications during NTC 24-04, the BCT weighted the MCP with the brigade S-1, S-4, AS-4, the medical plans officer, and the surgeon. This personnel configuration was designed to address the fundamentals of logistics management, namely, analyzing and approving the brigade LOGSTAT, conducting long-range logistics planning, synchronizing planning efforts and operations with the support operations (SPO) officer, and maintaining a logistics COP (LOGCOP) for the commander.

Furthermore, by centralizing sustainment planning activities in the MCP, sustainment leaders were aligned with the efforts of the brigade's operations cell; this departed from the traditional administrative and logistics operations center structure, which was often segregated from the operations cell. This structural change ensured that sustainment leaders understood the commander's intent and provided logistics analysis, risk assessments, and constraints to maneuver planners. Beyond the specific roles, responsibilities, and functions of these leaders at the MCP, 1st ABCT's experience at NTC underscores the need for commanders to reconsider and, more importantly, adjust the sustainment composition of the MCP when operating in a communications-constrained environment.

Adaptation to Lower TI

Within the context of NTC 24-04, it is important to emphasize the task and purpose given to sustainment planners with respect to the LOGSTAT: to collect, aggregate, and reflect data on essential elements of friendly information to enable the commander to make informed decisions. This core task and purpose provided the impetus for establishing a sustainment framework and system that limited guesswork and increased accuracy. On this point, the role of the LOGSTAT cannot be overemphasized, since it is the mechanism by which brigades request the type and quantity of supply necessary to meet tactical requirements and enable offensive and defensive operations.

LOGSTAT data collection requires a robust, clearly understood, and stable communications architecture that supports multi-echelon reporting. This architecture, however, does not depend on more systems or a larger signature but on fewer systems and a smaller signature. Current table of organizational equipment Lower TI systems combined with leaner and more modern Upper TI-like capabilities provide a communications solution that not only enables sustainment operations but does so without increasing command post signature. In 1st ABCT's case, organizational energy was focused on the JBC-P and FM radios, which resulted in more efficient and effective staff work. In other words, by removing the Upper TI server-based systems from the BCT architecture, staffs experienced an increased capacity to dialogue internally and externally, maintain accurate running estimates, analyze data, and provide recommendations.

Why did this dynamic emerge during NTC 24-04? Simply put, staffs did not have to allocate time to Upper TI system management and product development. Moreover, 1st ABCT's adaptation to a Lower TI-centric NTC rotation forced adjustments to systems and processes that historically were tailored to an Upper TI environment, such as rapid data exchange of files via SIPRNet/NIPRNet and establishing video conferences for synchronization between staffs and/or commanders. Without the ability to rapidly share substantial amounts of information, the BCT prioritized critical sustainment information requirements and defined the method by which these requirements would be reported.

Sustainment Systems and Processes

At NTC 24-04, 1st ABCT faced the unique challenge of ensuring LOGSTAT flow by using a system and method that was not ubiquitous across the organization. This challenge was manifested in the fact that the on-time LOGSTAT submission rate was below 50% during the first 96 hours of force-on-force training. How did this happen? To be sure, organizational discipline accounted for some portion of the deficient reporting, but much more of it was attributed to technological issues. Using the JBC-P free-text message and chat room features, sustainment leaders encountered friction partly because some platforms sent LOGSTATs via secure means but were intended for an unclassified end-user platform. Moreover, many users sent LOGSTATs using an Excel-based report that often did not make it to the end user due to bandwidth limitations. Realizing that the sustainment WfF had to adapt to both the fast-paced nature of the battlefield and the organizational limitations associated with LOGSTAT reporting, the BCT implemented immediate changes.

First, the BCT dictated a JBC-P free text report for all LOGSTATs so that information flow was not stymied by large, data-heavy files that slowed transmission. This step improved on-time LOGSTAT reporting by 35% from day 5 through day 12 of force-on-force training. Second, units were required to submit LOGSTATs via FM within a mandated time period if the initial JBC-P report was unsuccessful. Third, the BCT employed client-based Upper TI systems at the MCP and combat service support (CSS) Very Small Aperture Terminals (VSATs) at the brigade level to ensure that the requisite detail, analysis, and collaboration between the BCT, the division, and the division service support battalion were achieved. Fourth, the BCT extended communication capabilities by integrating the

internet JBC-P system into forums such as sustainment WfF chat rooms and working groups. This web-based application provides capabilities similar to those of a JBC-P tactical operations center kit, and thus directly improved sustainment collaboration at the brigade level. Fifth, the BCT expanded and enforced its JBC-P distribution list standard operating procedure (SOP) to all sustainment nodes across the force. This was done to avoid fratricide associated with NIPR-SIPR and SIPR-NIPR reporting. Finally, and perhaps most importantly, the BCT reemphasized the purpose of the LOGSTAT with leaders at echelon. More specifically, the BCT reinforced roles and responsibilities to ensure that company-level leaders were unencumbered with the business of projecting future logistical needs, since this was the domain of sustainment staff members who have the experience, resources, and planning process proximity necessary to drive predictive sustainment.

