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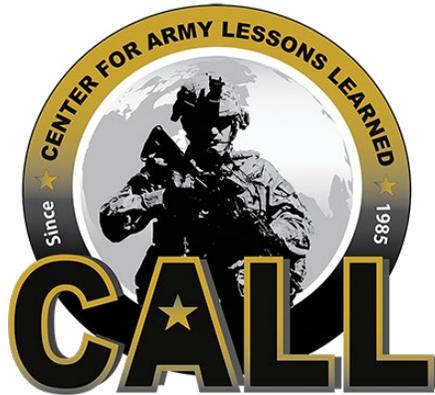
FEB 2018

BRIGADE SUSTAINMENT IN DECISIVE ACTION OPERATIONS



Lessons and Best Practices

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Brigade Sustainment in Decisive Action Operations

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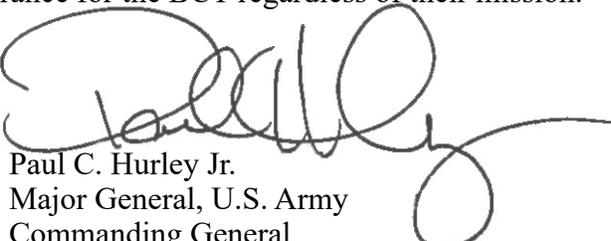


Foreword

Army sustainment planners are comfortable deploying into a mature theater where a majority of sustainment is already in place and much of it contracted out. Steady-state sustainment operations supported from forward operating bases like those in Iraq or Afghanistan do not exist in the decisive action (DA) operational environment (OE). The brigade combat team (BCT) decisive action operational environment at the National Training Center (NTC) is fast-paced, complex, and unpredictable. It replicates deployment into an immature theater where brigade combat team sustainment is conducted in an austere environment with only organic assets focusing on this fast-paced, complex, unpredictable combat against a regional-peer with counterinsurgency elements engaged in close combat operations. This complexity creates challenging BCT support operations requiring organized planning processes to synchronize sustainment execution.

Sustainment in DA operations is a dynamic challenge that requires technically sound sustainment leaders and Soldiers to plan, synchronize and execute successfully. Sustainment must be integrated with all other warfighting functions and consistently trained on to a high level of proficiency. When sustainment operations are not synchronized or managed, they limit the commander's options and freedom of movement. The worst possible outcome is ineffective sustainment negatively affecting maneuver forces from meeting their objectives.

The following collection presents sustainment observations, insight, and lessons learned at the NTC. Units which implement these practices will increase their likelihood of success in a decisive action environment and certainly be more prepared to ensure freedom of action, extended operational reach, and prolonged endurance for the BCT regardless of their mission.



Paul C. Hurley Jr.
Major General, U.S. Army
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Introduction

The Army is changing direction toward a decisive action training concept and few sustainment leaders have experienced this before. Performing quartermaster or other logistics functions on the move as well as defending and protecting are challenging for sustainment and maneuver formations. The trends captured from many of our training events indicate that most units have never planned, prepared, and conducted operations against a near-peer enemy either in combat or training.

The following collection outlines observations and best practices from the National Training Center (NTC). It exposes the challenges of providing sustainment in a decisive action environment but should assist units to tie the sustainment plan with the scheme of maneuver. It should also help develop home station training to address current gaps and shortfalls observed at the NTC.

We encourage units to support this effort by providing constant feedback from the field to the U.S. Army Quartermaster School, Combined Arms Support Command and the Center for Army Lessons Learned. Our aim is to ensure that your feedback is utilized which ultimately leads to doctrine, organization, training, materiel, leadership and education, personnel and facilities solutions in order to further assist our operational units supporting the warfighter.

Special thanks goes to the NTC's Gold Miner team for the tremendous efforts over the past 18 months to capture these essential sustainment lessons and share the best practices with the field.

A handwritten signature in black ink that reads "Rodney D. Fogg". The signature is written in a cursive, flowing style.

Rodney D. Fogg
Brigadier General, U.S. Army
Commandant
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Chapter 1

Follow the Cycle of Logistics in the Brigade Combat Team

COL Brent Coryell

Brigade combat team (BCT) sustainment operations in decisive action are dynamic and cyclic, progressing through eight “stages” that require disciplined management. When sustainment operations are not synchronized and managed using this cycle, the result is emergency resupply missions, backhaul, units showing up to the brigade support area “foraging” for what they need, and excessive time on the road for the distribution platoons. The cycle begins by conducting mission analysis and producing a logistics estimate, which is the most important part of military decisionmaking process for the sustainment planner. This is followed by publishing a concept of support (paragraph 4, and Annex F of the BCT operations order [OPORD]). After the OPORD is produced, tools and processes exist for logisticians to manage and synchronize the remaining stages in the cycle. Sustainment rehearsals provide the last opportunity to achieve a shared understanding of the support and casualty evacuation plan. Logistics status (LOGSTAT) reports drive logistics operations, and must identify logistics requirements, provide visibility on critical shortages, project mission capability, and provide input to the logistics common operational picture (LOGCOP). Logistics synchronization (LOGSYNC) meetings validate LOGSTAT reports, update the LOGSYNC matrix, and confirm quantities, method of distribution, times for resupply, and location. The LOGSYNC, arguably the most important document for a logistician, shows supported units the commodities they will receive, the time they will receive the commodities, and the method of receipt (supply point, logistic release point, combat sustainment support battalion throughput, etc.). Finally, the LOGCOP provides a single source of sustainment operations, however, care must be taken to avoid numerous LOGCOPs, thus negating the word “common.” The cycle repeats at the LOGSTAT, when the product or service is delivered to the end user or begins again at mission analysis after receipt of a new BCT mission.

See Figure 1-1 on the left for the cycle of brigade combat team sustainment in decisive action operations.

Chapter 2

Use the Military Decisionmaking Process to Plan Support Operations

COL Brent Coryell and CPT Ryan Breaux

Observation. During mission analysis (MA), many brigade combat teams (BCT) sustainment planners struggle with understanding unit capabilities and then in 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, and sustainment planners are reluctant to make assumptions to fill the gaps in planning. Often, sustainment planners plan in a vacuum and are not integrated with, and working concurrently with, the warfighting planners. The brigade support battalion (BSB) commander (CDR), the senior sustainer in the BCT, often does not operate harmoniously with the BCT due to conflicting agendas. This can lead to friction between the BSB CDR and BCT executive officer (XO) with the XO being overall responsible for BCT support, leading to de-synchronized efforts between the BSB and BCT staff.

Discussion. After receiving the BCT mission, the first step for any sustainment planner is mission analysis. Successful sustainment planners understand that to be successful, a Soldier must be fed, armed, and transported while his equipment must be maintained, fueled, and

During mission analysis, the sustainment planners must plan concurrently with the maneuver planners, not sequentially, to develop a concept of support (paragraph four, and annex F) for the operations order.

accounted for. For this to happen, 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; that is the 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.

The BSB CDR executes the BCT's concept of support and advises the BCT CDR on all aspects of sustainment support to the BCT. The BSB CDR coaches both the BSB and BCT staff on the importance of synchronized logistics and health service support. As the senior logistics CDR charged with responsibility to sustain the BCT, the BSB CDR must retain the ability to surge, mass, and re-allocate logistics capabilities according to the BCT CDR's intent and concept of the operation. Recommendations for logistics task organization for support to each maneuver battalion and squadron, the brigade engineer battalion, and the field artillery battalions are made by the BSB CDR to the BCT CDR.

The BCT XO provides the BCT oversight of operations and sustainment planning for the BCT CDR. The XO integrates and aligns the staff with the BCT CDR's priorities and intent. The XO's primary sustainment responsibilities are to synchronize the concept of support, developed by the support operations officer (SPO), with the BCT's scheme of maneuver. Additionally, the BCT XO provides oversight over the maintenance status of the BCT and synchronizes the maneuver task force XOs in maintenance management. The BCT XO sets the priorities for the BCT sustainment cell (personnel staff officer, logistics staff officer, contracting operations, and chaplain). Often, the BSB is either not part of the sustainment planning or receives information from the BCT too late for any BSB input to influence the BCT's sustainment plan.

Recommendation. Use all of the 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 XO, BCT command sergeant major, BCT S-4, BCT S-1, BCT surgeon, BCT chaplain, BSB CDR, BSB SPO, sustainment brigade SPO, and Army field support battalion 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 has overall responsibility for sustainment synchronization and execution across the BCT's operational environment (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. The BCT XO is responsible for synchronizing sustainment with the scheme of maneuver plan during its planning processes. The BSB CDR is responsible for recommendations to the BCT CDR for all logistics. When the BSB CDR is involved in the planning process with the BCT staff, this allows the BSB to anticipate requirements for the BCT. The BSB CDR should insert himself into the planning cycle to efficiently affect support for the BCT's mission.

Chapter 3

Remember the Sustainment Principles Using the Acronym “A CRISIS Exists”

COL (Retired) Mark Solseth and COL Brent Coryell

The seven sustainment principles discussed in Army Doctrine Publication (ADP) 4-0 can be useful during planning, however, many struggle to remember them. When they are used as guidance, those principles often add little to the planning effort. This article offers a way to remember the sustainment principles as well as a way to use them more effectively when providing commander’s guidance or while developing mission statements.

Captain Smith is the new brigade support battalion S-3 and listens closely to his battalion commander’s planning guidance, “S-3, I want an anticipatory, responsive, and simple plan; incorporate the other sustainment principles as you see fit. Let me see a draft at 1500.” Captain Smith, reviewing his notes, thinks “Okay, time to get cranking...and I’ll need to look up those sustainment principles to make sure I consider them all.”

The Army commonly uses mnemonic devices to easily remember complex information, examples include political, military, economic, social, infrastructure, information, physical environment, and time (PMESII-PT); mission, enemy, terrain and weather, troops, time available and civil considerations (METT-TC); area structures, capabilities, organizations, people, and events (ASCOPE).¹ Yet, there is not a mnemonic for the sustainment principles described in ADP 4-0.

These eight sustainment principles: anticipation, continuity, responsiveness, integration, simplicity, improvisation, survivability, and economy (some of which are often used in sustainment units’ mission statements and commanders’ key tasks) can be hard to remember. Often, they are used to describe operations that are not particularly helpful in enabling mission command. Usually, they add little to mission statements or commander’s guidance other than cheerleading words or wishful thinking. This article introduces a mnemonic to help users remember the sustainment principles, and it also discusses a way to use these principles in a more descriptive manner while issuing commander’s guidance or intent. Remembering the Army sustainment principles can be useful to others on the staff as a “guide for analytical thinking when assessing courses of action or plans/orders.”² These principles provide a useful approach to test aspects of the plan as it is being developed, and sometimes are included as criteria during course of action analysis.

A CRISIS Exists. It is helpful in remembering the sustainment principles mnemonic if the user visualizes himself as a sustainment planner on a planning staff, perhaps as part of a brigade planning group developing plans for an emergent operation, or as an Army crisis action sustainment planner working on a joint task force operational planning group or a combatant commander’s staff. Some type of crisis situation causes crisis action planning to start, so the mnemonic therefore is “A CRISIS Exists.” The first eight letters in this mnemonic are the first letter of each of the eight Army sustainment principles: Anticipation, Continuity, Responsiveness, Integration, Simplicity, Improvisation, Survivability, and Economy. Using “A CRISIS Exists” helps the planner or commander remember all the Army sustainment principles, which they can then consider using to provide guidance for planning and operations. This brings us to the second point of this article: Now that we have a way of remembering the sustainment principles, how do we make them useful?

Tactical-level commanders often do not use the sustainment principles very effectively; instead, the principles become buzzwords in mission statements and commander's intent that do not add much in regard to accomplishing the mission. We often see support battalion mission statements that contain elements of the sustainment principles. However, they add little to the mission command process because they are so non-descriptive that they do not add anything useful to the intent within which subordinates can exercise disciplined initiative. Consider the example mission statement below.

“On order (O/O) [or no later than date time group], the battalion occupies and defends a brigade support area [or logistics support area] vic. NV123459 and conducts logistics and health service support operations in support of the brigade combat teams (or sustainment brigade) operation in area of operation (AO) “desert” in order to ensure freedom of action (or extend operational reach, prolong endurance, etc.)”

The mission statement often has modifiers added to end up as such:

“O/O (or NLT DTG) The battalion occupies and defends a brigade support area or life support area vicinity NV123459 and conducts **anticipatory**, **responsive**, and **continuous** logistics and health service support operations in support of the BCT's (or sustainment brigade) operation in AO “desert” in order to ensure freedom of action (or extend operational reach, prolong endurance, etc.)”

Similarly, commander's intent often includes such phrases as the following: “My intent is to provide continuous, responsive, and anticipatory logistics support to units throughout the area of responsibility to facilitate the defeat of.....”

Sounds good, but are they useful modifiers? What do the words mean regarding accomplishing this mission? Do they add anything that further enables mission command? We would argue that most often they do not add much that is meaningful or that causes subordinates to do anything other than their doctrinal mission or execute the way they usually do based on their unit training and standard operating procedures. So, how does one make the sustainment principles of anticipation, continuity, responsiveness, integration, simplicity, improvisation, survivability, and economy more useful when issuing guidance? Below is the doctrinal description of the principles from ADP 4-0. We will make comments on some of them, and after their introduction, we will point out some overall observations about the principles.

Anticipation is the ability to foresee operational requirements and initiate actions that satisfy a response without waiting for an operations order or fragmentary order. Sustainment commanders and staffs visualize future operations, identify required support, and start the process of acquiring the sustainment that best supports the operation.

Try to act and not react. For example, anticipate that Soldiers air assaulting will need contingency truck transportation in the event aircraft cannot fly or that dismounted Soldiers will be tired of walking after completing the mission and will need light medium tactical vehicles (LMTVs) to return them to their tactical assembly areas. Sustainment planners who anticipate these requirements before maneuver task force commanders ask for them and posture LMTVs and drivers ahead of time are more successful. If there is no “pull” from the supported units, anticipate the requirement and “push.” Tactical unit S4s should also have a book, reference, or tool with planning factors for sustainment for their type of unit (e.g., vehicle fuel consumption rates, ammunition basic load, water consumption by environment type, etc.).

Continuity is the uninterrupted provision of sustainment across all levels of war. It is achieved through a system of integrated and focused networks linking sustainment across the levels of war, other service support capabilities, and to operations. It assures confidence in sustainment allowing commanders’ freedom of action, operational reach, and prolonged endurance.

At the tactical level of war (at which units at the National Training Center principally operate) this principle relates to having a battle rhythm for resupply based on synchronized and timely commodity distribution. That is to say the ability to deliver the right supplies and services, in the right quantity, at the right time and place. It involves physical distribution networks, systems, and data communications and uses interchangeable and modular exchange distribution assets like exchanging flat-racks. The goal is reducing distribution cycle times and providing required materiel to the user at the right time.

Responsiveness is the ability to react to changing requirements and respond to meet a unit’s support needs. Through responsive sustainment, commanders maintain operational focus and pressure, set the tempo of friendly operations to prevent exhaustion, replace ineffective units, and extend operational reach.

The ability to monitor and manage end-to-end sustainment activities is fundamental to reduce friction in a logistics pipeline. Instrumental in this is a practiced and enforced logistic status (LOGSTAT) report process. Preformatted Joint Capabilities Release reports work very well as observed at combat training centers. An example follows.

Table 3-1. LOGSTAT Joint Capabilities Release (JCR)/ Secure Voice over Internet Protocol (SVOIP).

LOGSTAT JCR/SVOIP				
LINE by Class	Capacity	On hand	Next 24 hours	Next 48 hours
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 IIIP				
Line 3B Class IIIB				
Line 4 Class IV by type or CCL				
Line 5 Class V by DODIC				
.50 cal/m2 (A598)				
7.62/240B (A111)				
5.56/M4 (A080)				
5.56/M249 (A075)				
SIM .ATWI S (BFV) (L367)				
SIM Tank-M1A2/Paladin-M109A6 (LA069)				
Line 7 Class VII by LIN				
Line 9 Class IX Major items				

Integration is combining all the elements of sustainment (tasks, functions, systems, processes, organizations) to operations assuring unity of command and effort. Army forces integrate sustainment with joint forces and multinational operations to maximize the complementary and reinforcing effects from each service and national resources. At the tactical level at the National Training Center, this includes integrating enabler units into the sustainment plan to ensure they are supported, and being clear regarding who is integrating attached units into their support and reporting plans during task organization and boundary changes.

Simplicity relates to processes and procedures to minimize the complexity of sustainment. Clarity of tasks, standardized and interoperable procedures, and clearly defined command relationships contribute to simplicity.

We are often told to use the KISS principle (in this case, keep it simple Soldier). To keep sustainment simple, use a support matrix that focuses on who is getting what – such as key commodities and amounts, when (time window), where (grid), and how (supply point, unit distribution, throughput, logistics release point, forward logistic element). Understood standard operating procedures and a routinely published matrix greatly assist in keeping it simple as everyone knows what to expect.

Improvisation is the ability to adapt sustainment operations to unexpected situations or circumstances affecting a mission. It includes creating, inventing, arranging, or fabricating what is needed from what is available. The sustainment commander must apply operational art to visualize complex operations and understand what is possible at the tactical level. These skills enable commanders to improvise operational and tactical actions when enemy actions or unexpected events disrupt sustainment operations.

Survivability includes all aspects of protecting personnel, weapons, and supplies while simultaneously deceiving the enemy (Joint Publication [JP] 3-34). Survivability consists of a quality or capability of military forces which permits them to avoid or withstand hostile actions or environmental conditions while retaining the ability to fulfill their primary mission. In mitigating risks and minimizing disruptions to sustainment, commanders often must rely on the use of redundant sustainment capabilities and alternative support plans.

