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TEN FUNDAMENTAL BRIGADE COMBAT TEAM SKILLS

REQUIRED to WIN the FIRST FIGHT

Ten Fundamental Brigade Combat Team Skills Required to Win the First Fight

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Foreword

Since 1981, the National Training Center has played a vital role in training and shaping the U.S. Armed Forces. The Army operating concept details how future Army forces will prevent conflict, shape security environments, and win wars while operating as part of the joint force and with multiple coalition partners.

This newsletter consists of ten chapters focusing on ten fundamental skills designed to communicate doctrinal solutions to the persistent observations from the National Training Center. The goal is to better prepare brigade combat teams to decisively win the first fight of the next war. These fundamental skills will enable leaders at echelon to quickly understand issues and change their training strategies, as required.

The current ten fundamental skills required to win the first fight in a complex world are:

1. Commander-driven operations process
2. Combined arms breaching
3. Decisive action in an urban environment
4. Operations in a cyber electromagnetic activities (CEMA)-denied environment
5. Reconnaissance and security
6. Digital fires capability (sensor to shooter)
7. Counterfire
8. Chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) in decisive action
9. Joint force integration and interoperability
10. Sustainment in decisive action

These ten fundamental skills were derived from senior leader input, persistent observations, and trends. They will be re-evaluated and updated regularly to ensure the National Training Center operations group provides the best feedback to the force that will enable brigade combat teams' success.

ROSS COFFMAN
COL, AR
24th Commander of Operations Group

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Chapter 1

Commander-Driven Operations Process: Observations and Recommendations

LTC(P) Warren E. Sponsler and MAJ Jason C. Gallardo, Bronco Team

> "*Look at who you have around you … assess who is in your inner circle … and make sure they understand you want to be part of the process. [Commanders] do not have some kind of secret network that provides magical read-aheads and products … that comes from the hard-working staffs. I was once a staff officer … you were once a staff officer and will be a staff officer again … one lesson I've taken away is the commander always needs to be involved, involved in the process … mission analysis, course of action (COA) development, COA decision, and not just there to make the final call. Counsel those within your staff that hinder this information flow, guide those gatekeepers, and break through the processes that keep you insulated.*"
>
> — GEN Robert B. Abrams, Commanding General,
> United States Army Forces Command, Maneuver Warfare Conference, 2016 [1]

Introduction

> *Many leaders misinterpret the commander-driven operations process to mean, "commanders must give a directed course of action for the staff to plan and subordinates to execute."*

This chapter aims to provide commanders and staffs at the brigade combat team (BCT) and battalion levels with insights on executing the operations process to achieve success on the contemporary battlefield. Operations in the modern operating environment at the brigade level are complex. This is the first level at which commanders are resourced with combined arms capabilities and requisite staff to synchronize and employ forces in time and space to achieve tactical success. BCTs form the base of the modern Army's warfighting capability to meet challenges around the globe. BCT commanders employ the operations process to achieve tactical and operational objectives. Army doctrine clearly describes this as a commander-driven process requiring the involvement, leadership, and visualization of the commander to enable success.

At the National Training Center (NTC), many leaders misinterpret this principle to mean, "commanders must give a directed COA for the staff to plan and subordinates to execute." Commanders then provide a detailed description of how they would like to conduct the operation based on their own experience and assessment as opposed to allowing the staff to conduct the detailed analysis and science required to enable true understanding of the tactical problem. As a result, challenges persist throughout the plan, prepare, execute, and assess steps of the operations process. This leads to plans that lack synchronization and the flexibility to adapt based on a changing or developing situation that are not clearly understood or adequately prepared for by subordinates.

Defining the Operations Process and Commanders' Activities

Army Doctrine Publication (ADP) 5-0, *The Operations Process* (17 MAY 2012), details the Army's view on planning, preparing, executing, and assessing operations. It accounts for the complex, ever-changing, and uncertain nature of operations and recognizes that a military operation is foremost a human undertaking. As such, doctrine emphasizes the philosophy of mission command to include the central role of commanders, supported by their staffs in driving the operations process. Commanders are the most experienced and capable leaders in their formations. Commanders, supported by their staffs, use the operations process to drive the conceptual and detailed planning necessary to understand, visualize, and describe their operational environment; make and articulate decisions; and direct, lead, and assess military operations to achieve successful mission accomplishment.

Commanders Drive the Operations Process

Commanders are the centerpiece and most important participants in the operations process. Commanders, by their very nature, bring the most experience, knowledge, and problem-solving abilities to the process. They are in leadership positions of Army combat units for this reason. The commander's ability to clearly articulate intent and create a positive culture enables their subordinates' success. While staffs perform essential functions that amplify the effectiveness of operations, commanders drive the operations process through understanding, visualizing, describing, directing, leading, and assessing operations. The operations process is not simply the military decisionmaking process (MDMP). ADP 5-0 defines the operations process as "the major mission command activities performed during operations: planning, preparing, executing and continuously assessing the operation."[2] Further, the operations process is a commander-led activity, informed by mission command. The commander's ability to make timely and informed decisions, and effectively allocate critical resources, weigh risk, and lead through each is critical to accomplishment of the mission against a capable and complex enemy. Commanders influence the operations process through their ability to understand, visualize, describe, direct, and lead.

Defining the Problem

At the NTC, BCTs struggle to plan, prepare, and execute synchronized operations in a time-constrained environment. The end state is seemingly simple: BCTs capable of developing executable and synchronized plans enabled by all the resources and capabilities resident within the organization at the decisive point to meet the higher commander's intent. Frequently, BCTs are unable to identify the decisive point of an operation, synchronize assets in time and space, and mass combat power against a capable and dynamic enemy so that, when committed, Soldiers are best able to achieve success. BCT's capabilities are either underutilized or committed piecemeal, allowing the enemy to seize the initiative, resulting in unnecessary casualties or an inability to complete the mission. The commander's involvement and emphasis to lead or "drive" this process is critical.

According to Army Doctrine Reference Publication (ADRP) 5-0, *The Operations Process*: "Commanders are the most important participants in effective planning. They focus the planning effort by providing their commander's intent, issuing planning guidance, and making decisions throughout the planning process. Commanders apply discipline to the planning process to meet the requirements of time, planning horizons, simplicity, level of detail, and desired outcomes. Commanders ensure all operation plans and orders comply with domestic and international laws.

They also confirm the plan or order is relevant and suitable for subordinates. Generally, the more involved commanders are in planning, the faster staffs can plan. Through personal involvement, commanders ensure the plan reflects their commander's intent."[3]

Plan

The MDMP is the method by which the BCT solves tactical problems and develops effective, feasible, and synchronized plans. In the training and evaluation outline titled "Conduct the Mission Command Operations Process for Brigades (28 SEP 2016)," the Army highlights 16 BCT commander tasks to accomplish during the plan phase. Doctrine has seven specific touchpoints for the commander with the staff during the MDMP.

The commander's participation in the MDMP as the most experienced and knowledgeable leader in the BCT is critical. Not only is the commander most able to visualize an upcoming operation based on his experience and knowledge, but he also has a unique understanding of the capabilities of the formation, relative strengths and weaknesses of subordinate units and leaders, and an inherent understanding of military operations. Although most commanders and staffs recognize where each of these touchpoints reside in the MDMP, BCTs frequently struggle to adequately involve the commander due to ongoing current operations, battlefield circulation, and other demands on the commander's time. The commander's lack of involvement early in the process results in wasted or duplicated planning efforts or development of infeasible COAs.

Staffs have a responsibility to ensure their planning timelines are realistic and, at a minimum, take into account constraints of the operating environment to allow the commander's participation at each of the seven required touchpoints. Some headquarters have utilized distribution methods to good effect. However, the face-to-face interaction between a commander and the staff has proven to be the most reliable method to increase shared understanding and issue necessary guidance.

The next paragraphs detail commander inputs during this planning and key staff inputs to support the commander during each phase of the planning process.

Receipt of Mission

> *The most successful BCT headquarters have a well-developed, rehearsed, understood, and trained-at-home-station SOP for receipt of mission that specifically defines who needs to be present, knowledge management practices for distributing the higher headquarters orders, and a clearly designated workspace for the planning team.*

Receipt of mission is often overlooked. Receipt of mission sets the conditions for the remainder of the process. Key commander activities during this phase include development of the commander and staff running estimates to understand the situation:

- The commander sets the stage by determining whether or not the BCT will conduct the Army design methodology or go straight into the MDMP process.
- The commander updates initial estimates and makes initial assessments based on changes within the formation.

- The commander must use his experience to help determine the outside agencies that will participate in the planning process.
- The commander provides initial planning guidance, which includes establishing the battle rhythm for the planning process, specifically if it deviates from the BCT's standard operating procedures (SOPs).

At the NTC, most units go directly to conducting the MDMP as opposed to utilizing the Army's design methodology. This is primarily as result of an assessed lack of sufficient time to fully frame the tactical problem. Although understandable, the critical thinking required in the Army design methodology to adequately frame the problem, develop an operational approach, and identify a clearly-defined problem statement may be helpful in some of the complex situations presented at the NTC and in complex decisive action operations.

The most successful BCT headquarters have a well-developed, rehearsed, understood, and trained-at-home-station SOP for receipt of mission that specifically defines who needs to be present, knowledge management practices for distributing the higher headquarters orders, and a clearly designated workspace for the planning team. During this step, the commander's clear expectations for collaborative planning opportunities or touchpoints with subordinate units is also helpful to assist leaders at echelon in managing their own battle rhythms.

Mission Analysis

Arguably, mission analysis is the most critical step in the process. However, many BCTs struggle to properly capture key inputs and outputs during this step. Mission analysis sets the stage for future planning efforts to gain an understanding of the operational variables affecting the upcoming mission. Although the staff conducts detailed mission analysis, it is also the commander's duty to conduct his own estimate based on knowledge, experience, and understanding of the higher commander's intent. From this estimate, the commander should be able to identify key decisions that will drive initial information collection operations across the brigade. Another output of the commander's estimate is initial planning guidance, which directs COA development and other planning activities. Initial planning guidance should not be confused with a directed COA.

The staff, with a clear understanding of the commander's expectations during mission analysis, will be able to focus efforts on facts, assumptions, and tasks from the higher operation order (OPORD), friendly capabilities, and other variables. The staff will then be able to develop coherent and relevant running estimates to inform future planning. A staff well practiced in this step knows the commander's critical questions or concerns during the mission analysis brief. The staff is also prepared with requisite data and analysis to further inform situational understanding.

Commonly, much of the mission analysis step is placed on the shoulders of the S-2 section with little oversight or direction. S-2 sections often only fully develop one enemy COA based on an insufficient understanding of the adversary. Rarely do they develop an event template to drive information collection efforts or future planning. Additionally, staffs struggle to assist the S-2 in providing warfighting function expertise to better understand the enemy's capabilities. As the U.S. Army continues to develop proficiency in conducting operations in the decisive action environment as replicated at the NTC, mission analysis serves as a critical activity to develop understanding and visualization throughout the unit. Detailed staff analysis of the problem (friendly and enemy) helps to mitigate a lack of experience with the situation on the modern battlefield, further allowing the development of feasible and executable plans.

Commander's planning guidance observed at the NTC typically takes the form of a single directed COA, normally as a result of the assessed lack of time for the staff to develop multiple options based on several unique enemy COAs. This single-directed COA often is not supported by a sufficient understanding of the enemy or tactical situation and fails to take into account the capabilities of a near-peer threat. Frequently, commanders develop these directed COAs with an inadequate understanding of the tactical problem or friendly situation and capabilities due in large part to insufficient detailed staff work during mission analysis.

Best Practices

Commanders' planning guidance should focus on:

- Anticipated BCT-level decisions.
- Visualization of the end state of the operation.
- Key tasks that are detailed and specific to the operation that must be accomplished for success.
- Battlefield framework and how the commander intends to prosecute the deep fight. This must include a detailed explanation of what "shaping" equates to for the BCT and when the enemy transitions from the deep to close fight.
- Identification of the decisive point and the enemy's defeat mechanism.
- Specific planning guidance by warfighting function to include transitions.
- Envisioned utilization of specific BCT-level capabilities (for example, attack aviation; close air support; electronic warfare; and chemical, biological, radiological, nuclear, and high-yield explosives; and situational obstacles.
- Identification of risk to force and mission with guidance to mitigate.

This guidance will drive the staff's future planning efforts and, more importantly, increase shared understanding and visualization.

The mission analysis brief and corresponding commander's planning guidance is also an opportunity to collaborate with subordinate units and assist parallel planning efforts. Successful methods for distributing these products include real-time broadcast of the mission analysis using Command Post of the Future (CPOF), publication of the staff's mission analysis brief and commander's planning guidance worksheet on the unit's SharePoint, and utilization of liaison officers. Early collaboration is important to develop feasible plans, achieve shared understanding, and enable necessary subordinate unit planning and preparation tasks. Several key outputs of mission analysis are the issuance of the commander's planning guidance, publication of Warning Order 2 including a detailed and fully developed Annex L, Information Collection, and approval of the mission statement and planning timeline.

Course of Action Development

COA development centers on the commander's planning guidance following the mission analysis brief. Many BCT staffs struggle to provide the requisite level of detail and flexibility when developing COAs and never fully develop the COA sketch and statement to adequately communicate the plan across the staff and to the commander. COAs frequently lack inclusion of all warfighting functions or capabilities within the unit to mass effects at the decisive point. The number of COAs the staff develops is dependent on the situation, but, at a minimum, should take into account the enemy's capabilities and options.

Best Practices for COA Development

- Divide the planning staff into multiple COA planning teams, each with representatives from warfighting functions and capabilities led by a senior member of the staff. Dictate these in the plans SOP prior to deployment.
- Enforce development of a COA sketch and statement that adequately describe each COA in doctrinal terms, identify battle framework, and address the relationship between adjacent units.
- Develop sufficient and detailed graphic control measures to allow maneuver of adjacent units, control fires, and enable flexibility during branches or sequels.
- Develop a base synchronization matrix and a decision support matrix.
- Integrate BCT-level capabilities and detailed considerations for employment of the BCT reserve to address contingencies.

Based on experience, the commander will be able to assess each COA and provide guidance for further development and analysis.

Often, development of COAs is assigned to a BCT planner with limited experience and little collaboration or input from the remainder of the staff. As the staff generates options, the commander's involvement is critical to guide the staff to build flexibility into the plan. Too often, staffs focus solely on development of the base plan with limited critical thought to address branch plans or sequels as the situation develops. As a result, BCTs and subordinate units are unprepared to react when the enemy situation varies from the initial assessment. If BCTs do not build complete, synchronized COAs during this step, they will struggle to put the required amount of rigor into COA analysis and risk missing key synchronization gaps, identifying additional risks, and utilizing opportunities during the war game.

Common Pitfalls in Building a Synchronized COA

- Lack of assessment of relative combat power (friendly and enemy)
- Failure by BCTs to determine the decisive point and build the battlefield framework around the decisive point
- Lack of detailed graphic control measures to allow the convergence of forces and direct and indirect fire control
- Vague or doctrinally inaccurate task and purpose for subordinate units
- Lack of detailed consideration of the reserve
- Unclear task-organization and command-support relationships
- Lack of synchronization between fires and reconnaissance
- An ineffective or vague collection plan that does not answer the commander's priority intelligence requirements (PIRs)
- Lack of clearly identified triggers or inadequate triggers that do not provide enough time or maneuver space to achieve the desired effect
- Lack of branch plans to provide requisite flexibility to the plan

Course of Action Analysis

Many BCTs are inexperienced at COA analysis, or war-gaming, missing necessary outputs of this step. The war game is a critical area that often determines success or failure at the BCT level. BCT commanders who are actively involved in COA analysis better own and understand the plan, are able to identify synchronization gaps, and better develop flexibility through guidance for branch plans and/or sequels. The commander also continues to develop an understanding of decision-making criteria as visualization of the problem develops.

The staff supports the commander and subordinate units by further developing several tools or products for each COA for use during execution. These include, but are not limited to, the synchronization matrix, execution matrix, graphic control measures, fires target-list worksheet, airspace management plan, intelligence collection matrix, logistics execution matrix, and decision support template. The staff may develop other products as required to further synchronize operations and develop shared understanding.

Effective COA analysis takes readily available prepared tools the staff understands and uses to train. The commander's ability to properly train the staff to conduct war-gaming will result in a fully synchronized planning process and products necessary to effectively communicate the plan, build shared understanding, and fight.

Course of Action Comparison

Following a thorough COA analysis, the BCT will conduct a COA comparison assuming the development of multiple COAs. The BCT will have already selected its evaluation criteria based on the commander's initial guidance to base this comparison. The commander ensures the staff properly compares COAs based on his guidance rather than gravitating toward the staff's desired COA. The staff conducts a final COA decision brief to codify the COA comparison and briefs the commander on the advantages and disadvantages of each COA and flexibility in the plan.

Course of Action Approval

The commander approves a COA as the visualization of the operation and issues the final planning guidance. This includes additional guidance for branches and sequels to limit the disadvantages of a selected COA. Additionally, the commander can provide refinements to his intent following war-gaming, if necessary. With the COA analysis and comparison, the staff and commander will gain a better understanding of decisions and refine criteria to further assist in making informed decisions. As the BCT prepares to transition from planning to preparation and then to execution, the commander issues guidance on priorities for the warfighting functions, rehearsals, and preparation tasks.

Orders Production, Dissemination, and Transition

During orders production, dissemination, and transition, the commander determines the method and manner in which the BCT will disseminate the order for effective shared understanding. When the situation allows, orders are best communicated in person to allow for dialogue and facilitate an immediate transition to confirmation briefs or another collaborative visualization tool.

The commander also directs the staff to produce essential products, such as the task organization, decision support matrix, and the execution matrix to enable execution and synchronization. The commander prioritizes these products and throughout the planning process ensures they are done to standard. As described previously, these products must be widely disseminated and understood, and provide a common framework to enable the unit's fight.

The commander leads the brief to subordinate units when he issues the commander's intent. The commander does not receive the brief from the staff, but participates by providing emphasis of key points or additional clarification based on a fully developed understanding of the situation and plan through involvement during the planning process. Commanders who participate in the issuance of orders in this way instill confidence in the organization and subordinate commanders.

Prepare

Following orders production and dissemination, the BCT transitions to preparation tasks. The unit and Soldiers improve their ability to execute an operation by performing these tasks. The commander must direct or approve the essential preparation tasks for the unit. Command posts are essential to directing and tracking completion of preparation tasks identified by the commander. Failure to complete critical preparation tasks may result in a reassessment of risk and force changes to the plan.

Best Practices for Preparation

- Complete the transition from plans to current operations.
- Establish security zone and conduct of information collection.
- Conduct confirmation briefs with subordinate units to ensure shared understanding.
- Complete command-directed tasks:
    - Dissemination of graphics to the lowest level with bottom-up refinement.
    - Completion of task-organization changes.
    - Establishment of mission command and sustainment nodes and capabilities.
    - Verification of fire support coordination measures.
    - Refinement of staff running estimates.
- Conduct leaders reconnaissance.
- Conduct rehearsals at all levels.

Successful commanders understand and clearly articulate critical tasks that must be completed or conditions that must be set before committing Soldiers into battle. Commanders describe tasks or conditions to subordinate units, provide their personal emphasis to ensure completion, and identify mitigation strategies if not complete.

Rehearsals

An effective rehearsal allows units to fight and practice the operation, increases shared understanding, and assists in visualization. Commanders must come to the rehearsal confident that they and their subordinate units fully understand the plan and the specifics of how it will be executed as previously briefed and communicated. The unit must publish a fragmentary order to the order following the rehearsal that captures the changes discussed during the rehearsal.

Most BCTs conduct a fires-intelligence collection rehearsal, sustainment rehearsals, and a combined arms rehearsal (CAR). The CAR presents the opportunity for the BCT to conduct final synchronization and ensures shared understanding. This is the best opportunity for the unit to practice how to fight. If done properly, commanders and staffs at all levels can visualize triggers, decisions, and critical events. Units will also understand the relationships between one another, identify friction points, and develop mitigation strategies.

Commanders determine the most effective type of rehearsal for the operation based on time, resources, and operations security risk. Distributed rehearsals, such as those conducted over CPOF, usually have limited effectiveness but can be beneficial if practiced. Many CARs devolve into a combination rebrief of the OPORD by the BCT staff or a mere backbrief by subordinate units. Commanders often are seen as observers and not participants in the CAR. Commanders ask questions on the details of the plan but demonstrate a lack of involvement in the planning process. Additionally, the most effective rehearsals have a thinking enemy who drives the commander's decisions.

Best Practices for Effective Rehearsals

- Involve commanders as active participants in the rehearsals, positioned on the terrain and fighting their units as they will in execution.
- Include an active, thinking enemy fighting the BCT and induce friction, forcing reaction by subordinate units.
- Organize the rehearsal by time or critical event, not by subordinate units.
- Include all participants in the operation to the lowest level feasible, including all the BCT-controlled assets or capabilities and command nodes.
- Fight through multiple friendly and enemy branches and COAs.
- Fight during the rehearsal using the same products with which the unit will fight the upcoming battle.
- Include and delineate mission command node responsibilities in time and space.
- Include consolidated graphic control measures and refinements to the fires plan.
- Address PIRs and decisions.

Execution

Many difficulties BCTs experience in the execution phase are a result of incomplete planning and preparation, which limit flexibility for the commander. The commander must position himself to gain an understanding of the fight and make informed decisions. In most circumstances, this is not within the confines of a command post or tactical command post, but forward positioned in a combat vehicle or on the battlefield. This is done to fully maintain communications with subordinate units and physically see critical events as they unfold. If the commander places himself in the right position, he can assess not only task completion, but also purpose. This allows the commander to identify friction early and take necessary action through his own personal intervention.

The commander must give directed guidance about the information he needs during the planning and preparation phases, which supports his decision making during the execution phase. This focuses the staff and subordinate units' efforts on prioritizing how information is collected and disseminated in support of maneuver. The commander must ensure subordinate commanders and staffs understand his commander's critical information requirements to support decisions.

Commanders should avoid becoming fixed on the current fight and, instead, enable the unit's command posts to manage execution. This allows the commander to focus on the next steps, friction points, transitions, and the changing battlefield. Additionally, the commander must manage risk. An effective headquarters is able to monitor and manage the current fight and anticipate friction and make informed recommendations before the commander forfeits options.

It is critical that headquarters maintain an updated common operational picture, combat power, disposition of forces, and enemy situation during the planning, preparation, and execution phases of the operation. This aids with shared understanding of the battlefield, and can allow the commander to provide guidance and make decisions at critical moments. The staff supports the commander by understanding his decisions, identifying conditions and triggers, and maintaining a common operational picture to support informed decisions. The staff must understand the delineation of mission command post responsibilities; maintain the common operational picture; and receive, analyze, and disseminate information.

Conclusion

One key principle of the operations process is that "commanders drive the operations process."[4] The commander's involvement in each of the plan, prepare, and execute phases will determine the success of the BCTs during NTC rotations, and, more importantly, in combat. Additionally, the staff bears a great responsibility for preparing its commander for the critical decisions he must make when facing a near-peer enemy in a complex operating environment. The staff must synchronize assets, build flexibility, and maintain shared understanding to ensure it identifies key triggers. Commanders have a responsibility to train the staff so it can conduct the commander's intent and transition it into a synchronized and executable plan. Command involvement in the planning process, commander-led rehearsals, and improved positioning during operations are critical to developing a BCT capable of dealing with the complexities of the decisive action training environment and beyond.

Endnotes

1. GEN Robert B. Abrams, Address at Maneuver Warfare Conference, Fort Benning, GA, 13-16 SEP 2016.

2. Army Doctrine Publication 5-0, *The Operations Process*, 17 MAY 2012, page 1.

3. Army Doctrine Reference Publication (ADRP) 5-0, *The Operations Process*, 17 MAY 2012, page 2-23.

4. Ibid., page 1-3.

Additional References

ADRP 6-0, *Mission Command*, 17 MAY 2012.

CALL Newsletter 98-5, *Rehearsals*, 1998.

Joint Publication (JP) 3-0, *Joint Operations*, 17 JAN 2017.

JP 5-0, *Joint Operation Planning*, 11 AUG 2011.

Chapter 2

Combined Arms Breaching

LTC Mark Federovich

Combined arms breaching is one of the most complex operations brigade combat teams (BCTs) execute in a decisive action training environment (DATE). It requires the synchronized action of reconnaissance assets, multiple ground combat elements, indirect fires, and aerial combat platforms. When done correctly, it allows BCTs to mass combat power at the decisive point and leverage assets to achieve maximum effects. When done improperly, the BCT exposes its subordinate units and assets to a prepared enemy at the location of the enemy's choosing.

A review of the relevant doctrine finds Army breaching doctrine is clear, concise, and sound. The breaching tenets outlined in Field Manual (FM) 3-34, *Engineer Operations* (02 APR 2014) — intelligence, breaching fundamentals, breaching organization, mass, and synchronization — provide a conceptual framework that, when applied, produce positive results. So, why do units consistently struggle with combined arms breaching? The problem is not in the doctrine; it is the application of the breaching tenets in both planning and execution.

Intelligence

Intelligence is the first breaching tenet doctrine covers. Doctrine highlights the need for a thorough collection effort to drive subsequent planning and shape breaching organization. Key components of any reconnaissance to support breaching operations are composition and disposition of the obstacle, obstacle orientation and depth, and the location of key enemy weapons systems. The discussion of obstacle and enemy forces reconnaissance is sound, but ignores any friendly reconnaissance objectives. Potential support by fires (SBFs), assault positions, and covered and concealed routes should be included as specified reconnaissance objectives. Their identification will facilitate more detailed planning and rapid execution.

The primary shortfall of the intelligence tenet in practice is reconnaissance forces rarely collect the detailed intelligence required to facilitate planning and execution. Typically, intelligence forces confirm the planned point of penetration and provide the location of enemy battle positions. However, they fail to report the composition and disposition of the obstacle that would allow a more tailored breach package and order of movement, or the location of key enemy antitank systems that would facilitate more effective suppressive fires. This shortfall can be traced to reconnaissance forces' lack of familiarity with relevant breaching doctrine and commanders' failure to provide detailed reconnaissance guidance to their reconnaissance assets.

Breaching Fundamentals

Suppress, obscure, secure, reduce, and assault (SOSRA) is one of the most well-established drills in the Army. It is included in all maneuver leaders' professional education. To effectively breach, the Army must suppress to prevent the enemy from placing well-aimed fires on the breach site, obscure to limit enemy observation of breaching elements, secure to prevent the enemy from interfering with obstacle reduction, reduce to allow the passage of follow-on forces, and assault to destroy the enemy overwatching the passage point and secure terrain on the far side.

BCTs and battalion task forces are generally able to execute each of the breaching fundamentals independently. The issue is in the sequencing and timing of each distinct task to leverage the sum of the actors. The fundamentals are taught in order for a reason. Suppression and obscuration of the enemy is executed before secure, reduce, and assault. However, the most common fault seen at the National Training Center is commitment of the support, breach, and assault elements prior to the suppression and obscuration of the enemy overwatching the obstacle with indirect fire systems.

Secure, reduce, and assault without suppression and obscuration increases risk and generally is not effective. The primary cause of this is failure to properly estimate and match technical triggers (processing time + time of flight + time to achieve effects for indirect suppression and obscuration) with the rate of march analysis to establish an accurate tactical trigger. This, coupled with a lack of graphic control measures to slow the unit's tempo when conditions are not set, leads to commitment of the support element prior to achieving the desired suppression or obscuration. As a result, the support element becomes fixed by enemy indirect and direct fire systems and rapidly loses combat power. The breach and assault elements' commitment is then accelerated, which compounds the initial indirect fire problem as breach elements enter the risk estimate distance. This causes fires to be shifted or lifted before fires can have their desired effect, exposing the breach and assault elements to accurate enemy direct fires.

Breaching Organization

Breaching doctrine directs commanders to designate support, breach, and assault forces and organize them with required assets to accomplish their tasks. The support force's primary responsibility is to isolate the breach, suppress the enemy overwatching the obstacle, and control obscuring smoke. The breach force creates, proofs, and marks lanes to pass follow-on forces through the obstacle. The assault force's primary mission is to destroy the enemy and seize terrain on the far side of the obstacle to prevent the enemy from placing direct fires on the opened lanes.

Across the board, units demonstrate proficiency at task-organizing for the breach. There is some variation in units as to whether the breach element is led by engineers or a maneuver force. However, support, breach, and assault elements are designated and task-organized to accomplish their doctrinally directed tasks.

Mass

Mass is a breaching tenet and principle of war. Military commanders attempt to mass forces at the decisive point, overwhelming the enemy and turning the tide of the battle. In breaching, commanders attempt to mass forces and effects at the breach site to reduce the obstacle and penetrate the defense.

The primary challenge units face with respect to mass is balancing dispersion to increase survivability and concentration to overwhelm the enemy at the breach site. Units either piecemeal their forces, allowing the enemy to concentrate on one element at a time, or mass within range of enemy direct and indirect fire systems before conditions are set, exposing them to effective fires from the enemy.

Synchronization

As much as any military operation, combined arms breaching requires precise synchronization of the support, breach, and assault elements with indirect fire assets. To achieve synchronization, doctrine highlights four fundamentals: detailed reverse planning, clear sub-unit instructions, effective mission command, and well-rehearsed forces.

An inability to synchronize forces and activities throughout the operation leads to the inability to execute the breaching fundamentals and mass forces and effects at the appropriate times. This is evidenced in the inability to execute SOSRA and mass when and where the commander directs. The limiting factor in a unit's ability to synchronize its efforts is a failure to transition from conceptual to detailed planning and execution. BCT and battalion-level planners fail to translate the conceptual framework described in doctrine and their commander's planning guidance into detailed plans for their subordinates. Further, they do not establish the requisite control measures that enable commanders to adjust the tempo of operations and control the commitment of subordinate elements as conditions change.

When multiple units operate in close proximity to each other, their actions must be coordinated. When these units' actions are related, they need to be synchronized. This responsibility lies with the higher headquarters (HHQ). Too frequently, under the guise of mission command, HHQ abdicates this responsibility to its subordinate commanders. As a result, subordinate commanders take the general guidance given in the order and develop their plans in isolation. The combined arms rehearsal is generally the first attempt made to synchronize the different units' actions, but even then, the plan lacks the detail and requisite control measures to achieve anything greater than an understanding of the sequencing of key events.

Mission command entails the conduct of military operations through decentralized execution based on mission orders for effective mission accomplishment. It has a place in offensive operations, but a combined arms breach is not meant for decentralized execution. It requires detailed planning, synchronized execution, and the deliberate commitment of combat power.