When it comes to the sustainment mission, process is paramount. This concept drove action throughout 1st ABCT's NTC rotation. This operating philosophy led the BCT to address the issue of JBC-P LOGSTAT recipients and ultimately resulted in a flattened process that ensured successful status submissions to the brigade logistics officer, the brigade support battalion's (BSB's) SPO officer, and the MSS, just to name a few. Once the issue of personnel was addressed, the BCT turned its attention to technical considerations. Realizing that shared information was the key to success, the BCT leveraged the CSS VSATs at the brigade support area to ensure maximum visibility, namely with the SPO officer who had real-time LOGSTAT visibility. As a result, the SPO officer was able to observe updates, conduct analysis, and initiate priorities of work within the BSB. Similarly, the brigade S-4 leveraged NIPRNet via client-based Upper TI technology to also observe LOGSTAT updates as they were submitted, which directly enabled logistics planning and resulted in a LOGCOP that informed commander decisions. To complete the process, the brigade S-4 and SPO officer submitted a vetted and approved LOGSTAT to the MSS, where it was submitted to the division and EAB entities.

Using the same communications architecture, battalions reported combat losses incurred during force-on-force operations. The MSS sustainment team, using a swing-shift strategy, was postured to rapidly submit reconstitution packets to the division G-4. This system resulted in the successful regeneration of over 730 combat and combat support platforms. Moreover, by placing reconstitution responsibilities with the MSS, the sustainment staff at the MCP could focus efforts on logistics planning and synchronization.

Sustainment Challenges and Opportunities

While systems and processes conducive to a Lower TI environment were implemented across the BCT, the exclusive reliance on FM and JBC-P systems required a much broader change in thinking. To be sure, home station training necessitated this shift in thinking through events such as combined arms live fire and command post exercises, but not to a level commensurate with the rigors of NTC. For example, units were either untrained on, or uncommitted to, the full suite of JBC-P capabilities, namely, the LOGSTAT reporting tool, an application that rapidly compiles and sends sustainment reports to a unit's higher headquarters. This powerful tool requires a high JBC-P operational readiness rate and is uniquely suited for squad, platoon, and company logistics reporting. It provides the necessary data for battalion logistics officers to assess sustainment shortfalls, forecast supplies, and submit accurate LOGSTATs to the brigade.

In 1st ABCT's case, inaccurate sustainment reports were partly a consequence of not integrating this JBC-P application into unit SOPs, which resulted in Class III shortages during critical points in the battle. More specifically, initial consumption forecasts did not fully account for environmental factors. As a result, many fuel projections were less than half of what was required for a combined arms battalion. The disciplined and proficient use of JBC-P reduces the high degree of error associated with methods that rely on human experience, inference, and bias. It simplifies reporting processes and eliminates many of the inaccuracies associated with logistics reporting. Thus, units should aggressively integrate this reporting mechanism into their sustainment communications architecture.

A unique feature of Upper TI systems is the interactive tools that make coordination and synchronization attainable on a battlefield; without these tools, battlefield collaboration is nearly impossible. In 1st ABCT's case, these tools did not exist, which required holding in-person meetings. Given the proclivity to fight from battalion command posts, key leaders were naturally reluctant to displace from their forward positions and travel long distances to attend meetings, even though the meetings were critical. This unique dynamic initially resulted in low participation in key brigade-level sustainment events, and ultimately translated into reduced parts flow and sub-optimal parts distribution.

Adaptability proved to be decisive to the BCT's ability to sustain the fight. Specific measures were taken to mitigate the risks associated with the lack of collaborative communication tools. First, the BCT adjusted the location of sustainment events based on current operations, which minimized disruption to battalion sustainment leaders. Second, the BCT mandated JBC-P tactical-operations-center kit placement at all battalion combat trains command posts so that critical maintenance and sustainment correspondence could be sent and received. Finally, the BCT integrated VSATs and Voice over Internet Protocol technology into the sustainment communications plan. In summary, perceived challenges associated with not having Upper TI can be mitigated through creative thinking, deliberate planning, and resource allocation.

Conclusion

"Talking is not fighting, but if you can't talk, you can't fight" is a refrain heard often in the Army profession. It perfectly captures the communications imperative that has been witnessed on battlefields past and present. As Gen. Robert H. Barrow articulated so many years ago, operational success in both combat and training is directly correlated to a unit's ability to sustain itself, and successful sustainment requires effective communication. On a degraded battlefield, execution of the sustainment WfF must be thought through carefully and executed with precision. In 1st ABCT's experience, the rigors of a combat training center experience will also force modifications to the sustainment systems and processes that are imperative to mission success. This said, it is important to underscore the unique capabilities that Upper TI assemblages bring to the modern fight. Commanders would be wise to harness their capabilities.

In this vein, the Army's approach to client-based Upper TI capabilities is both appropriate and needed, and it must be incorporated into BCT communications suites moving forward. To be sure, the tactics, techniques, and procedures associated with fighting the sustainment WfF in a Lower TI environment are nascent, but they deserve additional experimentation and attention. Whether it be CPN composition, client-based technology integration, LOGSTAT management, or the full exploitation of JBC-P sustainment capabilities, NTC 24-04 made clear that creative options exist for commanders to consider when it comes to fighting the sustainment WfF in a communications-constrained environment.

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Feature Photo
A modernized M2A4 Bradley Fighting Vehicle, assigned to the "Spartan Brigade," 2nd Armored Brigade Combat Team, 3rd Infantry Division, stops to receive fuel from a M969 5k Fuel Tanker before a convoy at the National Training Center, Fort Irwin, California, March 8, 2023. (Photo by Spc. Duke Edwards)