Economy is providing sustainment resources in an efficient manner to enable a commander to employ all assets to achieve the greatest effect possible. It is achieved through efficient management and discipline, prioritizing and allocating resources, and capitalizing on joint interdependencies. It can also be achieved by contracting for support or using host nation resources to reduce or eliminate the use of military resources.

Practical Use of the Sustainment Principles

After considering the principles above, we have noted that while perhaps helpful in the aggregate, some of the principles are somewhat paradoxical. For example, does one need to improvise if requirements are properly anticipated? We want sustainment forces to be responsive but that likely implies proximity to supported forces and that may affect survivability. We want support to be integrated into the BCT's scheme of maneuver but in the offense which means moving support areas that affect continuity in the support plan. With that as background, how does one use the principles in a helpful manner? Rather than using them as mission statement buzzwords, we encourage commanders and staff to consider using them in describing how they want to position assets, sustain forces, and consider where they are willing to accept risk. Some examples are listed next, by sustainment principle.³

Anticipation. “We have time to thoroughly plan this operation and we will anticipate requirements through detailed coordination and well-developed logistics estimates. Additionally, if our communications are disrupted during execution and we do not receive logistic status reports, do not wait. We will push supplies forward knowing approximately what units need based on time and tempo. I am willing to assume risk in economy to get units what they need early in this operation without them asking. Build the pre-prepared packages “combo number 1” and “combo number 2” based off of historical averages and have “speed balls” of water and ammunition on standby prepared to launch with 30 minutes notice. Anticipate seasonal class IX repair parts surges like batteries due to cold weather or additional ice and water in hot weather.”

The observation at the NTC is that the tactical-level commanders do not use the sustainment principles effectively. Using “A CRISIS Exists” helps the planner and commander remember all the Army sustainment principles they can use to provide guidance for planning and operations.

Sustainment Principles

“A CRISIS Exists”

- Anticipation** - Foresee requirements and proactively take action without an operations order.
- Continuity** - Have a resupply battle rhythm based on synchronized and timely commodity distribution.
- Responsiveness** - Be able to react to changing requirements and respond to meet the needs.
- Integration** - Combine all operations of sustainment to operations for unity of command and effort.
- Simplicity** - Reduce the complexity of sustainment through clarity of tasks and standardized procedures.
- Improvisation** - Adapt sustainment operations to unexpected situations.
- Survivability** - Protect personnel, weapons, and supplies while deceiving the enemy.
- Economy** - Provide resources in a manner to employ all assets to achieve the greatest effect possible.

Figure 3-1. “A CRISIS Exists” sustainment principles.

Continuity. “We’re going to maintain continuity with supported forces by being thoroughly involved in their planning process through positioning liaison noncommissioned officers forward and by maintaining robust communications and reporting. Additionally, we will coordinate for throughput and the use of a forward logistics element when we move so we always have support capability in place while other elements are moving. Practicing primary, alternate, contingency, and emergency (PACE) communication plans is essential to our continuity and the cross training within sections and platoons. Practicing PACE plans will help us maintain high-tempo 24-hour operations.”

Responsiveness. “We must be very responsive during this operation. Position support areas far forward and keep supplies uploaded and units ready to move quickly. I’ll accept risk in survivability and economy.”

Integration. “Due to the tempo of this offensive operation, we’ll integrate our capabilities into the forward units by reinforcing the forward support companies with additional fuel and ammunition capability. Plan to recover these assets once supplies are consumed by the forward units and then we’ll transition to our more traditional approach of using supply point and unit distribution. Another example is to integrate our planners into the brigade staff and with forward units in the main effort to assist with planning.”

Simplicity. “We don’t have much experience in supporting the entire brigade in the field, so initially we’ll keep things simple by primarily using supply point distribution from the brigade support area. I want to progress toward executing logistic release point operations, especially for the far-forward or widely dispersed units such as the cavalry squadron. Another example is that we have not worked closely with the subordinate companies in the task-organized combat sustainment support battalion; therefore, we’ll operate from a single life support area rather than from base clusters.”

Improvisation. “Improvisation is what we’ll use to meet requirements for which there is a capability gap. The key is to identify the requirements, then the capabilities, then the gaps and then we figure out how to make up the difference. We are early in this unexpected deployment, so we have not had time to plan it thoroughly. I want our sustainers in the torch and advanced parties to be creative until we get the rest of our force there. Use contracting and host nation support, perhaps create log task forces by pooling resources from multiple units until we have more cohesive forces there. I’ll underwrite risks that you take in making things happen.”

Survivability. “Certainly, we always want our formation and all in it to survive, so this the survivability principle is always important in operations but it can be used to describe acceptable risk. For example, I want equipment in our support area widely dispersed or in base clusters because I think the artillery threat could have the most significant impact on our ability to support. Or, I want the formation tight so we can better secure our perimeter against the insurgent threat. Priority in preparation goes to our convoy battle drills, and I want to rehearse increasing our brigade/life support area perimeter and casualty evacuation.”

Economy. “We are at the phase of the operation where we have a robust reporting structure and so we’ll rely on units “pulling” resources based on their logistics status. Confirm what is required during our logistics synchronization meetings before we send assets forward. Make sure we are disciplined in trans-loading fuel and water assets to minimize what we have on the road; put one empty tanker on the road rather than three that have a third of their load.”

The above examples provide some specific examples of how to use the sustainment principles; however, the broader point is to make the principles useful to subordinates and planners. Make their addition into mission statements and intent mean something. Captain Smith, the S-3 introduced at the beginning of the article, now has a mnemonic to help him remember the eight sustainment principles and he has some ideas about ways to use them more descriptively while drafting or issuing intent and guidance. He is now certain that he can progress from not really knowing what his commander meant and from using the principles as cheerleading buzzwords to making them meaningful additions to the battalion’s operations process. By using “A CRISIS Exists,” you can too.

Notes

1. PMESII-PT and METT-TC are operational and mission variables, and ASCOPE is used to consider critical aspects of the civil situation. All are described in FM 6-0 and many other publications.

2. JP 4-0, page III-3. While the Army sustainment principles are slightly different than the joint principles of logistics (responsiveness, simplicity, flexibility, economy, attainability, and sustainability), they also offer a useful analytical tool when planning sustainment.

3. ADP 4-0, 31 July 2012, pages 3-4. The definitions are directly from the publication; however, the authors present them in a different sequence so they follow the mnemonic introduced.

Chapter 4

Forecast Sustainment Requirements and Produce a Logistics Estimate

CPT Michael Johnson and COL Brent Coryell

Accurate forecasting of logistic requirements is a crucial and yet often overlooked process in the mission analysis phase of the military decisionmaking process (MDMP) by brigade combat team (BCT) logistics planners. BCT logistics planners tend to submit the same requests day-to-day instead of conducting analysis based on the future mission and factors such as requirements, consumption rates, time, and distance. Many BCTs rely on a “swag,” or “auto,” depending on a default push of supplies from higher echelons to satisfy requirements with no analysis of what requirements actually are. This failure to forecast commits unneeded distribution assets and often results in a backhaul of large quantities of supply, wasting man-hours and putting Soldiers at increased risk. It also fails to anticipate requirements for changing missions such as a transition from defensive to offensive operations. While occasionally effective in sustaining units for the short term, this methodology is very inefficient and is not sustainable over long periods.

Forecasting support requirements begins in mission analysis and is the most important mental process for the logistics planner. Mission analysis for logistics planners should be a focused means to define the current operational environment in terms of capabilities, requirements, assessment, and mitigation. In short, what do I have, what don't I have, what do I need, and how do I get what I need? With that understanding, the foundation for accurate forecasting is the use of standard logistics estimation tools that analyze distances and usage hours derived from the scheme of maneuver with calculated consumption rates to task organized equipment densities. This produces a logistics estimate that mitigates shortfalls and eliminates unnecessary backhaul.

Historical data is a good starting point or guide but it should not be the primary forecasting method when conducting an estimate for a new operation. Historical data is valuable only when an operation has matured enough to be applicable to the situation. For example, consumption rates for an attack in a forested temperate environment will differ vastly from one in an arid desert. In addition, training data, while historical, will not completely mimic deployed combat operations.

Below are procedural estimates and examples for each class of supply based on published consumption rates. Each class of supply is listed in order by class, not necessarily in order of importance.

Class I: Subsistence

Forecasting Class I (CL I) meals and water is crucial for sustainment planning. Since it is primarily population based, CL I is not as influenced by the maneuver operation as are most other supply classes, providing more consistency to planners.

Meals

Logistics planners forecast meals needed to sustain the force based on the headcount of how many Soldiers multiplied by the ration cycle of what type of meal multiplied by the issue cycle of how often bulk rations are delivered. There are three categories of meals: Meals, Ready to Eat (MRE); Unitized Group Ration-A Option (UGR-A); and UGR-Heat and Serve (UGR H&S). When multiple ration types are used, planners account for each type individually with the forecasted rations being the final sum.

Table 4-1. Class I MRE and UGR weight and pallet conversion.

Class I transportation planning factors: MREs	
Ration Package	Weight
Meals per case	12
Cases/pallet	48
Weight/case	22.7 pounds
Weight/pallet	1089 pounds
Class I transportation planning factors: unitized group rations (UGR)	
Ration Package	Weight
Servings/module	50
Modules/pallet	8 (400 servings)
Weight/module	128 pounds
Weight/pallet	1020 pounds
Pallet size	40 inches by 48 inches by 40 inches

Meal example. If 100 Soldiers on an M-M-M ration cycle were issued a “2” cycle, the total MREs needed would be 600 meals (100 headcount x 3 M per day x 2 days). Since meals are transported by cases/modules and pallets, the value would be converted using the chart shown. In the example, 600 meals would equate to 50 cases, or one pallet of MREs plus two additional cases. If conducting phased operations, the issue cycle could cover each phase and so a four-day phase would be an issue of “4” pending unit haul and storage capabilities.

Planners should adjust their total values to account for variances and unforeseen changes. Ten percent should be added to account for unforeseen changes, such as an unexpected attachment of a unit. Additional meals may be required for humanitarian aid such as internally displaced personnel and personnel holding, such as detainees and enemy prisoners of war.

There are two primary considerations when transporting CL I meals: storing perishable items and transporting cooked UGR meals. Units must consider the use of ice and Multi-Temperature Refrigerating Container Systems (MTRCS) when incorporating perishable items into the ration cycle. Failure to do so results in supplements being spoiled and wasted. Module 3 UGRs are the only meals needing cold storage in order to remain safe to consume.

Time must be considered when cooking UGR meals. Once the UGR is at the correct temperature, it must be consumed in four hours. Planners must be cognizant of where a unit’s assault/ containerized kitchen is located in relation to the forward troops. General planning factors are 20-35 minutes of upload and download time (40 to 70 minutes total) plus actual time traveled.

Water Forecasting can be Categorized into Bulk, Ice, and Decontamination Planning.

Bulk Water

During fiscal year 2015, 59,800 gallons of bulk water were backhauled between forward support company (FSC) and brigade support battalion (BSB) units at the National Training Center (NTC) resulting in unneeded utilization of personnel and equipment.

Table 4-2. Bulk water storage and requirements.

Bulk water storage requirements								
Modes of movement (capacity in gallons)					Bulk fixed storage (capacity in gallons)			
Buffalo	Bivets	Hippo	Camel	3K SMFT	5 K SMFT	Onion skin	20K	50K
400	500	2,000	900	3,000	5,000	500	20,000	50,000

Bulk water planning follows the same MDMP process in terms of identifying capabilities, requirements, and shortfalls. The BCT support operations section and brigade or battalion S-4s can calculate available water capabilities at echelon based on on-hand asset availability to understand the maximum water capability at each unit.

Table 4-3. Water consumption factors in gallons/person/day.

Use	Temperate	Tropical	Arid	Arctic
Drinking water	1.5	3.0	3.0	2.0
Personal hygiene	1.7	1.7	1.7	1.7
Field feeding	2.8	2.8	2.8	2.8
Heat injury treatment	.1	.2	.2	.1
Vehicle maintenance	--	--	.2	--
Standard planning factor	6.1	7.7	7.9	6.6

Bulk water planning is similar to class I meals in that it is calculated on a per-person, per-day cycle. Planners should use this in their initial analysis for forecasting proper requirements. Adjust the water consumption requirements with historical data as the operation progresses. Mortuary affairs operations are an additional planning factor considered at the BSB level. Four gallons per set of remains are needed for processing.

Ice

Ice is forecasted on a per-person, per-day basis based on the operational environment. Recommended planning factors in pounds per bag per person are arid-6, tropic-5, temperate-4, and artic-3. The bag size will determine how many bags per pallet are needed (for example, 103 20-pound bags fit on one wooden pallet). MTRCS are used for ice storage, with 14 pallets fitting into one MTRCS.

Decontamination

Decontamination operations require substantial water requirements for each Soldier and vehicle contaminated. The unit decontamination crew conducts vehicle wash down in the unit area of operation (AO). For operational decontamination, the vehicle wash-down crew may use 100 to 150 gallons of hot soapy water on each vehicle to wash off gross contamination. For combat vehicles such as the M1 series armored fighting vehicles, 200 gallons or more of water may be required per vehicle. Each 100 gallons of water provides a two-three minute wash. (Field Manual 3-11.5, Chapter 12, May 2006). For detailed equipment decontamination, the gallons required is higher. For troop decontamination beyond mission oriented protective posture (MOPP) exchange, water requirements are 250 gallons per 10 Soldiers or 25 gallons per person (FM 3-11.5).

Table 4-4. Detailed equipment decontamination planning factors.

Equipment Application	M12A1 PDDA Rinse		M17 LDS Rinse	
	Gallons applied	Minutes applied	Gallons applied	Minutes applied
M1 Tank	325	12	57	14
M2 BFV	325	12	57	14
M113 APC	203	9	38	10
M109A Paladin	325	12	57	14
HEMTT	180	8	30	12
5-Ton Truck	158	7	42	11
HMMWV	90	4	23	6
Note: The rinse is done with the spray wand for the M17.				
PDDA: power-driven decontaminating apparatus				
LDS: lightweight decontamination system				

Class II: Clothing and Equipment

Successful CL II forecasting resides at the unit supply level, where inventories are conducted on a regular basis to avoid a stock-out of critical office supplies, clothing, and equipment. Soldiers deploy with an initial load of clothing and equipment, and are fielded theater-specific equipment during the unit’s reception, staging, onward movement, and integration into theater. It is difficult to forecast CL II in relation to phases of the maneuver operation, as each echelon will consume supplies at different rates. Planners should be cognizant of the need for CL II, and work in close coordination with the BSB’s supply support activity (SSA) to determine transportation requirements needed for CL II requests.

Class III: Petroleum, Oil, and Lubricants

CL III can affect the success or failure of any unit conducting combat operations. Class III is categorized into bulk fuel (CLIII [B], including gasoline, diesel, and aviation fuel), as well as packaged (CLIII [P] which includes greases, oils, and lubricants).

Bulk CL III is a complex class of supply to forecast due to the large variety of vehicle types, consumption rates, terrain, and hours of use. Determining bulk fuel carrying capability is the same as bulk water. In other words, multiply available assets by their capacity amounts. Storage assets should never be filled to maximum capacity as expansion must be considered to avoid damage to personnel and equipment. Determining CL III requirements requires detailed analysis of the maneuver concept of the operation. Forecasters determine estimated fuel usage for each vehicle using the following formula: Number of vehicles x gas per hour (GPH) consumption x time in operation.

Table 4-5. Bulk fuel storage capability.

Fuel Planning Factors							
	Bulk Tanks	M1062 7.5K	M1969 5K	M978 HEMTT	500 Gallon Blivot	TPU PODS	MPS
Usable capacity		7,425	4,800	4,800	500	500	2500
Bulk fill rate (GPM)	600	300	600	600	125	125	
Self-load rate (GPM)	600	300	300	300			
Retail flow per nozzle	50			60		25	
Number of nozzles	2			2	1	2	

CL III bulk example: A mechanized infantry company comprised of 14 M2 Bradley Fighting Vehicles is conducting a one-day operation on cross-country terrain. In a 24 hour period, they are expected to be at a tactical idle for 16 hours, and traverse cross-country for 8 hours. Expected fuel consumption at idle would be $14 \times 1.4 \times 16 = \sim 314$ gallons. Expected fuel consumption during cross-country operations is $14 \times 18 \times 8 = 2,016$ gallons. Total estimated fuel consumption for the operation is 2,330 gallons.

Table 4-6. Vehicle consumption rates in GPH.

Vehicle	Idle	Cross-Country	Road
M1	17.3	56.6	44.6
M2/3	1.4	18.0	8.6
M113	1.0	10.5	8.9
M88	2.0	42.0	31.0
M9 ACE	1.4	12.6	9.3
M109A6	2.2	16.0	11.8
MLRS	1.3	15.0	8.6

This process is then used for each vehicle type within a unit. While detailed, it provides an accurate estimate of CL III (B) consumption that will help identify and mitigate shortfalls to ensure operational success. As with other classes of supply, adjust amounts based on historical data and actual consumption.

Table 4-7. Aviation planning factors.

Aircraft	AH-64A	AH-64D	OH-58D	CH-47D	UH-60L
Maximum speed in knots	170	150	120	170	193
Cruising speed in knots	120	120	90	120	120
Endurance in hours	2.3	2.3	2.0	2.5	2.5
Range in miles/ kilometers	260/430	260/430	180/300	345/575	300/500
Passenger seats (PAX)	NA	NA	1	33	11
Litter evacuation	NA	NA	NA	24	6
Ambulatory evacuation	NA	NA	NA	31	7

Calculate aviation fuel requirements the same as ground equipment. The number of aircraft multiplied by air hours allows planners to compute the estimated fuel needed.