To accomplish synchronization, HHQ needs to be more directive and establish more comprehensive graphic control measures. SBFs need to be planned to ensure the support element can supplement the indirect fire suppression and facilitate the commitment of the breach and assault elements in their objectives. Routes to assault positions and breach sites need to be

Phase Lines

- The first phase line should be the tactical trigger for indirect fire suppression and obscuration.
- The second phase line should be tied to when friendly forces enter the maximum effective range of enemy weapon systems without cover or concealment.
- The third phase line should be tied to the support element's weapon systems and should coincide with its planned support by fires.
- The fourth phase line is tied to the minimum safe or risk estimate distance of the indirect fire suppression and obscuration targets.

directed to ensure they maximize the cover provided by the suppression and obscuration of the indirect fire and support elements without masking them or violating minimum safe or risk estimate distances. Subordinate elements should retain the flexibility to adjust these positions and routes on the ground, but should not develop them in isolation.

Additionally, HHQ needs to establish phase lines that account for key friendly and enemy capabilities. Each phase line should also be tied to a friendly trigger and condition that must be set before crossing. The first relevant phase line should be the tactical trigger for indirect fire suppression and obscuration. It needs to be placed so that the technical trigger equals the time it will take for friendly units to enter enemy direct fire range.

The second phase line should be tied to when friendly forces enter the maximum effective range of enemy weapon systems without cover or concealment. Crossing this phase line needs to be a deliberate decision. It should only be done when indirect fire suppression and obscuration are achieving the desired effects.

The third phase line should be tied to the support element's weapon systems and should coincide with its planned SBFs, ideally at two thirds the maximum effective range of the primary weapon systems. This phase line serves as an additional check to ensure the support element is in a location where it can effectively suppress the enemy overwatching the obstacle. The support element crossing this phase line should not be the trigger for launching the breach element. The trigger for exposing the breach element should be the support element achieving the desired effect.

The fourth phase line is tied to the minimum safe or risk estimate distance of the indirect fire suppression and obscuration targets. Crossing this phase line is contingent on shifting or lifting the relevant targets. The commander should not let units approach or cross this phase line until he is comfortable with the obscuration achieved and the suppression the support element can accomplish without the assistance from the shifted or lifted indirect fires.

These phase lines should also be used to incrementally move the breach and support elements forward. They allow the commander to control his advance, maintaining dispersion initially, and then ensuring his ability to concentrate when conditions are set. This allows the commander to maximize a subordinate element's survivability, while allowing him to mass combat power at the breach point.

Conclusion

Combined arms breaching is one of the most complex missions in the DATE that units continue to struggle with at the combat training centers. Doctrine is clear, concise, and sound and provides a conceptual framework to guide planning and execution. The challenges to execute doctrine and achieve the precise synchronization required for a combined arms breach highlight the inability to conduct the requisite detailed planning and provide the necessary control as a HHQ during execution. A focus on detailed reverse planning, clear sub-unit instructions, proper application of mission command, and well-rehearsed forces will help BCTs and task forces bridge this gap. A more deliberate use of phase lines and tighter control when committing subordinate elements will result in better synchronization and an improved ability to mass at the decisive point.

Chapter 3

Training for the Unfair Fight: Decisive Action in the Urban Environment

LTC Matthew Hardman

"*He was in agony, his mouth was open and he was spitting. I covered his mouth with my hand and punched down on his clavicle trying to break his collar bone. He screams when I uncover his mouth. I let go a little bit, he started screaming again and I cover him back up. I don't know if he thought I was going to give him mercy, but in the struggle my Velcro knife case slid off my belt and was now on the ground next to his head. I hear someone yell down from above me in a panic. The man underneath me yells back. The more I put pressure on his left arm the more he goes limp. I flick my blade to the side and it snaps to the ready. I had never stabbed anyone before so I went down on him with a stabbing motion*."[1]

— SSG David Bellavia, 2nd Squad Leader, 3rd Platoon, Alpha Company, Task Force 2-2 Infantry in Fallujah during Operation Phantom Fury, 10 NOV 2004

SSG David Bellavia's harrowing experience exemplifies the aggressiveness, grit, and determination that we aspire to have in our Soldiers. It also illustrates our worst fears. It is a truism of American popular culture that cities are where infantry squads go to die. Movies such as *Black Hawk Down*, *Full Metal Jacket*, and *Saving Private Ryan* exhibit the tragedy of the fair fight in the city. In *Sharp Corners: Urban Operations at Century's End*, Dr. Roger Spiller wrote that "most professional Soldiers from the last several centuries would recognize the majority view in the leading armies today: it states that cities are no fit place for armies."[2] During the past two decades, the U.S. military has had enough experience to know how bad the situation can be. There are plenty of combat veterans from Fallujah, Baghdad, Najaf, and other places, but there must be an acceptance that it will happen again against more capable adversaries in almost certainly more complex urban terrain. The Chief of Staff of the Army's strategic studies group noted that "the Army's largest and most recent example of urban operations is small in comparison to the challenges ahead. In Baghdad, the Army fought for almost a decade in an urban environment with a population of 6.5 million people. By 2030, there will be 37 cities across the world 200 to 400 percent larger than Baghdad."[3] Our critical vulnerability, public opinion, is hardly a secret. Friendly casualties and collateral damage all undermine American and international confidence in our preeminent competence and, ultimately, the successful outcome of our cause. Precisely because the urban environment supposedly negates perceived strengths, exacerbates weaknesses, and benefits adversaries, we must professionally master it. There is no technological panacea, doctrinal sleight of hand, or wishing it away. We have to make it an unfair fight.

By mastering the fundamentals of combined arms maneuver that integrates joint intelligence collection and fires capabilities, we can make it an unfair fight. Throughout the wars in Afghanistan and Iraq, many of our enablers provided marked advantages: the unblinking eye of persistent intelligence, surveillance, and reconnaissance; armored-mobile firepower; precision-guided munitions; nearly unlimited bandwidth; and peerless medical treatment and evacuation, among others. A brigade combat team (BCT) S-3 discussing the preparation for the second battle for Fallujah noted that "we knew that when it was time to fight the enemy, if he stood and fought, we needed to use our combat multipliers: use close air support, use field artillery, use mortars,

use your information operations. Basically, use everything in the toolbox to kill the enemy."[4] Although we still maintain and, in some cases, have enhanced those capabilities, our adversaries have evolved as well. Even against lower-end hybrid threats and certainly against near-peer competitors, advantages are not as marked. Synchronizing our capabilities at a decisive point in space and time is what makes us exponentially more lethal.

We have significant shortcomings in our planning, preparation, and execution that undermine our ability to win the first fight in urban terrain. Our greatest problem — inadequate synchronization due to insufficient planning and preparation — is not unique to operations in any terrain, but the complexity of the urban environment exacerbates it. Operations in urban terrain are more complex because there are more actions occurring in a compressed space and during a shorter period of time. As Spiller noted, "reaching a point of complexity means not merely that there are more moving parts but that the moving parts move differently."[5] Army Doctrine Reference Publication (ADRP) 5-0, *Operations Process* (17 MAY 2012), warns against plans that are "too detailed." Our challenge at BCT and battalion levels is that too often we do not provide the right detail, particularly in our mission analysis, intelligence collection planning, development of triggers, and graphic control measures. We must develop detailed and complete plans to enable effective war gaming and rehearsals that create synchronization in execution. Our lack of synchronization results in a lack of physical, electronic, and psychological isolation, preventing us from setting conditions to dominate our enemies. It also causes us to lose momentum and fail to dictate the tempo of the fight.[6] This is most notable in our lack of suppression and obscuration from the BCT to the squad level in depth in terms of space and time. It also highlights a flaw in our approach to decisive action in urban terrain. We rely on 5.56 mm for problems best solved by high explosives. We are making it a fair fight for SSG Bellavia's squad.

The framework for decisive action in urban terrain is understand, shape, engage, consolidate, and transition. These are not phases of an urban operation. This is a fluid process that is iterative at echelon. For example, a combined arms battalion attacks to clear complex terrain in order to allow the forward passage of line of the brigade's cavalry squadron. The combined arms battalion is doing its own shaping and engaging in order to make that possible. This then allows the cavalry squadron to isolate and conduct reconnaissance of the urban objective. This discussion is focused on our effectiveness at understanding, shaping, and engaging. Figure 3-1 is a visual depiction of this framework as outlined in Field Manual (FM) 3-06, *Urban Operations* (26 OCT 2006).

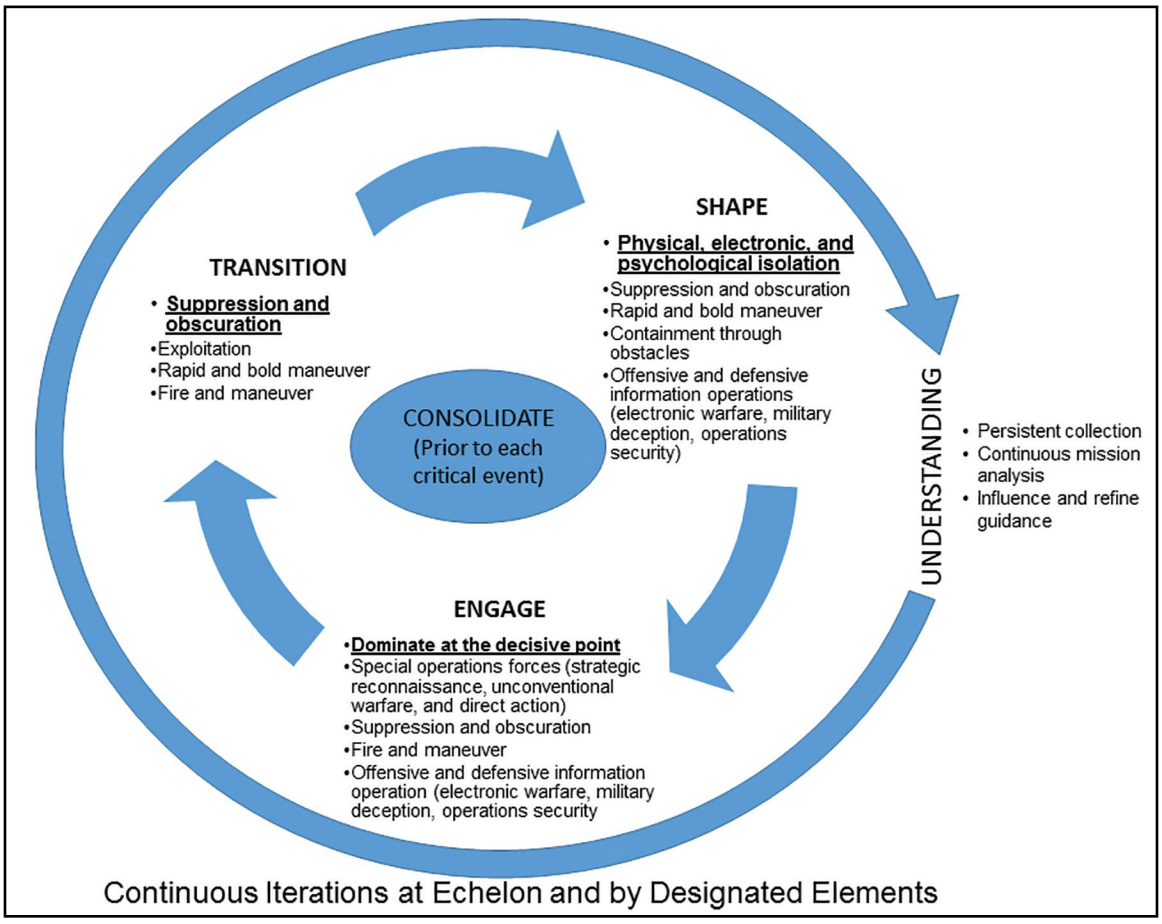


Figure 3-1. Framework for decisive action in urban terrain

Understand

> "*There are barrels of mogas ready to blow, to isolate our thermals and night vision capability. There were newly-bricked walls behind doors and windows. Almost all the access that wasn't created by tanks and artillery was covered by the insurgents. They also made great strides to block our access to rooftops. Stairs would just stop and a seven-foot wall would block a door.*"[7]
>
> — SSG David Bellavia, 2nd Squad Leader, 3rd Platoon, Alpha Company, Task Force 2-2 Infantry in Fallujah during Operation Phantom Fury, 10 NOV 2004

A failure to understand the enemy and terrain in an urban fight is fatal. BCTs need to produce a detailed modified combined obstacle overlay of the area of operations. For key terrain and especially canalizing terrain, there needs to be more detailed analysis using geospatial tools. Staffs conduct reverse warfighting-function analysis to determine where and how the enemy is going to employ its capabilities. The enemy situational template must be incredibly detailed. What are the enemy's decisive points? Where does the enemy want to kill us? How is the enemy going to synchronize its warfighting functions? Where does the enemy want to disrupt, turn, fix, and block friendly forces? How is the enemy covering its obstacles with observation, direct fire, and indirect fire? Where are the enemy's engagement areas with the maximum effective engagement lines for its weapon systems? How and where does the enemy plan to displace, reposition, and reinforce? Although the BCT staff can answer many of these questions regarding the terrain and enemy with the tools at hand, an in-depth, layered, multi-intent collection plan in space and time addressing all the enemy's warfighting-function capabilities is essential.

Through detailed intelligence preparation of the battlefield, course of action comparison, and war gaming, the staff identifies information gaps before execution. These information gaps are further developed into the information collection assets' reconnaissance objectives to answer the components of the commander's critical information requirements (CCIRs). These CCIRs are then actioned through the unit's organic reconnaissance assets. Brigades and battalions use their own reconnaissance assets, request joint information collection assets, and take advantage of special operations forces' efforts to answer CCIRs, completing the informational picture to determine the ideal method to accomplish isolation to enable success. Combined arms maneuver must be used to accomplish the information collection plan. First, we have to fight to get our collection assets into position to achieve success. Second, the enemy must be forced to react to maximize the effects of collection capabilities: electronic attack facilitates signals collection, repositioning enemy elements is easier to identify by ground and aerial reconnaissance assets, etc. With the execution of the collection plan, the patterns of life are gathered to facilitate the targeting of known and likely enemy positions. Throughout this collection effort, we coordinate for appropriate precision-guided munitions to accomplish the desired destruction prior to the execution of the direct fight.

Finally, we must understand and communicate the tactical problem to commanders at all levels to enable them to make informed decisions about risks to the mission, force, and noncombatants. For example, during the preparation for Phantom Fury (the second assault on Fallujah in November 2004), senior commanders resisted the employment of mine-clearing line charges until subordinate commanders highlighted the enemy's preparations in detailed intelligence briefings. Noncombatants' presence and patterns of life, and the enemy's capabilities and actions rightfully affect our timing, courses of action, rules of engagement, and calculations regarding proportionality.

Shape

> "*Unless you were able to get behind them and take away their lines of communications two and three blocks behind from where the fight was, they'd keep it up for hours. By putting the reconnaissance troop up on that elevated highway, we took away their deep fight. He was my deep fight. So now these guys that wanted to stay and fight had no place to go*."[8]
>
> — LTC Peter A. Newell, Commander, Task Force 2-2
> Infantry in Fallujah during Operation Phantom Fury, November 2004

We must visualize and describe our shaping efforts with greater depth in space and time and understand that the conditions we require for success do not happen on their own. They are combined arms operations of their own that require their own understanding and shaping. BCTs and battalions have to plan, prepare, and synchronize the execution of shaping efforts and they must clearly establish realistic roles and responsibilities. For example, the cavalry squadron is tasked to conduct zone reconnaissance. How are we enabling its entry into the zone? When, where, and to whom are they handing off collection responsibilities? Too often, we allocate resources, assign tasks, and leave subordinate units with the freedom to find solutions. The Army defines mission command as "the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of unified land operations."[9] Detailed graphic control measures and synchronized plans enable disciplined initiative. They do not stifle it. They create shared understanding through a common operational picture and common language, reduce ambiguity, provide a starting point for bottom-up refinement, and help to clearly communicate commander's intent. Additionally, they provide the structural framework for subordinate leaders to solve problems among themselves by shifting off known points.

A well-constructed collection plan allows the brigade to use enablers more appropriately to shape the battlefield before the assault. Preparation of the objective should achieve an isolating effect on each of the enemy's warfighting functions through physical, electronic, and psychological means. Shaping efforts before, during, and after the main assault may have an outsized influence on the fight. FM 3-06 notes that "depending on the threat reaction to isolation efforts and the nature of the threat center of gravity, this task may become decisive. … Because of the nature of urban operations, shaping operations may consume a much larger proportion of the force than during other operations and may take place both inside and outside the urban area."[10] This last point is critical. There are periods of time in an urban environment in which the BCT will utilize all of its combat power to isolate in order to enable one team to seize one room (attack aviation fighting deep to destroy the enemy's reserve, the cavalry squadron screening, electronic warfare assets jamming enemy communication, the fires battalion suppressing adjacent strong points and obscuring the objective area through the operation, mounted elements suppressing the objective with high-explosive direct fires, engineers employing an anti-personnel obstacle breaching system to clear a path, and the alpha team obscuring and suppressing apertures to allow bravo team to assault).

Shaping efforts require the use of all the tools available to the BCT. They require that we shape for the shaping effort and synchronizing those shaping efforts by developing detailed plans, war games, and rehearsals. The tempo is disrupted when the assault element is waiting for the support by fire to begin to achieve effects because suppression and obscuration was not conducted to seize the support-by-fire position.

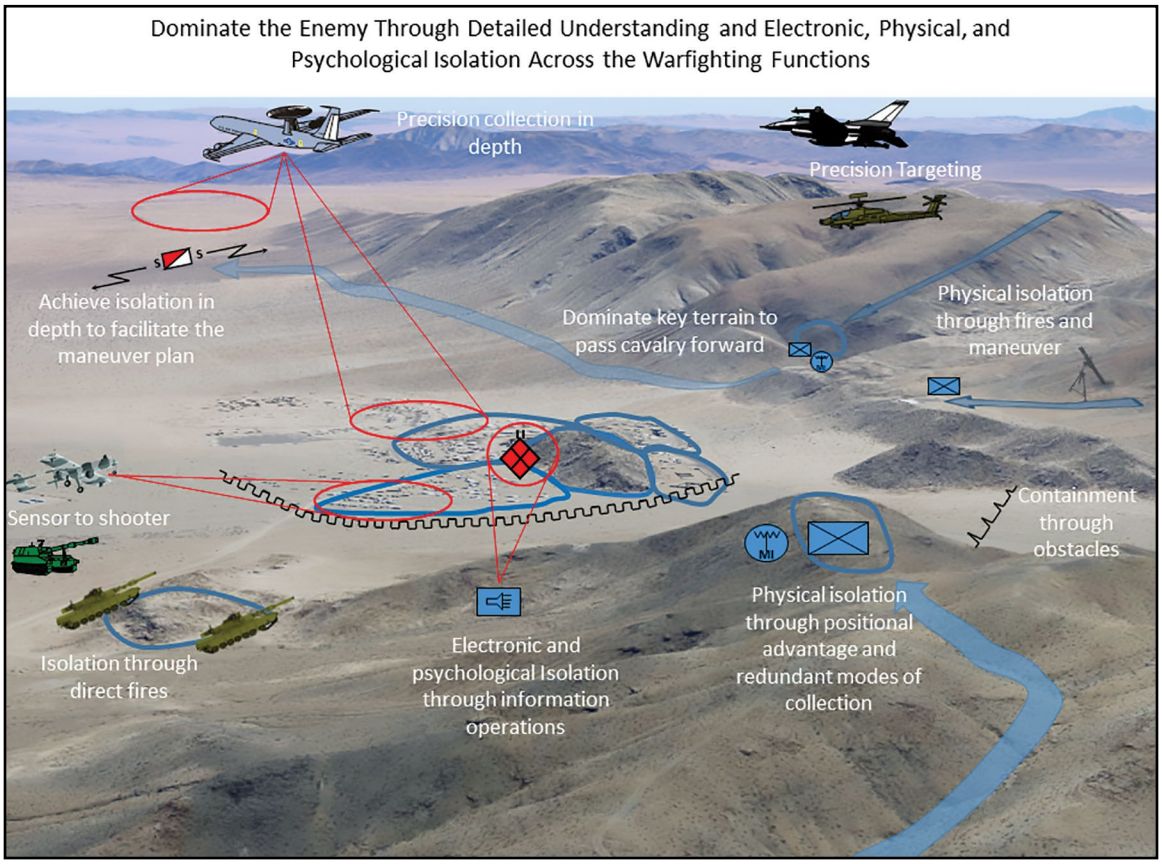


Figure 3-2. Shape the battlefield through detailed understanding and electronic, physical, and psychological isolation across the warfighting functions.

Engage

> "*Before assaulting or being able to "move" on the enemy, we must use direct and indirect fire to fix the enemy. This allows us to exploit a weakness before he can reinforce or reorganize. The volume of these fires must be such that the enemy cannot put effective fire on us, yet no more than necessary. We must not expose ourselves to the assault until these conditions are met. Combat patience — don't move until you have set the conditions*." [11]
>
> — CSM(R) Michael Hall, "Fundamentals of Combat and How to Train for It"

If the first two steps of an urban assault (isolation and suppression) are not followed, the enemy is allowed to maintain freedom of maneuver and retain the initiative. Isolating the larger urban objective and the subsequent zones prevents the enemy from supporting himself and executing initiative. We can allow ourselves to dictate the terms of the fight. Urban operations are often framed as room clearing (i.e., the shoot house) versus a complex operation that requires combine arms breaching and suppress, obscure, secure, reduce, and assault (SOSRA) from brigade to squad levels. If the breaching fundamentals are understood and applied at echelon, the conditions are successfully set before, through, and beyond each building and room. The experiences of Task Force Ranger on 3 OCT 1993 in Mogadishu, Somalia, were eye-opening for a generation of younger leaders. Lessons learned from this fight have undoubtedly saved lives over the intervening two decades, but that operation has also had an outsized influence on how we think about and train to fight in urban terrain. Close-quarters-combat (CQC) skills are critical to the mindset and survival of squads in the close fight, but they are not and should not be considered decisive. Mike Foreman argues in his article, "The Case Against Battle Drill Six," that "shouldn't we assume that we will never have the right conditions necessary to conduct low-risk CQC until we have taken steps to create those conditions ourselves?" [12] This part is being neglected, the necessary condition-setting to make it a wholly unfair fight for squads. This condition-setting is exactly what the progenitors of CQC, the Army's premier special operations forces, do so well. Through understanding and shaping of the urban battlefield, conditions are set for the squad's success.

Focusing solely on squad CQC and the way to train for it keeps Soldiers from being realistically prepared for the fight. CSM (R) Mike Hall, the former command sergeant major for the 75th Ranger Regiment, wrote that "high-explosive busts prepared positions and kills people in them, not 5.56 or 7.62. We must practice using high explosive in training." [13] Against prepared positions in Afghanistan and Iraq, the rangers learned to use high-explosive and thermobaric munitions to destroy or reduce the threat. Mounted forces are critical to getting those capabilities into the fight. LTC Newell, discussing his experience in Fallujah, noted that "guys talk about military operations in urban terrain being the right place for light infantry, but very few understood the power of a mechanized heavy battalion in an urban environment." [14] Tanks and Bradleys provide the firepower and protection essential to the squad's success. They have to be in the fight. However, this requires shaping, suppression, and obscuration of antitank positions, breaching to clear obstacles and improvised explosive devices, and dismounted infantry to secure them. The relationship between dismounted and mounted forces is symbiotic in complex terrain. We must fight accordingly and understand the capabilities and limitations of each so that we can be complementary.

The Army has enough experience to know that we cannot solve every problem with firepower. There are certainly conditions (no known threat, back-clearing objectives, etc.) that warrant CQC room clearing, but conditions have to be set through shaping efforts, and synchronized shaping efforts must be in place if conditions change. Anything else is a fair fight.

Training Recommendations

The challenges in decisive action are surmountable. Primarily, several repetitions are needed to build depth and muscle memory in leaders. There is a clear premium on time. The urban environment is difficult to realistically scale in training in terms of time, space, and complexity. The following recommendations augment or improve existing leader-development and training programs.

1. **Staff-leader certification**. Provide newly arrived staff officers and noncommissioned officers with a doctrinal self-study guide (doctrinal terms and graphics, doctrinal concepts) and unit standard operating procedures. Conduct a written exam on the material and brief mission analysis in its warfighting function and reverse warfighting function analysis to the executive officer in the first 90 days. Repeat as part of leader certification prior to major training events such as command post exercises, leader training program, and combat training center rotations. Many leaders know or have been exposed to this material, but lack muscle memory to execute at the speed of war.

2. **BCT terrain exercise without troops in urban terrain**. Execute the brigade and battalion military decisionmaking process and company troop-leading procedures to seize a large urban objective. Conduct combined arms, intelligence, fires, and sustainment rehearsals and then physically walk the ground with leaders using radios to call key triggers and reports. This gives leaders a greater appreciation for rates of march and timings in urban terrain. It also provides a repetition at planning and an opportunity to validate standard operating procedures and planning products.

3. **Tactical decision games**. These can be tailored for leaders at all echelons to include the staff elements. Think about, talk about, and study the problem. Practice what works and what does not. Obtain as many repetitions as possible. If executing a one-hour, tactical-decision game a week for a year, leaders could realistically achieve 30 to 40 repetitions. It will improve doctrinal understanding and build doctrinal muscle memory to think and operate at the speed of war in collective training.

4. **Suppression and obscuration**. Conduct virtual fire-support coordination exercises using Virtual Battlespace Simulator 3 (VBS3). This is an excellent tool for practicing the planning and execution of triggers. For this to be most effective, use accurate processing times and intentionally insert friction (firing batteries being suppressed, communication delays, etc.) into the process.

5. **High explosives**: In home-station training, use every munition type available. In preparation for a squad and platoon live fire, the unit should build a parallel training plan for both mounted and dismounted drills that meet at a culminating training combined arms maneuver squad live fire. The rifle squads should conduct standard individual task training to include the use of hand grenades, AT4s, Carl Gustavs, and Javelins while mounted platforms continue their focus on required gunnery tables. Live-fire exercises at echelon incorporate live or, if necessary, constructive high explosives (AT4 sub-caliber, demolitions effects simulators charges, etc.) at every opportunity. In force-on-force training, use observer controllers to replicate and provide credit for the use of high explosives from dismounted systems, MK19s, Bradley Fighting Vehicles, and M1s. Annually conduct a capabilities demonstration for all leaders that shows the effects of different types of munitions on defensive positions and obstacles (mine-clearing line charges, anti-personnel obstacle breaching system, Bangalore torpedoes, etc.).

6. **Close-quarters combat**. Room-clearing live fires should require the squad to conduct SOSRA to seize a foothold in a building. Alpha Team provides suppression (to include M320 rounds) and obscures to enable Bravo Team to explosively breach and then seize a room.

Endnotes

1. Matt Matthews, "Interview with SSG David Bellavia," *Operational Leadership Experiences Project*, Combat Studies Institute, Fort Leavenworth, KS, 27 JUL 2006, page 24.

2. Roger J. Spiller, *Sharp Corners: Urban Operations at Century's End*, U.S. Army Command and General Staff College Press, Fort Leavenworth, KS, 2001.

3. Chief of Staff of the Army, Strategic Studies Group, "Megacities and the United States Army: Preparing for a Complex and Uncertain Future," June 2014, page 8.

4. Matt Matthews, "Interview with LTC Ken Adgie," *Operational Leadership Experiences Project*, Combat Studies Institute, Fort Leavenworth, KS, 8 MAR 2006, page 5.

5. Roger J. Spiller, *Sharp Corners: Urban Operations at Century's End*, page 16.

6. Tempo is the rhythm or rate of activity of operations relative to an adversary's. The side which consistently decides and acts fastest should gain and hold an advantage. However, tempo does not always require high physical speed. The primary goal should be to maintain the initiative, which requires activity that is qualitatively as well as quantitatively of higher tempo than the adversary's. Therefore, to maintain tempo, there is often value in pausing in order to gain or improve understanding.

7. Matt Matthews, "Interview with SSG David Bellavia," *Operational Leadership Experiences Project*, page 14.

8. Ibid., page 12.

9. Army Doctrine Publication 6-0, *Mission Command*, 12 MAR 2014, page 1.

10. FM 3-06, *Urban Operations*, page 7-7.

11. CSM(R) Michael Hall, "Fundamentals of Combat and How To Train for It," 75th Ranger Regimental-Sergeant Major's Notes on Training for Combat, page 4.

12. Mike Forman, "A Case Against Battle Drill Six," Infantry, November-December 2006, p. 44.

13. CSM(R) Michael Hall, "Fundamentals of Combat and How to Train for It," page 4.

14. Matt Matthews, "Interview with LTC Peter A. Newell," *Operational Leadership Experiences Project*, Combat Studies Institute, Fort Leavenworth, KS, 23 MAR 2006, page 5.

Chapter 4

Operations in a Contested Cyber Electromagnetic Activities Environment

MAJ Steve Wojdakowski and CW2 James Gill

The U.S. Army relies on assured access to space, cyberspace, and the electromagnetic spectrum (EMS) to conduct unified land operations. Brigade combat teams (BCTs) leverage cyber electromagnetic activities (CEMA) in order to seize, retain, and exploit the initiative over adversaries across the warfighting functions. During past conflicts, the U.S. Army has not been contested in the space domain or the EMS. However, the decisive action training environment and actual adversaries possess the capability to deny land forces the assured access they need for mission command. Conducting operations in a contested cyberspace and EMS environment is a fundamental skill BCTs must master to win in a complex world.

Electronic Warfare

The most basic protection from enemy EW is radio discipline. The shorter the transmission, the less signature is presented to the EW system for processing. Transmissions should never exceed six to eight seconds in duration on the radio.

The greatest threat to digital mission command systems at the tactical level is the enemy's use of electronic warfare (EW) assets to geolocate and jam friendly communications. These EW assets vary in capability, size, and power from Manpack systems to fixed-site emplacements. Adversaries have the capability to engage U.S. forces across a variety of communications platforms, but there are steps BCTs can take to mitigate the impact. This is known as electronic protection (EP) and, along with electronic attack (EA) and electronic warfare support (ES), it is one of the three divisions of EW. "EP protects the EMS for friendly forces."[1] One of the most recognized EP techniques at the tactical level is the establishment of a communications primary, alternate, contingency, and emergency (PACE) plan. PACE plans should use a mix of systems that operate across a wide range of the EMS to present multiple dilemmas to enemy EW operators. The greatest vulnerability in a PACE plan is the failure to understand and rehearse the plan at the lowest possible level. Triggers must be established to move between PACE communications systems. This must be rehearsed continuously at all echelons during troop-leading procedures. This will ensure continuity of communication down to the lowest level during combat operations.