Packaged Class III

Packaged CL III forecasting requires coordination with supporting maintenance elements. There is currently no single source manual of CL III (P) requirements by vehicle type. Unit standard operating procedures (SOPs) usually do not address the CL III (P) basic loads required by vehicle platform. Poor planning for packaged lubricants has detrimental effects, commonly seen problems at NTC are engines low on oil or tracks that cannot be adjusted due to lack of grease for artillery or automotive. Most units deploy with 15-30 days of packaged lubricants on-hand as part of their stockage listing. Environmental considerations such as dust, snow, and rain affect the consumption rate of CL III (P). Sustainers must also analyze transportation trends regarding how long items take to arrive at the SSA so timely replenishment occurs.

Class IV: Construction Material

The planning of CL IV is conducted when planning for a phased defensive operation and for sustained unit defense. Every echelon is involved in materials planning and resourcing. Division echelons are responsible for determining each module configuration for their subordinate units. Each module will dictate the national stock number (NSN), nomenclature, quantity and unit of issue for a given defensive combat configured load (CCL). These modules are found in the division operations order Annex G (Engineering), Appendix 3 (General Engineering), Tab C (Engineer Specific Combat Configured Loads).

Logistics planners must coordinate closely with the BCT engineer planner for forecasting CL IV at the BCT and below level. The BCT engineer planner is responsible for determining the CCLs needed based on the BCT's defensive operation. He or she tasks how many modules are resourced for each battalion and where in the BCT's AO the CCLs are initially placed. The CCLs are built on container roll-in/roll-out platforms (CROPs) or flat racks, using a brigade-tasked detail supervised by the brigade engineer battalion (BEB). CCLs can be built by the supporting echelon above brigade (EAB) units if multiple BCT are operating within the same area. The BSB support operations officer (SPO) coordinates transportation of CCLs to supported units based on the BCT engineer planner's tasking. Each CCL should be delivered to the supporting FSC no later than 48 hours out prior to the start of the defensive operation in order to give maneuver units time to establish and improve their defensive positions.

Aside from planning phased defensive operations, CL IV is also used in sustained unit defense for force protection. Units training at NTC consistently fail to plan for adequate CL IV resources when building triple-strand concertina wire defense, a result of a lack of understanding in resourcing CL IV for the defense. Planning for a sustained unit defense is a collaborative effort between the battalion executive officer (XO) and S-4 where three primary defensive methods are integrated. The first is the use of engineer assets to construct berms and hasty fighting positions. This is the preferred method due to the increased protection, lower use of unit resources, and decreased transportation assets. The second is through the construction of triple-strand concertina wire around the unit's perimeter. Planners should ensure adequate amounts of materials are requested by referencing Technical Manual 3-34.85, Table 6-2, for resourcing sustained unit defense. The final method is a combination of the previous two that integrates each strength against the terrain defended.

Class V: Ammunition

Ammunition is forecasted through the Total Ammunition Management Information System (TAMIS), operated by the brigade ammunition office (BAO). Weapon density, number of personnel, and specific mission requirements will determine the requirement. Unit basic load (UBL), could vary with each operation. Note that there is no "one size fits all" UBL for an entire operation. Each combat phase may require unique ammunition. For example, high-explosive grenades for an attack, and family of scatterable mines for a defense. Controlled supply rates are also considered by referencing the brigade operations order, Annex F, paragraph 4, section 3 (Supply).

Once UBLs are determined by the BAO, BCT Master Gunner, and BCT S-4 and also validated through TAMIS, they are received from the ammunition supply point in mission configured loads (MCLs) which must be reconfigured into combat loads for each subordinate unit. Ammunition planners reference the Conventional Ammunition Packaging and Unit Load Data Index to determine transportation requirements for issuing to units by analyzing the compatibility and weight and cube dimensions of each set of ammunition. This determines how many CCLs are built for each subordinate unit. The planning factor for UBLs is three basic loads for a brigade-sized element: one with the unit with the weapon system (company level), one with the combat trains command post at the FSC (battalion level), and one stored at the ammunition transfer holding point (ATHP) (brigade level). This will enable smooth issuing of ammunition as a phase progresses. Sustainers need to account for the basic loads and should be able to transport all combat loads with organic assets (Army Regulation 710-2, 2-19).

The final forecasting consideration is how ammunition is replenished beyond the first two basic loads. Unit replenishment from the ATHP to battalion units is accomplished through expenditure reports. While the exact process is determined by unit SOPs, expenditure reports are the only method to bring a unit's UBL back to 100 percent after each combat engagement. Companies should incorporate an expenditure reporting process through their platoon sergeants to ensure accurate replenishment can occur. Battalion S-4s ensure that each logistics status (LOGSTAT) captures what has been expended. The expenditure report is sent to provide the BAO time to request additional ammunition as needed prior to subordinate units turning in their requests. The expenditure report itself is not an ammunition request. Unit S-4s are still responsible for requesting replenishment on a Department of the Army Form 581, Request for Issue and Turn-In of Ammunition.

Class VIII: Medical Material

Medical elements typically deploy with three days of supply of CL VIII in support of their battalion. When forecasting CL VIII requirements for medical operations, consider the mission, location, projected causality rates, and available medical assets. Determining multiple courses of action and methods of execution will ensure accessibility of supplies and the frequency of their delivery. Additionally, understanding projected battle casualty rates is crucial for forecasting unit requirements. Other considerations, such as disease and accidents, should be included in estimates.

Class IX: Repair Parts and Components

Class IX is extremely difficult to forecast during an operation due to the unknowns involved with equipment wear and tear. Planners work in coordination with the SSA and maintenance support elements to best predict what and how much CL IX is needed for an operation. The time of year and operational environment will factor into CL IX requirements. For example, winter requires additional batteries, where mountainous terrain will require additional tires. Units deploy with the SSA's authorized stockage list that will contain common use items for the unit. Coordination with the 920B SSA technician will help determine what transportation assets are needed to transport CL IX to subordinate units.

Transportation

Transportation requirements are interconnected to every class of supply forecasted. Transportation capabilities and requirements must be properly planned to support units. Too little, and multiple trips are needed to distribute supplies. Too much increases class III and IX supplies required and results in a backhaul of large quantities of supply, wasted man-hours, and commitment of unneeded logistic assets. Transportation is forecasted based on two things: (1) the analysis of how many pallets are needed per class of supply, (2) the determination of the time needed to deliver supplies to subordinate units.

Table 4-8. Pallet and time factors per major transportation asset.

Asset	Ware- house Pallets	436Ls Pallets	Min- utes up/ down load	Max Pers	Max Litter	Max Amb- ulatory
20' container	16		10			
40' container	32		10			
M872 Trailer	18		10	30		
M871 Trailer	12	4	8	50		
Supply van	12	3	8			
463L Pallet	4					
PLS Flatrack	10	2	2			
LMTV	6		4	16		
MTV	8		6	18		
HEMTT	8		6			
Bus						
UH-60/HH-60 Black-hawk					6	1
CH-47 Chinook	12	3			8	19
UH-72 Lakota					2	8
CH-46 Sea Knight					6	15
CH-53 Sea Stallion					8	19
V-22 Osprey					12	24
Sherpa	4				24	30
C-130 Hercules		6			50	27
C-141 Starlifter		13			48	38
C-5 Galaxy		36				70
C-17 Globe-master		18		54	36	102
C-21					1	3

Proper transportation forecasting relies on understanding how many assets will fit on a vehicle. For classes of supply, warehouse pallets are the common transportation planning factor because all physical equipment is bound to pallets and the end state for most requirements is the number of pallets needed for transportation. For personnel transportation, passenger seats and available litter and ambulatory spots are needed. Supplies bound on pallets can sometimes be double-stacked, effectively doubling the available space. Planners should be cautious when doubling loose items, as the top stack will lose integrity in tough terrain.

Transportation time-distance factors are important to forecast as they allow synchronization of efforts at echelons by dictating movement times and total time on the road. Convoy times can be determined by dividing the distance traveled by the speed limit (time = distance/speed). Leaders must also take into account “on-station” time which is the time needed to upload and download equipment. This analysis will help leaders plan the total time needed for a convoy and help subordinate units synchronize their efforts for maneuver units.

Fighter management is the final planning factor for transportation assets. The distribution company and FSC distribution platoon are responsible for managing transportation assets to ensure vehicles and personnel are readily available for convoy operations. Units that place all of their assets into operation at one time assume increased risk and prevent allocation of resources for emergencies that arise. If missions allow, units should strive to place one third of their equipment and personnel in a stand-down status at any time in order to conduct maintenance, administrative, and rest operations.

Conclusion

Accurately forecasting logistics requirements is a crucial, yet often overlooked process in a sustainment planner’s processes. Relying on a default push of supplies results in wasted man hours, increased risk to Soldiers, and unneeded commitment of logistic assets. Knowledge of forecasting and mission analysis conducted at each phase of the operation will provide units the ability to provide unit commanders with a logistics estimate that will sustain the force through any operation. Defining unit capabilities, shortfalls, and mitigations through detailed analysis and forecasting will ultimately shape the sustainment battlefield, expanding the combat commander’s operational reach as well as freedom of action and operational endurance.

“A firm doctrinal grasp enables sustainment staffs to use and apply the planning tools and other doctrinal reference to facilitate knowledge and understanding of the sustainment systems.”
(Army Doctrine Publication 4-0).

Table 4-9. Forecasting summary. Sustainment planners should focus on completing the logistics estimate during the mission analysis process.

<p><u>Class I: Meals (MRE/UGR)</u> </p> <ul style="list-style-type: none"> • Population (headcount) = 3 meals a day • Ration cycle (MRE VS UGR) / issue cycle • Perishables need refrigeration (Matrix/Reefer) • Insulated containers (< 4 hours in Mermite) 	<p><u>Class I: Water and Ice</u> </p> <ul style="list-style-type: none"> • Storage Capacity (Buffalo/Hippo/Can) • Soldier water = 8 gal per day in arid • Soldier ice = 6 lbs per day in arid • Decontamination / Mortuary Affairs 	<p><u>Class II: Clothing and Equipment</u> </p> <ul style="list-style-type: none"> • Deploy with basic load of OCIE • Factored into the SSA's ASL • Unit Supply Room
<p><u>Class III: POL Bulk</u> </p> <ul style="list-style-type: none"> • Equipment density and fuel tank capacity • Haul and storage capacity (M969/MFS/HEMMT) • Distance traveled and consumption rate (MPG) • Tactical idle/ Cross Country/Generators 	<p><u>Class I: POL Packaged</u> </p> <ul style="list-style-type: none"> • UBL- what does vehicle carry • 5 gal can vs 55 gal drum • Environmental considerations (spill kit) 	<p><u>CLIV: Construction Material</u> </p> <ul style="list-style-type: none"> • Primarily a consideration in the defense • Building the CCL • Transportation intensive • CSSB throughput
<p><u>CLV: Ammunition</u> </p> <ul style="list-style-type: none"> • Understand Soldier/system combat loads • CSR and RSR • Expenditure reports • Master Gunner forecasts, BAO manages 	<p><u>CL VIII: Medical Supplies</u> </p> <ul style="list-style-type: none"> • Number of CLS Bags and IFAKS • BMSO ASL • Controlled items (pharmaceuticals/needles) • MEDEVAC/CASEVAC backhaul 	<p><u>CLIX: Repair Parts and Components</u> </p> <ul style="list-style-type: none"> • Hard to forecast except by demand analysis • Bench Stock / SSL / ASL • seasonal = batteries

Chapter 5

Produce and Publish an Executable Concept of Support:
Paragraph 4 and Annex F of the Mission Order

COL Brent Coryell and CPT Ryan Breaux

Observation. In the decisive action operational environment, brigade combat team (BCT) sustainment planners have difficulty in developing a clear anticipatory support plan and translating that plan into a coherent written paragraph 4 and Annex F. There is often a blurred line between the support operations officer (SPO) and BCT S-4 responsibilities when producing these products for the order. The BCT S-4 and the SPO are often not synchronized in the orders production process; and so, this causes confusion during sustainment planning and execution. Personality often influences who leads this effort. Frequently, one or the other does the preponderance of the work and rarely do they work on it together. The BCT SPO executes the concept of support and therefore has an obligation to be involved in the planning. BCT S-4's who write support plans without SPO involvement and concurrence often suffer ineffective mission execution.

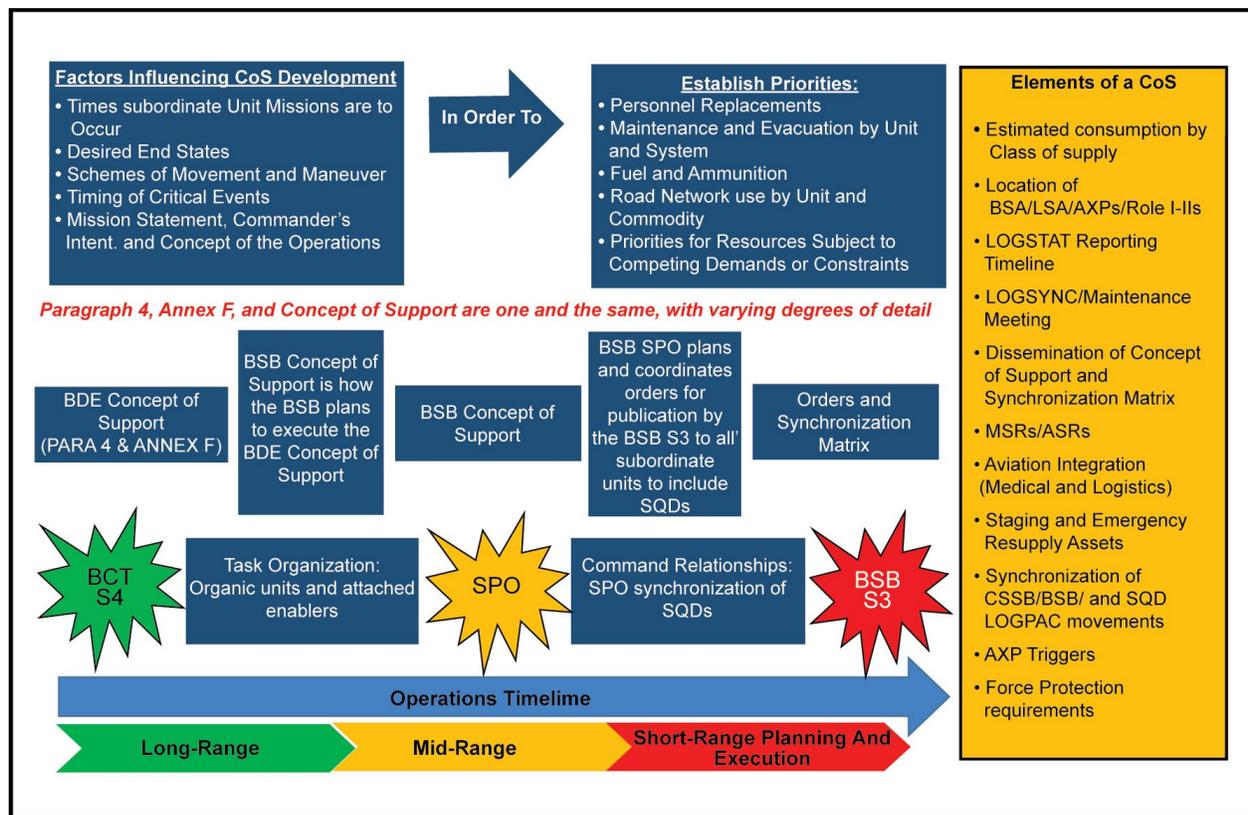


Figure 5-1. Creation and elements of the concept of support.

Discussion. The military decisionmaking process ends when the results of the mission analysis 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 and is where you find the specific details of who, what, when, where, and how. If these details are not addressed and paragraph 4 and Annex F are a copy/paste action from the last order that lack the detail required to gain an understanding of

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 and not separate and distinct products.

the concept of support for the current mission, those who are supported lose confidence and rarely even read them. The BCT S-4 and SPO must both be actively involved in making the sustainment plan and their responsibilities should be understood. Often this is developed through experience by working together. Sometimes it is

directed by the BCT executive officer or S-3 or influenced by the brigade support battalion (BSB) commander (CDR).

Desynchronization starts if the BCT S-4 and the SPO plan in a vacuum before operations even begin. The BCT S-4 coordinates logistics operations and plans, with special emphasis but not limited to, long-range planning. The S-4 provides staff oversight to subordinate units in the areas of supply, maintenance, transportation, and field services. The S-4 staff integrate themselves between the BCT commander, staff, and the BSB commander who execute sustainment operations for the BCT. The BCT S-4 has a very functional but not multi-functional staff and is limited in the number of sustainment planners. This makes it critical that the BCT S-4 collaborate with the SPO when writing paragraph 4 and Annex F of the BCT operations order (OPORD). The BCT S-4's most important duty is development of the BCT's sustainment plan that is executed by the BSB SPO.

The SPO assigned to the BSB is not part of the BCT staff. However, the SPO serves as the principal staff officer responsible for synchronizing BSB sustainment operations for all units assigned or attached to the BCT. The SPO applies sustainment capabilities against BCT requirements, conducts short- and mid-range planning of hours and days and executes the sustainment plan developed by the BCT S-4. The SPO also interfaces between supported units and the sustainment brigade and coordinates support requirements with the sustainment brigade SPO.

Recommendation. Annex F of the BCT OPORD is the concept of support. It is imperative that the BCT S-4 and the SPO collaborate in the sustainment planning for the BCT. We recommend the SPO produce the concept of support, supported by paragraph 4 and Annex F, depicting the execution plan for supporting the BCT's operations. These orders include a synchronization matrix outlining the plan for execution and enabling the BCT S-4 and all subordinate BSB units to maintain awareness of the BCT support plan.

Units who have clearly delineated roles between the BCT S-4 and SPO are more successful. To be effective, paragraph 4 must cover priorities for resources, locations of logistics support area, brigade support area (BSA), ambulance exchange points, Role I, Role II, main supply routes, and alternate supply routes. Annex F must cover who is getting what (commodities), when (time window), where (BSA, forward logistics element, logistic release point), 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 back briefs ensure the order is understood. Good products allow commanders to begin the next stage rehearsals.

Chapter 6

Conduct an Effective Sustainment Rehearsal

COL Brent Coryell

Elements of a Sustainment Rehearsal

The sustainment rehearsal is where key sustainment actions are practiced and allows participants to translate the tactical plan into visual impressions that leave a lasting mental picture of the sequence of key sustainment actions.

"The BCT sustainment rehearsal ensures the synchronization of sustainment efforts before, during and after combat operations. It also validates "the who, what, when, where and how" of support. The sustainment rehearsal usually occurs after the combined arms and FSC rehearsals and should not last more than 90 minutes" - FM 3-90.6

<p>Attendees</p> <p>BDE CDR/CSM BSB CDR BCT XO BN CSMs BCT S4 BCT S1 BCT SURG BCT MED PLNR BSB SPO BN XOs CHAPLAIN BCT S2 REP BCT S3 BSMC CDR BN S1s BN S4s MED PLs CSSB REP FSC CDRs BLST</p>	<p>A rehearsal is a session in which a staff or unit practices expected actions to improve performance during execution. FM 6-0</p>	<p>Sustainment Rehearsal Roles/Areas</p> <p>BCT XO: Roll Call BCT CDR or BSB CDR: Opening Remarks, Priority of Support, Priority of Maintenance, CDRs intent BCT S3: Overview of Terrain, Task Org, Concept of the Operation by phase BCT S-2: Overview of Enemy Situation, MSRs/ASR BCT SPO: BSA FTCP and CTCP Locations, LOGSTAT Reporting, LOGSYNC and Maintenance meeting BCT S4: Combat Slant, CL VII Regeneration BCT SURG: Role I, Role II, AXP locations and triggers BCT S1: Personnel Replacements - Casualty Estimate BN XOs: Maneuver actions during each phase BN Med PLs: BN MAS/FAS Locations – POI to Role I BDE XO: Injects Reaction Drills Throughout BSB CDR: Final Guidance</p>
	<p>BCT XO leads the rehearsal for the BCT CDR.</p>	
	<p>BCT S4 and SPO organize the rehearsal to ensure critical sustainment events are rehearsed.</p>	
		<p>For units to be effective and efficient in combat, rehearsals need to become habitual in training FM 6-0.</p>
	<p>Keys to Success</p> <ul style="list-style-type: none"> • Last Opportunity for Shared Understanding prior to Mission Execution • Before, during or After the Combined Arms Rehearsal? • Cover all classes of supply and services • 90 minutes or less • Scripted, but not read or verbatim • Use PA systems, not near generators 	

Figure 6-1. Elements of a sustainment rehearsal.

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

Discussion. A sustainment rehearsal should occur after each battle phase or major change to the operation order. The sustainment rehearsal brings together key sustainers and leaders from the BCT staff, the maneuver task forces, and the brigade support battalion (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 are conducted on a terrain model after the combined arms rehearsal (CAR) in order

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

to address any changes that happened during the CAR. Good 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 mission analysis. It is okay to find shortfalls and problems at the

rehearsal as that is partly what it is for. Resolve those issues on the spot; if the problem requires too much time, put them aside for resolution following the rehearsal.

Recommendation. The sustainment rehearsal can be conducted in 90 minutes or less after a few repetitions. The rehearsal should be scripted to a large degree to ensure all areas are covered and to avoid potential long-winded rambling or presence of unprepared participants. It should not be so scripted that the briefers just stand there and read the script. The script serves as a guide and reference; seasoned briefers learn to brief with a glance at notes and not reading verbatim. All briefers stand on and point to any locations they are referencing on the terrain model. It is very important to use an amplified sound system with microphone so everyone can hear. Do not set up the terrain model next to a running generator.

Follow an agenda that covers sustainment. The BCT executive officer (XO) conducts roll call and begins the sustainment rehearsal by discussing the ground rules on how the rehearsal will be conducted by task force, by phase, by topic, etc. The BSB commander (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 like 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's composition, disposition, and most likely course of action 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 support operations officer (SPO) covers brigade support area, forward logistics element, field trains command post, combat trains command post and any logistic release point locations. The SPO briefs the distribution method of who is getting what, when, where, and how. Battalion (BN) XOs brief the scheme of maneuver for their task force. This portion has a tendency to go long so it is important for BN XOs to just give an overview appropriate to the sustainment discussion. The BN XO's hand it over to their BN S-4s and forward support company (FSC) CDRs to brief classes of supply on hand and needed at each phase of the operation based on logistics estimates that they have already conducted. The BN S-4's and FSC CDR (standing side by side) then brief and confirm the method and time of re-supply.

Follow an agenda that covers CASEVAC and MEDEVAC. The sustainment rehearsal then shifts to cover CASEVAC and MEDEVAC. The BCT surgeon briefs the overall CASEVAC plan by 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 BN medical officers brief main aid station and forward aid station locations and responsibilities, both standard and nonstandard evacuation platform capacity, casualty collection point (CCP) locations, and actions from the point of injury to CCPs and Role I's. It is essential that medical leaders consider casualty estimates during the rehearsal to determine support requirements (casualty volume and density) versus capabilities (MEDEVAC and CASEVAC platforms). The Charlie Company CDR of the BSB briefs the Role II location, along with ambulance exchange point (AXP) 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 executors. The BSB CDR ends the rehearsal with closing comments emphasizing the timely and accurate turn in of logistic status reports.

Chapter 7

Produce and Submit an Accurate and Timely Logistics Status Report

COL Brent Coryell

The brigade combat team (BCT) must develop and use a logistics status (LOGSTAT) report that identifies logistics requirements, provides visibility on critical shortages, projects mission capability, and provides input to the logistics common operational picture.

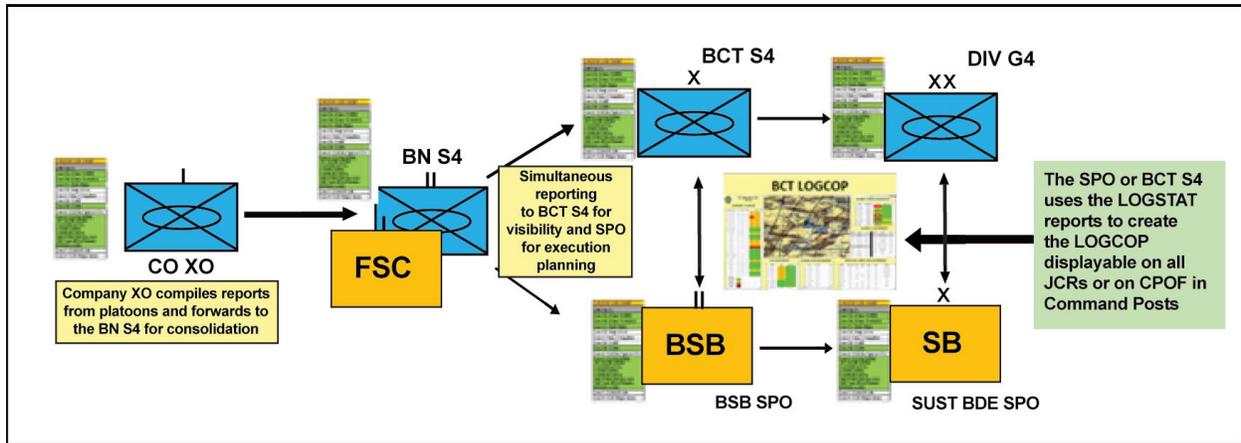


Figure 7-1. Accurate LOGSTAT reporting.

Observation. Logistic status reporting challenges all echelons. Reporting does not occur with regular frequency and thus prevents anticipatory sustainment planning and execution. The BCT average LOGSTAT turn-in rate at the National Training Center (NTC) is 76 percent, and often the LOGSTATs submitted are inaccurate which affects shared understanding and actions or decisions that need to be made. Inaccurate LOGSTATs often result in unforecasted or emergency resupply operations or backhaul of unneeded supplies. At NTC, BCTs average 30

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

unforecasted resupply missions during a 14-day rotation, usually due to improper forecasting on the LOGSTAT report.

Discussion. LOGSTAT reports drive the entire sustainment process. The battalion (BN) S-4 is frequently the primary source of logistics de-synchronization at echelon due to LOGSTAT inaccuracy. This is primarily due to them not understanding how to accurately forecast and produce a logistics estimate built from on-hand quantities reported by company executive officers (XOs). Company XOs must accurately report current on-hand supply statuses and BN S-4s should roll them up 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.

There is often duplication of effort with LOGSTAT reporting by reports being sent to the support operations officer (SPO) and S-4 separately. Many times, the BCT S-4 and the brigade support battalion SPO are tracking different on-hand quantities and future requirements. Some BCTs have the BCT S-4 who is the logistics planner responsible for the concept of support, while others push it to the SPO who is the logistics executor. LOGSTATs are either received by the SPO without BCT S-4 visibility or received by the BCT S-4 without prompt submission to the SPO.

Recommendation. The LOGSTAT reporting plan should be simple and understood by all with an executable method for reporting. For example, primary: Joint Capabilities Release (JCR), alternate: Command Post of the Future (CPOF), contingency: Secure Internet Protocol Router (SIPR) email, emergency: frequency modulation radio or runner. Publish the LOGSTAT primary, alternate, contingency, emergency (PACE) plan in the mission order and practice it during all training events. The XO in company, battalion, and brigade must be the enforcers of the process ensuring reports are timely and accurate. Delineate who receives, processes, and distributes the LOGSTAT information for the BCT.

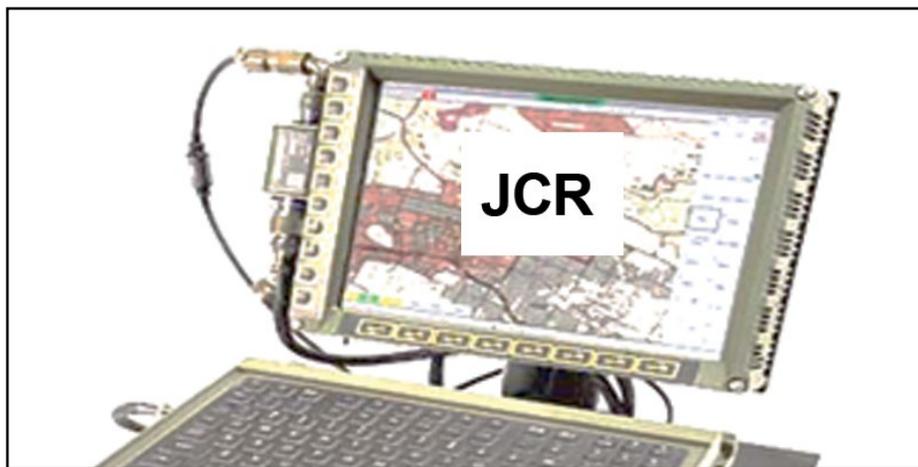


Figure 7-2. Example JCR.

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 into 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. The LOGSTAT reports should list current on-hand quantities for Class I, III (P), III (B), V, and VIII. Classes II, III (P), IV, and IX are requested through Global Combat Support System-Army and obviously will not fit on the LOGSTAT report. Ammunition is requisitioned by submitting a Department of the Army Form 581, along with an expenditure report. Class VIII is ordered through medical communications for Combat Casualty Care and Defense Casualty Analysis System. We suggest listing these classes of supply (II, IV, V, VIII, and IX) by exception on the LOGSTAT report if they are an emergency or unit is experiencing a problem with the requisition. The LOGSTAT report should then list the forecasted request for each class of supply (minus the ones just mentioned) for the next 24, 48, and 72 hours. LOGSTAT reports should also contain the task force headcount and grid locations for combat trains command posts.

Table 7-1. Example LOGSTAT report.

LOG STAT JCRI/ SVOIP				
LINE By CL	CAP	OH (DOS)	Next 24	Next 48
Line 1A: (Class 1) MRE				
Line 1B: (Class 1)UGR-A				
Line 1C: Bulk Water				
Line 1D: Bags of ice				
Line 2: Class 2 Supplies				
Line 3A: CLIIIP				
Line 3B: CLIIIB				
Line 4: CLIV By Type or CCL				
Line 5: CLV By DODIC				
.50 CAL/M2 (A598)				
7.62/240B (A111)				
5.56/M4 (A080)				
5.56/M249 (A075)				
SIM ATWIS (BFV) (L367)				
SIM Tank-M1A2/Paladin-M109A6 (LA06)				
Line 7: CLVII BY LIN:				
Line 9: CLIX: Major items				

Observer, coach/trainers (OC/Ts) have observed great success with units using a pre-formatted LOGSTAT report on JCR providing increased visibility across numerous platforms.

The LOGSTAT report should be sent to both the BCT S-4 and SPO simultaneously for visibility; however, we recommend delineating who receives, processes, validates, and distributes the LOGSTAT information between the BCT S-4 and the SPO. Observer, coach/trainers have observed great success with units using a preformatted LOGSTAT report on JCR, providing increased visibility across numerous platforms. This allows the BCT S-4 to gain situational awareness and shared understanding and collect and consolidate the LOGSTAT reports to send to the division G-4. This also allows the SPO to have near real-time data to analyze for resupply planning and to coordinate with echelons above brigade units for resupply. The SPO or BCT S-4 uses unit LOGSTAT reports to create the logistics common operational picture displayable on all JCRs or on CPOF in command posts. Once commodity re-supply amounts are validated in the logistics synchronization (LOGSYNC) meeting, the LOGSTAT report is used to update the LOGSYNC matrix. The LOGSYNC matrix then becomes the source document driving resupply operations and is used to validate the LOGSTAT and to drive distribution execution.

Chapter 8

Conduct an Effective Logistics Synchronization Meeting

COL Brent Coryell

Observation. Many units do not conduct logistics synchronization (LOGSYNC) meetings because of insufficient time and poor connectivity. Most brigade combat teams (BCTs) and brigade support battalions (BSBs) do not hold the maneuver units accountable to participate in the LOGSYNC at the prescribed time. Units also 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 which occurs during reception, staging, onward movement, and integration. This results in the LOGSYNC meetings not having the required participants in attendance or the communication platform not being established.

Discussion. LOGSYNC meetings should occur daily and are absolutely essential to successful sustainment execution. Successful LOGSYNC meetings have appropriate participation and are used to validate logistic status (LOGSTAT) reports, synchronize resupply operations, and create shared understanding amongst all of the sustainment planners within the BCT. The LOGSYNC meetings should be scripted events that have the same participants, are conducted at the same time, and are 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.

The support operations officer (SPO) should bring the senior field trains command post representative located in the brigade support area (BSA) in for a face-to-face meeting during the digital LOGSYNC meeting.

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. Units have successfully used Defense Communication System (DCS) connect and Command Post of the Future 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 field trains command post representative into the LOGSYNC meeting, in person, enables the SPO to ensure unit representatives understand what needs to be prepared for the next logistics package (LOGPAC). The end product of the LOGSYNC meeting is an updated LOGSYNC matrix. The SPO should send it to the combat sustainment support battalion so they have 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 alpha company (A/BSB) commander and representatives so they can prepare the next day's LOGPACs. The SPO should bring the senior representative located in the brigade support area in for a face-to-face meeting during the digital LOGSYNC meeting.

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

Chapter 9

Produce and Publish an Executable Logistics Synchronization Matrix

COL Brent Coryell

Observation. Many logistics synchronization (LOGSYNC) matrices produced 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 but not specifically how many pallets of each type (for example, Unit Group Rations or Meals, Ready to Eat) based on the headcount. Other common shortfalls of the matrix include: no time window annotated, no grid coordinates for logistic release point (LRP) missions, and unclearly identified system exchange processes (for example, bringing empty flat-rack to swap for flat rack of Class IX). The most common mistake is that the matrix gets posted but does not get printed and into the hands of those preparing and executing the mission.

Table 9-1. Elements of a LOGSYNC matrix.

DAY	D+5 (12 APR 10)	D+6 (13 APR 10)	D+7 (13 APR 10)
PHASE	III	III	III
CLASS I	Receive 3 DOS MREs (22,446 lbs (27 pallets) H&S 25, 446 (HumMRE 975 (22 pallets) BDE	<ul style="list-style-type: none"> • The matrix shows supported units: • Supply commodities they will receive • Time they will receive commodities • Method of receipt (supply point, LRP, CSSB throughout, etc.) • The LOGSYNC matrix prevents • de-synchronization in support operations • minimizes tactical risk in the BSA • helps coordinate external support with the supporting Sustainment BDE. 	
1-8 CAB			
1-68 CAB			
3-29 FA			
7-10 CAV			
WATER & ICE	Receive 3 DOS ICE from SUS BDE 22,446 lbs (27 pallets) Bottle Water 12,300 1.5L bottles (18 pallets), 2x freezers, and 4x chill vans Bulk water purification and production site established along the ARAS River located in the BSA vic 38SQJ191577700	SP: 0600 with 20 Pallets Ice on 4x chill vans, 6x full HIPPOs to FSCs on 4 X LHS systems (truck and trailer) to the following grids: 1-8 CAB 38SQJ11257411, 1-68 CAB 38SQJ36841, 3-29 FA 3SQJ16537883, 7-19 CAV 38SQJ24798288	
		ACO conducts unit dist to FSCs 2 DOS	

Discussion. The LOGSYNC matrix is arguably 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 brigade support area (BSA) by mitigating all units showing up 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 support operations officer (SPO) to S-3 to A/BSB-brigade support battalion or forward support companies (FSCs) as well as to the combat service support battalion (CSSB) and sustainment brigade SPO. If the matrix clearly spells out who is getting what (commodities and amount), when (time window), where (grid), and how (supply point, LRP, forward logistics element, etc.), it will greatly assist in logistics synchronization across the battlespace.

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.).