The most basic protection from enemy EW is radio discipline. This can take the form of limiting transmissions, antenna masking, and use of low power. Limiting the number of overall transmissions and transmission time when a radio microphone is keyed makes it more difficult for enemy EW operators to target friendly forces for geolocation and jamming. The shorter the transmission, the less signature is presented to the EW system for processing. Transmissions should never exceed six to eight seconds in duration on the radio. Proper words should be used before the end of a transmission, such as "break," "over," and "out." Radio transmissions can be detected at great distances by enemy EW forces. Too much radio traffic on a net will present a radio target for the enemy to geolocate and jam. This exposes mission command nodes, fires assets, logistics cells, and maneuver elements to more risk. Enemy fires can target the sources of friendly radio transmission (with indirect fires or EA) without visual confirmation.

Antenna masking and lower power settings are another form of electronic protection used to safeguard friendly mission command nodes.

With this method, avoid open crests of hills and mountains. Although antennas protruding from the top of a hill provide better line of sight for BCT radios, they present an easily identifiable visual target for enemy forces. Concealing an antenna behind the crest of a hill will help protect elements from visual observation. It can also assist in masking friendly transmissions, which may not penetrate the hill. This provides added protection from enemy geolocation. This same principle also applies to enemy EA, which will be masked by the hill. In addition to antenna masking, the lowest possible power setting on a radio should be used to maintain communications. It is important to start a transmission at low power and only increase to medium, high, or power amplifier if communications cannot be established. The use of the lowest possible power setting further decreases the likelihood of detection and jamming by enemy EW forces. If a jamming environment is encountered, increasing to the highest power setting and decreasing the distance between elements trying to communicate could overcome the jammer. A position protected from enemy fire just behind the crest of a hill gives better concealment and sometimes provides better communications.[2]

Friendly forces should always operate in frequency-hopping mode with encryption. The easiest way to geolocate a radio transmission is on a single, fixed frequency, also known as single channel on the single-channel ground and airborne radio system (SINCGARS).

Anything transmitted over a fixed frequency without encryption can be easily intercepted and exploited by enemy forces. Frequency hopping creates a further obstacle for enemy jammers. Frequency-hopping requires advanced jamming techniques, which near-peer adversaries currently possess. Frequency-hopping nets share a common set of frequencies; if one is jammed then all will be jammed. EP measures, such as antenna masking, decreasing transmission distance, and limiting transmissions, can also assist in defeating a frequency-hop jammer. Frequency-hopping nets do not share the same frequencies at the same time. Multiple frequency-hopping nets operating simultaneously can degrade the effects of an enemy jammer and allow communications systems to work. However, frequency hopping is still susceptible to geolocation. An experienced enemy EW operator can easily determine a frequency-hopping radio and use direction-finding techniques to locate it on the battlefield to enable lethal targeting. Even when using frequency-hopping radios, avoid being a cooperative target for enemy EW.

ES is also a capability organic to most BCTs. "ES actions search for, intercept, identify, and locate sources of radiated electromagnetic energy for future operations … ."[3] ES can be used to target and locate enemy radios, radars, and jammers. The destruction of these systems can enable a BCT by providing freedom of maneuver in the EMS. An example of ES systems within a BCT is the Prophet. ES systems should be employed in such a manner that they can receive clear line of sight to enemy emitters. They should also not be located near friendly radio systems that can cause interference. Once an enemy jammer is identified and located by an ES system, it should be confirmed by some other type of intelligence or reconnaissance asset to establish a positive identification and location. This location can then be passed on to the fires cell for targeting with direct fire, indirect fire, air interdiction, or rotary wing. EW can also assist with operations in a cyberspace and EMS contested environment. EA can be used as deception to "convey misleading

information to an enemy or to enemy electromagnetic-dependent weapons."[4] This can cause the enemy to commit its own EW assets against false targets allowing friendly communications to proceed unimpeded. Deceptive EA can also assist ES assets to locate enemy jammers to destroy them.

Cyberspace Operations

Operations in the cyberspace domain are rapidly emerging as a threat to BCT operations. Adversaries are able to take advantage of a wide variety of capabilities in the cyberspace domain to provide intelligence, early warning, and targeting information against U.S. forces. State and non-state actors take advantage of offensive cyberspace operations (OCO) to conduct asymmetric attacks against U.S. forces in all phases of joint operations. BCTs must conduct defensive cyberspace operations to protect their own networks from cyberspace attack. Army BCTs must be prepared to attack and defend in cyberspace to enable maneuver.

The most dangerous threat to Army BCTs in cyberspace is the state actor or hacker. This threat is normally well-funded, trained, and capable of penetrating the best cyber defenses available. The Department of Defense takes a layered defense strategy to protect information networks from these adversaries. In a contested cyberspace environment, the BCT information protection technician (255S), S-6, is the last line of this defense and must plan accordingly. The S-6 and every user who logs onto a computer system in a BCT must recognize they are also engaged in a cyberspace fight. Therefore, appropriate action must be taken to defend against adversaries.

Simple steps such as using complex passwords, locking computers when not in use, and screening web links in emails can prevent major attacks against BCT networks.

Many Army mission command systems come with default passwords that are easily broken and exploited by adversaries. These passwords must be changed and secured to safeguard administrative access to these systems. As advanced as modern hackers are, ensuring proper cyber discipline across the BCT formation will assist greatly in negating their ability to affect BCT mission command. The individual Soldier must recognize that he is not only the most prevalent vulnerability in cyberspace, but also the first line of defense.

BCTs also face threats from adversary use of the internet. The internet is typically referred to as gray space as opposed to friendly blue space and enemy red space in the cyberspace domain. Adversaries can take advantage of gray space in a variety of ways. Gray space can be a conduit for adversary access to blue space; an intelligence, surveillance, and reconnaissance (ISR) platform via devices such as smartphones; or a command and control system via services such as social media. It is crucial that BCTs understand enemy use of gray space and how it can affect their ability to maneuver. An example is isolation of a city or town during a BCT attack. The BCT must take into account the cyber domain capabilities inherent in the town when planning to isolate; it is not a strictly physical operation. Internet cafes and cellular networks allow enemy forces in cities and towns to maintain situational awareness even when they are unable to maneuver on the ground, providing indicators and warnings to follow-on forces. BCTs must account for this in operational planning with integration of OCO. The BCT EW officer is responsible for integrating OCO and submits a cyberspace effects request form with a concept of support to receive desired effects against a target. This cyber isolation will enable the BCT to continue its attack without disruption by cyber means from an adversary.

The cyberspace domain is rapidly changing how military operations are conducted across all domains. Although many concepts of cyberspace are new and challenging, BCTs should not be intimidated by them. Continuing proper cyberspace awareness practices and taking the cyberspace domain into account during the operations planning process will allow a BCT to successfully maneuver in the cyberspace domain even in an EMS-denied environment.

Space Operations

Historically, the Army has enjoyed assured access to space capabilities. However, in today's environment, the space domain has become increasingly congested and contested as near-peer adversaries work to increase their own space-based assets. Commercial enterprise in the space domain further complicates the operating environment. BCTs rely on space-based capabilities for navigation, situational awareness, ISR, and beyond-line-of-sight communications. Space capabilities and the space domain contribute in some degree to all warfighting functions. BCTs and levels below must understand the capabilities and vulnerabilities of their formations as well as adversaries with regard to access and employment of space-based capabilities. BCTs must also understand how to operate when capabilities are degraded or denied.

Threats to space assets include kinetic capabilities such as anti-satellite missiles, targeted strikes on ground control stations, space debris, and non-kinetic means such as EA or cyberspace operations. These threats have the potential to affect all warfighting functions at the brigade level and below.[5] A major space-based capability present in all BCTs is satellite communications (SATCOM). SATCOM networks require an uplink and a downlink, each assigned a specific frequency. The uplink consists of any data going to the satellite, while the downlink transmits data down from the satellite to a user. For example, the transceivers used with the Joint Capabilities Release (JCR) platform transmit situational awareness data and message traffic through uplinks to the satellite at the same time they receive data from the downlink. The JCR also receives position, navigation, and timing information through the Defense Advanced Global Positioning System (GPS) Receiver (DAGR) through a downlink from the GPS satellite constellation.

The reliance of SATCOM (and every other space-based system) on the EMS makes it susceptible to electronic attack similar to terrestrial line-of-sight systems.

Adversaries may choose to jam the uplink or downlink frequency. Uplink jamming is the more effective of the two techniques and most likely to be encountered in a near-peer conflict. In an uplink jam, the adversary transmits enough energy against a satellite to disrupt or deny data flow. As a result, the downlink data cannot reach the intended user or users. Uplink jamming requires extremely high-powered jammers, precise knowledge of the location of the target satellite, and intelligence on the target's uplink frequency. An uplink jammer could deny SATCOM from well outside the BCT's area of operations. However, the massive amount of power associated with these systems makes them easy targets for joint and national capabilities. On the other hand, a downlink jammer targets the receiver or user only. A downlink jammer does not require as much energy as an uplink jammer and can be employed tactically. Downlink jammers must have line of sight to their intended target and may not be able to affect the entire BCT based on the terrain and tactical situation. The greatest downside to downlink jammers for the adversary is that they must be employed closer to their target, which makes them vulnerable to direct and indirect fires. A BCT can employ organic ES capabilities in conjunction with other ISR assets to locate and target downlink jammers. In both cases of uplink and downlink jamming, the adversary must also employ ES to assess effects.

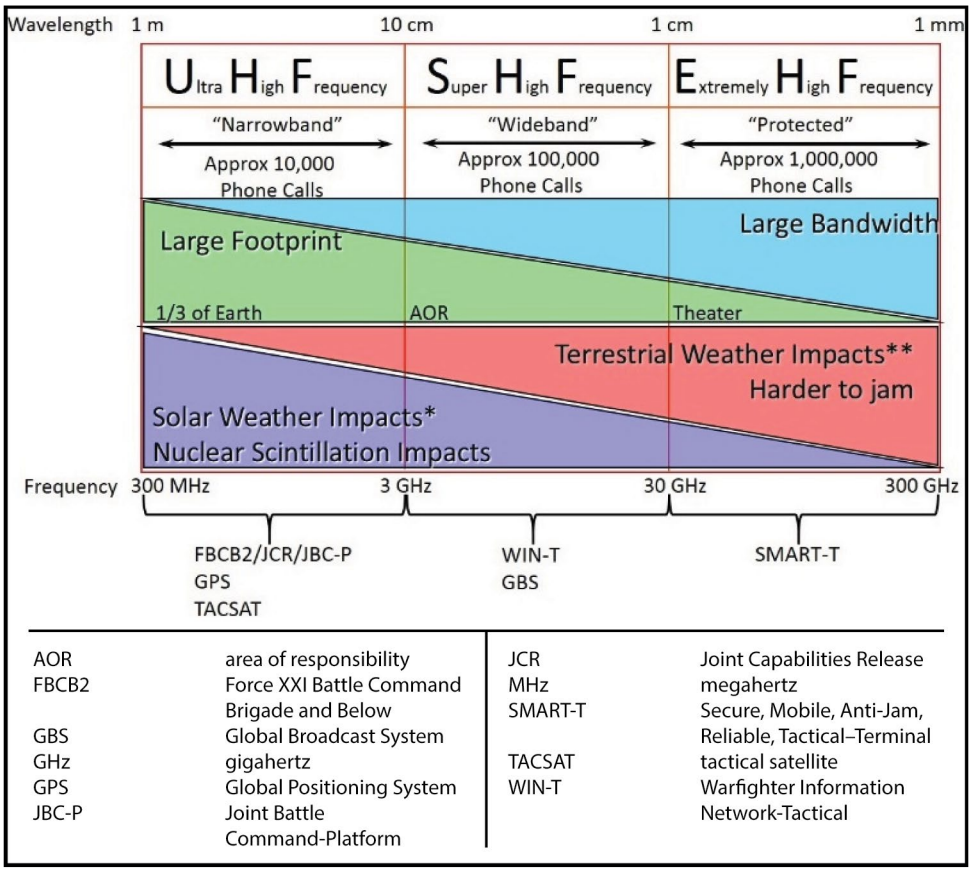


Figure 4-1. Satellite bands

PACE plans should specify analog means for communications, battle tracking, and synchronization such as pyrotechnics signaling, brevity words over alternate nets, and manual product dissemination.

SATCOM requires EP to ensure access and operability similar to terrestrial communications systems. PACE plans should include SATCOM systems across multiple bands when feasible based on the enemy situation, terrain, and weather analysis. SATCOM bands from low to high are the ultra high frequency (UHF), super high frequency (SHF), and extremely high frequency (EHF) bands. SATCOM systems generally use directional antennas for transmitting and receiving such as Joint Network Nodes (JNNs), SECRET Internet Protocol Router (SIPR)/ Nonsecure Internet Protocol Router (NIPR) access points (SNAPs), and the Harris AN/PRC-117 family of radios. These can be hidden behind terrain features as long as they maintain line of sight to their intended satellite. Some antennas, such as those for GPS receivers, are designed to receive a signal from any direction. This allows the antenna to receive signals from satellites positioned anywhere in the sky. Radar-scattering camouflage nets and foliage can disrupt or deny SATCOM signals. Higher frequencies, such as those in the EHF and upper SHF, are extremely difficult to jam because of their high energies and resulting smaller uplink and downlink footprints. They are also more easily disrupted by rain and cloud cover, which should be taken into account during planning. Lower frequencies, such as UHF and lower SHF, are easy to jam but can also easily penetrate weather and some foliage.

The GPS constellation transmits two distinct signals: coarse acquisition (C/A) and precision P(Y). C/A and P(Y) are on two separate frequencies referred to as L1 and L2. All civilian and military GPS receivers can access the C/A code free of charge using the L1 frequency. However, the P(Y) code can only be accessed by authorized users and is broadcast on both L1 and L2. The increased bandwidth and data rate of the P(Y) signal make it harder to disrupt, jam, or spoof.

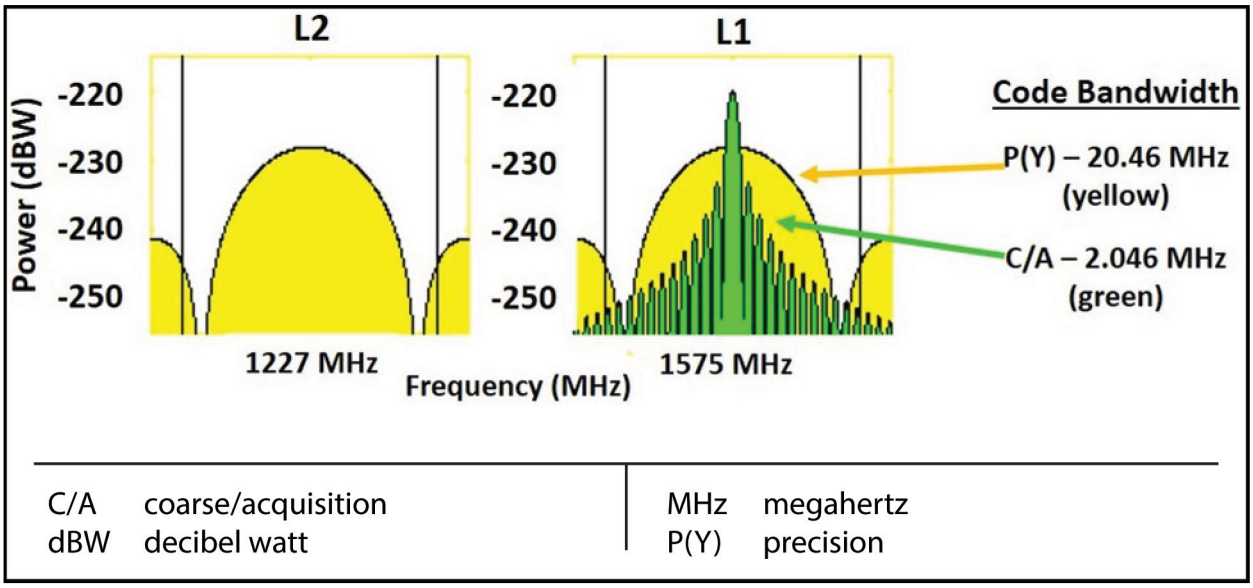


Figure 4-2. GPS frequencies [6]

Potential near-peer and non-state adversaries may attempt to disrupt BCT access to the GPS signals. GPS jammers are one of the easiest EA systems to employ and are widely proliferated. Because it is not feasible to uplink jam all 30+ satellites in orbit, GPS jamming is achieved by jamming the downlink only. The GPS signal at ground level is extremely weak, so the power required to jam it is very low. Non-state actors may seek to deploy low-power GPS jammers to disrupt movement and maneuver and small unmanned aircraft system (UAS) operations in and around urban centers. Near-peer adversaries may employ high-power GPS jammers in order to disrupt larger UAS and precision-guided munitions in the vicinity of high-value targets. Detection and location of a GPS jammer can be accomplished by organic BCT equipment or requests for collection from echelons above brigade assets.

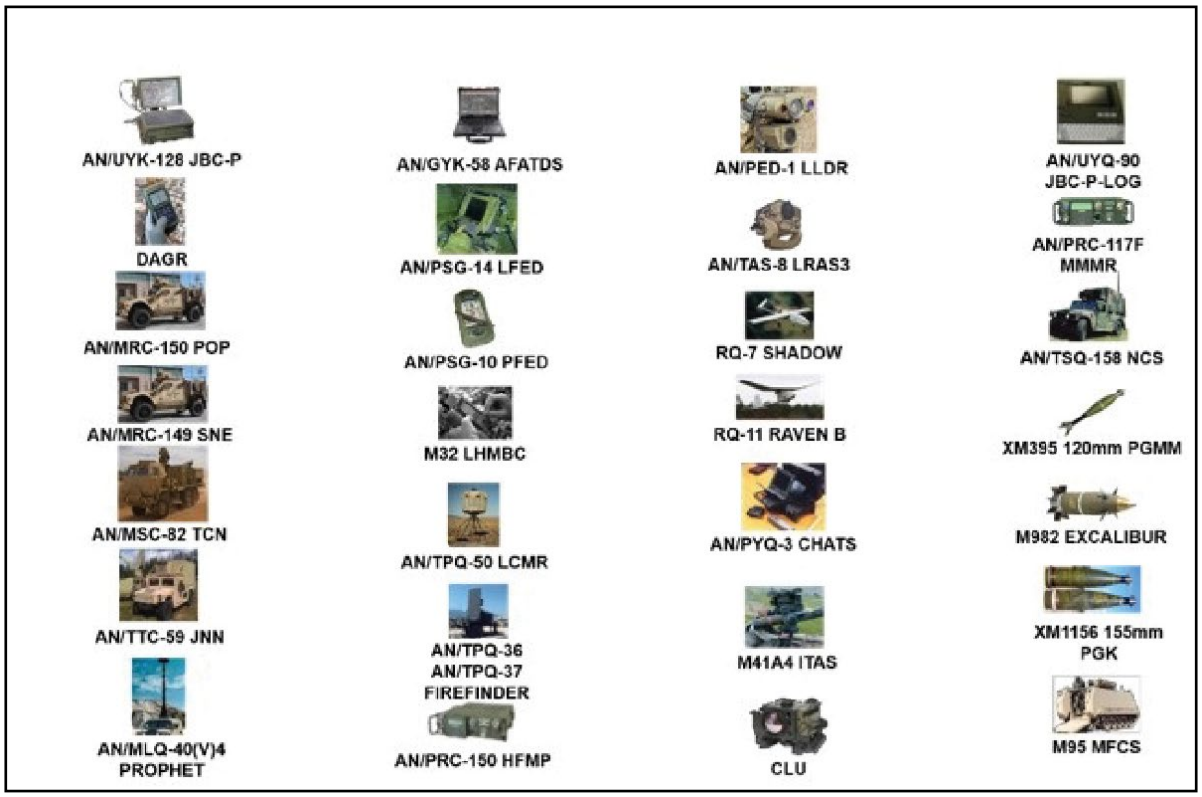


Figure 4-3. Systems that use GPS

With proper training and rehearsals, individual Soldiers could be a powerful asset in detecting and locating GPS jammers. Any GPS jamming detected by a DAGR should be reported to the BCT spectrum manager and EW personnel to mitigate the jamming.

BCTs use several GPS-enabled devices that would be degraded in a contested GPS environment without mitigating the threat. For example, accurate indirect fires rely on precise and accurate positioning data. Military GPS receivers, such as the DAGR, use an encryption key to receive the P(Y) code and therefore protect against jamming and spoofing. This key can be obtained from the BCT communications security manager. A jammer requires 50 times more power to deny the GPS signal to a keyed DAGR than to an unkeyed DAGR, and ten times more power to knock off a keyed DAGR tracking the GPS signal. A keyed DAGR will automatically switch to a frequency not receiving interference when experiencing jamming and will also notify its user of the jamming environment. The keyed DAGR can also provide limited direction finding capability via its jammer finder application (see Technical Manual 11-5820-1172-13, *Operator and Maintenance Manual Defense Advanced GPS Receiver Satellite Signals Navigation Set* [09 MAY 2014]).

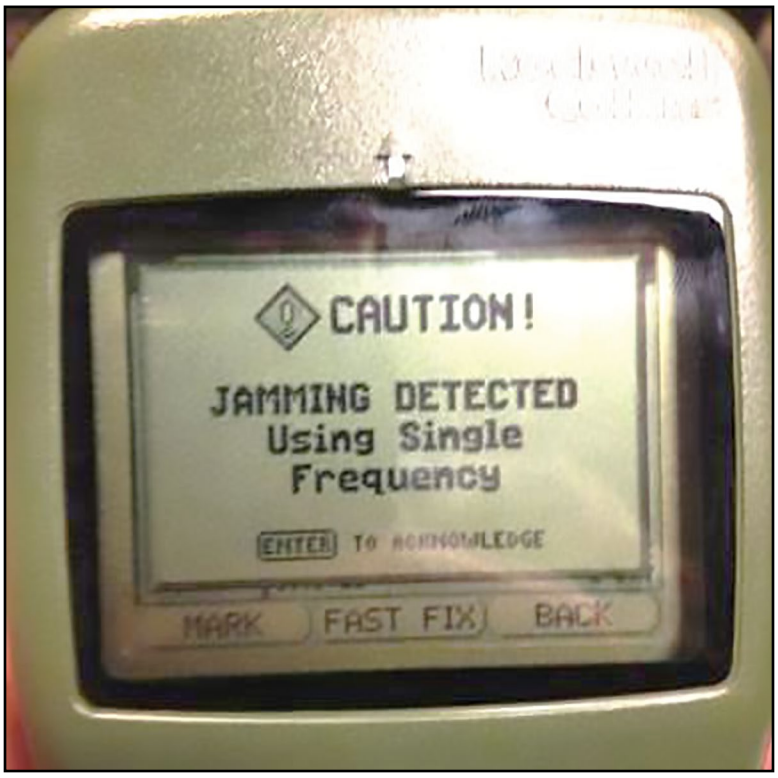


Figure 4-4. DAGR

Operating in a Cyberspace and Electromagnetic Spectrum Contested Environment

Maintaining analog products for common operations and staff estimates will preserve shared understanding upon entrance into a cyberspace and EMS contested environment.

The cyberspace and EMS environment is complex and can be intimidating to understand. CEMA give U.S. forces an asymmetrical advantage on the battlefield. Adversaries will seek to deny this advantage in order to disrupt the ability of commanders and staffs to plan and execute operations. The ability to transition to and conduct analog operations in a cyberspace and EMS contested environment is necessary for BCTs to continue the fight without disruption.

A BCT that may operate in a cyberspace and EMS contested environment must always plan on having backup analog products to continue operations if upper and lower tactical communications systems are lost. An example is the common operational picture on Command Post of the Future (CPOF) or other mission command system. BCTs should employ an analog map for battle tracking in conjunction with CPOF and update each simultaneously. This will allow the BCT and battalion command posts to maintain situational awareness once connectivity is lost due to an adversary cyberspace or electronic attack. Staff sections should maintain analog running estimates for combat power, intelligence, sustainment, and fires to ensure that a loss of connectivity does not cause a loss of awareness for the commander.

The warfighters across the BCT formation also must maintain analog capabilities to communicate and maneuver their forces in the event of the loss of systems such as radios or JCR. Field Manual 21-60, *Visual Signals* (30 SEP 1987), provides ways to control combat formations by means such as hand and arm signals. For example, pyrotechnics provide a means for cueing and synchronizing assets, enabling BCTs to mass effects on the enemy. Units should incorporate visual signaling techniques into their standard operating procedures and validate them during training and exercises to ensure all echelons can rapidly and comfortably transition from one form to another in combat.

Army leaders should also continue to exercise disciplined initiative upon entrance into a cyberspace and EMS contested environment. "Disciplined initiative is action in the absence of orders, when existing orders no longer fit the situation, or when unforeseen opportunities or threats arise."[7] A cyberspace and EMS contested environment may be an unforeseen threat, but it can also be an opportunity. Leaders who understand their mission orders can continue to execute using disciplined initiative. Commanders must clearly articulate their intent in mission orders to include publishing graphic control measures that enable subordinate echelons to continue the fight. The shared understanding derived from mission orders and control measures must also be rehearsed and refined. BCTs and battalions should always conduct a thorough combined arms rehearsal prior to execution of combat operations. This will drive company and platoon leadership to rehearse movement and maneuver, fires, and sustainment to a degree that ensures they can continue to execute in the absence of reliable communications to higher headquarters.

Conclusion

Conducting operations in a cyberspace and EMS contested environment is a new reality that BCTs will be forced to contend with on the modern battlefield. Near-peer and non-state actors will each seek to gain an asymmetric advantage over U.S. forces through denial of cyberspace and EMS capabilities. BCTs must understand the capabilities and limitations of their own systems as well as adversaries to conduct effective combat operations in this type of environment. A BCT that masters the fundamental skill of operating in a cyberspace and EMS contested environment will be well postured to fight and win in a complex world.

Endnotes

1. Army Techniques Publication (ATP) 6-02.53, *Techniques for Tactical Radio Operations,* 07 JAN 2016, page 12-2.

2. Ibid., page D-10.

3. ATP 3-36, *Electronic Warfare Techniques*, 16 DEC 2014, page 1-3.

4. Ibid., page 2-10.

5. BCT equipment that uses space assets includes Blue Force Tracking (BFT), JCR, Joint Battle Command-Platform (JBC-P), Combat Service Support-Very Small Aperture Terminal (CSS VSAT), Warfighter Information Network-Tactical (WIN-T) (command post node [CPN]; tactical communications node [TCN]; Point-of-Presence [POP]; Soldier network extension [SNE]; Satellite Transportable Terminal [STT]); Secure, Mobile, Anti-Jam, Reliable, Tactical-Terminal (SMART-T), unmanned aircraft system (UAS), Shadowfire, Global Broadcast Service (GBS), SNAP, Trojan Lite, and anything that uses the GPS signal. Space assets also provide imagery, ISR, and missile warning.

6. GPS frequencies and code characteristics can be found at http://www.gps.gov/.

7. Army Doctrine Publication 6-0, *Mission Command,* 17 May 2012, page 4.

Chapter 5

Building Proficiency in Reconnaissance and Security: Observations and Solutions

CPT Trevor R. Barrett and MAJ Rohn Perry White, Cobra Team

Introduction

The Army's transition to a triangle-design brigade combat team (BCT) [1] has significantly changed the task organization of cavalry squadrons. Squadrons have received a dramatic increase in organic firepower and a marked improvement in dismounted capability. This change has provided cavalry squadrons with increased lethality and survivability for threats that Soldiers will face on battlefields of the future. The shift to improved mobility, firepower, and protection have been positively received by commanders of these organizations and provides them with the ability to accomplish a wider array of missions. However, this has inadvertently led to a decrease in reconnaissance and security proficiency. Commanders and their subordinates embrace "fighting for information" but consistently overlook the importance of basic reconnaissance and security fundamentals.

This trend has been documented during multiple rotations at the National Training Center (NTC) and is not specific to any one squadron or BCT type. Organizations routinely race toward their limit of advance, relying on the improved task organization without properly setting battlefield conditions or a having clear understanding of the commander's intent and guidance. Cavalry organizations are subsequently defeated by numerically inferior forces and forced to retrograde without reaching their objectives. They fail to provide adequate information to the brigade, resulting in increased danger for the rest of the formation.

Defining Reconnaissance and Security

To be successful, cavalry organizations must build proficiency in the fundamentals of reconnaissance and security.

Reconnaissance and security are the primary missions of cavalry squadrons. Each subordinate element in the brigade will be required to conduct its own reconnaissance and security and participate in reconnaissance and security as part of a larger information collection plan or security mission. However, the bulk of reconnaissance and security tasks in support of the brigade fight falls on the cavalry squadron.

Reconnaissance is the process of confirming or denying commander and staff assumptions about the operational environment. It develops the intelligence picture for the BCT to allow the commander to visualize, understand, describe, direct, lead, and assess military operations to make effective decisions as they arise.[2]

Security is the process of providing early and accurate warning of the enemy in order to provide protected forces with reaction time and maneuver space. [3] Security is inherent in all operations; it is always the first priority of work and is a continuous process.

Reconnaissance and security are not only historical requirements for cavalry organizations, they have also taken a renewed importance due to the hybrid threat and the emerging anti-access/area denial concept.[4] Successful reconnaissance and security operations allow U.S. and coalition forces to determine enemy composition and dispositions to penetrate and defeat defenses. They can only do this by collecting commander's critical information requirements and preventing enemy influence on friendly forces. To be successful, cavalry organizations must build proficiency in the fundamentals of reconnaissance and security. Proficiency is defined as a deep understanding of each fundamental and how it relates to the brigade fight.

Fundamentals of Reconnaissance

- Gain and maintain enemy contact.
- Do not keep reconnaissance assets in reserve.
- Orient on the reconnaissance objective.
- Report information rapidly and accurately.
- Retain freedom of maneuver.
- Develop the situation rapidly.
- Ensure continuous reconnaissance.

Fundamentals of Security

- Orient on the force, facility, or area to be protected.
- Provide early and accurate warning.
- Provide reaction time and maneuver space.
- Perform continuous reconnaissance.
- Maintain enemy contact.

Observations at the National Training Center

Cavalry organizations deployed to the NTC have demonstrated four areas where they consistently lack proficiency:

- Understanding the commander's intent;
- Operating within the commander's reconnaissance and security guidance;
- Enabling subordinate units; and
- Soldier training.

The areas listed above are directly tied to the fundamentals of reconnaissance and security and the inability to perform them adequately. Correcting these will improve reconnaissance and security execution while increasing the mission command, fires, and intelligence warfighting functions.