Recommendation. Use the LOGSYNC meeting to update a preformatted and practiced matrix. Sustainment planners must then get the LOGSYNC matrix into the hands of the executors who are the distribution platoon leaders and the (alpha company) A/BSB commander. Changes should be reflected and disseminated as soon as possible. Once the LOGSYNC matrix is developed, it can become Annex F, updated by a daily fragmentary order. The field trains command post officers in charge 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.

Chapter 10

Conduct Effective Supply Point Distribution in the Brigade Support Area

CPT Janelle Forde and COL Brent Coryell

Supply point distribution from the brigade support area (BSA) is the most common method of supply distribution observed at the National Training Center (NTC) and is particularly effective when forward support companies (FSCs) are located in close physical proximity to the BSA. Supply point distribution requires the brigade support battalion (BSB) to issue supplies from a supply point in the BSA to the receiving FSC. Specifically, the FSC goes to the supply point in the Alpha Company sector of the BSA and uses its own transportation assets to move supplies forward to its line companies. A frequent friction point with the supply point distribution method from the BSA is that resupply can take an unreasonable amount of time if the supply points and issue methods are not organized efficiently. Combat service support battalion (CSSB) and FSC time spent on station at the BSA can be minimized by following some general principles. This chapter will discuss the best practices as observed by observer, coach/trainers (OC/Ts) at NTC for efficient supply point distribution at the BSA that will minimize FSC and CSSB time on station.

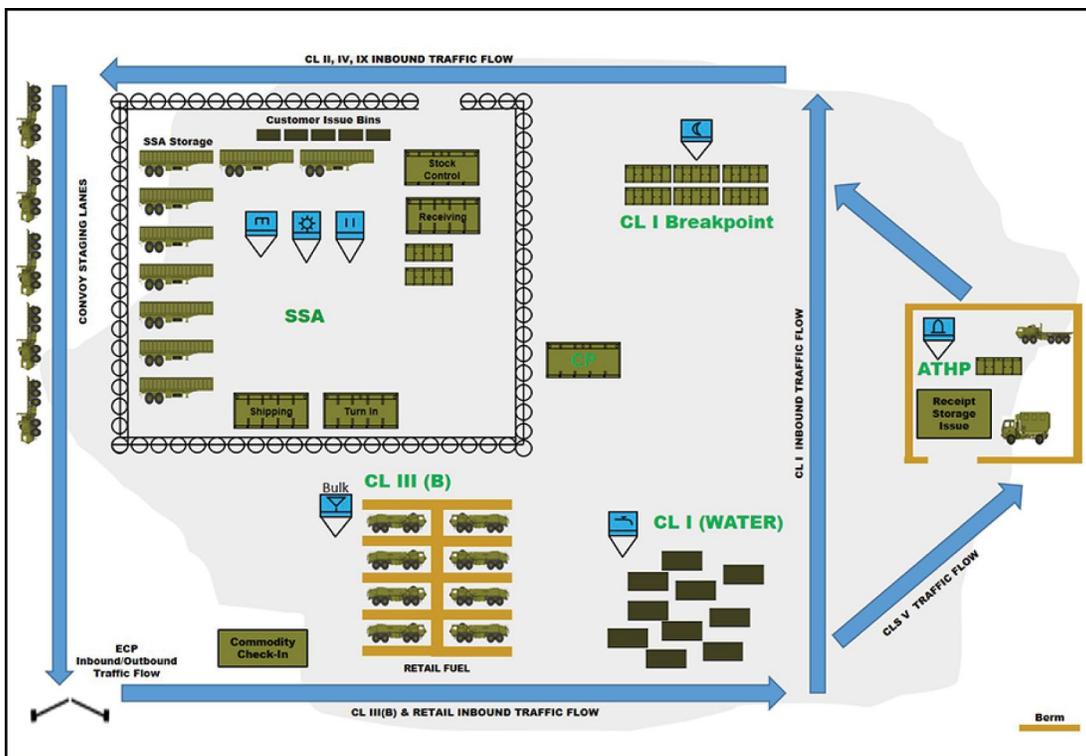


Figure 10-1. Optimal layout of Alpha Company BSB in the BSA is essential to the success of supply point distribution.

Alpha Company Brigade Support Battalion Layout and Operations

Designate CSSB delivery and FSC pick-up times. Synchronizing FSC distribution platoon arrival times to conduct supply point distribution from the BSA is challenging. If all the FSCs show up to the BSA at the same time, which occurs often, unnecessary traffic congestion and excessive time spent on station occurs. This unsynchronized situation results in FSCs not

Designated pick-up times for FSC's and drop-off time windows for the CSSB will help ease traffic congestion at the BSA and will synchronize the CSSB re-supply by ensuring assets are diminished in capacity to facilitate re-supply.

following priorities with one FSC potentially taking another FSC's allotment. Each FSC should be resupplied in a particular order in accordance with the published logistics synchronization (LOGSYNC) matrix in order to prevent shortfalls, emergency resupply, and backhaul. FSCs have to draw from, and deplete the BSB's assets at the BSA before the CSSB arrives to eliminate CSSB backhaul.

The CSSB delivery and FSC issue synchronization effort is dependent on the LOGSYNC matrix getting into the hands of the executors. If the LOGSYNC matrix clearly spells out who is getting what (commodities and amount), when (time window at the BSA), it will greatly assist the field trains command post (FTCP) personnel preparing the packages.

Dedicate optimal FSC Soldier representation and management to the BSA FTCP. The FSC FTCP is the primary direct coordination element between the supported battalions and the BSB. Therefore, optimal FSC FTCP representation in the BSA is essential to supply point distribution efficiency. Very often, commodities required by the FSCs are not ready for pick-up because

OC/Ts have observed that most FSCs do not dedicate the optimal number of Soldiers to the BSA mission. Recommended FSC representation at the FTCP in the BSA is between eight and 10 Soldiers representing all commodities respective to their MOS under the supervision of the FSC.

the FSC FTCP Soldiers located at the BSA have not prepared them. When established at the BSA, the FSC FTCP usually consists of varying levels of representation. During most NTC rotations, the FSC FTCP representation at the BSA ranges from zero Soldiers to half of the FSC. To enable resupply efficiency and to create an integrated package building effort, it is important for the FSC to have the right number of Soldiers working at the FTCP. Most OC/Ts believe the optimal number is between eight and 10 Soldiers. Assign eight to 10 military occupational specialty (MOS) specific-Soldiers as commodity managers to assist Alpha Company in the BSB (A/BSB) in preparing commodities for logistic packages (LOGPACs). The FSC executive officer (XO), along with a sergeant first class,

best leads this team. A good technique is to assign the A/BSB commander (CDR) as the overall manager of these Soldiers. FTCP Soldiers need leadership, management, and task direction to be effective. If followed, the FTCP structure reduces the time on station for the FSC to pick up supplies, builds the right configured loads for their forward units, and ultimately ensures coordination and synchronization of sustainment across echelons.

Establish an efficient A/BSB layout with one traffic flow and staging areas. The optimal layout of the A/BSB sector takes planning as it typically takes up a quarter of the entire BSA. Many A/BSB commanders do not understand how to set up their area of operation in order to provide efficient supply point distribution support to the brigade combat team (BCT). The A/BSB commander must determine how much space is needed for efficient supply point distribution operations and how to get the most effective use of the space he or she is allotted. More often than not, the design of A/BSB sector layout is not optimal for traffic flow and staging of LOGPAC convoys, resulting in bottlenecks and equipment turning around in confined spaces.

An ideal BSA road network has signs and sufficient space to conduct supply support activity (SSA) and ammunition transfer holding point (ATHP) operations, fuel and water issue, class I break point receipt and issue, space for flat rack exchange, space for material handling equipment (MHE) operations, and staging areas for convoys. The A/BSB sector is best located near the BSA entry control point (ECP) to keep traffic away from the BSB command post and Role II medical facility. A good technique is if the BSA ECP is located at six o'clock on a circular BSA set up, the A/BSB sector could occupy three o'clock to six o'clock or just off to the right as you enter the BSA. The internal A/BSB road network has to support heavy traffic and the area should be large enough for vehicle dispersion with relatively flat ground for operations. Designate

The best technique observed for efficient traffic flow in the A/BSB sector is to create a road network that takes convoys past every commodity stop, marked with signs, and with room to stage before departure.

a temporary parking area to facilitate individual vehicles stopping at each commodity area to load and unload supplies. Incoming convoys to the BSA learn to place their vehicles in an order that facilitates easy peel off without having to bypass the vehicle in front of them. Designate staging lanes for FSC or CSSB vehicles to stage or wait for the rest of their convoy vehicles to finish issue or resupply. Staging areas require an area large enough to accommodate all types of vehicles and up to 20 vehicles. When all convoy vehicles return to the staging area, the convoy commander can take charge, give the convoy brief, and exit the BSA.

A best practice observed by OC/Ts is to create a CSSB/FSC convoy commander check-in point at the entry to the A/BSB sector. This enables A/BSB to validate the commodities and quantities to be picked up according to the LOGSYNC matrix, and to alert the commodity managers of the distribution platoons arrival. Every commodity issue point in the A/BSB sector has different things to consider with regard to establishing their issue points. The following are some suggestions by commodity.

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



Figure 10-2. Commodity checkpoint.

Establish a CL III (B) Point (ATP 4-43)



Figure 10-3. Example tanker spacing. Tanker spacing directly contributes to commodity protection.

The class (CL) III (B) issue point is an essential stop for the FSC or CSSB when they enter the BSA. When selecting a location for fuel issue operations, the A/BSB commander has to consider cover and concealment, dispersion, terrain and the internal road network to support heavy traffic. Locate the bulk distribution point next to but not directly on, a one-way traffic road in order to facilitate the flow of vehicles in and out of the issue point. Keep the fuel site as level as possible and do not place it uphill or upstream in order to prevent fuel leaks

or spills. It is a good idea to use the industrial drive-over fuel spill liners as a precaution. The A/BSB CDR must work closely with the engineers to determine the exact layout and placement of berms required for the fuel issue point. Each fuel tank should have a berm around it, with the recommended spacing of at least 100 feet to protect it from enemy direct and indirect fire and to absorb possible explosions. The walkway between a tank and berm should also be wide enough to allow for maintenance and resupply. Consider the space required between trucks during refueling. Adequate space is needed for fuel handlers to bond and ground the refueling tank directly to the tank being refueled by connecting the ground wire from the refueling nozzle to a grounding point on the vehicle.

The fuel issue point requires a lot of space. Fuel tanks should be at least 100 feet from each other and have a berm around them to protect the fuel tanks (and more importantly Soldiers) from enemy direct and indirect fire.

When receiving or issuing fuel, the customer service goal is for the fuel issue or transfer to be fast and safe. The fuel point wishes to get the unit in and out in accordance with the time allotted on the LOGSYNC matrix. The



Figure 10-4. Fueler top loading. BII shortages can cause a 15x time delay in fueling operations.

exchange of modular fuel systems (MFS) tank rack modules (TRM) is the most efficient method of fuel resupply and should be the primary re-supply method when assets are available. Simply drop the empty TRM and pick up the full one. When system exchange is not feasible, fuel transfer processes from bulk-to-bulk or bulk-to-retail must be well organized. Cross leveling fuel between tanks before the CSSB arrives allows for less transfer link ups for the CSSB and ultimately less time on station. Although not a recurring trend,

some units either do not have or do not bring, the M969, M978, and MFS basic issue items required to conduct bulk fuel transfer efficiently. We recommend that units inventory the required additional authorized items such as the D1 nozzle and all other required hoses, fittings, valves and other operational equipment to transfer bulk fuel. When conducting bulk transfer from the M969 to the M978, it is most efficient to use the D1 nozzle to connect to the one-and-a-half-inch dispensing hose for faster bottom loading. Failure to use the required nozzles results in a much slower fuel delivery rate.

Safety is a major concern when operating at the fuel point. An unsafe act or accident will halt fuel issue operations and delay the customer. Therefore, fuel handlers must wear personal protective equipment and follow safe working practices such as grounding and understanding proper first responder and aid procedures. Fuel handlers must know the necessary self-care techniques and actions to take if fuel products come in contact with skin, eyes or mouth. Place an eyewash station in the vicinity. The fuel point must have a fire prevention and firefighting plan that covers, in detail, all possible fire dangers, and issues. Place serviceable fire extinguisher in the vicinity as fuel handlers have the primary responsibility for controlling and extinguishing fires.

Supply Support Activity

Establish an efficient supply support activity point. Class II, IV, and particularly class IX repair parts help build the combat power necessary to defeat the enemy. The SSA is the heartbeat of repair parts flow across the battlefield and as such, processing and throughput must be continuous. The SSA can easily be set up to accommodate the rapid turnaround of FSC pick-ups and CSSB deliveries. Consider establishing a secure perimeter with triple strand concertina wire around the SSA to help prevent pilferage.

The SSA area needs sufficient space to support stock control, receiving, storage, issue, turn-in, and shipping sections.

Establish a guarded entrance and exit point to control foot traffic inside SSA receiving, issuing, and storage locations. Plan for the best placement and layout of each SSA section to simplify workflow as follows.

Establish the supply support activity stock control section. The stock control section is the first place customers gravitate to and, therefore, it should be established near the entrance of the SSA. The OC/Ts recommend that the section maintain a manned customer service desk to assist and direct customers as they enter. The section needs space near the section to emplace the very small aperture terminal, known as the VSAT, which consists of two parts including a transceiver that is placed outdoors in direct line of sight to the satellite and a device that is placed indoors to interface with the Global Combat Support System-Army which is vital to stock control and passing requisitions. The section requires this satellite communication connectivity as soon as 20 to 30 minutes when establishing at a new location. The section on average will process 1,500 stock records during a rotation. They will manage the production of over 400 material release orders (MROs) given to the storage section to pull and process three times a day (morning, afternoon, and evening) in order to ensure all supplies are ready for the units when they arrive in accordance with the LOGSYNC matrix. Customers with high priority 02 walk through can conduct it while onsite provided they meet all criteria and procedures as depicted in the SSA standard operating procedure.

Establish the supply support activity issue section. The issue section requires adequate space for customer bins and bulk supply storage lanes. The issue section will average more than 900 MROs to the supported units during a rotation. Supported units must remove and sign for all parts (bins and bulk). An effective technique to store smaller items awaiting issue is to use cardboard multi-pack “kicker” boxes with large clear signs that annotate each customer’s Department of Defense Activity Address Code (DODAAC) so that units can easily recognize them. Larger supplies ready for FSC pick-up are located and sorted by unit in the “bulk” storage lanes and typically require MHE to load and transfer to the FSC. Ideally, if the FTCP Soldiers are doing their job, all supplies will already be signed for, packaged, and tied down on a flat rack ready for the distribution platoon to drop and swap an empty flat rack for exchange. Supported units who fail to pick up supplies daily are reported to the support operations officer to brief in the LOGSYNC meeting.

Establish the supply support activity storage section. The storage section requires an adequately sized area to place roughly seven straight trailers of major assemblies as well as ten BOH (brand name) containers of smaller stocked items. The Authorized Stockage List (ASL) needs to remain uploaded on these platforms to remain 100-percent mobile, so placing them in a standard configuration makes for easy set up. Most accountable officers set up the SSA ASL storage containers and trailers in a horseshoe-shape configuration because this design provides security and facilitates short travel distances for receipt, storage, and issue of class II, IV, and IX. The section must protect the stockage from exposure to the elements such as rain or dust which will cause them to rust and become unserviceable. Protecting stock is best accomplished by using weather resistant tarps. The layout and protection of stocks is important because the storage section will store and pick more than 500 MROs per rotation.



Figure 10-5. MRO sorting. Systems must be in place to ensure MROs are organized properly.

Establish the supply support activity receiving section. The receiving section requires sufficient room to receive and unpack all inbound materiel from the CSSB, particularly adequate space to accommodate safe MHE offload and transfer operations. The receiving section should sort inbound supplies by priority, customer unit, or storage location and then deliver them to these areas accordingly. The OC/Ts have observed that Soldiers working in the SSA receiving section are not using the portable data collection device material release order control hand held terminals for processing. Some SSA accountable officers prefer not to use these devices because they sometimes have difficulty with accurate reading of the barcode. Units occasionally process parts in the rear at a company direct support unit and send supplies forward, resulting in the forward SSA’s inability to use hand held terminals. When used correctly, these hand held scanners, with updated radio frequency identification technology, allow Soldiers to instantly process parts which helps the SSA’s supply chain to become more efficient and less error prone. These hand held scanners allow personnel to easily check restock quantities and improve overall processing time.

Establish the turn-in section. The turn-in section requires sufficient space to accommodate the serviceable and unserviceable turn-in of supplies. This requires accommodating the unit with this capability to some degree. The items should be clean and free of dirt and grease, so having a dedicated cleaning and degreasing area is helpful rather than turning the unit away. In addition, parts should be drained of all fluids. Drainage statements are mandatory and need to be stamped by the inspector, but this does not always happen. Again, rather than turning them away, provide them with a drainage area with the assistance of Bravo Company (B/BSB) serving as the inspector. Items should be banded, bolted, boxed, and palletized to facilitate handling and protection as appropriate. Having an area with metal banding straps, wire cutters, crimpers, and crimping claps is helpful. Engines and large assemblies not in containers must be on serviceable pallets and banded. Having a pile of serviceable pallets available to the turn-in unit is also helpful. The turn-in section is most efficient when it assists they help accommodate the process but this is not always possible. Some requirements that cannot be accommodated at the SSA turn-in area (missing parts statements and damage statements).

Establish the shipping section. The shipping section requires sufficient space to pack and crate supplies and load CSSB vehicles for outbound shipment. Shipping clerks consolidate and assemble supplies according to weight and dimensions. A storage location is necessary for blocking, bracing, packing, crating, and tie-down (BBPCT) materials needed to prepare items for shipment.