The first area of emphasis is understanding the commander's intent. Officers, noncommissioned officers, and Soldiers at echelon often do not always understand what is expected of them to accomplish the mission. They understand the mission statement and can articulate their task and purpose, but cannot visualize the larger picture or see the purpose of conducting a specific mission. They frequently do not understand the end state and how the battlefield should look at the conclusion of operations. Key tasks are also often misunderstood due to vague, ill-defined tasks, which often results in mission failure.

The second area of emphasis is operating within the commander's reconnaissance and security guidance. Subordinates typically receive incomplete guidance or guidance that has not been updated based on changes in the mission. It is also common to see the same reconnaissance and security guidance for multiple phases of an operation even though units are expected to react differently in each phase. Subordinates then use information without considering its effect or refining it for their formation. Reconnaissance and security guidance requires commanders to dictate five topics of information: focus, tempo, engagement criteria, disengagement criteria, and displacement criteria.[5] These topics should be deliberate and well-thought through. The more detailed each one can be, the better subordinate commanders perform their mission. Leaders rarely understand that tempo is different for reconnaissance guidance as compared to security guidance. Tempo, when applied to reconnaissance operations, determines unit speed, movement techniques, the specific level of detail gathered during information collection, and the level of force permitted to engage the enemy. However, when applying tempo to security operations, it includes the time duration of observation posts (short, long, or extended). This allows commanders to plan sustainment for observations posts, both mounted and dismounted, as well as the degree of engagement area development they can conduct.

Enabling subordinate units is a third area of emphasis. Brigades must take a whole-of-brigade approach to reconnaissance and security. Often, commanders rapidly task-organize units during course of action development without validating the task organization during course of action analysis or providing time for detailed coordination and planning once the task organization has taken effect. Direct support relationships and priorities of assets are not clarified or disseminated, resulting in a lack of understanding of the assets at their disposal and an inability to mitigate tactical risk (i.e., fires and information collection assets). Also, higher echelons frequently do not synchronize subordinate elements. Mission command often stops at battle tracking and the receipt of information, permitting gaps in formations, missed opportunities, and inadequate or improper support to units in contact.

Soldier and leader training and proficiency is the fourth area of emphasis. Many leaders at echelon do not understand the difference between movement and maneuver. They do not exercise proper movement formations and techniques and do not change them according to the terrain or expected level of enemy contact. Direct fire plans are not often established, and support by fire or mortar firing positions are usually not well-synchronized in time and space to support maneuvering elements. Sustainment and medical plans are also rarely adjusted from the base plan, leading to extended lines of communication and a higher died-of-wounds rate.

The more successful units regularly establish pre-planned targets with organic systems to enable maneuver without planning an excessive amount of targets.

Dismounted teams are frequently undermanned and require additional training to achieve proficiency. Experienced leaders are diverted to vehicle platforms resulting in junior Soldiers leading dismounted teams. Experienced leaders at critical places on the battlefield can greatly enhance the cavalry squadron's ability to conduct reconnaissance and security. Often, Soldiers are unfamiliar with their optics and the intricacies required to properly acquire the threat. They require a greater understanding of observation post site selection and how it increases their observation of assigned named areas of interest and survivability. Proper sustainment plans will result in increased observation time and clear retrograde plans. Finally, dismount teams must grasp the importance of priority information requirements and indicators. They must also know who needs critical information and understand what is meant by "report rapidly and accurately."

Fires planning and execution is another common Soldier training deficiency. The more successful units regularly establish pre-planned targets with organic systems to enable maneuver without planning an excessive amount of targets where nothing becomes a priority. Commanders also rarely dictate specific fire support tasks to platforms in order to achieve independent desired effects. The more successful fire support officers arm maneuver elements with high-payoff target lists/high-value target lists; target, trigger, location, observer, delivery system, attack guidance, communications network (TTLODAC); fire execution matrices; target list worksheets; and conduct fire support rehearsals. Also, participation in unit rehearsals ensures a clear, shared understanding of the fire support plan.

The Way Forward

Commanders must articulate the expanded purpose and how their mission relates to the fight two echelons above.

How can these trends be fixed? What corrective actions can be done to improve proficiency in reconnaissance and security? The following recommendations are simple, but require leaders to focus efforts in areas they previously have not and, in some cases, to change expectations.

First, commanders must be clear when issuing intent. It must be deliberate and well-thought out. Too often, intent is issued without preparation. Commanders must articulate the expanded purpose and how their mission relates to the fight two echelons above.[6] Key tasks are events critical to each phase, such as the execution of passage of lines, establishment of a squadron guard, or identification of a breach point in named areas of interest X, Y, and Z. Key tasks are those tasks that are critical to mission accomplishment; they are different from specified tasks, which cover important activities but are less essential to the mission at hand. In describing the desired end state, commanders convey their expectations about the enemy, civilians, and friendly forces with respect to terrain at the end of operations. Commanders must also provide subordinates latitude to execute missions as they deem adequate, especially during training. Commanders and staff should limit dictating specific unit positions. Allowing subordinate elements the freedom to determine their own positions is a way for them to learn how to operate within the commander's intent and understand expectations. Subordinate commanders must use their latitude to select positions they believe are best to support the squadron. This requires disciplined initiative but also the acceptance and mitigation of risk. Understanding the commander's intent helps leaders orient on the reconnaissance objective or force, facility, or area to be protected. It improves their ability to gain and maintain contact, develop the situation, and perform continuous reconnaissance.

The commander's reconnaissance and security guidance requires extensive details and must be just as deliberate as the commander's intent. Specific instructions about focus and tempo should be explained and discussed, especially if they are expected to change during a mission. Engagement criteria should go beyond "aggressive or discreet" and detail where, when, how, and with what weapon platforms to engage the enemy.[7] This is particularly important when differentiating between direct and indirect fire platforms. Disengagement criteria and displacement criteria must always be issued. These are two distinct criteria. Often, they are combined or issued with the statement declaring "go to ground." Disengagement criteria and displacement criteria help a unit maintain observation on reconnaissance objectives as well as retain combat power for follow-on operations. Once priority information requirements have been answered, units should be allowed to displace. Maintaining observation 200 meters from an enemy serves little purpose if the formation is destroyed soon afterward. Detailed reconnaissance and security guidance facilitates early and accurate warning, improves reaction time and maneuver space, prevents units from keeping assets in reserve, and ensures units maintain contact with an enemy using all assets available.

To properly enable formations, commanders must provide time for planning and coordination. This begins with the issuance of a warning order and ends with a face-to-face link with associated counterparts. Adhering to the one-third, two-thirds rule helps units accomplish this, but higher headquarters should push adjacent units to send their enablers to linkup locations.

Troops are required to request assets through squadron and rely on higher echelon coordination. It falls on the squadron and brigade to communicate with their counterparts to ensure enablers and supporting elements have the proper information for linkup and are relieved from duties to perform the next mission. Staff elements should provide essential information to subordinate units as well. Staffs must be proactive in generating products and sending digital and frequency modulation information to commanders. Too often, the fires and sustainment plans are afterthoughts, preventing commanders from incorporating them sufficiently into their scheme of maneuver. Properly enabling formations supports all the fundamentals of reconnaissance and security.

Increasing Soldier proficiency is the most complex area with the widest array of solutions. Although each formation is different, the common deficiencies expressed above are found in most units. Cavalry squadrons need to embrace the dismounted aspect of reconnaissance and security and incorporate it into every training event and mission. Dismount teams cannot consist of excess personnel. They should have the best leaders and fittest Soldiers capable of supporting the brigade. Remember, one scout on a hilltop with a pair of binoculars and a radio can significantly change a battle. Clear dismounted training plans should be established at the troop level. Extensive classes in information collection, fires execution, and observation post establishment must be conducted routinely. Dismount teams should possess expertise in their direct fire weapon systems (i.e., Javelin) and dismounted optics (i.e., Laser Target Locator Module, Lightweight Laser Designator Rangefinder). Fires planning and execution should also be present at every training event. The NTC should not be the first time commanders and fire support officers work together. At the staff level, expected fires products should be determined during the training cycle with enough time to determine how they will be generated and disseminated. Finally, fires technical and tactical rehearsals should be conducted at all levels to gain an understanding of the time involved, associated triggers and observers, and how the fires plan supports the overall maneuver plan.

Conclusion

Reconnaissance and security is the primary mission of the cavalry. It is something every cavalryman views with the upmost importance, but is highly complex, especially in a time constrained environment. The fundamentals of reconnaissance and security must be ingrained into every officer, noncommissioned officer, and Soldier at echelon. The key is improving the ability to issue clear commander's intent and detailed reconnaissance and security guidance, providing support and enabling subordinate units, and building military occupational specialty expertise within formations.

Endnotes

1. In the triangle design, the brigade combat team consists of three maneuver battalions and one cavalry squadron.

2. Field Manual (FM) 3.98, *Reconnaissance and Security Operations*, 01 JUL 2015, page 1-1.

3. Army Doctrine Reference Publication (ADRP) 3-90, *Offense and Defense*, 31 AUG 2012, page 5-3.

4. Freedberg, Sydney J., Jr. "Miserable, Disobedient, and Victorious: GEN Milley's Future U.S. Soldier." *Breaking Defense*. 05 OCT 2016. Accessed 24 MAY 2017, http://breakingdefense.com/2016/10/miserable-disobedient-victorious-gen-milleys-future-us-soldier/.

5. FM 3.98, page 4-3.

6. ADRP 6-0, *Mission Command*, 17 MAY 2012, page 2-3.

7. Freedberg, Sydney J., Jr. "Miserable, Disobedient & Victorious: Gen. Milley's Future US Soldier." Breaking Defense. October 05, 2016.

Chapter 6

Digital Fires in Decisive Action

LTC Jonathan A. Shine, MAJ Ashton J. Read, MAJ Reginald D. White, CPT Brian Buchholz, and CPT John Furr

Introduction

Units often fail at employing digital fires. Inadequate training is a big part of the problem. Most Soldiers do not receive formal training on the digital fire support systems. Digital sustainment training (DST) at home station, usually conducted in the motor pool, lacks the tactical rigor to reinforce the skills necessary for processing digital fire missions over distances. Another problem is that units consider vehicles fully mission capable (FMC) when they can drive and fire their main weapon system. However, to be truly FMC, a fire support vehicle should be able to send fire missions digitally. This will give commanders an accurate portrayal of their unit's digital fires capability.

Observations from rotations at the National Training Center (NTC) suggest that increased or improved fires battalion training is not enough. A comprehensive and integrated training and maintenance strategy at the brigade level is necessary to adequately train the force to conduct digital fires. Capability will improve with repetition, which leads to success in winning the first fight at NTC and beyond.

Sending Fire Missions Digitally Is Preferable

Field artillery battalions use a mix of digital and voice radio networks as determined by the operational status of assigned equipment and mission variables.[1] A robust digital and voice communications network that can transmit over an extended range is essential for successful operations.[2] Fire missions can effectively be sent using either method. However, the use of digital communications to send fire missions is preferable for several reasons. Sending fire missions digitally reduces the potential for inaccurate computational procedures and reduces fire mission processing time, which leads to increased battle damage assessment, especially in time-sensitive missions and counterfire. Also, the use of the digital net frees the fires voice net from fire mission traffic, allowing the voice net to be used for increased coordination and shared understanding.

Equipment Shortages and Deficiencies

The first challenge in the use of digital networks to send fire missions from sensor to shooter is equipment shortages and deficiencies. The problem with equipment originates at the observer level. Both mounted and dismounted observers have the capability to send digital missions, but observers have to be proficient in their employment through repetitive use. Dismounted observers must use the pocket-sized forward entry device and the lightweight forward entry device. Mounted observers must use the stand-alone computer unit (SCU) with the most current version of the forward observer system loaded to process missions digitally.

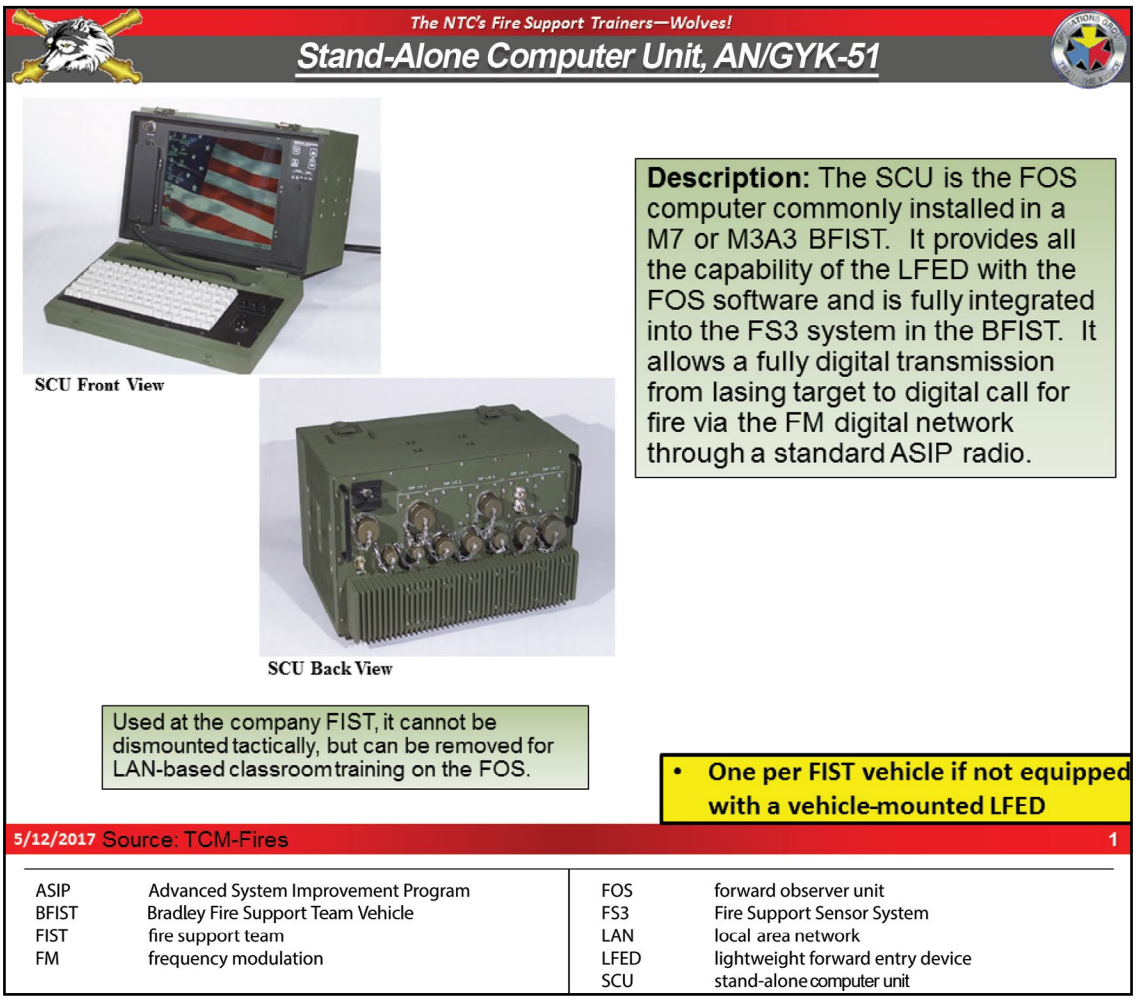


Figure 6-1. SCU

Most units have this equipment; however, it is complex and requires regular maintenance and training. Unfortunately, due to the lack of training proficiency, FSR support is often necessary to ensure all systems are operational. Common problems in M3A3 Bradley Fire Support Team Vehicles (BFISTs) include a crashed SCU hard drive (requires FSR support), cracked or damaged SCU screens, broken or missing Y cables to connect the SCU to the radio on the digital fires net, and faulty TacLink card. The status of this equipment is often tracked at the company level, but rarely at the battalion and brigade levels. Equipment remains missing or broken and operator-level fire support skills degrade quickly due to the lack of awareness of fire support digital equipment status at brigade level.

A further challenge is the maintenance of the BFISTs and Stryker fire support vehicles (FSVs). Although the vehicle and its associated target acquisition and communications equipment are vital to the unit's ability to provide fire support, they are not tracked as pacing items with the associated level of emphasis and visibility. Further, for the vehicle to be FMC, it must be mechanically able to drive and fire its main gun, which is not its primary combat function. Units should report and track the BFIST/FSV as a complete fire support system FMC only when the parts and systems necessary to acquire a target at a distance and process a digital call for fire are functional. This allows commanders to adequately "see themselves" with respect to fire support readiness and make appropriate resource allocation decisions.

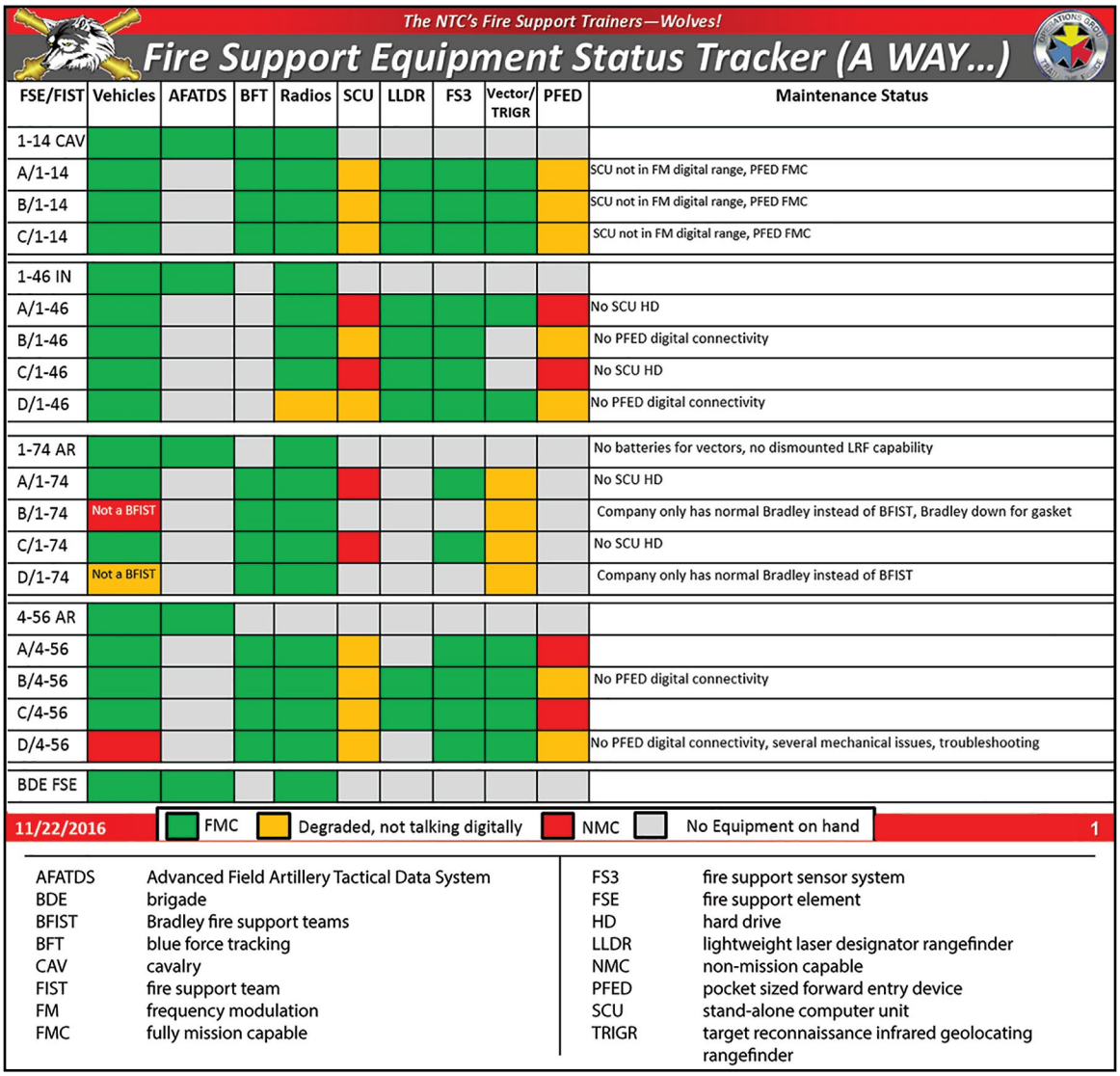


Figure 6-2. A suggested tool to track digital communications equipment status

There is currently no standard practice for who owns and maintains these vehicles across the Army. The vehicles are organic to the field artillery battalion in most brigade combat teams (BCTs). However, some vehicles are still maintained by the supported maneuver unit. Even in units that have the vehicles assigned to the field artillery battalion, there is still confusion about who has the maintenance responsibility. Some field artillery battalions assign the vehicles to headquarters and headquarters battery, some distribute them among cannon batteries, and others create a non-modified table of organization and equipment "delta battery" (consisting of fire support teams [FISTs]) and assign maintenance responsibilities to this ad-hoc battery. The addition of 13 BFISTs or FSVs to the field artillery battalion results in maintenance challenges, because the field artillery battalion lacks sufficient mechanics to maintain the vehicles and a master gunner to oversee maintenance and training. Additional challenges occur when the FISTs are detached from the field artillery battalion and attached to their supported maneuver battalion. Many maneuver units will maintain the vehicles in the field, but parts ordering still goes through the field artillery battalion. Other maneuver units do not conduct maintenance on the vehicles/

equipment, so any necessary maintenance must go through the field artillery battalion. This increases the time necessary to conduct maintenance and effectively removes the team from the fight for several days. Battalion and brigade-level involvement and issue emphasize the maintenance of these vehicles and equipment. A complete system will ensure maintenance occurs and the systems are operational.

The last major challenge with equipment is the employment of retransmission (RETRANS) (Unit Task List No. 11-6-7017, Employ a Relay/RETRANS System [brigade]) at the brigade, field artillery battalion, and maneuver battalion levels. Although the brigade and battalion headquarters often communicate via local area network, the individual FISTs must communicate via frequency modulation (FM) digital radio nets. As RETRANS assets at the brigade and battalion levels are limited, a deliberate emphasis must be placed on retransmitting both the brigade and battalion digital fires nets. Often, these nets are not retransmitted, which immediately stops the ability to send fire missions digitally from sensor to shooter. Nearly as often, the RETRANS team establishes, but is unable to effectively employ, sustain, or troubleshoot an FM digital net or the system. A home-station certification and training program will fix this common shortfall.

Training Shortfalls

One training shortfall units commonly face is unfamiliarity with the equipment necessary to send digital fire missions. There are many different pieces of equipment Soldiers must be able to operate to conduct a digital call for fire. Due to the time constraints of enlisted professional military education programs, Soldiers leave advanced individual training after receiving familiarization on digital call-for-fire systems and are commonly only proficient in how to send a call for fire over a voice FM net. Military occupational specialty (MOS) 13F Soldiers, fire support specialists, generally do not retain the minimal training on any of the digital systems used in the Army, nor are they thoroughly trained on the Advanced Field Artillery Tactical Data System (AFATDS). Further professional military education focuses on preparation for service in staff positions and does not focus on operating digital systems. The model requires follow-on training with the Soldier’s unit to achieve proficiency, but the effectiveness of this training varies widely across units.

Figure 6-3. AFATDS

A similar training challenge occurs with artillery officers. Training at the Basic Officer Leader Course focuses mainly on gunnery, fire support planning, and call for fire over voice FM radio nets. Although the lieutenants receive training on FM nets, additional training at their unit of assignment is necessary to be proficient in the employment of digital systems on the specific platforms in their unit. At the Captain's Career Course, emphasis is placed on planning and the military decisionmaking process with limited training on the integration of digital systems into the fire support chain.

As a result, most Soldiers and officers only receive on-the-job training on digital systems at their unit. The quality of this training varies because there is no standard knowledge base across the force. Soldiers who are proficient at using their digital systems can effectively train their subordinates and operate digital fire systems, while others remain largely untrained. This leads to the extensive overuse of FSRs to maintain the systems and troubleshoot problems. Also, after over a decade of combat operations in a counterinsurgency environment, the experienced forward observers are largely comfortable with sending missions over voice nets.

Deliberate planning for rigorous, tactically sound DST is required at the battalion and brigade levels. This emphasis on training will improve the knowledge base across the force, increase command visibility of materiel shortfalls, improve Soldier troubleshooting capability, and reduce the amount of FSR support necessary to conduct digital operations. The United States Army Training and Doctrine Command Capabilities Manager-Fires Army Knowledge Online page at https://www.us.army.mil/suite/grouppage/13314 (Common Access Card required) has FSR contacts, up-to-date forward observer system software, Joint Master Unit List, equipment training manuals, and troubleshooting guides to help commanders establish a quarterly training program.

Field Artillery Technical Rehearsal

When preparing to execute planned operations, a quality field artillery technical rehearsal will identify where and when digital fires shortfalls desynchronize the fires plan and provide time for the BCT's fires enterprise to adjust the plan. Rotational units deploying to the NTC routinely struggle to execute the brigade's fire support plan because the field artillery technical rehearsal was not conducted with sufficient detail to ensure the plan was synchronized and executable. As a result, planned fires are often executed late or not at all. A quality technical rehearsal will reveal shortfalls with the fires plan, identify where the communications plan is lacking, and pinpoint exactly how long it takes the brigade to process preplanned calls for fire (without which it is impossible to develop triggers).

Field artillery technical rehearsals conducted at the NTC often consist of merely a review of the target list worksheet. Frequently, the rehearsal is not sensor to shooter and the missions are initiated in the brigade fire support element (FSE) AFATDS computer. To conduct an effective field artillery technical rehearsal, the call for fire must be initiated by the observer who will actually call the mission using the digital system used to call for fire. The observer should verify the location on the battlefield (ensuring observer planning is conducted) and the trigger for engagement of the target. The target grid is refined to a 10-digit grid, if possible.

Figure 6-4. Rehearsing a target sensor to shooter

The observer then processes the mission including the desired sheaf, munition used, target number, and method of control (at my command, time on target, etc.). Each element involved in the fire mission process, down to the firing unit, then processes the mission. In AFATDS, the field artillery battalion fire direction center should position the firing unit at the planned firing unit location. This also allows the unit to preverify the necessary information to clear airspace (maximum ordnance, gun-target line, firing unit location). This information is recorded and maintained in the brigade FSE to facilitate rapid clearance later during execution and to identify any deficiencies in the brigade's airspace plan.

The mission is sent digitally from AFATDS to the tactical airspace integration system. It is sent through the Distributed Data Server, allowing the air defense airspace management/ brigade aviation element cell to plot the flight of the round, confirm the viability of the airspace coordination order, and rehearse airspace clearance drills. The FSE also uses the rehearsal to confirm that the refined target location does not violate any current or planned fire support

coordination measures. The observer keeps track of how long the entire process will take and the time of the flight reported by the fire direction center in order to account for this timing during execution (the technical trigger). This process should be conducted for every brigade-level target beginning with the missions deemed most critical to the brigade plan. Once the primary observer has completed the process, the alternate observer then executes the process. After the primary and alternate observers have executed every brigade-level target, battalion-level targets should be rehearsed, if time allows. Completing this process will give the brigade awareness as to how long the fire mission process will take, help reveal flaws in the fires plan, identify where the communications plan is lacking, and help establish or refine tactical and technical triggers.

Units struggle with this process for many reasons. Often, they are unsure of their duties or who should be involved in the rehearsal. They may be constrained by the time and tempo of continuous operations. All too often, they are not familiar with the basic troubleshooting procedures required to rapidly regain access to the digital network when challenges arise. The simple fix is repetition. As the field artillery technical rehearsal becomes routine, units will be able to execute them efficiently and effectively determine where and when to assume risk with parts of the rehearsal due to time constraints. This level of proficiency can only be achieved during weekly DST.

Digital Sustainment Training at Home Station

For most field artillery units, DST occurs weekly at home station. However, it still fails to adequately prepare units to effectively process digital fire missions or execute field artillery technical rehearsals at the NTC. Common shortfalls are a lack of leader involvement, detailed planning, and rigor in the scenario such that Soldiers process only the most basic missions and operate without all required equipment. DST should be a regularly scheduled battle rhythm event run by the brigade FSE and organized as a field artillery technical rehearsal with every observer (both mounted and dismounted) sending fire missions digitally from sensor to shooter within a tactical scenario. Weekly input and participation of brigade, squadron, and battalion command posts is critical to a successful DST program. Commanders should also use the event to train their staffs to report on prebattle conditions checks, as they will do prior to execution of a tactical mission.

Digital Sustainment Training Over Distance

Another challenge facing units is conducting DST over the distances they will experience at the NTC and in combat. Many units conduct DST in their motor pool, which is not an accurate representation of the conditions faced in combat or at a combat training center. Conducting DST in the motor pool also presents an incorrect picture of the unit's actual digital capability because FM digital communications typically work well over short distances but are degraded as distances increase. In combat and during a combat training center rotation, distances between observers, battalion and brigade command posts, and the firing units can easily stretch to 20 kilometers or more.

This distance should be replicated during DST at home station. Brigade-level leadership and involvement are critical. By conducting DST over distance, multiple tasks will be trained at echelon from brigade down to the firing units and observers. First, at echelon, the staff will perform Unit Task List No. 17-85-511, Conduct the Military Decisionmaking Process (battalion-corps), to plan the training. Simultaneously, company/battery/platoon leaders will perform Unit Task List No. 07-2-5081, Conduct Troop-Leading Procedures (platoon-company). The brigade

and battalions will perform Unit Task List No. 11-6-7017, Employ a Relay/RETRANS System (brigade S-6/network signal company/network signal detachment). Conducting these tasks and deliberately planning this training will result in improved digital capability and provide the brigade with an accurate picture of its digital capabilities. This is then communicated to maneuver commanders for appropriate risk decisions during planning and execution of operations.

Conclusion

Until brigades take a different approach to training their fires warfighting function at home station, units will continue to struggle to execute digital fires during BCT-level operations. Fire support team vehicles should be reported as complete systems and only reported as FMC when all target acquisition and digital communications systems are functional. Routine DST should be fully planned and resourced. DST should use a tactical fire plan and the BCT's field artillery technical rehearsal standard operating procedure as the agenda, increasing the range at which systems are required to communicate. The end state of an effective program is accurate command visibility of the BCT's actual fires capability and making digital fire mission processing, digital systems maintenance, and digital calls for fire routine across the entire fires enterprise through repetition in a tough, realistic training environment.