Establish Class V ammunition transfer holding point operations (ATP 4-90 and ATP 4-35.1). The ATHP requires a secure, safe, and central location to conduct ammunition transfer,



Figure 10-6. Example CL V load. Soldiers conduct final checks on a CL V load.

holding, issue, and turn in operations. While there is no doctrinal standard configuration for an ATHP layout, locate it at least 180 meters away from other units within the BSA for explosive safety concerns. It is also recommended to berm the ATHP in the same manner as the fuel tanks. Construct the ATHP large enough to hold the expected volume and capacity of munitions and allow effective trans-loading and storage of munitions. The A/BSB CDR should consider having one entrance and exit point and locate the ATHP near a road network within the BSA. This allows control of vehicle traffic and use of MHE. Soldiers managing the ATHP provide oversight of all ammunition replenishment operations and should have keen awareness of the

BCT's ammunition requirements and of controlled supply rates. It is important for customers to understand the paperwork requirements before conducting business at the ATHP to avoid delays. Plan for the best placement and layout of each ATHP section to simplify workflow as follows.

Ammunition and explosives at the ATHP must be properly handled, transported, stored, and accounted for from the time of receipt to the time of expenditure or turn-in.

Establish the ammunition transfer holding point receipt section. The receipt section selects a location that is conducive to unload the ammunition. Upon ammunition receipt, the receipt section conducts a detailed inventory to ensure that the correct Department of Defense Identification Codes (DODICs), national stock numbers (NSNs), and lot numbers were delivered. The receipt section then inspects the ammunition thoroughly for damage and off-loads and stores the ammunition. Stored ammunition remains at the ATHP on flat racks supplied by the units until needed.

Establish the ammunition transfer holding point storage section. The storage section should also inspect and verify the ammunition type, lot numbers, condition, and quantity prior to committing the ammunition to storage. As ammunition is stored, the storage section prepares all administrative forms (Department of the Army [DA] Form 581, DA Form 3161, or DA Form 2062) to ensure that they stored the correct DODICs, NSNs, and lot numbers.

Accurate and timely ammunition expenditure reporting is critical to the management of ammunition. For the accountable officer to ensure proper accountability, units requesting additional ammunition must submit expenditure reports. Failure to do so will result in a delay and additional time on station.

Establish the ammunition transfer holding point issue section. Soldiers working in the issue section are responsible for issuing ammunition to the supported units to include basic and combat loads and resupply. Ammo handlers should establish a system to ensure ammunition is properly issued and a DA Form 581 is properly executed. Ammunition is issued based on adequate types and quantities of ammunition for available training and an analysis of historical expenditures. Requesting units will ensure a unit representative, whose signature is on a DA Form 1687, accompanies the unit's ammunition detail during issue. Only those items listed on an approved DA Form 581 will be issued to the requesting unit. Acceptable substitutes may be issued if the requested item is not available. The brigade ammunition officer must validate expenditure reports prior to issue. Failure



Figure 10-7. CL I breakpoint operations.

to provide expenditure reports and properly filled out DA 581s will result in additional time on station at the BSA.

Establish the Class I break and issue point (ATP 4-41). Another mandatory stop for units entering the A/BSB sector at the BSA is at the class I break and issue point. This area can quickly become overwhelmed with a backlog of rations. The rations do not sort themselves. This site needs to be large enough to hold the expected inbound Class (CL) I volume in accordance with the published ration and issue cycle and be accessible to the road network to facilitate heavy vehicle traffic engaged in loading and unloading of CL I. The layout should allow for enough space for forklifts to maneuver and load the container roll-in/out platforms (CROP) and multi-

temperature refrigerated container system (MTRCS). Locate the CL I area in the vicinity of the SSA so that MOS 92A Soldiers can shift from CL II, IV, IX to class I operations as needed.

Rations do not sort themselves. The method used to break rations depends on the quantity and type of ration, Soldiers on hand to do the work, time, and transportation assets available. Flat rack and MTRC exchange is preferred.

When the BSB receives the rations from the CSSB, the rations should already be configured by type. The OC/Ts recommend that the CSSB preconfigure perishable rations (unit group rations or UGR-A and ice) before pushing to the SSA CL I break and issue point in order to eliminate additional handling and storage requirements. FSC FTCPs should provide two representatives, preferably a 92G, to oversee their units' ration break and shipment build and mitigate issues that may arise. The A/BSB needs to provide an three to four additional Soldiers to assist with breaking rations.

A senior 92G noncommissioned officer (NCO), food service warrant officer or the A/BSB XO supervises the rations break point operations and accounts for the rations received from the CSSB until they are issued to the FSCs.

There are a few ways to break rations. The FSCs typically use the "unit pile" method. With this method, all the supplies for a unit are put in one marked pile and the receiving unit personnel load the supplies on their trucks. The FSCs sometimes use the truck-to-truck method where supplies are transferred directly from the CL I point's vehicles to the unit's vehicles. This method is used mainly for CROPS/MTRCS transfer for perishable supplies. If not swapping CROP/MTRCS systems, configure them in a line as opposed to side-by-side to make loading and unloading with a forklift easier. Units should, however, conduct a CROP or MTRCS exchange which will greatly increase efficiency and decrease time on station. Flat rack exchange should always be used as the primary method of class I resupply as it will drastically decrease the time that units spend on station.

Conclusion

Supply point distribution from the BSA requires A/BSB to be organized efficiently. The optimal layout and design of the A/BSB sector is critical to reduce time on station for the BSB and CSSB at the BSA. For supply point distribution to be the most efficient, O/CTs recommend enforcing designated supply point CSSB delivery and FSC pick-up times that are published on a LOGSYNC matrix. Dedicate optimal FSC Soldier representation and management to the BSA FTCP to work with A/BSB to build the logistics packages for the FSC distribution platoon. Create an optimal A/BSB sector layout with a one-way traffic pattern, signs, sufficient space for MHE operations, staging areas for convoys, and a check-in control center. Create organized commodity issue points to for SSA (CL II, IV, IX), ATHP ammo (CL V), fuel (CL IIIB), water, and food (CL I) receipt and issue operations. Lastly, enforce exchange of modular logistics systems to include flat racks, MFS, and load handling system compatible water tank rack known as HIPPOs.

Chapter 11

Conduct Successful Logistics Package Tactical Convoy Operations

CPT Ramon Cortes, MAJ Carey Way, and COL Brent Coryell

Logistics package (LOGPAC) convoys are the primary supply distribution method observed at the National Training Center (NTC) during decisive action (DA) rotations. In fact, armored brigade combat teams (BCTs) average 190 logistics LOGPAC convoys per rotation (17 each day) between the forward support companies, brigade support battalion (BSB) and combat service support battalion (CSSB). All LOGPAC ground supply movements in a contested environment are conducted as a tactical convoy operation (TCO). There often is replication of terms used for these resupply convoys. We regularly use the term TCO, convoy, and LOGPAC interchangeably. For the sake of simplicity, this chapter will hereafter refer to LOGPAC/TCOs/convoys simply as LOGPACs. The purpose is to discuss observations gathered by observer, coach/trainers (OC/Ts) at NTC and to provide recommendations for the successful planning, preparation, and execution of LOGPAC missions. This article will provide recommendations on proven and successful methods of LOGPAC tactics, techniques, and procedures (TTPs) for planning, preparing, and executing LOGPAC operations.

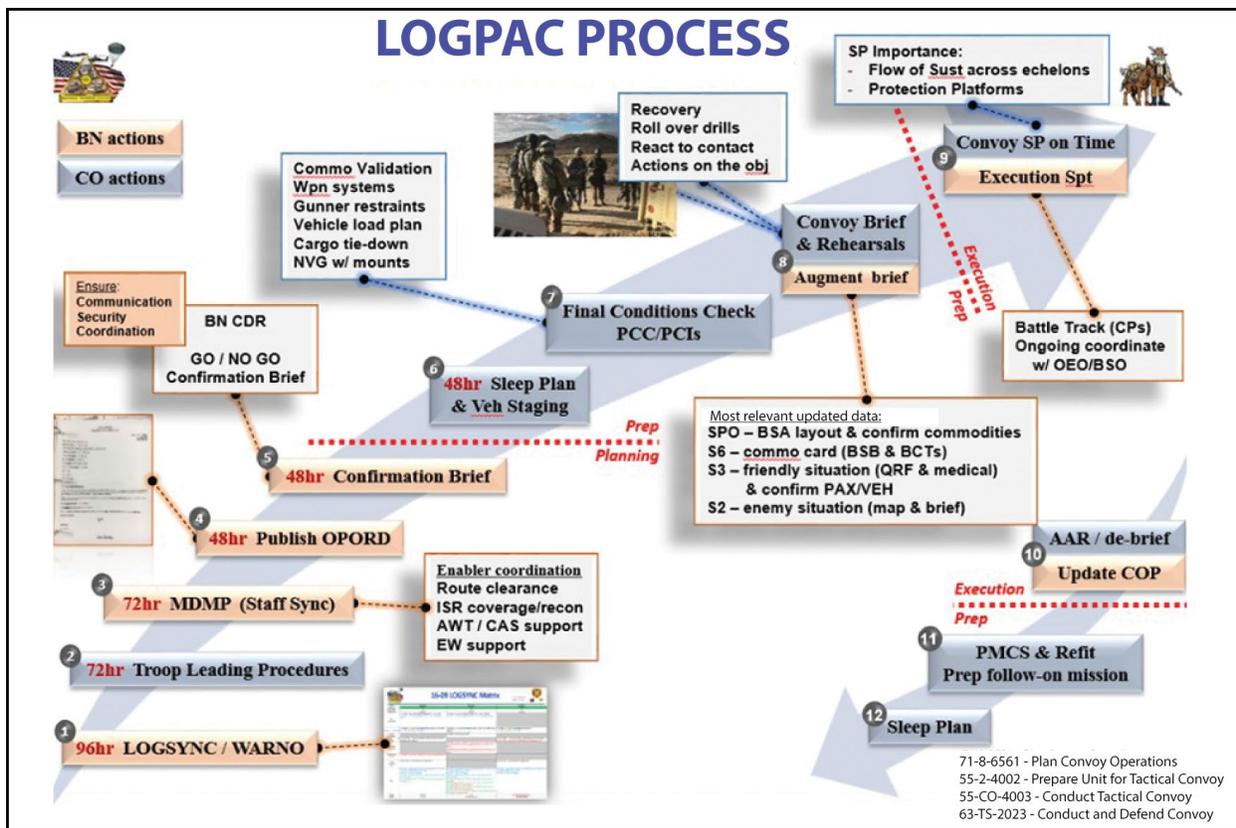


Figure 11-1. “A Way” LOGPAC process.

Logistics Package Planning

Use the **military decisionmaking process (MDMP) to plan the logistics package**. Many battalion staffs do not use the MDMP to plan LOGPACs or to produce a detailed LOGPAC operation order (OPORD) especially in a time-constrained environment. The absence of a detailed OPORD directly impacts the ability of the subordinate unit to conduct parallel planning, implement proper troop leading procedures (TLP), and produce company-level LOGPAC mission orders. Time is critical in DA operations because it is constrained. Commanders must ensure subordinates have enough time to plan and prepare their own actions prior to execution. Commanders should follow the one-third two-third rule as a guide to allocate time available. To optimize available planning time, battalions should begin MDMP no later than 72 hours prior to execution of the LOGPAC and should take no more than 24 hours to produce an order and allocate the remaining 48 hours to subordinate units for preparation. The support operations officer (SPO) section issues the logistics synchronization (LOGSYNC) matrix as the S-3 issues the warning order (WARNORD) for subordinates to conduct TLPs and parallel planning. Simultaneously, the battalion staff conducts MDMP which results in a detailed OPORD to staff and subordinate units. The battalion should have a plan to transition tasks from plans (SPO) to current operations or S-3 as part of the LOGPAC planning process.

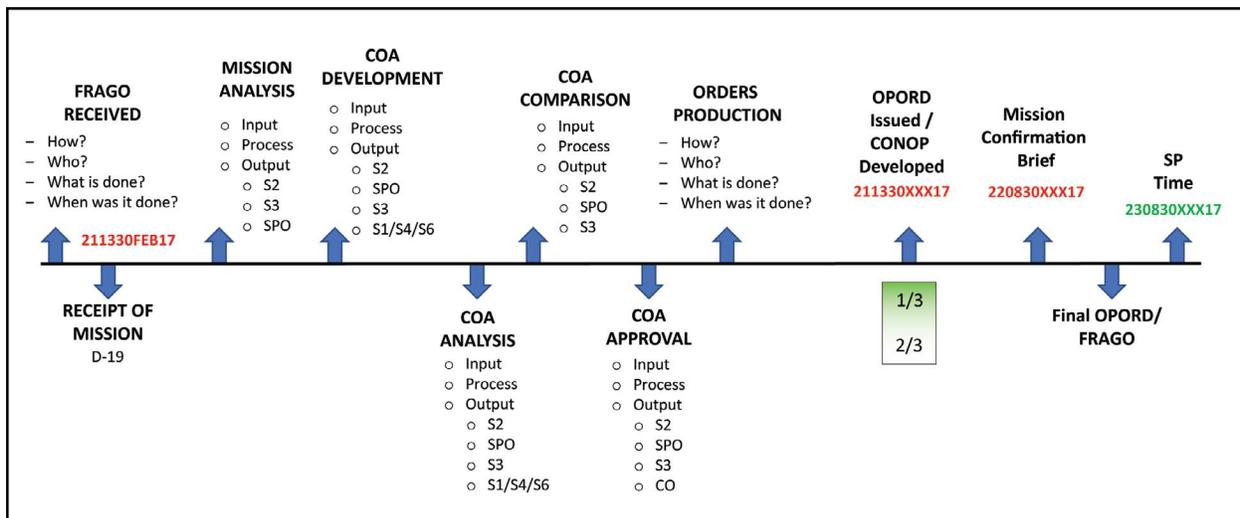


Figure 11-2. LOGPAC planning applied to the military decisionmaking process.

Use **troop leading procedures to prepare for the logistics package**. TLPs are rarely used effectively to prepare for LOGPAC missions. Leaders repeatedly fail to anticipate necessary requirements and identify shortfalls upon receipt of the WARNORD. The majority of the company level leaders wait until the battalion publishes an OPORD to initiate TLPs. TLPs are essential for the planning, preparation, and successful execution of LOGPACs. Company leadership or designated representatives should attend the daily battalion LOGSYNC meeting to understand and receive information about future LOGPAC operations planning to help drive TLPs at the company level. While companies cannot complete the plan until the final order is received, commanders should analyze the WARNORD and put their tentative plan into place in order to execute the mission upon receipt of the final OPORD.

Troop Leading Procedures include:

- Step 1. Receive the mission step
- Step 2. Issue a warning order
- Step 3. Make a tentative plan
- Step 4. Start necessary movement
- Step 5. Reconnoiter Step
- Step 6. Complete the plan
- Step 7. Issue the complete order
- Step 8. Supervise

Publish the logistics package operation order. Most BSBs and CSSBs are not proficient in producing a detailed final OPORD, when they do produce one, most lack critical information. Most battalion OPORDs identify sustainment tasks but do not identify the mission, commander’s intent, current enemy and friendly situation, and signal relative to the specific LOGPAC mission. Additionally, the battalions that do produce a five-paragraph order tend to sacrifice the one-third two-third rule which impacts the company’s ability to conduct preparation efforts. Consistent and timely OPORDs and fragmentary orders (FRAGORDs) will help maintain situational understanding throughout the battalion and help LOGPAC commanders navigate mission variables. LOGPAC operations demand timely and detailed OPORDs that will enable commanders throughout the battalion and convoys to make decisions based on the mission, current conditions, and identified hazards. The LOGPAC commander’s plan is informed by the final OPORD/FRAGORD briefed to the commander during LOGPAC mission order confirmation and back brief. After the commander provides decision and approved concept of operation, the battalion S-3 publishes a final OPORD and annexes relevant to the LOGPAC. The LOGPAC OPORD should include detailed information that the subordinate units and LOGPAC commander will need to be successful on their mission.

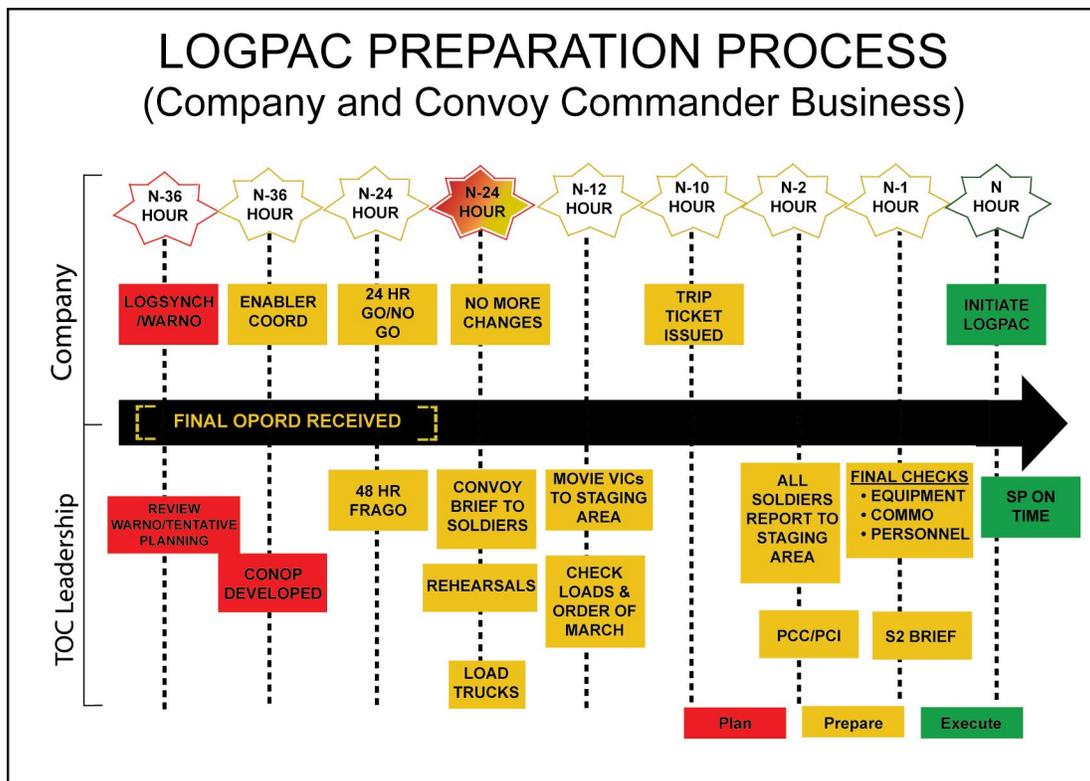


Figure 11-3. Recommended LOGPAC preparation timeline.