Endnotes

1. Army Techniques Publication 3-09.23, *Field Artillery Cannon Battalion*, 24 SEP 2015, paragraph 2-89.

2. Ibid., paragraph 2-95.

Chapter 7

Proactive Counterfire at the National Training Center

LTC Jonathan A. Shine, MAJ Reginald D. White, CPT Michael W. Miller, and CW3 Ferman C. Barnes

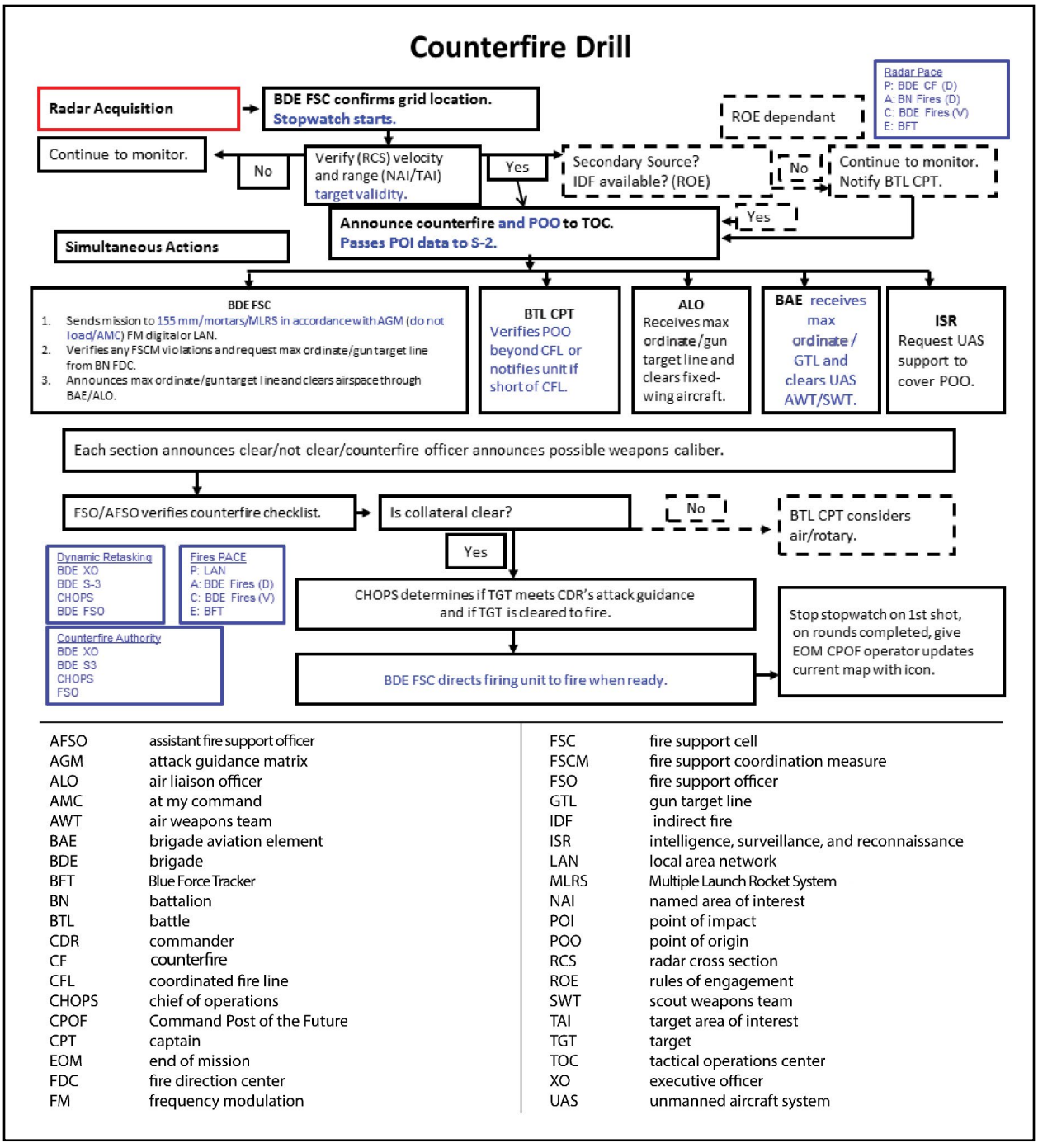
An Introduction to Proactive Counterfire

Counterfire operations are critical to the ability of a brigade combat team (BCT) to provide fires and protect the force (Combined Arms Training Strategy [CATS] Task 06-BDE-5060, Conduct Counterfire Operations). Enemy indirect fire systems displace rapidly after firing for survivability and, in order for brigades to overcome the threat of enemy indirect fires, brigades strive to react to radar acquisitions before the enemy can move. This generally requires an acquire-to-fire time of less than 8 minutes. Conversely, the average counterfire time for all rotations at the National Training Center (NTC) in fiscal year 2016 was 30 minutes, 30 seconds. This demonstrates that combat brigades across the Army are challenged to provide reactive counterfire, let alone proactive counterfire. Proactive counterfire is "targeting enemy indirect fire systems, including their command and control, sensors, platforms, and logistics, before they engage friendly forces."[1] In order to employ proactive counterfire effectively, brigades must establish a counterfire operations section and synchronize reconnaissance and strike capabilities (CATS Task 06-BDE-2035, Process Counterfire Target Information). Although the concept is simple (find enemy indirect fire assets and radars, and destroy them before they shoot), planning, training, and executing are complicated and continue to prove challenging for BCTs facing the Donovian opposing forces at the NTC.

Counterfire at Brigade or Battalion

One method for facilitating communication between the battalion and brigade is to collocate the target acquisition platoon's headquarters with the battalion.

The first step to successful proactive counterfire is establishing a counterfire operations section with the authority and capability to synchronize targeting analysis with the appropriate weapons system based on the approved attack guidance matrix. Doctrine supports establishing the counterfire headquarters at either the brigade or the battalion level. Regardless of the location, the counterfire operations section must understand the brigade commander's targeting priorities, synchronize reconnaissance and fires (CATS Task 06-BN-5076, Synchronize Fires), and ensure communication of targeting effects with all interested parties.[2] If the counterfire cell is established at the brigade level, centralized control provides for positive clearance of ground and air before executing fire missions. In particular, air clearance is always held at the brigade level with the air planners responsible for developing airspace coordination measures (CATS Task 01-6-6110, Integrate Airspace Control into Aviation Mission Planning). Clearing airspace prior to counterfiring is much faster when the counterfire operations section is adjacent to the aviation element in the BCT command post. Furthermore, cross-cueing of additional enablers, such as unmanned aerial vehicles (UAVs) or air support, may be more closely synchronized as those assets are often controlled directly by the brigade headquarters. For the fire support coordinator (FSCOORD), placing the counterfire operations section at the brigade provides maximum flexibility. The disadvantage of being at brigade level is that the counterfire cell is physically disconnected from friendly indirect fire support assets, potentially increasing mission processing time from sensor to shooter.



AFSO	assistant fire support officer
AGM	attack guidance matrix
ALO	air liaison officer
AMC	at my command
AWT	air weapons team
BAE	brigade aviation element
BDE	brigade
BFT	Blue Force Tracker
BN	battalion
BTL	battle
CDR	commander
CF	counterfire
CFL	coordinated fire line
CHOPS	chief of operations
CPOF	Command Post of the Future
CPT	captain
EOM	end of mission
FDC	fire direction center
FM	frequency modulation
FSC	fire support cell
FSCM	fire support coordination measure
FSO	fire support officer
GTL	gun target line
IDF	indirect fire
ISR	intelligence, surveillance, and reconnaissance
LAN	local area network
MLRS	Multiple Launch Rocket System
NAI	named area of interest
POI	point of impact
POO	point of origin
RCS	radar cross section
ROE	rules of engagement
SWT	scout weapons team
TAI	target area of interest
TGT	target
TOC	tactical operations center
XO	executive officer
UAS	unmanned aircraft system

Figure 7-1. Counterfire drill

On the other hand, establishing the counterfire operations section at the battalion headquarters has its own set of advantages and disadvantages. Sensor-to-shooter time is more streamlined when counterfire is located at battalion level, as long as efficient clearance of fires procedures are established (CATS Task 06-BN-5424, Process Fire Missions). Control of the radars is less complicated and more direct when control is maintained at the battalion level. Additionally, the battalion S-2 has the opportunity to lessen the workload of the brigade S-2 by conducting pattern analysis on enemy radar acquisitions to support the brigade's read of the enemy. The disadvantages come primarily from the ability of the battalion to synchronize radar into the brigade's overall collection plan. Zone management for radar collection and coordination with higher level is more difficult when counterfire is maintained at the battalion level. Moreover, the battalion does not have immediate access to the lethal and nonlethal assets to incorporate into a reconnaissance plan. The FSCOORD is responsible for directing acquisition routing, and either a centralized or decentralized method will work.

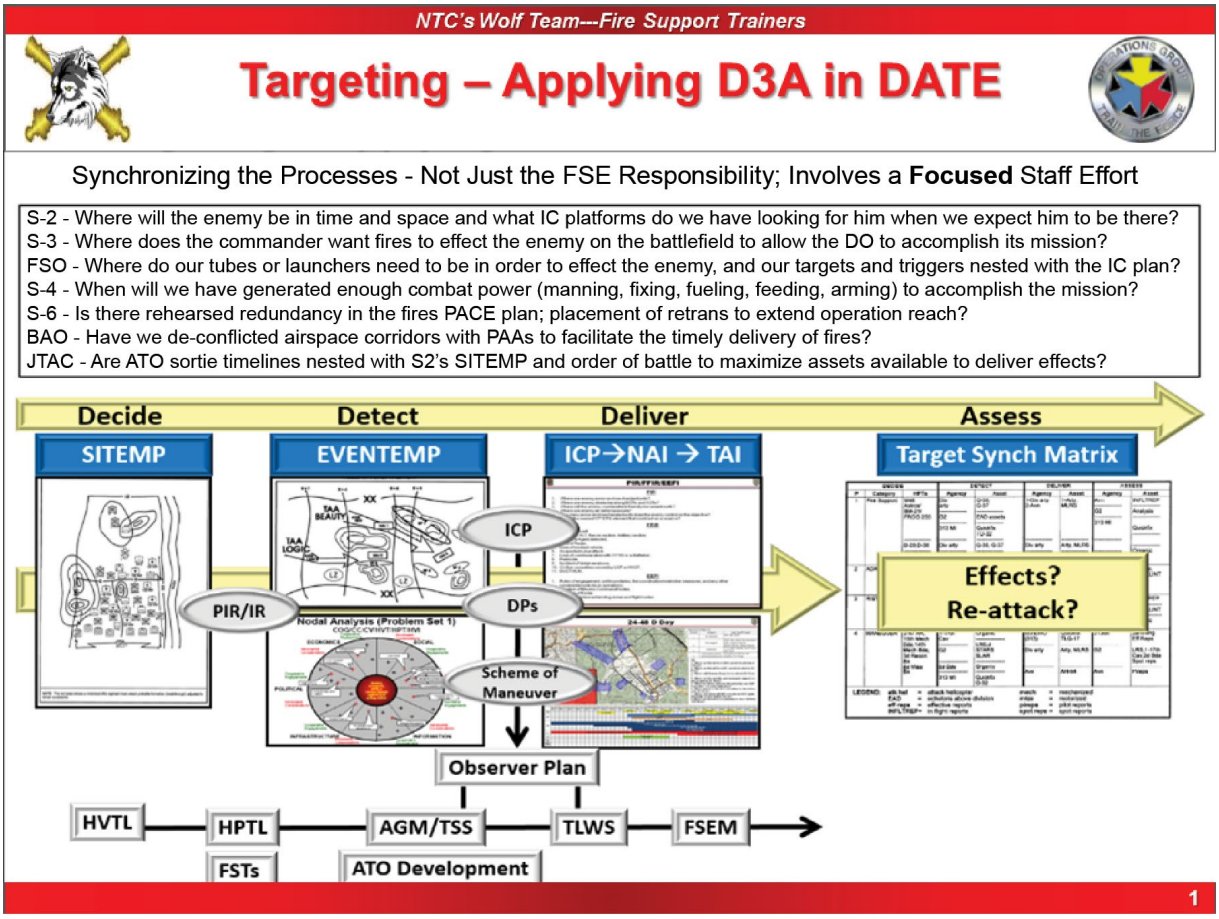
Locating the counterfire operations section at brigade level is the most common choice. One method for facilitating communication between the battalion and brigade is to collocate the target acquisition platoon's headquarters with the battalion. Doctrine does not prescribe a location for the target acquisition platoon leader's (TAPL) headquarters. Collocating the TAPL with the FA battalion S-2 section and outfitting him with the necessary communication tools allows him to serve as a conduit of information among the radar sensors, the FA battalion S-2 section, and the brigade counterfire operations section. The TAPL requires little in terms of communication support: access to a frequency modulation (FM) radio on the counterfire net and a SECRET Internet Protocol Router (SIPR) phone or other communication platform in accordance with the unit's primary, alternate, contingency, and emergency (PACE) plan. The TAPL conducts pattern analysis based on radar acquisitions and directly passes these to the battalion S-2 (CATS Task 061-31A-1014, Conduct Indirect Fire Pattern Analysis), assisting the S-2 with his assessment of the enemy situation.

Counterfire in the D3A Targeting Process

Proactive counterfire requires intelligence preparation of the battlefield (IPB) to drive targeting. Similar to the military decisionmaking process (MDMP), targeting is a leader-driven process and demands synchronization of multiple warfighting functions at echelon to be successful.[3] D3A targeting methodology (decide, detect, deliver, and assess) provides a doctrinal framework through which effective counterfire operations may be planned, trained, and executed; it only works when embraced as a whole-of-staff effort.

Decide

The decide function requires close interaction among the commander, intelligence, plans, operations, fires cell, and other staff sections.[4] In this step, the field artillery (FA) battalion S-2 provides intelligence support through "artillerized" IPB (CATS Task 06-1-2010, Provide Intelligence Support) to identify likely enemy position areas for artillery (PAAs) and the estimated location of enemy radars. In order for the battalion S-2 to develop an accurate assessment of the enemy situation, the S-2 should be supported by the counterfire operations section and TAPL. The counterfire officer, commonly located at brigade level, may leverage the TAPL at the battalion level to promote collaboration between the brigade and battalion. Incorporating pattern analysis conducted by the TAPL and shared with the battalion S-2 will increase the accuracy of the brigade S-2's assessment. Templating known and suspected enemy positions leads to the development of an overlay capturing named areas of interest (NAIs). Armed with this information, the S-2 plans collection against the NAIs as he continues to refine assessments into an event template with a supporting event matrix.[5]



AGM	attack guidance matrix
ATO	air tasking order
BAO	brigade aviation officer
D3A	decide, detect, deliver, and assess
DATE	decisive action training environment
DO	decisive operation
DP	decision point
EVENTEMP	event template
FSE	fire support element
FSEM	fire support execution matrix
FSO	fire support officer
FST	fire support task
HPTL	high-priority target list
HVTL	high-value target list
IC	information collection
ICP	intelligence collection plan
IR	information requirement
JTAC	joint terminal attack controller
NAI	named area of interest
PAA	position areas for artillery
PACE	primary, alternate, contingency, emergency
PIR	priority intelligence requirement
SITEMP	situational template
TAI	target area of interest
TLWS	target list worksheet
TSS	target selection standard

Figure 7-2. The targeting cycle in the decisive action training environment

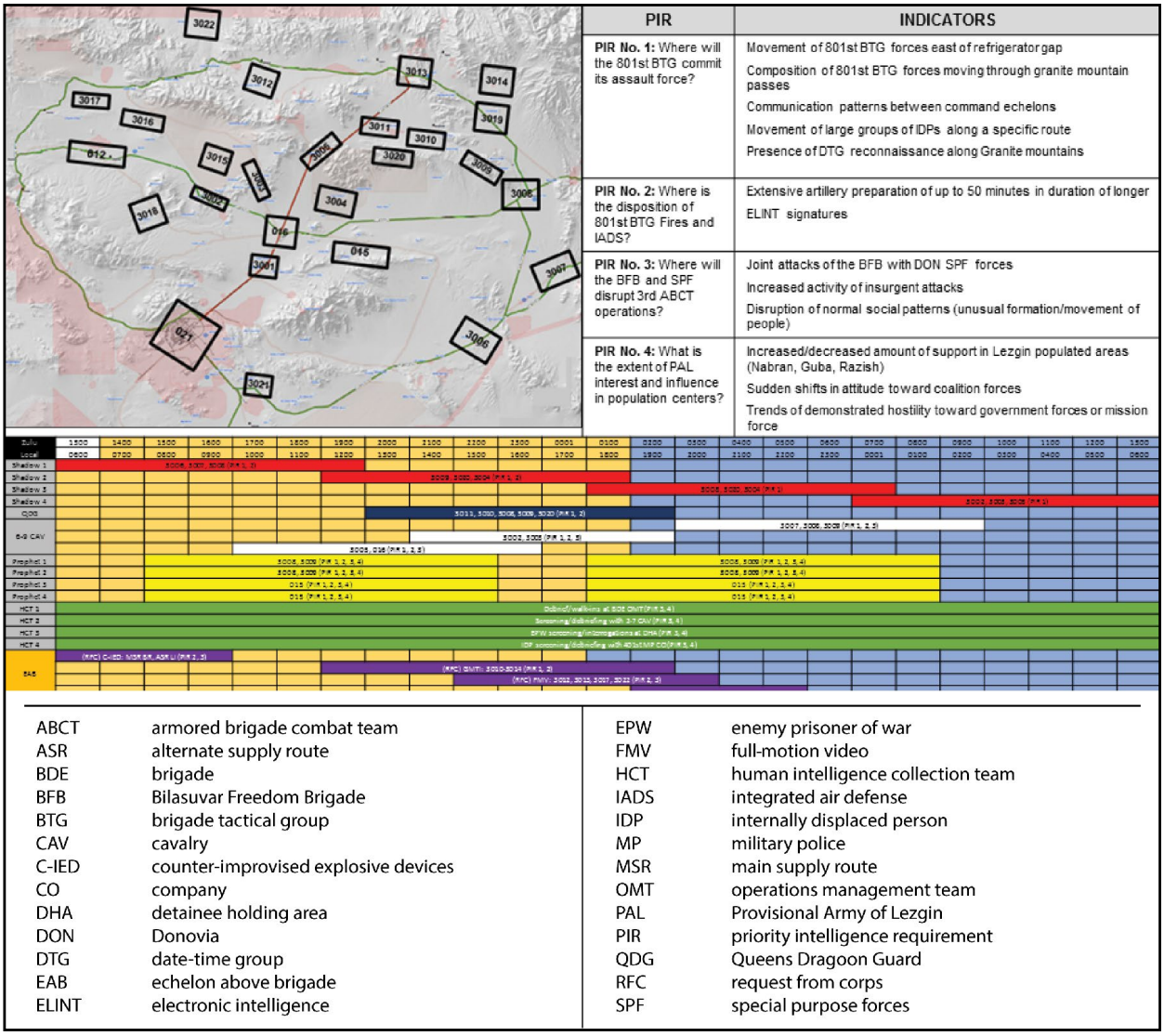


Figure 7-3. Example of an intelligence collection plan

Detect

> *The enemy will not leave the radar on all the time, but is likely to use it when U.S. forces are conducting sustained fire missions.*

As MDMP progresses, the brigade collection manager, guided by the priorities set by the commander, allocates assets to support proactive counterfire operations, triggering progression from decide to detect.[6] The detect function consists of gathering information and reporting findings back to the controlling headquarters. At the National Training Center, proven and effective techniques in detecting enemy indirect fire targets are the use of ground-moving target indicator (GMTI) radar, electronic intelligence (ELINT), and full-motion video.

GMTI is most effective when cued by pattern analysis. Acquisitions from the radar sections provide an accurate location of the most recent points of origin. Over time, these will paint a picture of enemy displacement techniques, tactics, and procedures that can be exploited.

Requesting and employing GMTI when the enemy is likely to shoot allows the BCT to track the movement of enemy artillery pieces after a fire mission is complete. The brigade may then strike the enemy with lethal fires after it has completed a survivability move, thereby extending the required mission processing time beyond the eight minutes necessary for reactive counterfire, increasing the chances of success.

ELINT is best employed to detect the location of the enemy's radars. The FA battalion S-2 must become an expert in understanding the enemy's techniques for radar employment and the potential radiating schedule. The enemy will not leave the radar on all the time, but is likely to use it when U.S. forces are conducting sustained fire missions. For example, obscuration or family of scatterable mines (FASCAM) missions that require multiple rounds fired from the same position entice the enemy to use its radar to identify the positions of friendly artillery. If ELINT collects during these types of missions, the BCT can quickly detect the position of the enemy's radar and cue the delivery of lethal effects. This improves freedom of maneuver for friendly artillery and decreases mission processing times.

Deliver

Delivering effects on a target consists of selecting the right weapon and using it properly to accomplish the desired impacts. Regardless of the intended outcome, delivering effects on target relies on timely synchronization between operations and information collection. Within the BCT, the FA battalion S-2 is best positioned to facilitate cross communication between lethal fires and the intelligence warfighting function. Unfortunately, the critical area where FA battalion S-2s struggle is communicating with the brigade fires and effects coordination cell (FECC). The battalion S-2 must aggressively pull products from the brigade such as the attack guidance matrix and the brigade high-priority target list. Receiving and understanding these documents allows the battalion S-2, along with the rest of the FA battalion staff, to proactively plan collection requirements and maintain situational awareness to solve brigade problems by eliminating enemy artillery.

An example of how synchronization between information collection and operations can best facilitate the delivery stage of the targeting process was observed during a rotation at the National Training Center in fiscal year 2017. An FA battalion requested ELINT collection during a planned obscuration mission with the intent of detecting enemy radar. The battalion S-2 assessed that the radar would likely be radiating during the prolonged firing of Paladins, required to emplace an effective smoke screen. When the enemy's radar system was detected, the brigade used aviation assets instead of its organic artillery to destroy the radar. Destruction of the enemy radar impacts the frequency of survivability moves and the suitability of potential PAAs, but only if the FA battalion is aware the enemy's radar assets have been destroyed. Due to the S-2 closely tracking the use of the collection assets and the potential targeting efforts at the brigade level, the S-2 asked and received accurate battle damage assessment from the brigade if they had been successful in destroying the enemy's radar. Upon receipt of the battle damage assessment, the battalion was able to transition to a single battery providing obscuration. They were no longer constrained by survivability moves, while another battery was able to maneuver closer to the front lines of enemy troops and have greater range into the deep fight.

Assess

The assessment phase is essential to accurately refine the requirements for future targeting cycles.[7] An effective method for assessing effects on targets is the use of full-motion video provided by a UAV, such as the brigade's organic Shadow. When organic UAVs are not available, responsibility for the assessment falls on forward observers or other Soldiers in the squadron and maneuver battalions. In order for these individuals to be successful in providing feedback that ties into the commander's decision points, they must receive and understand the commander's priority intelligence requirements (PIRs).

PIRs articulate what the commander needs to know about the enemy in a single question. However, the PIR does not end at just the simple question. PIRs must be explained with a robust set of indicators that help Soldiers understand the information required to answer the PIRs. "An indicator, in intelligence usage, is an item of information which reflects the intention or capability of an adversary to adopt or reject a course of action."[8] Creating PIRs is primarily the responsibility of the S-2, but dissemination and collection against them is a command responsibly at all levels. For the brigade's counterfire fight, PIRs influence commander decisions on radar cueing cycles, appropriate collection zones, survivability moves, and other factors that rely on an accurate assessment of the enemy's fire support capabilities (CATS Task 06-BN-2006, Direct the Employment of Field Artillery Acquisition Assets).

Rehearsals

The counterfire battle is one aspect of the overall combined arms fight and not a separate battle to be fought solely by the counterfire operations section. In order to deliver timely and accurate effects against counterfire targets, the fires plan must be well rehearsed and account for rapid ground and airspace clearance.

1. **FA battalion tactical rehearsal**: Counterfire injects during the FA battalion tactical rehearsal allow the battalion to validate that the firing element with responsibility for counterfire (assigned during MDMP) has the appropriate positioning guidance and ammunition combat configured load to prosecute the mission. This battery is typically loaded with base bleed, dual-purpose, improved conventional munitions and high-explosive, rocket-assisted projectiles to engage targets at range while still remaining survivable. Additionally, counterfire injects during the rehearsal allow the command team to identify times in the battle when all assets are engaged in firing missions, and will not be able to prosecute counterfire targets. By visualizing this during the tactical rehearsal, the FSCOORD can better inform the BCT commander of operational risks during critical points in the battle.

2. **BCT IC/fires support rehearsal**: Counterfire injects allow the BCT commander and staff to visualize if available times and positioning of collection assets are synchronized with the position of the BCT's delivery assets. Furthermore, the point and time when the enemy's indirect fire assets will present themselves during the fight is identified, validating that the NAIs and the IC plan meet the commander's intent. Additionally, during this rehearsal, participants validate that the communications architecture from sensor to the shooter is feasible and that the PACE plan for acquisitions from the radar systems is understood by all.

3. **BCT fires technical rehearsal**: Employing counterfire injects during the BCT fires technical rehearsal allows the BCT FECC and the battalion fire direction officer to validate what has been rehearsed during the fire support rehearsal. The FA technical rehearsal provides gun target lines and maximum orders from PAAs to NAIs. The BCT FECC captures this information to validate that airspace control measures are deconflicted and facilitate rapid airspace clearance.

Conclusion

The experience of rotational units at the National Training Center confirms that Army counterfire doctrine is comprehensive and sound. Integration of the full BCT staff, with focused and continuous input from the FA battalion S-2 and TAPL, allows the brigade to embrace counterfire as integral to the BCT's fight. Too often, this realization comes only after hard experience and high casualties in the early battles of a rotation. In order to protect friendly forces and provide freedom of maneuver for subordinates, BCTs need to target the enemy's fires assets with proactive counterfire that synchronizes the intelligence and fires warfighting functions to win the first fight.

Endnotes

1. Army techniques publication (ATP) 3-09.12, *Field Artillery Target Acquisition*, 24 JUL 2015, paragraph 2-2.

2. Ibid., paragraph 2-30 to 2-32.

3. ATP 3-60, *Targeting*, 07 MAY 2015, paragraph 1-21.

4. Ibid., paragraph 1-25.

5. ATP 2-01.3, *Intelligence Preparation of the Battlefield/Battlespace,* 10 NOV 2014, paragraph 6-54.

6. ATP 3-60, paragraph 1-9.

7. Ibid., paragraph 2-81.

8. Joint Publication 2-0, *Joint Intelligence*, 22 OCT 2013, page GL-8.

Chapter 8

Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives in Decisive Action: Observations and Recommendations

MAJ Jonathan J. Gross, Bronco Team

Introduction

Although Army doctrine recognizes the importance of chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) defense, and a common understanding of its importance resonates throughout the force, units at every echelon struggle with deliberate CBRN defense planning and execution. To win the first fight of the next war, units must address the following challenges during planning, preparation, and execution: effective CBRN defense planning; integrating CBRNE enablers; equipping and training the force to fight and survive in a CBRNE environment; and executing decontamination operations.

Planning for CBRNE in Decisive Action

During decisive action rotations at the National Training Center, brigade combat teams (BCTs) struggle at all levels to conduct operations in a CBRNE environment. This challenge, commonly amplified by minimal detail provided in BCT CBRN defense plans to subordinate units, hampers pre-attack preparations and execution of post-attack actions during CBRNE events. Commanders at all levels direct the establishment of coordinated CBRNE protection requirements through CBRN defense plans. Consequently, if CBRN defense plans are not detailed, then subordinate units are at greater risk of increased casualties and widespread degradation of combat power due to the lack of preparedness for CBRNE strikes. Tailoring the CBRN defense plan to both the enemy and friendly schemes of maneuver will allow the BCT to anticipate CBRNE threats on the battlefield.

Updating the CBRN defense plan during every phase is a critical aspect of ensuring the BCT is ready to counter the CBRNE threat. Equally important, leaders and staffs must implement protective actions by ensuring such actions (e.g., directed mission-oriented protective posture [MOPP] level) are integrated into standing operating procedures (SOPs), written and verbal orders, mission briefings, and staff estimates. They must also ensure required actions (controls) are converted into clear, simple execution orders. CBRNE defense challenges call for close commander and staff interactions.

Note on CBRN and CBRNE Terminology

CBRN threats and incidents can include explosive devices; this chapter uses the terms **CBRN** and **CBRNE** in the following contexts:

- **CBRN**: When referencing capabilities or products as they current exist in doctrine (CBRN reconnaissance, CBRN defense plan, CBRN tasks [in CATS], CBRN warning and reporting).
- **CBRNE**: When discussing general threat or capabilities inclusive to the ‘E’ (EOD, Tech Escort, and similar capabilities in the CBRNE enterprise).

Best Practices

An effective CBRN defense plan includes:

- Enemy intent, capabilities, and effects for CBRNE munitions
- Clear guidance to the force on necessary protective measures
- CBRN reconnaissance plan (named areas of interest [NAIs] driven by priority information requirements)
- Employment criteria of CBRNE enablers to counter CBRNE threat
- Logistic support plan for long-term CBRNE operations
- CBRN warning and reporting requirements

Operations in CBRNE environments demand close attention to technical details by CBRNE staff experts and the integration of CBRNE defense knowledge into plans and actions. Staffs at every echelon must be familiar with the mission, capabilities (including capability gaps), and the current situation so their assessments and recommendations provide meaningful options for action by the commander. Technical information must be communicated in meaningful ways to maneuver commanders. CBRNE technical information, communicated in "maneuverist terms," will help commanders understand the CBRNE threat in terms of risk to the mission, friendly forces, and ways in which the measures included in the CBRN defense plan can mitigate these risks. Effective CBRN defense plans include integrating all aspects of CBRNE defense, from collective efforts directed by the BCT staff, to the basic individual CBRN tasks Soldiers must be trained to conduct.

Fundamental to understanding enemy CBRNE capability and intent is conducting intelligence preparation of the battlefield (IPB). The IPB process must account for both confirmed as well as plausible enemy capabilities, plans, and actions. In conjunction with CBRNE threat and vulnerability assessments, the IPB allows the commander to visualize the enemy situation and discern the enemy commander's probable intent.

The BCT staff uses the IPB process to address the capabilities and limitations of the enemy's CBRNE weapons and delivery systems. The staff must understand the enemy's intent, weapons capabilities, and weapons effects. The enemy may use weapons systems that include artillery, rockets, theater ballistic missiles, or covert means (e.g., special operations forces, state-sponsored terrorism, or other asymmetric methods). Following this process, the staff then establishes a CBRN collection plan, assigning specific NAIs to specific collection assets. The information collection plan, when focused on CBRNE effects, will prioritize CBRN reconnaissance assets to areas of greatest importance.

A reconnaissance and surveillance plan that focuses assets to determine the enemy's CBRNE intent and disposition provides the commander with current intelligence and relevant combat information to enable informed decisions. In order to employ CBRN reconnaissance, it is critical to determine:

- What information is CBRN reconnaissance fighting for?
- Who makes that decision?
- Who needs to know?
- What logistical support is required to sustain it?

Providing CBRN reconnaissance with a clearly defined, CBRN-related mission (task and purpose) and integrating assets into the BCT's collection plan are fundamental to identify and remediate chemical strikes/contaminated areas. Considering these assets are the BCT's primary mechanism to determine type and extent of contamination, employing them forward only makes sense. Often, these assets remain in the rear area and conduct command post or convoy security. In these roles, CBRN reconnaissance is an ineffective and unused capability.

Best Practices

Units have an opportunity to increase the effectiveness of CBRN reconnaissance by applying the following methods:

- Incorporate CBRN reconnaissance within the information collection plan in order to provide accurate information on CBRN hazards.
- Implement training opportunities for CBRN reconnaissance into every battalion training exercise, allowing each unit in the organization to become familiar with the capabilities and employment of CBRN reconnaissance assets.
- Provide clear task and purpose for specific CBRN missions at the BCT level and appropriately task-organize CBRN reconnaissance assets to best support the mission.
- Retain CBRN reconnaissance as a distinct element within the BCT task organization.
- Track and report maintenance status of nuclear, biological, and chemical reconnaissance vehicles at the BCT level. As a result, these assets will gain an increased level of attention for rapid resolution of maintenance challenges.

Units also may consider developing a collaborative CBRNE working group among the CBRN cells within the BCT to improve current tactics, techniques, and procedures at echelon for the integration of CBRNE enablers. This includes outlining the necessary planning and preparation activities required to ensure seamless integration of CBRNE enablers during execution and the forecasting of CBRNE enabler requirements in future missions. Working groups also facilitate updates to BCT and battalion SOPs to formalize CBRNE enabler integration, maintenance, and support throughout the formation.

Overall, success in a CBRNE environment depends on the effective integration of CBRN equipment, training, and CBRNE tactics, techniques, and procedures while preparing for and executing BCT operations. Flexibility is the key to providing maximum protection with the lowest risk possible, while still allowing mission accomplishment. Through the implementation of CBRN contamination avoidance and proper application of CBRNE protection and decontamination principles, the BCT will be able to restore operational capability following a CBRNE-related incident. This preserves the BCT's ability to mass combat power and achieve the commander's intent.

Preparing for CBRNE in Decisive Action

As units prepare for execution, they must understand what they can and cannot do in MOPP 4 gear.

Implementing many CBRNE defensive measures may slow tempo, degrade combat power, and increase logistics requirements. CBRN reconnaissance and surveillance consumes resources, especially time. Personnel in protective equipment find it more difficult to work and fight. However, countering the CBRNE threat with such measures is an essential component of preserving the force, assuring mobility, and protecting the scheme of maneuver against CBRNE-related vulnerabilities.

Integrating CBRNE defensive considerations into all types of rehearsals is central to mitigating CBRNE-specific risk. Complacency and the absence of command emphasis on CBRNE defense during rehearsals cause a lack of preparedness. As units prepare for execution, they must understand what they can and cannot do in MOPP 4 gear. Movement/maneuver and fire support are harder to synchronize, rates of march can decrease significantly and lead to increased fuel usage, and many tactical tasks take longer to perform. Before initiating movement, commanders must have a thorough understanding of individual and collective proficiency in CBRNE defense tasks. If units are untrained in these tasks, it may be necessary to generate branch plans to account for deficiencies. Taking time for the CBRN staff and leaders at echelon to address aspects of CBRNE defense in combined arms and battle-drill rehearsals will reveal shortcomings and the required actions for mission success under CBRNE conditions. This includes reviewing MOPP analysis and reinforcing MOPP guidance.

Considerations for Commanders Preparing for CBRNE in Decisive Action

- Individual Soldier training in basic CBRN survival skills
- The unit's proficiency in CBRN collective skills and mission-essential tasks under CBRN conditions
- Subordinate leaders' understanding of the CBRNE threat
- The unit's ability to perform (project power) in MOPP 4 gear
- The unit's ability to continue the mission following a CBRN attack

MOPP analysis, which focuses on enemy intent and the probability of attack, sets the conditions both physically and psychologically for units to fight and survive in a CBRN environment. BCTs routinely conduct MOPP analysis and provide MOPP guidance. However, many units do not comply.

Commanders determine the required protection for their units by assessing the capabilities of the enemy. They estimate the likely impact of CBRN attacks and, based on the concept of operations, determine the methods to reduce the impact and allow mission accomplishment. Commanders accept certain levels of risk when approving courses of action. However, their assessment does not fully account for unit preparedness in CBRNE defense. This miscalculation has significant repercussions during execution, preventing the ability to mass combat power and achieve mission objectives.

Execution Under CBRNE Conditions

Units in MOPP 4 gear are at greater risk when executing tactical operations. With reduced situational awareness, disorientation, and difficulty communicating, units will operate in closer formations and take easier routes when maneuvering. The longer amount of time Soldiers are in MOPP 4 gear, the more they worry about survival and less about task performance. CBRN reaction drills, not collectively understood or rehearsed in advance of chemical strikes, are ineffective and contribute to the generation of unnecessary casualties due to inadequate protection measures.

> *The most important decontamination capability is the M26 decontamination system. The M26, with dedicated teams, provides the freedom and flexibility for battalions to execute decontamination on their terms.*

Donning the protective mask, alerting others of a chemical strike, and wearing protective gear are the most basic of tasks, yet Soldiers fail to train on them adequately. Soldiers must not allow themselves to be casualties due to insufficient individual and collective CBRN training. Training as they fight, executing training at the platoon, company, and battalion levels in MOPP 4 gear will reduce the disruption normally experienced by conducting operations in Joint Service Lightweight Integrated Suit Technology. Soldiers will become accustomed to communicating, managing work-rest cycles, and adjusting tempo appropriately before encountering a contaminated environment.

The full use of organic decontamination and detection systems must be enforced to the lowest echelon. Modified table of organization and equipment authorizations include detection systems at platoon level and above, capable of accurately identifying chemical warfare agents and radiation. The Joint Chemical Agent Detector, employed by trained Soldiers in advance of a chemical strike, is a valuable tool for early warning and identification. Additionally, the capability to conduct operational decontamination at the battalion level must be rebuilt. The most important decontamination capability is the M26 decontamination system. The M26, with dedicated teams, provides the freedom and flexibility for battalions to execute decontamination on their terms. Battalions will not have to depend on external enablers for decontamination support. Investing in this capability will significantly reduce wait times for decontamination and allow rapid regeneration of combat power.

Improving operational decontamination capability starts by continually verifying the maintenance status of decontamination equipment and implementing a battalion training program for operational decontamination teams. Formalizing this requirement with emphasis from battalion leadership and identifying specific individuals to execute operational decontamination (usually from the headquarters and headquarters company) are often eclipsed by other training requirements.

Conclusion

A single CBRNE incident dramatically changes the operating environment. It has a significant effect on any military operation, plan, or decision and fundamentally changes how operations are conducted in the field. Therefore, commanders at all levels must ensure plans, directives, and SOPs consider CBRNE defense as a priority. To achieve success on the modern battlefield, commanders and staffs must create effective and efficient systems for CBRNE support efforts. The BCT staff must clearly understand its responsibilities and relationships with supported commanders for proper CBRNE defense.

Each organization must accomplish its mission in a CBRNE environment. Commanders must take the time to carefully consider courses of action and permit additional measures and time requirements associated with operating under CBRNE conditions. CBRN cells, with collaboration throughout the staff, must generate effective CBRN defense plans and communicate them at echelon. Units at all levels must continue to train and implement realistic CBRNE scenarios into home-station training to develop the required skills at all echelons to survive and fight in a CBRNE environment. This includes the integration of organic CBRN reconnaissance and additional CBRNE enablers, and the training of battalion-level decontamination teams with operational equipment. Focusing on the basics, such as react to CBRN attack battle drills, and building on them to conduct collective CBRN training at all levels, are the first steps to sharpen the capability to fight and survive in a contaminated environment.

References

Army Techniques Publication (ATP) 3-11.37, *Multi-Service Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Reconnaissance and Surveillance*, 25 MAR 2013.

Field Manual (FM) 3-11, *Multi-Service Doctrine for Chemical, Biological, Radiological, and Nuclear Operations*, 01 JUL 2011.

FM 3-90-1, *Offense and Defense, Volume 1*, 22 MAR 2013.

FM 3-96, *Brigade Combat Team*, 08 OCT 2015.

Chapter 9

Joint Force, Special Operations Forces, and Conventional Forces Integration and Interoperability

LTC Jeremy J. O'Donnell and MAJ Ryan M. Laughna

> "*Globally integrated operations is the concept for how the joint force should prepare for the security environment we will soon face. It requires a globally postured joint force to quickly combine capabilities with itself and mission partners across domains, echelons, geographic boundaries, and organizational affiliations. These networks of forces and partners will form, evolve, dissolve, and reform in different arrangements in time and space with significantly greater fluidity than today's joint force.*"
>
> — Capstone Concept for Joint Operations, Joint Force 2020

The joint force is required to operate in a complex world where fiscal responsibility and rapidly evolving technology collude against mission success. However, unity of effort enables the joint force to leverage the unique skills and mission sets of each participating organization to provide mutually supportive efforts and strengthen the overall force. Significant progress toward globally integrated operations has been made during the past decade of ongoing conflicts. Retaining the ability for joint forces to seamlessly conduct and transition integrated operations with other unified action partners (UAPs) remains a challenge.

Tactical and operational levels of war are where the fundamental understanding of integration and interoperability become visible. The lack of an understanding of the other unit's capabilities, limitations, roles, and requirements often creates added friction. Ignoring core activities and operations of other UAPs will result in less effective, micro-managed control measures. At the tactical and operational levels, commanders do not usually focus outside their area of operations. The combat training centers offer a unique opportunity for joint forces, special operations forces (SOF), and conventional forces (CF) to improve relationships that will pay dividends in the operational environment. As current large-scale combat operations wane, joint participation across the force is reduced. Training conducted at the combat training centers will become increasingly important to maintain the efficiencies developed during the past decade and reduce the likelihood of missed opportunities.

Joint and multinational commanders use capabilities resident in UAPs to achieve mission success using technology, procedures, and personnel to realize the integrated effects intended. It is important to be familiar with the definitions of the three variables: interdependence, interoperability, and integration (I3).[1] In addition, it is necessary to realize that the definitions are not unique to the interaction between joint forces, SOF, and CF. Joint, SOF, and CF operations can be achieved at a basic level through the phases of planning, preparation, execution, and assessment. Following is a summary of these four goals and the methodologies applied during each of the phases.

Planning

As with most elements of military operations, coordination conducted last minute is too late.

Early coordination is necessary for units to obtain a mutual understanding of roles, capabilities, requirements, and limitations. "Early and detailed coordination between SOF and CF enables unity of effort. SOF-CF synchronization facilitates unity of effort, maximizes the capability of the joint force, and allows the joint force commander to optimize the principles of joint operations in planning and execution."[2] Early coordination also enables units to validate liaison officer (LNO) exchanges and communications procedures, which will significantly affect interdependence, interoperability, and integration.

When SOF conduct operations within the CF battlespace, a deliberate plan to synchronize efforts across the commands is necessary to ensure mission success and mitigate risk. "SOF may need to conduct special operations within a CF 'battlespace' while CF require near-complete knowledge of friendly locations to prevent fratricide."[3] As a result, graphic control measures are the appropriate means to facilitate SOF and CF interoperability. When graphic control measures are not practical, commands may find the use of procedural controls in planning, and coordinated at the appropriate level, to be effective at reducing operational challenges. Early coordination is necessary to develop the foundation for future phases of the operation. As with most elements of military operations, coordination conducted last minute is too late.

Preparation

During this phase, it is important to note that units must continue to communicate and coordinate to maintain the solid foundation they established through early coordination and planning. Failure to maintain this momentum will lead to avoidable friction and unnecessary risks during execution. The proper use of liaison elements enables organizations to overcome friction where existing technology and procedures are insufficient. With that said, manpower is expensive to any organization, and placement of the right LNOs should be deliberate and thoughtful. Liaison between joint forces, SOF, and CF is best accomplished through the use of competent and experienced LNOs. "LNOs can significantly improve the flow of information, facilitate concurrent planning, and enhance SOF mission planning and targeting processes."[4] LNOs must be selected based on having the right amount of experience, understanding, and capabilities necessary to convey the unit's plans, operations, and standard operating procedures. Choosing the right LNO will facilitate a greater understanding between units, providing greater understanding to both unit commanders. It is important to note that LNOs' primary functions are to monitor, coordinate, advise, and assist.[5]

Testing the communications architecture between units is crucial before operations begin. "One critical point of consideration is the testing of communication between I3 nodes from the start of operations and with every subsequent change. If there is any alteration to the configuration of an I3 node in terms of personnel, technology, or procedure, follow-up validation of communications can often mitigate the emergence of challenges, and supports I3 throughput. This is paramount to continued operations."[6]

Execution

During execution, it is critical for units and LNOs to maintain information flow to coordinate, integrate, and synchronize SOF and CF operations. In addition, changes within the operational environment could result in changes to the way units integrate. "Commanders shape the

environment through action to seize, retain, and exploit initiative. Likewise, the actions taken to seize and retain the initiative in terms of I3 manifest as the establishment of trust between organizations and the assurance that technology and critical procedure can aid exploitation of emergent opportunities between organizations. This level of trust and assurance results from mutual understanding built over time, through shared experiences."[7]

Assess

As with all military operations, the ability to learn from prior experiences is key to prevent repeating prior mistakes. Developing a plan and utilizing simple assessment tools are all that is required to track and evaluate the successful implementation of integration and interoperating nodes. "Integrating this assessment into key events and plans will improve coordination over time and reduce possible friction points while establishing the habitual relationships necessary to continue to build partnerships and teams."[8]

It is important to leverage the unique abilities present across the joint force, SOF, and CF as we examine the multifaceted threats encountered on the modern battlefield. Improving these organizations' capacity for integration and interoperability facilitates seamless coordination and collaboration, and ultimately increases the probability of mission success. Each of these individual units has developed different ends, ways, and means to deliver the capability required. It is this difference that provides flexibility for the joint forces commander and interoperability challenges between operational and tactical organizations. Combat training centers provide a unique opportunity for organizations to plan early on with other UAPs. This, in turn, will identify and optimize interoperability measures while retaining freedom of action. The resulting integrated tactical effects will ultimately increase the probability of success.

Endnotes

1. Center for Army Lessons Learned (CALL) Handbook 16-28, *Leader's Guide to SOF/CF Interdependence, Interoperability, and Integration*, SEP 2016, pages 5 and 6. (**Note**: CALL Handbook 16-28 is available only to authorized users). Interdependence is defined as "the purposeful reliance of military forces and other partners on each other's capabilities, authorities, and actions to maximize the complementary and reinforcing effects of both. The required degree of interdependence varies over the range of military operations. Considerations can include time, phase, echelon, and environment or proximity. Both SOF and CF contribute distinct capabilities to joint operations, but their interdependence is essential to overall operational effectiveness by enabling the joint force to present a seamless front to our enemies and a united face to U.S. partners. Enhanced interdependence enables a joint force that is more capable of preventing and deterring conflict, shaping the environment, prevailing in war, and succeeding in a wide range of contingencies." Interoperability is defined as "the ability to operate in synergy in the execution of assigned tasks. Interoperability is the ability of UAPs, including SOF/joint forces and CF, and other stakeholders to exchange information, services, or actions to facilitate executing assigned tasks. SOF/joint forces and CF partners must be interoperable to some degree to integrate effects." Integration is defined as "the arrangement of military forces and their actions to create a force that operates by engaging as a whole. SOF/joint forces and CF integration is the purposeful and synchronized arrangement of capabilities, authorities, and actions in support of national and theater strategic objectives. The required degree of integration varies over time and under different circumstances, but ultimately is shaped by the thorough consideration of capabilities and limitations."

2. Joint Publication (JP) 3-05, *Special Operations*, 16 JUL 2014, page III-23.

3. CALL Handbook 16-28, page 25.

4. JP 03-05, page A-2.

5. JP 3-33, J*oint Task Force Headquarters*, 30 JUL 2012, page II-18.

6. CALL Handbook 16-28, page 30.

7. Ibid., page 31.

8. Ibid., pages 30 and 35.

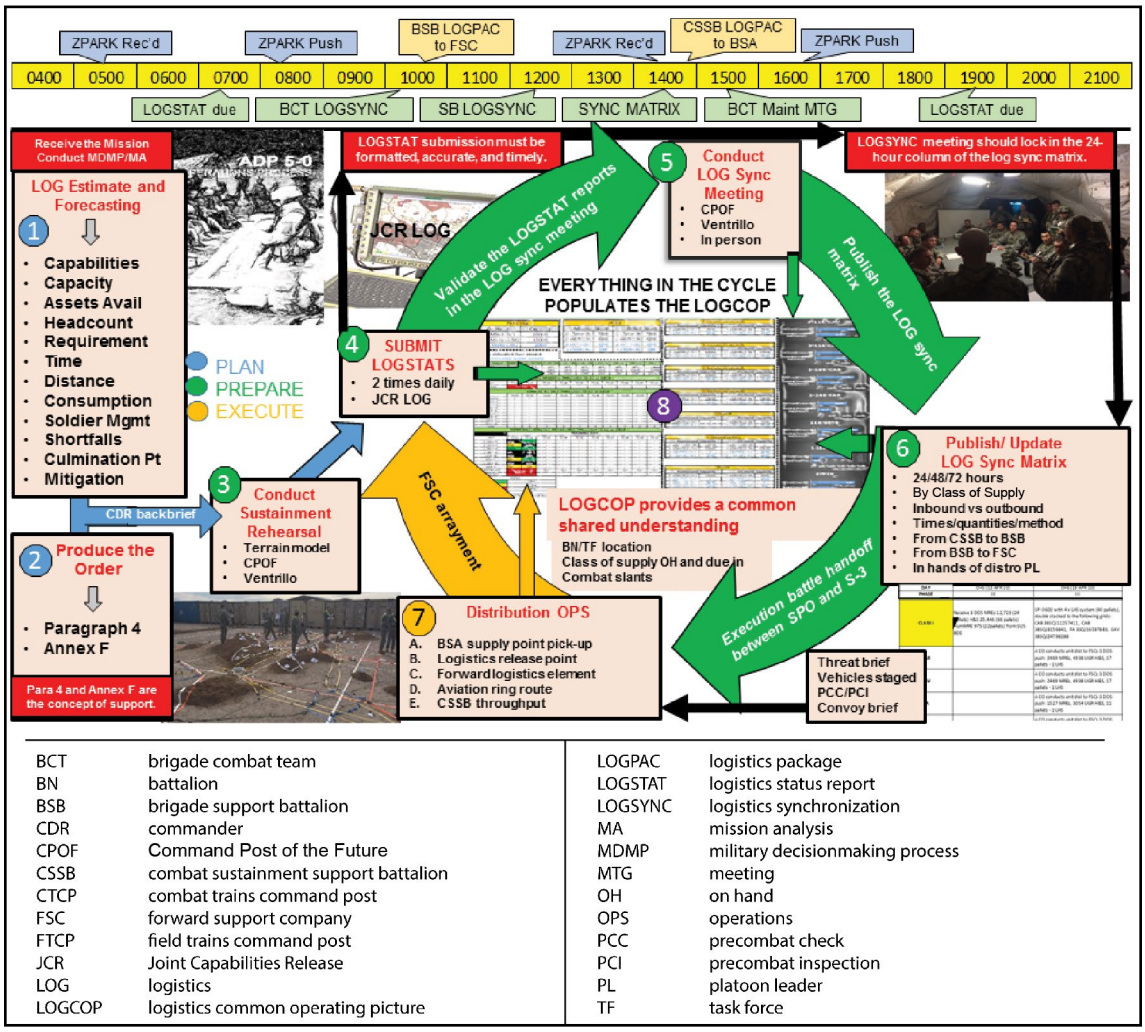
Chapter 10

Sustainment in Decisive Action

COL Brent Coryell, Goldminer Team

Army sustainment planners are comfortable deploying into a mature theater where sustainment is in place and much of it is contracted out. Steady-state sustainment operations, supporting from forward operating bases in Iraq or Afghanistan, do not exist in the decisive action (DA) operational environment (OE). The brigade combat team (BCT) DA OE at the National Training Center (NTC) is fast-paced, complex, and unpredictable. It replicates deployment into an immature theater where BCT sustainment is conducted in an austere environment with only organic assets. The NTC DA OE focuses on combined arms maneuver and wide area security (with counterinsurgency elements) in a single comprehensive manner. This complexity creates challenging BCT support operations requiring organized planning processes to synchronize sustainment execution.

BCT sustainment operations in DA OE are cyclic, progressing through eight stages that require disciplined management. Stage one of the cycle begins by conducting mission analysis (MA) and producing a logistics estimate. Stage two continues with publishing a concept of support (Paragraph 4 and Annex F of the BCT operation order [OPORD]). After the OPORD is produced, tools and processes exist for logisticians to manage and synchronize the remaining stages in the cycle. These include sustainment rehearsals, logistics status reports (LOGSTATS), logistics synchronization (LOGSYNC) meetings, logistics synchronization matrix, and a logistics common operational picture (LOGCOP). The cycle repeats at stage 4 when the product or service is delivered to the end user or begins again at stage 1 after receipt of a new BCT mission. Figure 10-1 (next page) shows the eight stages of the DA BCT sustainment cycle. This chapter discusses each stage using the observation, discussion, and recommendation format. It also discusses lessons learned and successful tactics, techniques, and procedures observed during these stages at the NTC.



BCT	brigade combat team	LOGPAC	logistics package
BN	battalion	LOGSTAT	logistics status report
BSB	brigade support battalion	LOGSYNC	logistics synchronization
CDR	commander	MA	mission analysis
CPOF	Command Post of the Future	MDMP	military decisionmaking process
CSSB	combat sustainment support battalion	MTG	meeting
CTCP	combat trains command post	OH	on hand
FSC	forward support company	OPS	operations
FTCP	field trains command post	PCC	precombat check
JCR	Joint Capabilities Release	PCI	precombat inspection
LOG	logistics	PL	platoon leader
LOGCOP	logistics common operating picture	TF	task force

Figure 10-1. Eight stages of BCT sustainment operations in DA

Stage 1A: Receive the BCT Mission and Conduct the Military Decisionmaking Process and Mission Analysis

The three most important outcomes of MA for sustainment planners are to: (1) forecast requirements, (2) produce a logistics estimate, and (3) ensure that support plans are synchronized with maneuver plans.

Observation

During MA, many BCT sustainment planners struggle understanding unit capabilities and estimating sustainment requirements for various maneuver courses of action (COAs). At times, COAs produced by BCT maneuver planners lack sufficient information to integrate and synchronize support operations. Sustainment planners are reluctant to make assumptions to fill the gaps in planning. Often at the NTC, sustainment planners plan in a vacuum and are not integrated and working concurrently with the warfighting planners.

Discussion

After receiving the BCT mission, the first stage for the sustainment planner is MA. Successful sustainment planners understand that to be successful a Soldier must be fed, armed, and transported while maintaining, fueling, and accounting for equipment. For this to occur, the sustainment planner must consider the priority of resources and estimate the current and future support requirements. Sustainment planners need to understand the maneuver plan (type of mission, task organization, duration, terrain, routes, locations of support areas, etc.). The three most important outcomes of MA for sustainment planners are to: (1) forecast requirements, (2) produce a logistics estimate, and (3) ensure that support plans are synchronized with maneuver plans.

Recommendation

During mission analysis, the sustainment planners must plan concurrently with the maneuver planners, not sequentially, to develop a concept of support (Paragraph 4 and Annex F) for the operation order.

Use key and essential sustainment planners in the BCT in the MA process. Sustainment planners with critical roles in the BCT staff's MA effort include the BCT executive officer (XO), BCT command sergeant major, BCT S-4, BCT S-1, BCT surgeon, BCT chaplain, brigade support battalion (BSB) commander (CDR), BSB support operations officer (SPO), sustainment brigade SPO, and Army field support brigade, brigade logistics support team. This team, if planning concurrently with the maneuver planners, can correctly identify the sustainment tasks required to accomplish the operational mission. As the BCT's senior logistician, the BSB CDR is responsible for sustainment synchronization and execution across the BCT's OE. The BCT CDR should view the BSB CDR as the sustainment coordinator, analogous to the field artillery CDR as the fire support coordinator. Supported by the BCT sustainment planning team, the BSB CDR uses the MA process to drive the detailed planning necessary to understand, visualize, and describe the OE and direct, lead, and assess sustainment operations that support the maneuver plan. The BSB CDR must take charge of the MA sustainment planning process and lead the aforementioned individuals through the most important part, the logistics estimate.

Stage 1B: Produce a Logistics Estimate by Forecasting Support Requirements

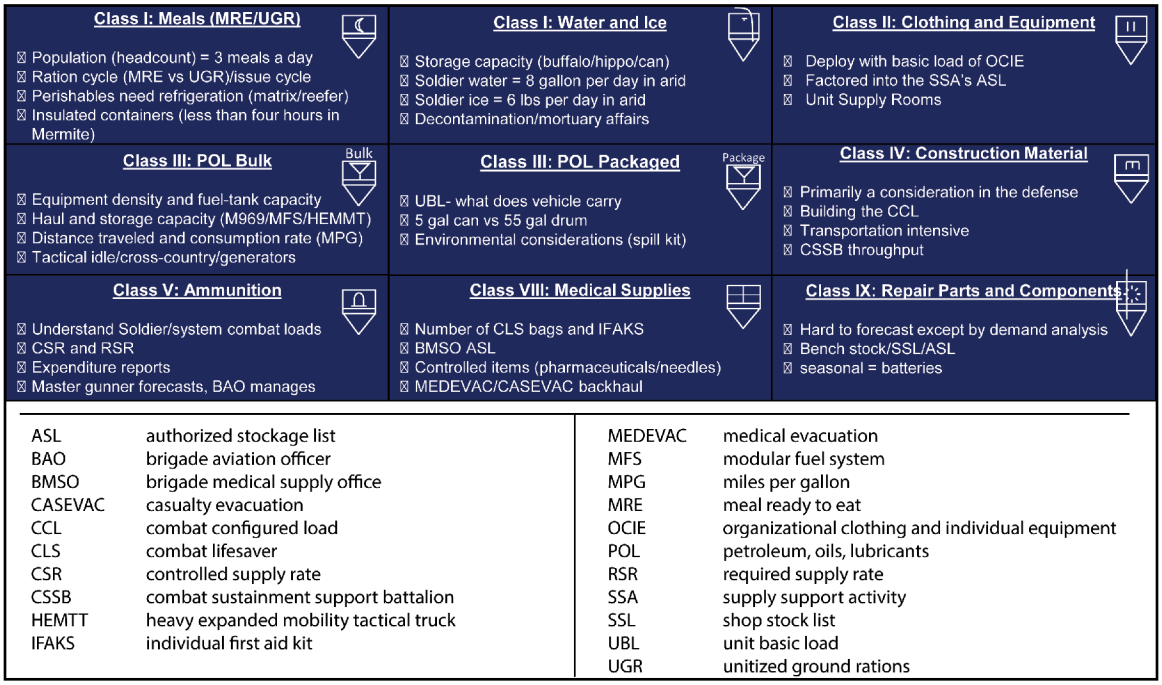


Figure 10-2. Sustainment planners should focus on completing the logistics estimate during the MA process.

Observation

Sustainment planners in DA operations must improve forecasting and conducting a logistics estimate. Battalion S-4s are often observed submitting the same supply and service requests day after day, rather than analysis of the mission and factors such as task organization, headcount, equipment density, haul capacity, consumption rates, time, and distance. There is frequently an over-reliance on historical data.

Discussion

Inaccurate forecasting leads to backhaul, emergency resupply, wasted man-hours, increased risk to Soldiers, and commits unneeded and limited support assets.

As previously mentioned, the most important part of MA for the sustainment planner is forecasting support requirements and producing a logistics estimate. Historical data is a starting point but it should not be the primary forecasting method when conducting an estimate for a new operation. The logistics estimate is the sustainment planner's running staff estimate. Accurate forecasting is aided by logistics estimation tools that analyze distances derived from the scheme of maneuver, task-organized equipment densities, and consumption rates. Existing forecasting tools are Operational Logistics Planner V8, Logistics Estimation Worksheet V16, Quick Logistics Estimation Toll, and the Sustainment Planners Smart Book.

Recommendation

MA for sustainment planners should result in a forecast by defining the current OE in terms of what do I have (capabilities), what do I need (requirements), what do I not have (shortfalls), and how do I get and deliver what I need (request format and distribution method). A technique some BSB CDRs use at home station to reach this objective is hosting a "sustainment university" to train logisticians on producing logistics estimates using the existing forecasting tools mentioned. The training focuses on understanding unit equipment densities, sustainment platform capabilities, calculating consumption rates, and pairing capabilities with consumption rates against mission requirements. The academy training concludes with writing a concept of support (Paragraph 4 and Annex F) based on the logistics estimate.

Stage 2: Publish the Concept of Support (Paragraph 4 and Annex F)

Paragraph 4

4. (U) Sustainment.

a. BSB provides direct support to TM BLACK JACK via supply point and unit distribution throughout the operation. CSSB provides general support to BSB via unit distribution throughout the operation. The priority of support throughout the operation is the following: CAV1, CAV4, CAV2, CAV3, FA BN, BEB. Logistics operations are broken into three phases. Phase I: All units will cross the LD with 100 percent filled on all classes of supply. Units will receive five DOS Class I no later than RSOI 3 (**15 FEB 2017**) for **17-21 FEB 2017**. BSB will establish FLE with Class III(B) and Role II capabilities **IVO 11S NU 385 945** in order to provide Class III(B) resupply to CAV1 as required. Phase II: At the completion of TRM all BNs will internally resupply and BPT to receive Class III(B). No later than H+12, BSB delivers Class III(B) resupply to CAV2, CAV4, CAV3 CTCP, approximately 10,000 gallons Class III(B) each, with resupply to CAV1 as required from FLE. BEB, FA BN will receive resupply via supply point distribution at the BSA IVO AA GAMBLER, as required. BSA will jump and envelope BSB FLE upon BEB and FA BN resupply operation completion. Phase III: BSB will conduct resupply operations to all supported units, as required, based on LOGSTAT reports.