Conduct a logistics package OPORD confirmation and back brief. Most commanders do not receive confirmation briefs 24 hours prior to execution of the LOGPAC, which limits their ability to influence preparations. The commander or designated representative must receive a confirmation brief as part of the battle rhythm to authorize the execution of any LOGPAC mission.

During the back brief, the LOGPAC commander discusses control measures to mitigate identified risks and threats such as the LOGPAC security plan. By doing this, the LOGPAC commander demonstrates an understanding of the commander's intent, mission, concept of operation, tasks

A confirmation brief ensures the commander that subordinate leaders understand

- The commander's intent, mission, and concept of the operation.
- Their unit's tasks and associated purposes.
- The relationship between their unit's mission and those of other units

and associated purposes, linkup times, decision points and the relationship between their unit's mission and those of other units in the LOGPAC. Once the commander or his designee approves

the LOGPAC commander's plan, the LOGPAC team continues TLP and begins LOGPAC preparation beginning with vehicle staging.

Logistics Package Preparation

Stage logistics package vehicles on time. The LOGPAC commanders frequently stage vehicles only two hours prior to the LOGPAC execution limiting time to organize the LOGPAC, conduct cargo inspections, conduct preventive maintenance checks and services (PMCS), and conduct pre-combat checks/pre-combat inspections (PCC/PCI). The repercussions of neglecting these checks include delaying the LOGPAC start point (SP) time, loss of reaction time to mitigate

At a minimum, LOGPAC PCC/PCI checks include

- Strip map is in each vehicle
- Inspection of personnel, weapons, and ammunition
- Inspection of vehicles, trailers, and loads for serviceability, load plans, and security
- Checks of the analog and digital communications to headquarters (HQs) and within the convoy

unidentified maintenance issues, incomplete rehearsals, and missing basic issue items (BIIs). Identifying a staging area during LOGPAC planning facilitates the LOGPAC preparation for movement and the integration of all supporting elements. When the staging area is identified, the LOGPAC commander or his designee will assign positions for all logistics vehicles, security platforms, medical teams, and recovery assets. A good practice is to position the heavier and slower vehicles at the front of the LOGPAC (mission, enemy, terrain and weather, troops and support available, time available, and civil considerations [METT-TC] dependent).

Another great TTP is to place vehicles in an order that facilitates easy "peel off" without having to bypass the vehicle in front of them when they arrive to the release point. The order of march should be briefed at the convoy brief and confirmation brief to enable disciplined initiative and shared understanding among the vehicle operators.

Conduct a final conditions check, pre-combat checks and inspections.

Many LOGPAC commanders fail to conduct PCCs and PCIs. The most common issues identified by OC/Ts are missing night vision device (NVD) batteries and mounts; clear eye protection for limited visibility operations; improved outer tactical vest; and operator's license for vehicles, trailers, and NVDs. PCC/PCIs can be METT-TC dependent but units should have a standard PCC/PCI list in the tactical standard operating procedure (TSOP) for standard LOGPAC operations. Many companies rely on junior non-commissioned officers to accomplish the PCCs/PCIs without supervision. The PCC/PCIs are conducted by junior leaders and supervised by LOGPAC commanders or their designated representative to ensure they are completed properly. The shared understanding of PCC/PCIs published in the TSOP enables Soldiers to exercise the initiative required to successfully prepare for TCOs. The most successful units have company leaders verify the inspections.

Common logistics package battle drills

- React to contact
- React to IED
- React to ambush
- Break contact
- MEDEVAC/CASEVAC
- Water egress
- Rollovers
- Fires

Only 80 percent of the convoys conduct a briefing and rehearsals and of these, only 30 percent integrate crews into back-briefs with battle/immediate action drills prior to scheduled start points.



Figure 11-4. Convoy brief.

Conduct logistics package briefing and rehearsals. Many LOGPAC briefings and rehearsals are ineffective at providing details about the current mission, chain of command, rules of engagement, immediate actions on contact, and actions on the objective. Eighty percent of LOGPACs contain a briefing and rehearsal and of these, only 30 percent of LOGPACs integrate crews into back briefs with battle and immediate action drills prior to the scheduled SPs. A lack of TSOP guidance contributes to ineffective briefings and rehearsals. Units should create a standardized convoy briefing format in their TSOPS and ensure all convoy commanders and assistant convoy commanders use the format as the standard and make adjustments based on METT-TC. Staff members from the S-2 and S-3 sections should be present during the LOGPAC briefing to provide the most updated enemy and operational situation. Rehearsals should be scheduled as part of LOGPAC preparation using maps, terrain models, and sketches. A full dress rehearsal is the best technique. The LOGPAC commanders ensure that all members of the LOGPAC understand march discipline, actions at scheduled and unscheduled halts, and common battle drills. Unfortunately, only approximately 30 percent of the BSB and CSSB LOGPAC rehearsals include battle drills. The battle drills frequently omitted include react to improvised explosive device (IED), react to ambush, and request for air medical evacuation (MEDEVAC), and actions on the objective. The tendency is for LOGPAC Soldiers to not react to an enemy attack and stay inside their vehicle because they do not understand their immediate action responsibilities. Units can conduct battle drill rehearsals periodically regardless if they have a mission or not. Units' LOGPAC TSOPs must include battle drills and guidance on rehearsals.

Execution

Initiate the logistics package on time. Missing LOGPAC SP times will cause a desynchronization of already planned sustainment operations. The LOGPAC usually miss the SP time due to the delayed OPORD development process, failure to stage vehicles in advance, or unsupervised final condition checks. Many LOGPACs will miss the SP time because they fail to conduct frequency modulation (FM) and Joint Capabilities Release (JCR) communications checks within the LOGPAC and with higher headquarters. Crossing the SP on time is critical in DA to ensure that sustainment operations remain coordinated at echelon. It is also important to note that staffs have already synchronized security of the lines of communication (LOCs), logistic release point (LRP), commodity, and trailer transfer operations based on SP, checkpoints (CP), and release point (RP) times specified in the LOGPAC OPORD or LOGSYNC by higher HQ staff.

Maintain analog and digital communication within the logistics package and with higher headquarters. The BSBs and CSSBs fail to allocate enough analog and digital communication systems for the LOGPAC vehicles. On average, only 30 percent of LOGPAC vehicles have FM or JCR systems to maintain internal and external convoy communication. The BSB and CSSB units often have a shortage of radio mounts, JCR, or JCR-logistics (JCR-LOG) systems. These shortages affect the convoy's ability to maintain situational awareness, react to contact, or coordinate changes without halting the operation. Missing, inconsistent or unreliable communication systems increase the LOGPAC's time on the road, cause late arrivals to the rally point, and increase the overall risk to the mission. Many LOGPAC launch criteria do not include digital systems. This practice leads to command posts (CPs) losing communication with the LOGPAC commanders when they are outside the range of the very high frequency radio. In addition, LOGPACs typically cross to other unit's battle spaces unannounced, do not call in CPs, and do not have situational awareness along the way. Not having internal communication makes it difficult for LOGPAC commanders to observe and control LOGPAC operations or actions on contact. JCR and JCR-LOG systems allow LOGPAC commanders to stay in touch with

their higher HQ, battlespace owners, and receiving units while en route to the RP. These digital systems successfully provide LOGPAC in-transit visibility and long-range communications across echelons in DA. Commanders should identify minimum communication requirements for LOGPACs in their TSOP. The goal should be for every vehicle in the LOGPAC to communicate with each other as well as the company or battalion headquarters. LOGPACs should have at least two JCR systems for communication, navigation, movement tracking, and in-transit visibility. A good TTP is to identify vehicles that meet the minimum communication platform requirements and track those vehicles as combat power to help commanders understand the risk and make decisions.

Enforce march discipline in the logistics package. LOGPAC commanders habitually do not enforce march discipline, increasing the risk of a rear end accident. Vehicle operators repeatedly fail to maintain a safe distance which results in accidents, especially during hours of limited visibility. LOGPAC commanders only brief day/night convoy speed and the catch-up speed; however, the speed should be unpredictable to an enemy and vary as METT-TC dictates along the LOC. Vehicle operators frequently drive close to one another to prevent getting lost. In addition, convoys tend to speed up in order to RP as soon as possible without considering the amount of time that will be lost if the convoy has an accident. Inadequate internal communication will lead to poor march discipline in the LOGPAC. The LOGPAC commander often fails to choose a position that will allow them the ability to enforce their TSOP convoy operations policies or react to changing tactical situations. Maintaining march discipline should be a control measure when managing the risk of IED, ground ambushes, indirect fire scenarios, and low-light or limited-visibility driving. Varying the speed is a passive defensive measure and is only possible with good internal LOGPAC communication and an informed LOGPAC

March Discipline Focus Areas	
• Formation	• Passing procedures
• Intervals	• Halts
• Speed	

commander. Enforcement of march discipline will help enforce convoy speeds and help maintain convoy intervals. A good TTP is to place the heaviest vehicle in the convoy as the second vehicle in the convoy after the lead gun truck, in order to be the convoy pacer. All LOGPAC

personnel should be briefed on speeds and intervals during the LOGPAC brief. The TSOPs should reflect TCO policies and adjustments should be made based on METT-TC.

Defend the logistics package. The LOGPAC commanders sometimes have a plan to defend the LOGPAC but are not prepared to execute their plans. The BSB and CSSB units struggle with providing first aid, evaluating casualties, reporting casualties, and requesting an air MEDEVAC after an attack. In addition, very few LOGPAC commanders are aware of the exact location of the next echelon of medical care. Survivability is a principle of sustainment that is critical to LOGPAC operation in DA. The LOGPACs must have the ability to protect personnel, weapons and supplies, information, and dedicated gun truck crews (gunner/driver/track commander) and be practiced in integrating gun trucks and crew served weapons systems for LOGPAC defense. The LOGPAC commanders must be aware of the threat and assets available so they can request the appropriate number of security platforms to match the threat. During the execution of the LOGPAC, gun truck crews are most effective when operational control is by the LOGPAC commander and crews are prepared to execute rehearsed battle drills to repel an enemy attack. The TSOP should indicate the gun truck to logistics vehicle ratio standards for the battalion. A good TTP is for gun trucks to have internal communication as well as FM and JCR communications with the higher HQ. The TSOP, OPORD, and annexes should direct minimum communication guidance for LOGPAC and gun truck operations.

Conduct resupply actions on the objective. LOGPACs routinely do not have a sense of urgency when they reach the RP and LOGPAC commanders rarely communicate their actual expected time of arrival (ETA) ahead of their arrival. The goal should be to get the LOGPAC in and out of the sustainment support areas as quickly as possible. Time on station is greatly reduced when there is effective communication and maximum use of exchangeable systems. The LOGPAC commander should communicate his estimated time of arrival to the receiving unit at least 30 minutes prior to arriving. Often logistics planners will discuss the LOGPAC SP times and ETA during the LOGSYNC meeting. However, opposing forces and unexpected halts affect the LOGPACs ability to RP when expected. Soldiers and material handling equipment can be limited in the logistics support area (LSA) and brigade support area (BSA); it is important to notify the unit so they can prepare to receive the LOGPAC, download commodities, and exchange systems. If the LOGPAC commander has completed an effective reconnaissance of the BSA/LSA setup as a part of TLP and has rehearsed the actions on the objective during the planning phase rehearsal, then all the elements of the LOGPAC can exercise initiative and complete their mission with very little guidance. In decisive action operations, the BSB and CSSB units need to enhance velocity and reduce LOGPAC time on station by exchanging container roll-in/out platforms (CROP), flatracks, and load-handling system compatible water tank rack (Hippo). Exchanging systems enhances the mobility of BSB and CSSB by allowing supplies and equipment to remain

Many units are reluctant to exchange systems due to the risk of losing property accountability. The benefits of exchanging systems are:

- Increased velocity
- Minimized handling
- Extended throughput capability

uploaded for immediate displacement. It also increases the supported commander's tactical flexibility. Many units are reluctant to practice system exchange due to the risk of losing property accountability. However, LOGPAC commanders must take advantage of the tactical efficiencies that

come with exchanging delivery equipment. BCT, BSB, and CSSB commanders must underwrite the risk of property accountability and damage in order to benefit from the increased velocity of exchanging systems.

Conduct night logistics package operations using night vision devices. Many units are not prepared to conduct night driving. A significant amount of LOGPACs occur during hours of darkness. Approximately 60 percent of BSB and CSSB drivers are familiar with their NVDs and only 40 percent are properly licensed to operate equipment with NVDs. This increases risk for the LOGPAC. Some of the consequences observed from inexperienced NVD drivers involve accidents, extended hours on the road, and remaining overnight (RON) at the BSA. The most successful BSB and CSSB LOGPACs are executed by Soldiers with more than 10 hours of NVD training within the last three months of training. In the execution of the LOGPAC, trained Soldiers have a better understanding of depth perception, identifying terrain features, maintaining proper speed and distance, and adapting to low light conditions faster than inexperienced Soldiers. Soldiers that are trained and qualified to operate the equipment using NVDs enable a more efficient LOGPAC, lower the risk to the mission, and have higher rates of success conducting LOGPACs.

Conduct debrief and after action reviews. After the completion of the LOGPAC, the LOGPAC commander sometimes does not report to the battalion command post for a debriefing. Often, LOGPAC commanders return to base and only report commodities pushed and backhauled. When they do not debrief the S-2, they leave out potentially valuable information on the current status of the area of operation that could answer intelligence requirements. Many times, when S-2s and S-3s do get debriefed, they do not take these TCO observations or significant activities

to update intelligence estimates, conduct mission analysis, or effectively change the concept of operation (CONOP). The S-2, S-3, and SPO/S-4 must be synchronized to conduct the LOGPAC debrief together. The BSB and CSSB have two options for the debrief: (1) The battalion staff can debrief the entire convoy at one time. (2) Squad leaders and key leaders together or LOGPAC commander write up debriefs while the S-2 reads and conducts questioning. Companies can conduct their own debrief following the battalion debrief. Guidance for the mission debriefings program should be in the TSOP and generally follow the format of a mission briefing: review the route traveled, mission objectives, and commodity closure reporting. The debrief information collected must be analyzed, updated, and disseminated to higher headquarters immediately and subordinate units prior to the next mission.

Conduct post-mission operations. Due to long hours of operation, fatigue, and lack of supervision, LOGPACs often return from missions and do not conduct post-mission operations. In DA operation, the simplest LOGPACs often leads to operations that extend well past the planned LOGPAC timeline. The TSOP, commander's guidance, and the OPORD should have post-mission tasks built into LOGPAC timeline and contain priorities of work for LOGPACs that return to base. Equipment preventative maintenance checks and services, PCCs/PCIs, destruction of classified material, debriefs, loading trucks and staging vehicles for the next mission are some of the post mission requirements that must be completed prior to crew rest period to ensure the unit is ready for future operations. Upon return of the LOGPAC, the focus should be on regenerating combat power and readiness. A good TTP is for leaders to consider tasking rested Soldiers with post-mission operations to prepare equipment for current and future mission requirements in support of crew rest periods.

Conclusion

The LOGPAC are the primary supply distribution method in DA operations. Successful LOGPAC execution requires concurrent planning and preparation and begins immediately upon receipt of the mission. Thorough LOGPAC planning helps the commander create and communicate a common vision to staff, subordinate commanders, and LOGPAC enablers. Good staff planning provides a synchronized plan via an OPORD/FRAGORD that details the BSB or CSSB requirements, the commander's priorities, and actions necessary to accomplish the mission. The battalion TSOP provides guidance for MDMP, TLP, orders publication, and how the unit will conduct the LOGPAC mission order confirmation and back brief. Continuous assessment of the mission and situation before, during, and after the LOGPAC will reduce risk, strengthen unit preparedness, and create shared understanding. Leaders should verify that subordinates understand critical tasks by conducting a confirmation brief, establishing a go/no-go time for all TCOs, and eliminating changes after that time. Stage LOGPAC vehicles on time, conduct a final conditions check, conduct convoy briefings, and conduct battle drill and actions on the objective rehearsals during mission preparation. The LOGPAC must cross SP on time. Upon crossing the SP, LOGPAC commanders must maintain situational awareness with digital communication systems and remain ready to respond to variables along the route to their destination. LOGPAC commanders must be prepared to operate under limited visibility with night vision devices, enforce march discipline, defend the LOGPAC, and arrive at the RP on time. Rehearsed actions and organized and prepared reception at the RP will reduce LOGPAC time on station.

Chapter 12

Produce an Accurate and Functional Logistics Common Operational Picture

COL Brent Coryell

The logistics common operational picture (LOGCOP) provides a near real-time picture of logistics, human resources, and medical information that link the battalion to the brigade combat team (BCT) and the BCT to the sustainment brigade and theater planners (see Figure 12-1).