(1) (U) Maintenance. The priority of maintenance throughout the operation is M1A1, M2A3, M109A6, M3A3, Q36/37, M88, and M113. Units will establish their own maintenance collection points. BCT recovery plan will include: self-recovery, FSC recovery assets, and emergency HET assets. Any HET support for recovery and movement operations should be coordinated through SPO transportation office. Ordinary HET requests are due no later than 72 hours prior to required support. All units will notify immediately and submit their reconstitution packets for all battle damage/battle loss equipment to the BDE S-4 in order to regenerate combat power.

Annex F

(a) (U) Class I Rations.
1.) (U) Ration cycle is M-M-M for TRM day. Upon completion of TRM, transition to M-M-HS through
Phase IV of the operation.
2.) (U) The brigade will deploy with five DOS of Class I, one at the unit, one at the FSC, and one at tAhe
BSA. The CSSB will push additional Class I resupply, as needed.
(b.) (U) Class II organizational clothing and individual equipment and maps.
1.) Gunner Restraints. Ensure all gun truck vehicles have associated gunner restraints and notify the 52
ID G-4 of all shortfalls.
2.) Limited Class II. Units will deploy with three DOS of Class II.
3.) General Services Administration. Not Applicable.
(c) (U) Class III Bulk Fuel, Class III Package Petroleum, Oils and Lubricants.
1.) all types of fuel and petroleum are available. BCTs will LD from MAD with a minimum of six DOS of Class III(P) at echelon within each formation. Replenishment will be requested through LOGSTAT reporting procedures.
2.) BDE S-4 and BSB SPO will receive bulk fuel requirements from units through daily LOGSTAT reporting. F24 requirements identified in the LOGSTAT that is sent to the BSB SPO S&S section and the BDE S-4 is reported to the BSB LNO with 916 SB for resupply. Estimates should be identified by product type, quantity (gallons) needed by location by day, and delivery location. See Enclosure C, LOGSTAT Reporting SOP.
(c) (U) Tasks to subordinate units.
(1) (U) A Co, BSB.
(a) (U) BPT to push additional Class III(B) and III(P) to FSCs.
(d) (U) Class IV Construction and Fortification Material.
1.) Units will draw Class IV to act as base defense, carried separate from CCLs on TRM day.

AA	**assembly area**
BEB	**brigade engineer battalion**
BN	**battalion**
BPT	**be repaired to**
BSA	**brigade support area**
BSB	**brigade support battalion**
CAV	**cavalry**
CCL	**combat configured load**
CL	**class**
CSSB	**combat sustainment support battalion**
CTCP	**combat trains command post**
DOS	**days of supply**
FA	**field artillery**
FLE	**forward logistics element**
FSC	**forward support company**
HET	**heavy equipment transporter**
IVO	**in the vicinity of**
LD	**line of departure**
LOGSTAT	**logistics status report**
RSOI	**reception, staging, onward movement, and integration**
SB	**sustainment brigade**
SOP	**standard operating procedure**
SPO	**support operations officer**
S&S	**supply and services**
TM	**team**
TRM	**tactical road march**

Figure 10-3. Concept of support, Paragraph 4 and Annex F

Observation

In the DA OE at the NTC, BCT sustainment planners are challenged in developing a clear, anticipatory support plan and translating it into a coherent written Paragraph 4 and Annex F. There is often a blurred line between SPO and BCT S-4 responsibilities when producing these products for the order. Personality often influences who leads this effort. Observations at the NTC show that one or the other does the preponderance of the work and rarely work together. The BCT SPO executes the concept of support and therefore has an obligation to be involved in the planning. BCT S-4s who write support plans without SPO involvement and concurrence often suffer ineffective mission execution.

Discussion

The BCT S-4 and SPO work together on Paragraph 4 and Annex F, which are synonymous with the concept of support. They are one in the same, not separate and distinct products.

Stage 2 of the BCT sustainment cycle begins when the results of the MA and logistics estimate are translated into a written mission order. Paragraph 4 of the order is dedicated to the sustainment warfighting function. Annex F, typically a synchronization matrix, is also dedicated to sustainment operations where specific details of who, what, when, where, and how are found. If these details are not addressed, and Paragraph 4 and Annex F are a copy and paste action from the last order that lack the detail required to gain an understanding of the concept of support for the current mission, those who are supported by the order lose confidence and rarely read it. The BCT S-4 and SPO must be actively involved in making the sustainment plan. Their responsibilities should be understood. Often, this is developed through experience by working together, sometimes directed by the BCT XO or S-3 or influenced by the BSB CDR.

Recommendation

Units that have clearly delineated roles between the BCT S-4 and SPO are more successful at the NTC. To be effective, Paragraph 4 must cover priorities for resources, locations of logistics support area, brigade support area (BSA), ambulance exchange points, Role I and Role II facilities, main supply routes, and alternate supply routes. Annex F must cover who (task force) is getting what (commodities), when (time window), where (BSA, forward logistics element [FLE], logistics release point [LRP]), and how (resupply distribution method). A detailed Annex F prepares those executing the support for the conduct of an effective sustainment rehearsal. Confirmation briefs and backbriefs ensure the order is understood. Effective products allow CDRs to begin the next stage: rehearsals.

Stage 3: Conduct a Sustainment Rehearsal

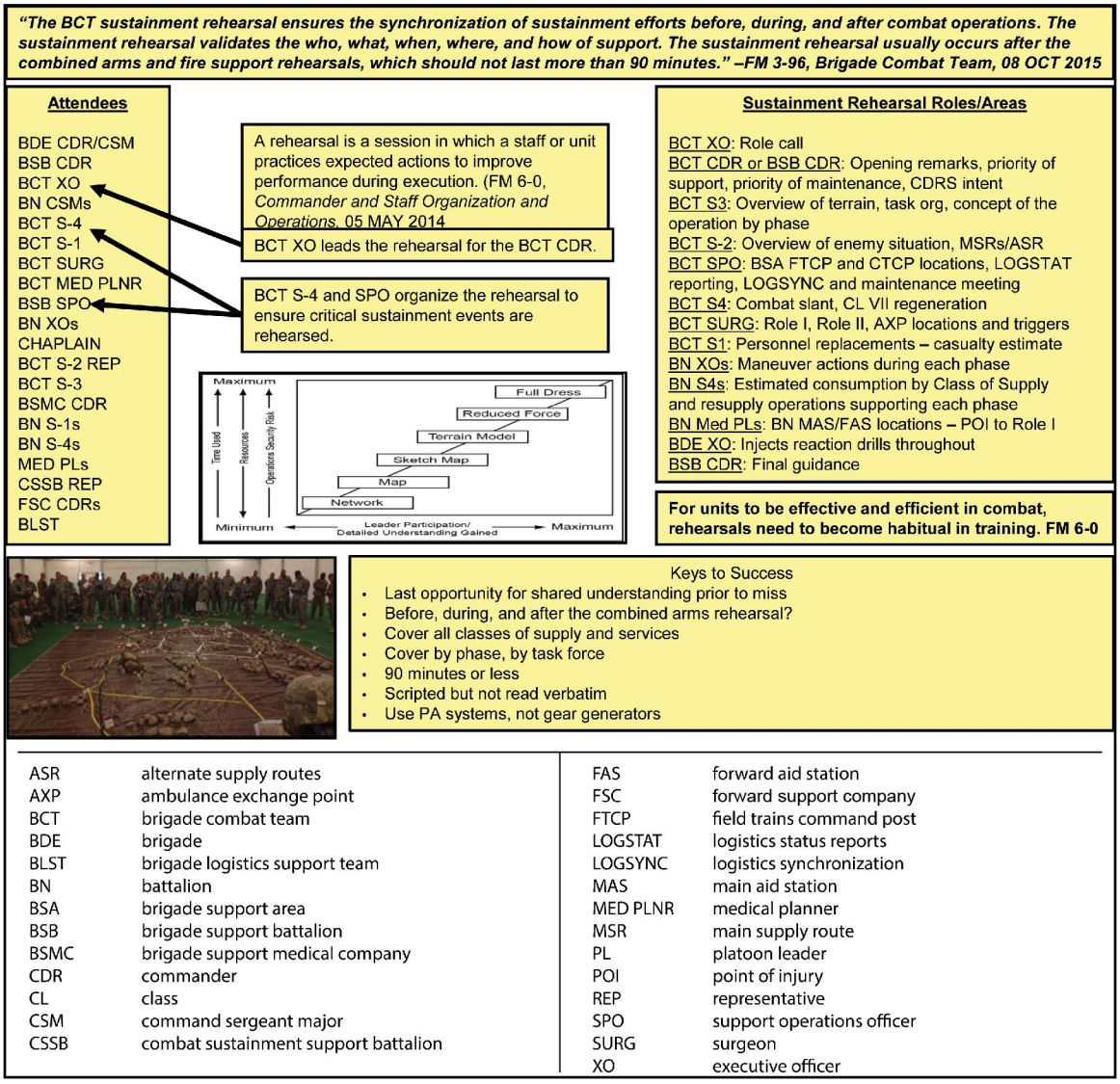


Figure 10-4. The sustainment rehearsal is used to rehearse key sustainment actions, allowing participants to translate the tactical plan into visual impressions that leave a lasting mental picture of the sequence of key sustainment actions.

Observation

At the NTC, many sustainment rehearsals included leaders saying the right words, but never fully grasping what the words meant in terms of time, location, and method of resupply. The sustainment rehearsal sometimes devolves to leaders in the BCT having a "sustainment discussion" and conducting low-level coordination. Oftentimes, the sustainment rehearsal is conducted so late in the process that the only sustainment function remaining to rehearse before execution is the casualty evacuation/medical evacuation (CASEVAC/MEDEVAC) plan. When the rehearsal happens late, much of the resupply has already happened and it is overcome by events.

Discussion

The sustainment rehearsal is the last opportunity prior to mission execution to achieve a shared understanding of how resupply and CASEVAC will occur.

Stage 3 in the cycle is the sustainment rehearsal. The sustainment rehearsal brings together key sustainers and leaders from the BCT staff, maneuver task forces, and the BSB. The rehearsal assists in synchronizing logistic execution and aides the executors' understanding of the sustainment plan. The rehearsal validates the already developed concept of support. The best rehearsals at the NTC are conducted on a terrain model after the combined arms rehearsal. These rehearsals address changes that happened during the combined arms rehearsal. Effective rehearsals have a published agenda with a mandatory attendee list. Some units will effectively use unscripted injects tied to the specific mission requirements of the operation to create adaptability to possible situations. All classes of supply and services must be covered, as well as CASEVAC plans using the logistics and medical estimates derived during MA. It is okay to find shortfalls and problems at the rehearsal, which is partly its purpose. Resolve them on the spot or if the problem requires too much time, put it aside for resolution following the rehearsal.

Recommendation

Medical leaders need to consider casualty estimates during the rehearsal to determine support requirements (casualty volume and density) versus capabilities (MEDEVAC and CASEVAC platforms).

The sustainment rehearsal can be conducted in 90 minutes or less after the group conducts a few repetitions. The rehearsal should be scripted to a large degree to cover all areas. It should not be so scripted that the briefers just read. The script serves as a reference guide. Seasoned briefers learn to glance at notes instead of reading verbatim. All briefers stand and point to locations referenced on the terrain model. Briefers should use an amplified sound system with microphone. The terrain model should not be set up next to a running generator.

The BCT XO conducts roll call and begins the sustainment rehearsal by discussing the ground rules on how the rehearsal will be conducted by task force, phase, topic, etc. The BSB CDR gives opening remarks and covers BCT CDR's intent, priority of support, and priority of maintenance. The BCT XO or S-3 representative orients everyone to the terrain model showing key nodes such as objectives, named areas of interest, phase lines etc., as well as the task organization and concept of operation for each battle phase. The BCT S-2 briefs the enemy composition and disposition and most likely COA for each battle phase, focusing on the threat to sustainment forces. The BCT S-2 also covers the statuses of main supply routes and alternate supply routes. The BCT S-4 briefs combat slants and the Class VII regeneration process. The SPO covers BSA, FLE, field trains command post (FTCP), combat trains command post (CTCP), and any LRP locations. The SPO briefs the distribution method: who is getting what, when, where, and how.

The battalion XOs brief the scheme of maneuver for their task force. This portion has a tendency to last long; it is important for battalion XOs to give an overview appropriate to the sustainment discussion. The battalion XOs hand the scheme of maneuver to their battalion S-4s and forward support company (FSC) CDRs to brief Classes of Supply on hand and those needed at each phase of the operation based on logistics estimates already conducted. The battalion S-4s and FSC CDRs (standing side by side) then brief and confirm the method and time of resupply.

The sustainment rehearsal then shifts to cover CASEVAC and MEDEVAC. The BCT surgeon briefs the CASEVAC plan, discussing ground and air evacuation capabilities, anticipated bands of casualties, and possible friction points in the medical support plan. The BCT S-1 briefs casualty estimates and personnel replacement operations. The battalion medical officers brief main aid station and forward aid station locations and responsibilities. They also brief standard and nonstandard evacuation platform capacity, casualty collection point locations, and actions from the point of injury to casualty collection points and Role I locations. Medical leaders need to consider casualty estimates during the rehearsal to determine support requirements (casualty volume and density) versus capabilities (MEDEVAC and CASEVAC platforms). The C Medical Company CDR briefs the Role II location, along with ambulance exchange point locations, capabilities, and triggers to provide and shift support. The BCT XO discusses air MEDEVAC prioritization, allocation, and conducts injects throughout the rehearsal to test the reaction of the sustainment planners and executers. The BSB CDR ends the rehearsal with closing comments emphasizing the timely and accurate turn in of LOGSTAT reports.

Stage 4: Produce and Submit an Accurate LOGSTAT Report

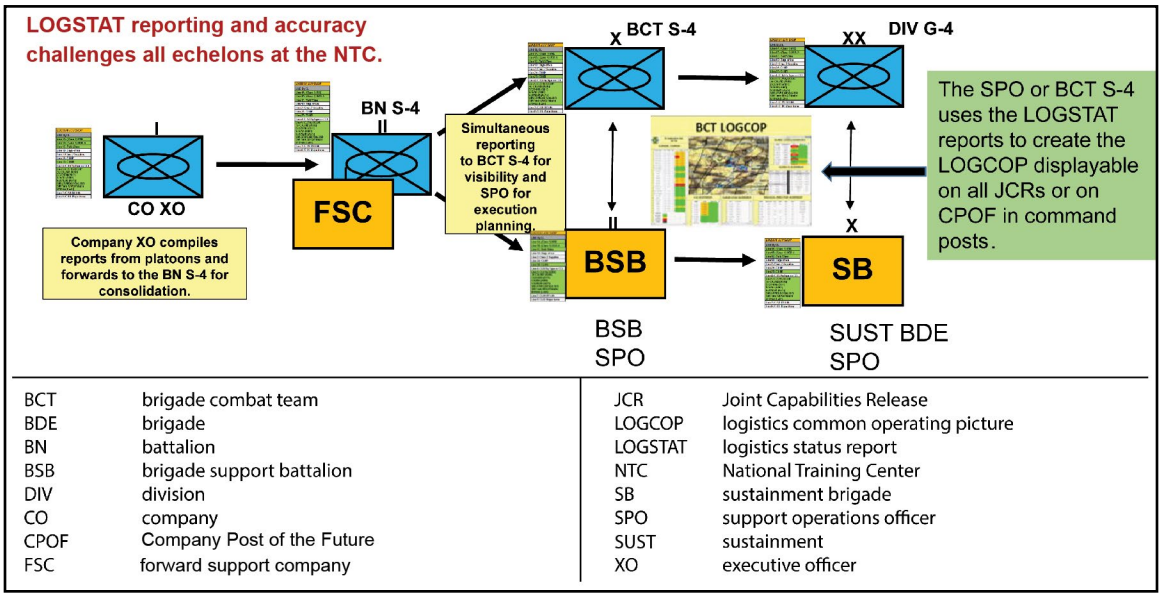


Figure 10-5. The BCT must develop and use a LOGSTAT report that identifies logistics requirements, provides visibility on critical shortages, projects mission capability, and provides input to the logistics common operational picture.

Observation

LOGSTAT reporting challenges exist at all echelons at the NTC. Reporting does not occur with regular frequency, preventing anticipatory sustainment planning and execution. The BCT average LOGSTAT turn-in rate at the NTC is about 76 percent. Often, the LOGSTATs submitted are inaccurate, which affects shared understanding and actions or decisions that need to be made. Inaccurate LOGSTATs often result in unforecast or "emergency" resupply operations, or backhaul of unneeded supplies. At the NTC, BCTs average 30 unforecast resupply missions during a 14-day rotation, usually due to improper forecasting on the LOGSTAT report.

Discussion

Stage 4 is the LOGSTAT report. LOGSTAT reports drive the cycle. Observation has shown that the battalion S-4 is frequently the primary source of logistics de-synchronization at echelon due to LOGSTAT inaccuracy. This is primarily due to not understanding how to accurately forecast and produce a logistics estimate built on on-hand quantities reported by company XOs. Company XOs must accurately report current on-hand supply statuses and battalion S-4s should combine them as a forecast in the LOGSTAT report. Successful BCTs have a clear and concise standard regarding LOGSTAT reporting from all subordinate units, to include all enablers.

Recommendation

The BCT XO must enforce discipline in reporting on the LOGSTAT to avoid emergency resupply. The key to LOGSTAT reporting success is that submissions are enforced, accurate, and on time.

The LOGSTAT reporting plan should be simple and understood by all, with an executable method for reporting (for example using the primary, alternate, contingency, and emergency [PACE] plan: primary, Joint Capabilities Release [JCR]; alternate, Command Post of the Future [CPOF]; contingency, SECRET Internet Protocol Router email; emergency, frequency modulation [FM] radio or runner). Publish the LOGSTAT PACE plan in the mission order and practice it during training events. XOs at the company, battalion, and brigade must be the enforcers of the process, ensuring reports are timely and accurate.

LOGSTAT reports are best when they are preformatted. If a standard formatted report is not used, reports will come in free text and be difficult to compile onto a master roll-up. Allow space for free text at the end of the formatted report for any discussion or requests that do not fit well into the preformat. LOGSTAT reports should list current on-hand quantities for Classes I, III(B), III(P), V, and VIII. Classes II, III(P), IV, and IX are requested through Global Combat Support System-Army and will not fit on the LOGSTAT report. Ammunition is requisitioned by submitting a Department of the Army (DA) Form 581, *Request for Issue and Turn-In of Ammunition* (01 JUL 1999), along with an expenditure report. Class VIII is ordered through Medical Communications for Combat Casualty Care and Defense Casualty Analysis System. These Classes of Supply (II, IV, V, VIII, and IX) should be listed by exception on the LOGSTAT if they are an emergency or the unit is experiencing a problem with the requisition. The LOGSTAT report should then list the forecast request for each Class of Supply (minus those listed) for the next 24, 48, and 72 hours. LOGSTATs should also contain the task force headcount and grid locations for CTCPs.

The LOGSTAT report should be sent to the BCT S-4 and SPO simultaneously for visibility, but delineate who receives, processes, validates, and distributes the LOGSTAT information between the BCT S-4 and the SPO. The BCT S-4 needs the LOGSTAT for situational awareness and shared understanding. The BSB SPO needs it to begin the resupply planning. The SPO or BCT S-4 uses unit LOGSTAT reports to create the LOGCOP displayable on all JCRs or on CPOF in command posts. Once commodity resupply amounts are validated in the LOGSYNC meeting, the LOGSTAT is used to update the LOGSYNC matrix. The LOGSYNC matrix then becomes the source document driving resupply operations. The LOGSYNC meeting is the next stage in the BCT sustainment cycle; it is used to validate the LOGSTAT and to drive distribution execution.

Table 10-1. Preformatted LOGSTAT report

LOGSTAT JCR/SVOIP				
Line by Class	**Capacity**	**OH (DOS)**	**Next 24**	**Next 48**
Line 1A: (Class I) MRE				
Line 1B: (Class I) UGR-A				
Line 1C: Bulk water				
Line 1D: Bags of ice				
Line 2: Class II supplies				
Line 3A: Class III P				
Line 3B: Class III B				
Line 4: Class IV by type of CCL				
Line 5: Class V by DODIC .50 cal/M2 (A598) 7.62/240B (A111) 5.56/M4 (M080) 5.56/M249 (A075) SIM ATWI S (BFV) (L376) SIM Tank M1A2/Paladin M109A6 (LA06)				
Line 7: Class VII by LIN				
Line 9: Class IX major items				

CAL	caliber	LOGSTAT	logistics status report
CL	class	MRE	meal ready to eat
CCL	combat configured load	OH	on-hand
DODIC	Department of Defense identification code	SIM	simulator
DOS	days of supply	SVOIP	secure voice over internet protocol
JCR	Joint Capabilities Release	UGR-A	unitized group ration-A
LIN	line item number		

Figure 10-6. Observer-coach/trainers have observed success with units using a preformatted LOGSTAT report on the JCR, providing increased visibility across numerous platforms.

Stage 5: Conduct a Logistics Synchronization Meeting

Units are most successful when they execute the LOGSYNC meeting routinely at the same time, using an agenda and communications method they have practiced before coming to the NTC.

Observation

Units struggle when conducting LOGSYNC meetings because of insufficient time and poor connectivity. Most BCTs and BSBs do not hold the maneuver units accountable to participate in the LOGSYNC at the prescribed time. Also, units do not identify the communications platform on which the meeting will be conducted and do not properly establish that system during the mission command validation exercise that occurs during reception, staging, onward movement, and integration. This results in the LOGSYNC meetings missing the required participants in attendance and/or not having an established communication platform.

Discussion

LOGSYNC meetings are a necessary forum to validate LOGSTAT reports, update the LOGSYNC matrix, and confirm quantities, method of distribution, times for resupply, and location.

LOGSYNC meetings occur at stage 5 in the BCT sustainment cycle and are essential to successful sustainment execution. Successful LOGSYNC meetings have appropriate participation. They are used to validate LOGSTAT reports, synchronize resupply operations, and create shared understanding among the sustainment planners within the BCT. LOGSYNC meetings should be a scripted event that has the same participants, is conducted at the same time, and is over an established platform. Participation is critical in validating the battalion LOGSTAT reports. Having an established timeframe to conduct the meeting enables the sustainment planners to develop a battle rhythm. Finally, identifying the proper communication platform on which to conduct the meeting ensures required participants can participate.

Recommendation

Units are most successful when they execute the LOGSYNC meeting routinely at the same time, using an agenda and communications method they have practiced before coming to the NTC. Units have successfully used Defense Communications System-Connect and CPOF, but sustainers must analyze the communications architecture of the BCT to ensure that the right people have the communications means at their location. Incorporating the senior FTCP representative into the LOGSYNC meeting in person enables the SPO to help unit representatives prepare for the next logistics package. The end product of the LOGSYNC meeting is an updated LOGSYNC matrix. The SPO should send the matrix to the combat sustainment support battalion (CSSB) to provide situational awareness of how the BSB plans to conduct its resupply operations for the next 24 hours. The BSB provides hard copies of the LOGSYNC matrix to the A/BSB CDR and FTCP representatives to prepare the next day's logistics packages.

Figure 10-7. The SPO should bring in the senior FTCP representative located in the BSA for a face-to-face meeting during the digital LOGSYNC meeting.

Stage 6: Produce and Publish an Executable LOGSYNC Matrix

Use the LOGSYNC meeting to update a preformatted and practiced matrix. Sustainment planners must then provide the LOGSYNC matrix to the executers.

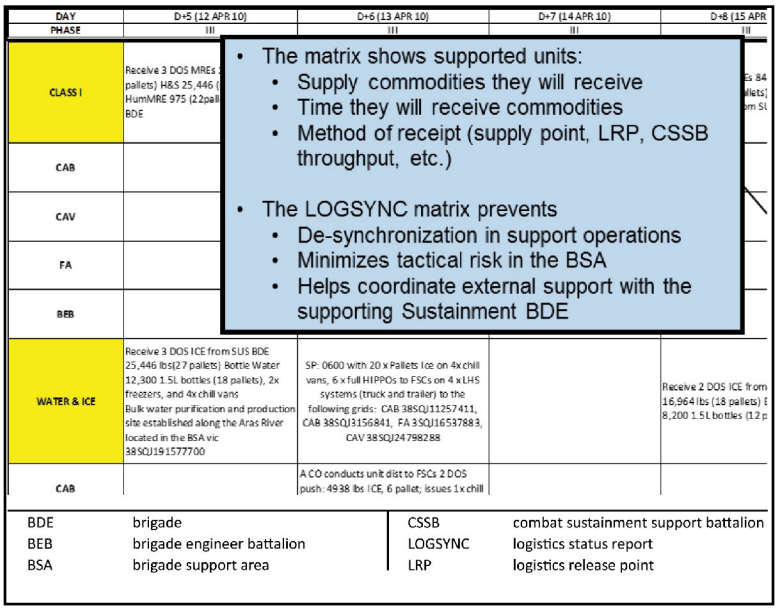


Figure 10-8. The LOGSYNC matrix is arguably the most important document for a logistician. The LOGSYNC matrix shows supported units the commodities they will receive, the time they will receive the commodities, and the method of receipt (supply point, LRP, CSSB throughput, etc.).

Observation

Many LOGSYNC matrixes produced at the NTC lack sufficient detail required to plan and execute a resupply operation. For example, the matrix will annotate fuel and water but not mention the amount required in gallons. The matrix will list Class I supply, but not specifically how many pallets of each type (e.g., unitized ground rations or meal ready to eat) based on the headcount. Other common shortfalls of the matrix include no annotated time window, no grid coordinates for LRP missions, and unclearly identified system exchange processes (e.g., bring an empty flat rack to swap for a flat rack of Class IX). The most common mistake is posting the matrix but not distributing it to those preparing and executing the mission.

Discussion

The LOGSYNC matrix may be the most important document a sustainer has to plan and execute a resupply mission. The LOGSYNC matrix synchronizes support operations, minimizes tactical risk in the BSA by preventing units from arriving at the same time, and helps coordinate external support with the supporting sustainment brigade. The LOGSYNC matrix should be used to promote shared understanding and facilitate desired execution from the SPO to S-3, to A Company (supplies and services) BSB or FSCs, to the CSSB and sustainment brigade SPO. If the matrix clearly defines who receives what (commodities and amount), when (time window), where (grid), and how (supply point, LRP, FLE, etc.), it will greatly assist in logistics synchronization across the battlespace.

Recommendation

Use the LOGSYNC meeting to update a preformatted and practiced matrix. Sustainment planners must then provide the LOGSYNC matrix to the executers (the distribution platoon leaders and the A Company BSB CDR). Changes should be reflected and disseminated as soon as possible. Once the logistics synchronization matrix is developed, it can become Annex F, updated by a daily fragmentary order. The FTCP officers in charge (OICs) and the FSC elements located at the BSA are critical to this synchronization and must use the matrix to prepare the commodities for the next push.

Stage 7 A, B, and C: Conduct BCT Distribution Operations

Observation

Sustainment planners do not effectively balance all methods of distribution. The majority of BCT sustainment plans at the NTC are focused on supply point distribution with FSCs picking up from the BSA. The A Company BSB distribution platoon is seldom used to deliver supplies forward. Air assets are rarely used as a method of supply distribution. LRPs are employed occasionally, but ineffectively. FLEs are employed frequently, but they are not needed or are used as a retail point. CSSB throughput also is not coordinated when it makes sense to do so.

Figure 10-9. Mission success for the logistician is to get the product or service on time to the consumer, end user, Soldier, and combat system.

Discussion

There are numerous methods of distribution (explained further in this chapter) and understanding these are essential for the logistician to use the most effective delivery options. Items can be moved by ground or air. The most common method observed at the NTC is to have the FSC distribution platoon pick up commodities from the BSA (supply point distribution, discussed below as stage 7A), even though this is often not the most effective. The BSB can conduct an LRP between the transportation platoon of A Company BSB and the distribution platoons of the FSCs (discussed as stage 7B). The BSB can also position an FLE when the forward line of troops begins to extend beyond a reasonable operation reach and conditions are not yet set for BSA relocation (discussed as stage 7C). Sometimes it makes sense to have the CSSB provide direct throughput, especially in the case of Class IV, where mission configured loads need to be delivered for defensive operations. Air assets can be used on a ring route to move supplies forward (stage 7D). There are many distribution options for the sustainment planner to consider. The challenge is finding and employing ones that work best for the supported unit.

Recommendation

Sustainment planners choose methods of distribution considering the forward line of troops, placement of troops, and scheme of maneuver. SPO transportation sections act as the distribution management element for the BSB, and function as a distribution management center for the BCT. The distribution managers maintain situational understanding of the distribution system and act as the fusion center for distribution-related information.

Stage 7A: Conduct Supply Point Distribution from the Brigade Support Area

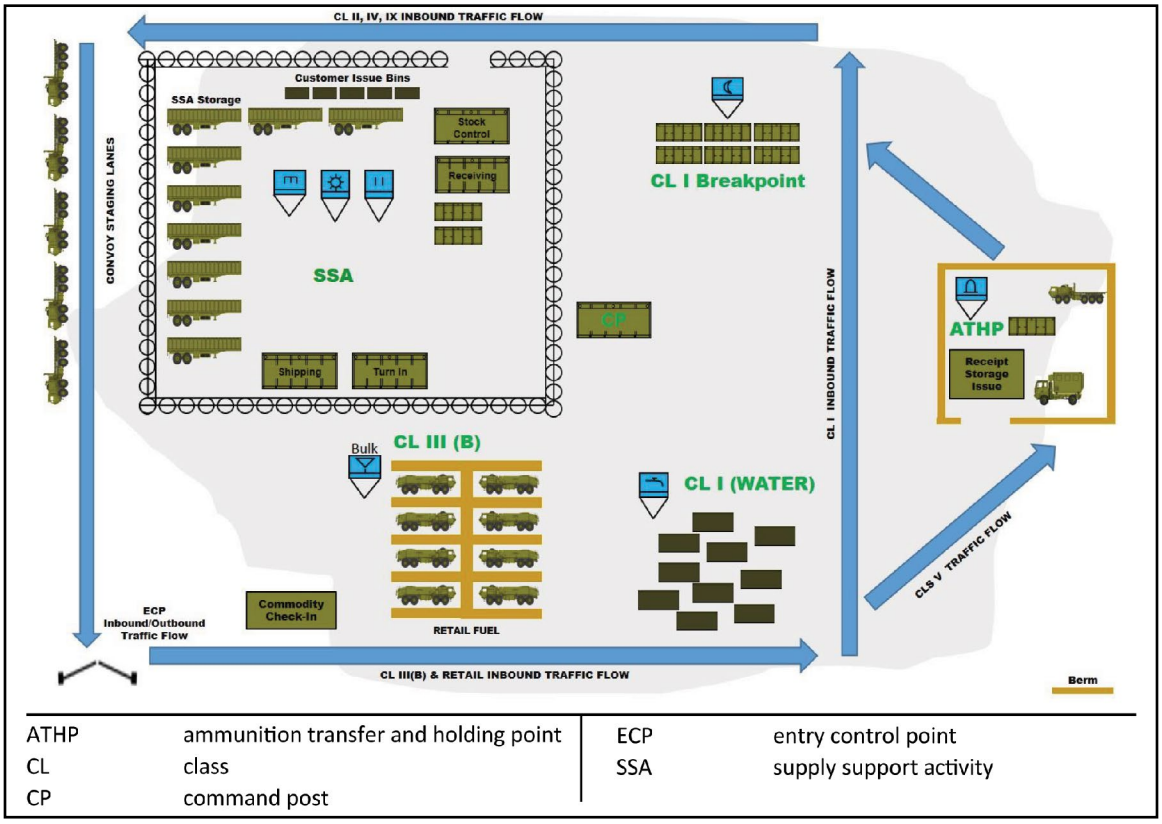


Figure 10-10. Essential to the success of supply point distribution is the optimal layout of the A Company sector in the BSA. The best technique is a road ring route that brings convoys past every commodity stop with room to stage before departure. A good BSA routing network has signs and sufficient space to conduct supply support activity (SSA) and ammunition transfer and holding point (ATHP) operations, fuel and water missions, Class I break point, flatrack exchange, material handling equipment (MHE) operations, and staging areas for convoys.

Observation

FSC distribution platoons frequently show up at the BSA unannounced to gather what they need. Observer, coach/trainers have termed this reactive method "shopping at the BSA."

Many distribution company commanders struggle with how to design their area of operation to provide efficient supply point distribution support to the BCT. More often than not, the A Company BSB sector layout is not designed for optimal traffic flow and staging of LOGPAC convoys, which results in bottlenecks and turn-arounds in confined spaces. Additionally, commodities required are typically not ready for pickup because the FSC FTCP personnel located in the BSA did not have them prepared. At the NTC, FSC distribution platoons often arrive at the BSA unannounced with M978 fuelers and Load Handling System Compatible Water Tank Racks (hippos) without an idea of the amount of fuel or water required. They also arrive with Light Medium Tactical Vehicles (LMTVs) for Class I rations pickup after their Class I has already been prebuilt on flatracks. If all of the FSCs arrive to the BSA at the same time, which occurs often, there is unnecessary traffic congestion and excessive time spent on-station. This type of unsynchronized situation often results in priorities not being followed, with one FSC taking another FSC's allotment.

If the matrix clearly spells out who receives what (commodities and amount) and when (time window), it will greatly assist the FTCP personnel preparing the packages.

Discussion

Supply point distribution from the BSA is the most common form of distribution and makes sense when FSCs are in close proximity to the BSA. Supply point distribution requires the supplying unit to issue supplies from a supply point to a receiving unit. The receiving unit must go to the supply point and use its own transportation to move the supplies to its area for distribution. For supply point distribution to be the most efficient, it is essential to have three items: (1) designated and synchronized pickup times, (2) appropriate FSC (FTCP) representation in the BSA to coordinate with the A Company BSB and build the supply packages, and (3) an optimal A Company BSB sector layout that has sufficient space to conduct SSA and ATHP operations, fuel and water missions, Class I break and issue point, flatrack exchange, MHE operations, and staging areas for convoys.

Recommendations

Designated and synchronized pickup times. One challenge with supply point distribution is synchronizing unit arrival times. Each echelon must be filled or emptied in a particular order to prevent shortfalls, emergency resupply, and backhaul. FSCs must draw from and empty the BSB's assets at the BSA so that when the CSSB arrives, they can down-load to the BSB. This synchronization effort goes back to the LOGSYNC matrix, getting into the hands of those executing it, discussed in stage 6. If the matrix clearly spells out who receives what (commodities and amount) and when (time window), it will greatly assist the FTCP personnel preparing the packages. Designated pickup and drop-off time windows help ease traffic congestion at the BSA and synchronize the CSSB resupply by ensuring assets are diminished in capacity to facilitate resupply.

Optimal FTCP representation. Appropriate FSC (FTCP) representation in the BSA is essential to supply point distribution efficiency. The FTCP is the primary direct coordination element between the supported battalions and the BSA. To gain efficiency and to create unified effort, it is important to have the right personnel dispersed between the CTCP and the FTCP. This ensures coordination and synchronization of sustainment occurs. Recommended FSC representation at the FTCP in the BSA is 10 to 15 personnel under the supervision of the FSC XO. Assign military occupational specialty (MOS)-specific Soldiers as commodity managers to assist the A Company BSB in preparing commodities for LOGPACs. This structure reduces the time on-station for the FSC to pick up supplies and ensures the right supplies are prepared and marked correctly for their forward units.

Figure 10-11. A successful supply point distribution management technique is to create a check-in point at the entry to the A Company sector to validate the commodities and quantities to be picked up or dropped off according to the LOGSYNCH matrix and to alert the commodity managers of the FSC or CSSB arrival.

Optimal A Company BSB layout. The optimal layout of the A Company BSB sector takes planning. The A Company BSB CDR must know how much space is needed for efficient supply point distribution operations and how to maximize the use of the space allotted. The best technique for optimal throughput is a ring-road route that takes convoys past every commodity stop with room for staging before departure. An effective BSA routing network has signs and sufficient space to conduct SSA and ATHP operations, fuel and water missions, Class I break point, flatrack exchange, MHE operations, and staging areas for convoys. Incoming distribution platoons learn to place their vehicles in an order conducive to arrival at the BSA allowing for easy "peel off" without having to bypass the vehicle in front. Another technique is to create a check-in point at the entry to the A Company sector. The challenge is not to create another bottleneck, but to validate the commodities and quantities to be picked up according to the synchronization matrix and to alert the commodity managers of the distribution platoon's arrival. Every commodity issue point in the A Company BSB sector has different considerations. The following are some best practices by commodity:

> **Class III(B) issue point**. A successful technique for the layout of the Class III(B) area is to make it the first stop for the FSC or CSSB whenever they enter the BSA. When selecting a location for fuel operations, the A Company BSB CDR must consider cover, concealment, dispersion, terrain, and road networks for trafficability. The bulk distribution point should be located next to, but not directly on, a road to facilitate the flow of traffic in an out of the issue point. Only one-way traffic should be permitted in the Class III(B) area of operation. The fuel site should be level and not uphill or upstream in order to prevent fuel leaks or spills.

Class I break and issue point. Class I operations should be set up and executed in accordance with Army Techniques Publication (ATP) 4-41, *Army Field Feeding and Class I Operations* (31 DEC 2015). The site should be large enough to hold the expected volume and capacity of Class I. Accessible road networks should facilitate heavy vehicle traffic engaged in loading and unloading of Class I. Locate the Class I area in the vicinity of the SSA so that MOS 92A Soldiers can shift to conduct Class I operations as needed.

ATHP. ATHP operations should be in accordance with ATP 4-90, *Brigade Support Battalion* (02 APR 2014). There is no specific standard configuration for an ATHP layout, but it should be located at least 180 meters away from other units within the BSA for explosive safety concerns. The ATHP should be large enough to hold the expected volume and capacity of munitions and allow effective trans-loading and storage of munitions. The A Company BSB CDR should consider having one entrance and exit point. The ATHP should be located near a road network within the BSA. This allows control of vehicle traffic and use of MHE.

SSA. The SSA location should be in accordance with ATP 4-42.2, *Supply Support Activity Operations* (09 JUN 2014). The SSA site location should facilitate the handling and movement of supplies within the BSA. The area designated for the SSA should support office space, receiving, shipping, turn-in, hazardous materials storage, and open storage. Consider establishing a secure perimeter around the SSA to help prevent pilferage. Establish an entrance and exit point to control traffic to the SSA receiving, issuing, and storage locations. Maximize the use of road networks to assist customer units with receiving and turning in supplies. Ensure adequate space is available for generators and the use of MHE.

Stage 7B: Conduct Logistics Release Point Operations

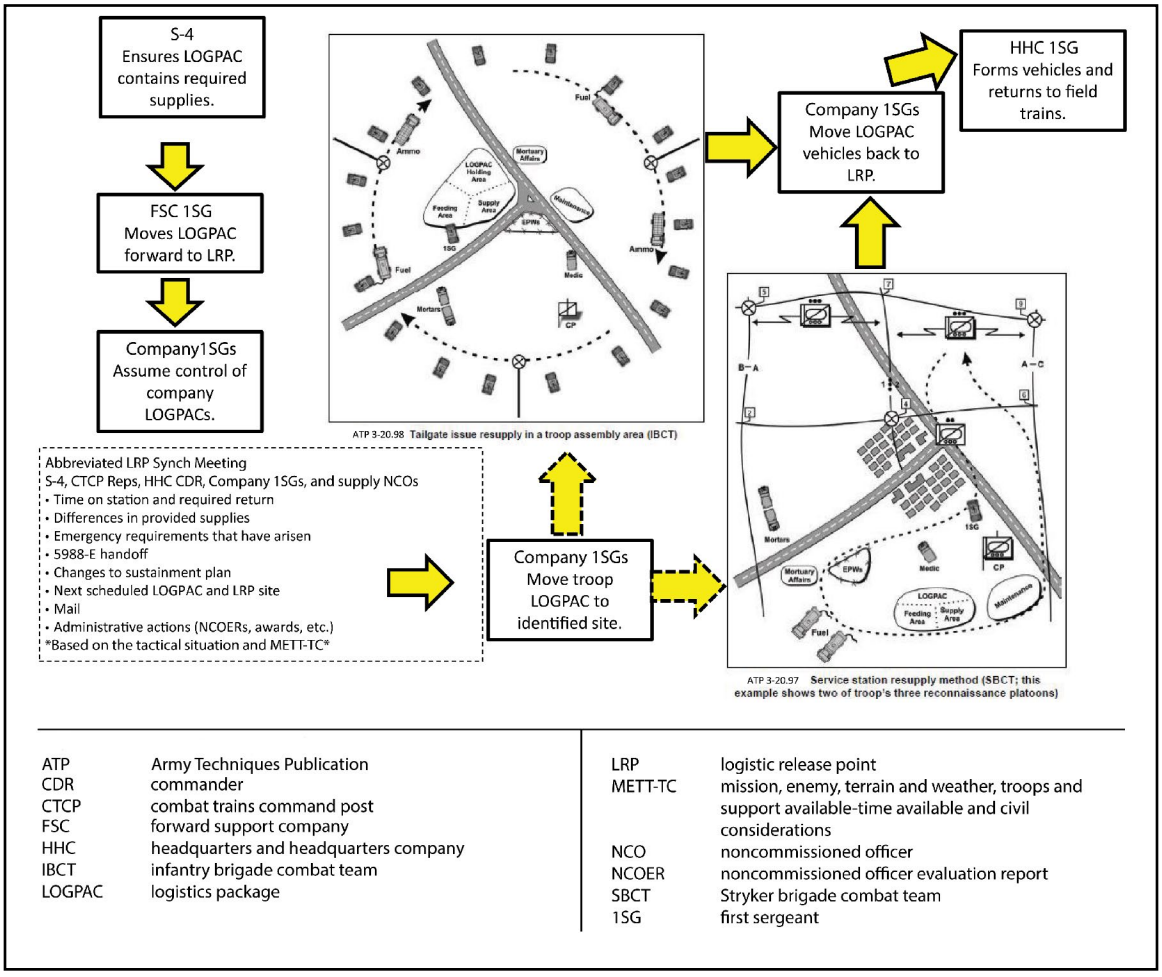


Figure 10-12. LRPs are designed for support units to meet at a designated place and point in time to conduct a rapid exchange of modular systems (for example, drop off of a flatrack of Class IX in exchange for an empty flatrack).

Observation

LRPs are effective means for unit distribution. However, many BCTs need practice executing them. Many units practice supply point distribution, but rarely train on LRP operations at home station. Often, A Company BSB and the FSC are not synchronized, which leads to failure to link up at the right location at the right time. Night operations are also a challenge to conduct LRPs. Units are not confident in night-land navigation and transferring supplies in limited visibility. Ineffective LOGSYNC meetings also contribute to the FSCs not understanding the required lift assets to bring to the LRP, causing them to return late or having an incomplete transfer of supplies. Hand-receipt holders are also anxious about property accountability, leading to trans-loading supplies between assets instead of exchanging hippos, modular fuel systems, and flatracks as doctrinally designed. The trans-load of supplies causes an increased turnaround time (for example, it takes approximately one hour for a hippo to trans-load).

Discussion

LRP operations are a way of shortening the lines of communication (LOCs) in support of one or more battalions. Use the modular distribution systems for increased velocity. The Army designed these systems for a rapid turnaround. The A Company BSB transportation platoon is often underused. The FSC distribution platoons are often overused because of over reliance on supply point distribution. The goal is for all distribution assets and Soldier time on the road to be equally distributed. Any more than two LOGPAC missions in a 24-hour period will begin to wear down the distribution platoons.

Recommendation

A Company BSB and FSC distribution platoons must train on LRP operations using the exchange of flatracks and modular systems during home-station exercises and combat training center (CTC) rotations. Although the distances during these training events may not seem to warrant an LRP, practice and repetition are the only way to achieve proficiency.

Plan for the A Company BSB to conduct two LRPs a day, alternating between supporting different units so that every few days each FSC will get a distance break. Use hippos, modular fuel systems, and flatracks as designed for efficient and expedited transfer of supplies. The BCT, battalion, and company CDRs must underwrite system exchange and manage the risk of loss or damage. The odds are minimal to lose a system or flatrack at the NTC. Damage to a system is the main concern. This can be mitigated by holding operators accountable.

Figure 10-13. Using a forklift to unload items from a palletized load system flatrack is not efficient. A better way is to drop the flatrack and pick up an empty one.

Stage 7C: Conduct Forward Logistics Element Operations

Observation

At the NTC, units are not advantageously employing forward logistics elements (FLEs) due to their inability to forecast, plan, and synchronize activities between supported units, the BSB, and CSSB. Poor forecasts make it difficult for the sustainment planner to develop the composition of the FLE, which usually leads to allocation of an arbitrary percentage of the BSB's capability. Most units send the SPO to perform initial set up and command of the FLE. They then replace the SPO with either the SPO deputy or an OIC from the A Company BSB. There is often more than one officer of the same rank at the FLE and it is sometimes unclear who is in charge. Many units fail to properly resource communication assets at the FLE. For example, some FLEs will not have a JCR and rely on FM or the Very Small Aperture Terminal (VSAT) to communicate with the BSB SPO. Units often do not clearly identify the supported units that will use the FLE. This usually results in the FLE becoming a retail point for anyone in the area. The supported battalions, BSB, and CSSB are unclear of the trigger to establish the FLE and the duration it will remain in place. As a result, units miss linkup or return to the BSA. The FLE location is chosen without knowledge of the location of future CTCPs, resulting in a less than optimal location for the FLE. Weapon platforms are usually limited in the BSB, forcing CDRs to make a decision on whether to assume risk at the BSA or the FLE. This results in the FLE not having the necessary security platforms to defend.

Discussion

The FLE operates out of a forward logistics base or support area. The FLE represents the BSB CDR's ability to weight the effort of the operation by drawing on all sustainment assets across the BCT. Sustainment planners typically plan an FLE when the BCT is moving forward, but it is not yet advantageous to relocate the entire BSA. The FLE is often used as a leapfrog location for the BSA to jump to, or jump beyond. The FLE shortens the LOC between the forward maneuver CTCPs and the supplies located on the BSA because FSC distribution platoons conduct supply point distribution from the FLE, not the BSA. Most sustainment planners realize that because the logistics LOC has exceeded the BSB's ability to conduct resupply, then the medical LOC has also been exceeded. Most units push the Role II locations and its accompaniments (personnel holding areas or mortuary affairs transfer points) with the FLE.

Considerations for Conducting FLE Planning

- Future operations (duration)
- Future site for BSA or leapfrog
- Mission command until BSA jumps
- Task and purpose
- Officer and noncommissioned OIC
- Communication (JCR/FM)
- Supplies and services (commodities)
- Resupply of the FLE
- Medical assets (Role I, Role II, mortuary affairs transfer point, personal holding areas)
- Security

Figure 10-14. An FLE consists of task-organized multifunctional logistics assets designed to support fast-moving offensive operations in the early phases of DA (ATP 4-90).

Recommendation

When planning for an FLE, sustainment planners must consider several factors such as future operations, mission command, commodities and services, medical assets, and security. Determine the task and purpose of the FLE early. Also consider who is supported from the FLE and if the BSB will jump to the FLE site or beyond, and when. Mission command of the FLE is critical, especially when the BSA is jumping. The BSB CDR and staff must identify who will be the OIC of the FLE. Observations have shown that the deputy SPO or A Company BSB CDR are ideal choices as FLE OICs. The mission typically is not the best place for the SPO. However, the BSB CDR may understandably want a field grade officer on the ground. Next, determine how units will communicate with the FLE. The JCR has proven to be the most effective and consistent platform. A hasty command center with a JCR can be established from the OIC's vehicle and monitored 24 hours a day.

With the decision to employ an FLE, the sustainment planner needs to consider the location, amount of commodities needed, and duration of the FLE. These factors will also allow the sustainment planner to plan resupply operations either through the BSB or echelons above brigade to augment the FLE. Understand the future CTCP locations before deciding the location of the FLE to ensure proximity between units.

The main decision is whether or not to push the Role II location and the components that accompany it with the FLE. A consideration when pushing the Role II location forward with the FLE are the security assets required to conduct ambulance exchange points, location of the brigade medical supply office for Class VIII resupply, and Nonsecure Internet Protocol Router (NIPR) connectivity (Defense Medical Logistics Standard Support Customer Assistance Module, Medical Communications for Combat Casualty Care, and Armed Forces Health Longitudinal Technology Application). At the NTC, units must push the mortuary affairs transfer point and the personal holding areas with the Role II facility in order to conduct reconstitution operations.

Lastly, the FLE must be able to secure itself. Security must be planned to include site selection and weapon platforms. The FLE OIC needs to establish sectors of fire and hasty battle positions for the Soldiers at the FLE. Units need to use the terrain to aid in the defense plan while remaining accessible for sustainment assets. If the FLE plans to conduct an LRP or execute ambulance exchange points, additional security is required.

Stage 7D: Plan and Use Air Assets for Logistics Distribution

Observation

Air assets as a method of distribution are rarely used at the NTC. The majority of units observed are either hesitant or unwilling to use rotary-wing assets due to the complexity of the operations or unfamiliarity with the air mission request (AMR) process. Most units do not conduct sling-load operations, low-cost low altitude delivery, or the containerized delivery system with rotary-wing aviation, which results in a less effective distribution system. Units rarely have a system to ensure the correct cargo and people get to the correct locations. Often, units do not know how to select and prepare helicopter landing zones (HLZs) and pickup zones (PZs).

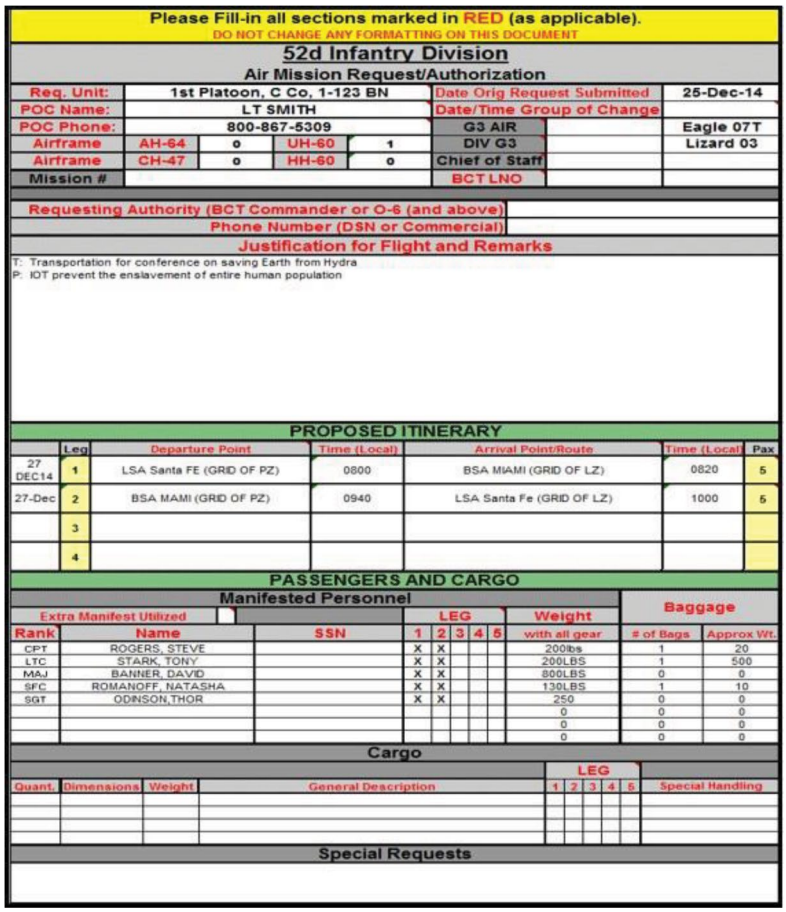
Discussion

Aviation assets offer flexibility, speed, and maneuverability to move supplies around the battlespace. Aviation assets require synchronization to maximize the economy of these limited assets. The process begins with the SPO and transportation officer conducting MA to determine available assets and different methods of air delivery. Air planning considerations include available resupply platforms, priority of resupply, and the selection of a usable HLZ. The SPO transportation officer then fills out and submits the AMR to the BAE who coordinates with the launch/mission authority for use of aviation assets. The BAE should collect the required sustainment missions, create a viable plan to allocate resources, and develop a COA to support the air request.

Recommendation

The BAE must work closely with the aviation unit and the SPO in order to establish routes, times, PZs, LZs, and the details for every AMR.

The BAE, SPO, S-4, and aviation task force S-3 must develop relationships, potentially through combined training, prior to a rotation at the NTC to understand capabilities and limitations. It is recommended they should practice submitting an AMR. The BAE and SPO should consider a ride-along team in the aircraft to facilitate the efficient loading and unloading of personnel and cargo at the right locations. Every unit using aircraft for logistics purposes needs to identify appropriate HLZs to accommodate all types of aircraft. Each HLZ should have an associated call sign and frequency to enable on-site coordination. It is imperative that when units move and the HLZs change, the aviation task force is notified so preplanned missions are not flown to old assembly areas. The final recommendation is to ensure trained (pathfinder, air assault, or sling-load inspector certification) and resourced (sling sets and basic issue items) sling-load teams are available at PZs and HLZs. Lastly, plan sling and cargo net recovery.



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52d Infantry Division
Air Mission Request/Authorization

Req. Unit:	1st Platoon, C Co, 1-123 BN				Date Orig Request Submitted		25-Dec-14
POC Name:	LT SMITH				Date/Time Group of Change		
POC Phone:	800-867-5309				G3 AIR		Eagle 07T
Airframe	AH-64	0	UH-60	1	DIV G3		Lizard 03
Airframe	CH-47	0	HH-60	0	Chief of Staff		
Mission #					BCT LNO		

Requesting Authority (BCT Commander or O-6 (and above)	
Phone Number (DSN or Commercial)	

Justification for Flight and Remarks

T: Transportation for conference on saving Earth from Hydra
P: IOT prevent the enslavement of entire human population

PROPOSED ITINERARY

	Leg	Departure Point	Time (Local)	Arrival Point/Route	Time (Local)	Pax
27 DEC14	1	LSA Santa FE (GRID OF PZ)	0800	BSA MIAMI (GRID OF LZ)	0820	5
27-Dec	2	BSA MAMI (GRID OF PZ)	0940	LSA Santa Fe (GRID OF LZ)	1000	5
	3					
	4					

PASSENGERS AND CARGO

Manifested Personnel

Extra Manifest Utilized			LEG					Weight	Baggage	
Rank	Name	SSN	1	2	3	4	5	with all gear	# of Bags	Approx Wt.
CPT	ROGERS, STEVE		X	X				200lbs	1	20
LTC	STARK, TONY		X	X				200LBS	1	500
MAJ	BANNER, DAVID		X	X				800LBS	0	0
SFC	ROMANOFF, NATASHA		X	X				130LBS	1	10
SGT	ODINSON,THOR		X	X				250	0	0
								0	0	0
								0	0	0
								0	0	0

Cargo

				LEG					
Quant.	Dimensions	Weight	General Description	1	2	3	4	5	Special Handling

Special Requests

Figure 10-15. Not understanding how to fill out and process the AMR is the number one reason units do not receive air-for-commodity movement.

Stage 8: Produce and Maintain an Accurate Logistics Common Operational Picture

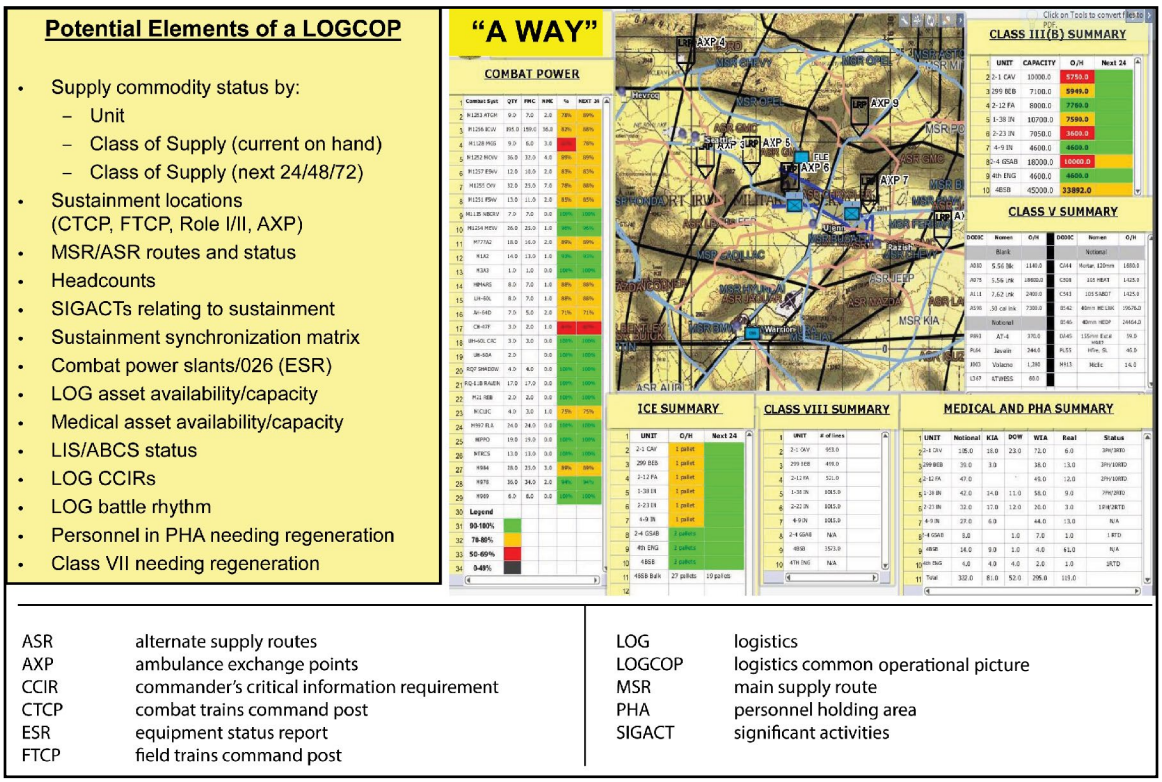

Figure 10-16. Elements of an effective LOGCOP

Observation

> *The LOGCOP enables the higher command and support units to make timely decisions, prioritize, cross-level, and synchronize the distribution of supplies to sustain units.*

There are often numerous LOGCOPS posted. LOGCOPS are often missing critical data or are not updated with the frequency required to draw on actionable data provided by the LOGSTAT to determine the sustainability and supportability of current and planned operations. The use of green, amber, red, and black do not have commonly understood definitions or percentages tied to them. Planners overreact when a status turns red, not understanding that systems have to go red and lower their stock to facilitate loading the total amount of inbound resupply.

Discussion

The LOGCOP is used throughout the BCT and at higher levels of command to provide a logistics snapshot of current on-hand quantities. It is also used to predict future requirements. Decision makers need a near real-time picture of logistics, human resources, and medical information linking the BCT to the sustainment brigade and theater planners. They need to maintain visibility of current and projected requirements, synchronize movement and materiel management, and maintain integrated visibility of transportation and supplies. Visibility enables responsive sustainment management, achieved through situational awareness (using a LOGCOP), total asset visibility, personnel tracking, and effective monitoring of distribution operations. The ability to monitor, measure, and manage end-to-end sustainment activities is fundamental to reduce the degree of friction inherent in a logistics pipeline.

Recommendation

Develop and maintain a LOGCOP that allows maneuver and logistics CDRs to view the same data in near real-time, enabling unity of command and unity of effort. The LOGCOP will then allow BCT leaders to see themselves in order to make informed and timely decisions. The BSB CDR in conjunction with the BCT XO/S-4 needs to determine ownership and the process for developing and maintaining the BCT LOGCOP. There should be only one LOGCOP for the BCT posted for all units' situational understanding. Successful units develop a LOGCOP that provides the BSB and BCT CDR with a single snapshot of the current sustainment status. First, units need to identify the major Classes of Supply (i.e., Classes I, III[B], and V), and medical status broken down by battalion. Second, a BCT combat power slant should also be added to provide the BCT CDR with a clear idea of the combat power available. Finally, a graphic representation of all of the logistic nodes (i.e., CTCPs, LRPs, ambulance exchange points, Role I and II facilities, FLE, BSA, main supply routes, and alternate supply routes, etc.) should be created to establish shared understanding. Successful units have also created battalion efforts, so they could be turned on and off as required. Lastly, ensure the terms and depictions of green, amber, red, and black are understood and tied to actual percentages.

Summary

Sustainment is a warfighting function that must be integrated with all other warfighting functions and trained to the same proficiency. Sustainment operations in DA are dynamic and require planning and synchronization. When sustainment operations are not synchronized and managed, the result is less effective as a result of emergency resupply missions, backhaul, and excessive time on the road for the distribution platoons. The worst potential outcome is ineffective sustainment operations affecting operations, such as a task force missing line of departure time on a mission because of fuel or ammunition issues. This chapter has described problems with sustainment observed at the NTC and how to overcome them by mastering the "cycle of logistics," which are the stages that build from receipt of mission into getting the service or product into the hands of the Soldier or system. Units that implement and practice these steps are better at sustaining themselves in the NTC DA environment. They are certainly more prepared to ensure freedom of action, extended operational reach, and prolonged endurance for the BCT regardless of future missions.

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