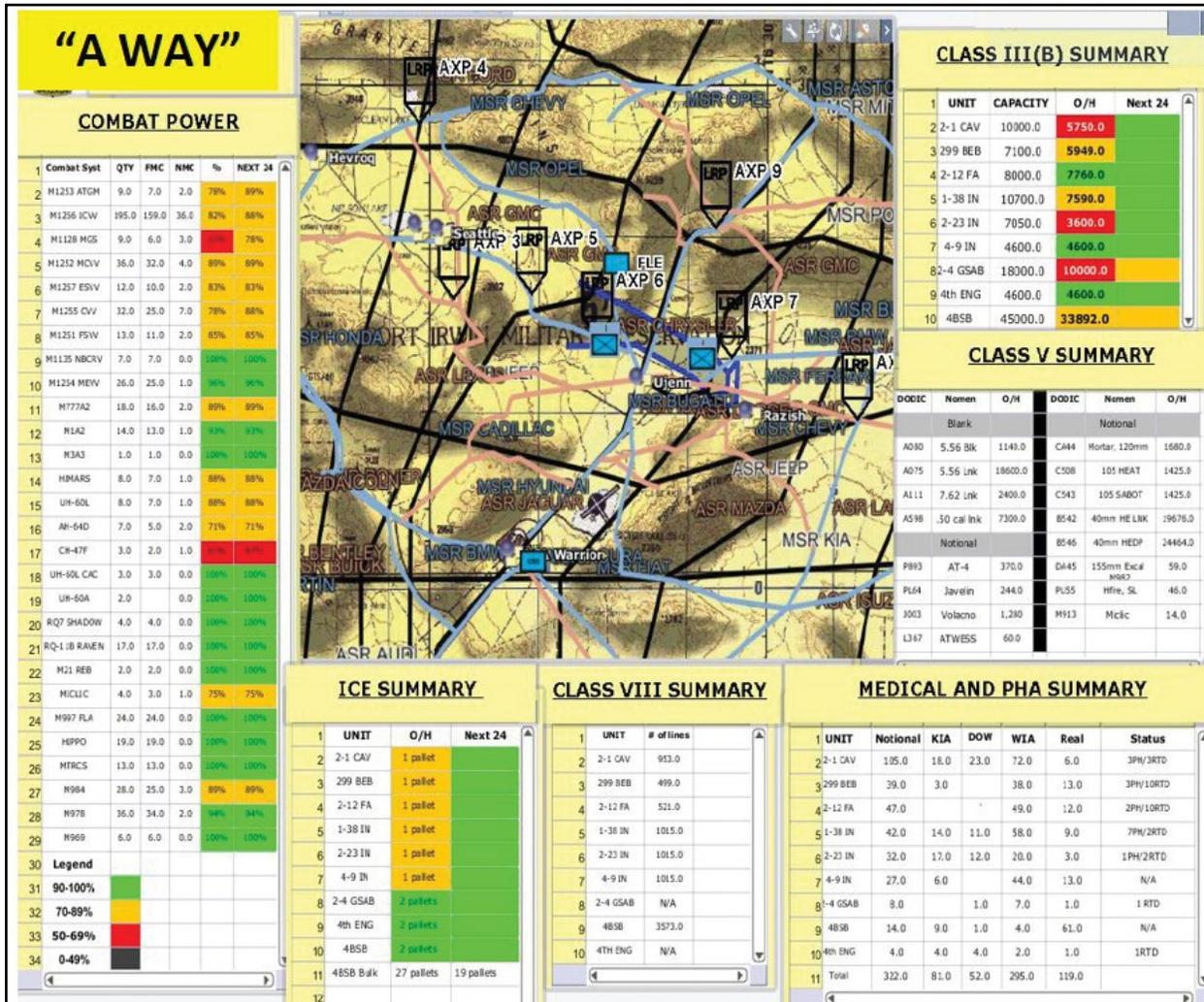


Figure 12-1. Example LOGCOP.

- Potential elements of a LOGCOP¹
- Supply commodity status by:
 - Unit
 - Class of supply (current on hand)
 - Class of supply (next 24/48/72)
 - Sustainment locations
 - CTCP, FTCP, Role I/II, AXP
 - MSR/ASR routes and status
 - Headcounts
 - SIGACTS relating to sustainment
 - Sustainment synchronization matrix
 - Combat power slants /026 (ESR)
 - Logistics asset availability/capacity
 - LIS/ABCS status
 - LOG CCIRs
 - LOG battle rhythm
 - Personnel in PHA needing regeneration
 - Class VII needing regeneration

Observation. There are often numerous LOGCOPs posted, thus negating the word “common.” LOGCOPs are often missing critical data, or are not updated with the frequency required to draw on actionable data provided by the logistics status report to determine the sustainability and supportability of current and planned operations. “Green,” “amber,” “red,” and “black” codes do not have commonly understood definitions, such as percentages, tied to them. Planners overreact when a status turns “red” not understanding that systems have to go “red” and lower their stock in order to facilitate loading the total amount of inbound re-supply.

Discussion. The LOGCOP is used throughout the BCT and at higher levels of command to provide a logistics snapshot of current on-hand quantities and to predict future requirements. Decision makers need a near-real time picture of logistics, human resources and medical information that links the BCT to the sustainment brigade and theater planners. They need to maintain visibility of current and projected requirements, be able to 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 in order to reduce the degree of friction inherent in a logistics pipeline.

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.

The BCT S-4 is the overall responsible party for monitoring the logistics status across the BCT while the observations from the combat training centers show that the support operations officer (SPO) builds and manages the LOGCOP. Units arrive without knowing who is responsible to create and maintain the LOGCOP. Therefore, either both the SPO and the BCT S-4 create their own LOGCOP, removing the ‘common’ out of common operational picture or neither creates the LOGCOP thinking the other is creating it. The key is that the unit must determine who owns the LOGCOP and train that way.

Recommendation. Develop and maintain a LOGCOP that allows maneuver and logistics commanders 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 brigade support battalion (BSB) commander (CDR) in coordination with the BCT executive officer/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 (in other words, I, III [B], and V), and medical status broken down by battalion. Second, a BCT combat power slant should also be added in order to provide the BCT CDR with a clear idea of what combat power he has available. Finally, a graphic representation of all of the logistics nodes. In other words, combat trains command post, logistic release points, ambulance exchange points, Role I/II, forward logistics element, brigade support area (BSA), main supply route/alternate supply routes, etc. should be created for a shared understanding. Successful units have also created battalion efforts, so they could be turned on and off as required. Lastly, ensure that the terms and depictions of “green,” “amber,” “red,” and “black” are understood and tied to actual percentages.

Notes

¹: ABCS: Army Battle Command Systems, ASR: alternate supply route, AXP: ammunition transfer point, CCIR: commander’s critical information requirements, CTCPC: combat trains command post, ESR: equipment status report, FTCP: field trains command post, LIS: logistics information system, LOG: logistics, MSR: main supply route, SIGACTS: significant activities,

Chapter 13

Displace and Occupy the Brigade Support Area

SFC Danny Lampkin and COL Brent Coryell

Displacing, setting up, and tearing down the brigade support area (BSA) is an enormous endeavor. The BSA must keep up with the brigade combat team (BCT) as it moves forward fast in a decisive action environment. It also must remain stable for around 72 hours to optimally support the BCT. Given these requirements, the BSA must be able to move and set up rapidly. Displacing and occupying the BSA takes practice and repetition to master. Effective BSA displacement preparation includes placing the right personnel on the right movement at the correct time and with the right equipment. Failure to do so can result in large delays of support to the BCT as well as wasted man hours, extended convoy operations, and increased risk for enemy attack. Only by deliberate planning and training of BSA layout, location selection, carefully selected convoy movement elements, and priorities of work can these risks be mitigated.

Determine the Type of BSA Internal Layout

Tips for BSA Location and Layout

- Conform to terrain features that leverage good fields of fire and observation
- Make it defensible with key terrain
- Provide cover and concealment
- Make sure it's not on major enemy avenue of approach
- Keep it out of tube artillery range
- Position FSC field trains command post (FTCPs) closer to A/CO supply points to mitigate BSA congestion
- Position ammunition transfer and holding points (ATHPs) on the perimeter for standoff blast protection
- Position the Role II and helicopter landing zone (HLZ) near the rear of the BSA, but not on the perimeter
- Create one way road networks and traffic patterns that will support heavy vehicles
- Create space to stage outgoing convoys
- Centrally locate to support all BCT units
- Keep near MSRs
- Have an area large enough for vehicle dispersion
- Ensure relatively flat ground for operations
- Be sure it will not flood during hard rain

Various configurations exist for BSA layouts with the most observed being the circle and triangle layout. Brigade support battalions (BSBs) need to decide early in their train up as to which type of BSA layout they want to use and stick with it. The BSA will never be a perfect circle or triangle. It must conform to terrain features that leverage good fields of fire and observation. Regardless of the BSA design, the BSA layout should be large enough to support all operations that are conducted in the BSA by organic and tenant units, FSCs, and the combat sustainment

support battalion (CSSB). The BSA requires one way road networks and traffic patterns that will support heavy vehicles. There must be enough room to stage outgoing convoys. Perhaps most importantly, the BSA must be centrally located to support all BCT units and must be near the main supply route (MSR). The most critical sector of the BSA is the A company layout. Reference Chapter 10 on Conduct Effective Supply Point Distribution in The Brigade Support Area (BSA) for additional information.

BSA Circle Layout

A successful technique to establish the BSA is the circle or clock method. Using this method, think of the BSA as a pizza. Every tenant or organic unit gets a slice or two. The entry control point (ECP) becomes the first point of reference. With this design, the main ECP is established at either the 6 o'clock or 12 o'clock position of the BSA. With the battalion command post (CP) representing the center of the clock, the perimeter of the BSA can then be divided according to relative combat strength of the tenant units. With these two reference points, one can easily determine their piece of the pie. Let's say the ECP is 6 o'clock, and A/BSB knows they occupy from 6 to 9 in the circle, they should then understand to just come in the ECP and turn left to occupy. They also know that 9 o'clock is relatively even with the CP in the center. This method also allows for easier tie-in to adjacent units. Another advantage of the clock method is that it provides a comprehensive traffic flow that allows sufficient space for incoming and outgoing convoys and staging. It also allows easy access to supply points and field maintenance support for incoming CSSB and FSC convoys. The BSB can establish a full 360-degree perimeter with sufficient fields of fire. Consequences of the circle design are that it requires more individual and vehicle fighting positions as opposed to the triangle.

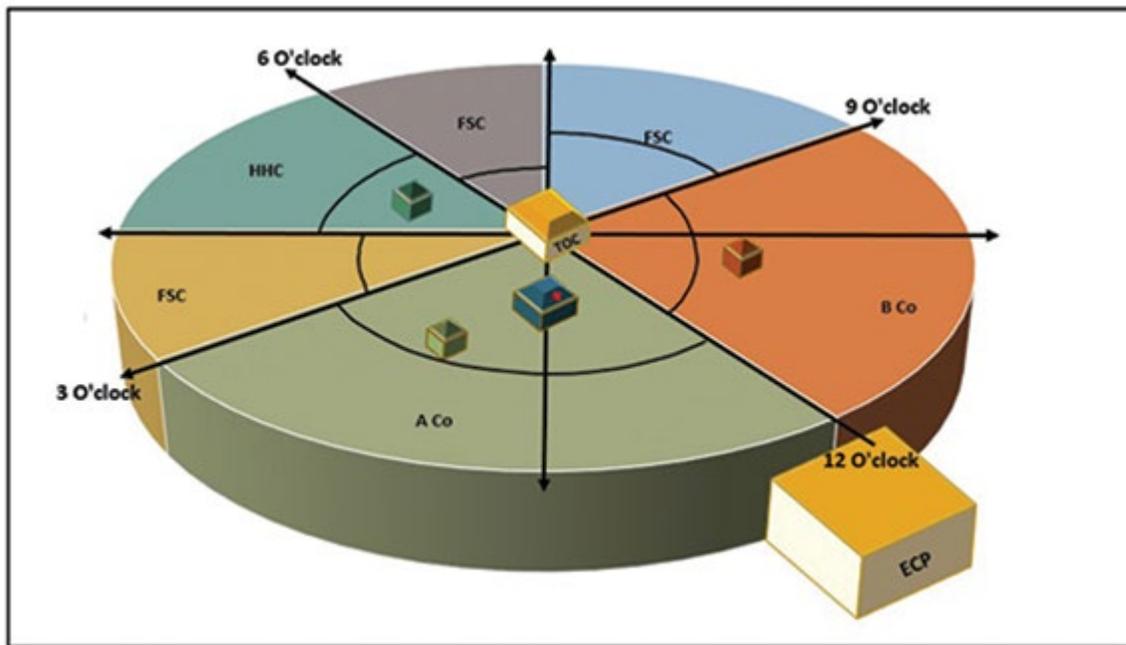


Figure 13-1. Example occupation of a BSA using the clock method.

and vulnerabilities to assist in selecting an area that provides the best protection. BSBs should conduct ground reconnaissance during daylight hours prior to occupation when possible. When not possible, the use of unmanned aerial systems assets can increase information collection. The BSA must be located near but not on a MSR. The BSA should not let the forward line of the troops exceed beyond 30 kilometers and should not be closer than 15 kilometers from the forward line of troops. A good technique for determining the BSA location is to see where the BCT CP and maneuver battalion CTCs are planned to be located before committing. The cavalry and combined arms battalion CTCs should ideally be located around 10 kilometers forward of the BSA. The engineer and field artillery CTCs are often located in closer proximity to the BSA.

Plan and Execute the Brigade Support Battalion Movement and Brigade Support Area Occupation

Proper planning and staff work can minimize congestion at the BSA as occupation is executed and thus prevent negative impacts to the defense execution and increases in safety risks. Staff planning should determine when elements of the organization will move to occupy the BSA.



Figure 13-3. Aerial view of a BSA with decent dispersion of assets.

For example, through planning and coordination of the support operations officer (SPO) and operations officer (S-3), it is determined when essential logistic platforms must move and occupy to enable support operations to begin at the BSA. These movements must all translate into support of the maneuver plan and support the BCT mission. Determining when the BSA will achieve initial operational capacity versus full operational capacity (IOC versus FOC) is essential in planning the concept of support and must be communicated across the BCT. Occupation of the BSA begins with the occupation by the quartering party (QP). After the QP, the

other elements of the BSA are tactically divided into serials to conduct the tactical road march (TRM). These movements are normally divided into the main bodies (number of main body movements can differ by organizational planning, and finally into a trail party. All units will report directly to the CP upon arrival with number of personnel, vehicles, and equipment entering the BSA.

Displacement Concept of the Operation

Three critical convoys exist with displacement operations, each with varying roles and responsibilities that ensure movement of troops without loss of command and control. These convoys are the quartering party (QP), responsible for site security; main body 1 (MB1), moving critical nodes and personnel; and trail party, responsible for closing out the old BSA location. Prior to QP movement, the trail party establishes the tactical command post (TAC). The TAC is operationally controlled by the assistant S-3 and is responsible for command and control of forward movements while the battalion CP breaks down and displaces. When the QP occupies and secures the new BSA location, this becomes the trigger to begin the movement of MB1. Upon MB1 arrival, the BN XO places MB1 elements into their company locations. Additional

main body elements will arrive based either on triggers and are emplaced by company first sergeant's or XOs. The final movement will always be the trail party which only displaces once the CP assumes command and control at the new location and when all other elements are on the move forward. The handover between the CP and TAC occurs using the unit's primary alternate contingency emergency or PACE communications plan, usually through Joint Capabilities Release (JCR) or frequency modulation (FM) communications. Another method is to emplace the TAC with the QP to establish forward command and control as soon as possible. However, this increases the risk to key personnel as the site will not have been secured yet.

Conduct Quartering Party Operations

The QP is the first element of the BSB to arrive at the new BSA and therefore it has the first opportunity to get eyes on the terrain and make adjustments to the BSA location and defense. Its mission is to occupy and secure the new BSA location, verify that it is suitable to support brigade resupply operations, and make limited preparations for receiving the rest of the organization.

The top five priorities of work for the quartering party

1. Confirm the suitable BSA location
2. Conduct CBRNE sweep
3. Emplace crew served weapons on key terrain
4. Establish the ECP
5. Establish communications and new BSA CP.

The QP should consist of crew-served weapons (preferably gun trucks) and include the BSB XO as the mission commander. The BSB XO supervises priorities of work and manages all CP operations in the absence of the BSB commander (CDR). The QPs usually marshal one hour prior to SP and conduct tactical movement two hours prior to the main body. The QP should check the route for obstacles and

known or suspected enemy activity along the route as well as place route markers at appropriate points if necessary. QP is responsible for the initial security reconnaissance and chemical, biological, radiological, nuclear, explosive (CBRNE) sweeps of the BSA. The purpose of security reconnaissance is to determine the threat environment with regards to enemy, CBRNE, and civilians on the battlefield. This denies enemy movement along avenues of approach. The FM and JCR communications should be continuous. Upon arrival to the new BSA location, the top five priorities for the QP are to: confirm the suitable BSA location, conduct CBRNE sweep, emplace crew served weapons on key terrain, establish the ECP, and transfer communications from mobile platform to the new BSA CP. The QP then establishes tenant areas of responsibility on the BSA and makes changes in the defense concept as needed. It is recommended that the QP bring signs or cones coupled with chemical lights to help outline the initial BSA layout and color coded for each company. This will ease occupation efforts and eliminate some confusion that takes place during BSA establishment. QP personnel reconnoiter the new area, mark unit positions, and guide MB1 elements into these new positions as they arrive.

Conduct Main Body 1 Operations

The MB1 is synonymous with the commonly misused term ADVON. The critical nodes necessary for mission command and support operations travel with the MB1 element. MB1 generally consists of one third of the BSB's assets under the direction of the BSB SPO. MB1 start points (SPs) at "H-hour" and transport mission essential supplies, personnel, and equipment to the BSA. Key personnel normally assigned to the MB1 are as follows: BN SPO, battle captain (CPT)/non-commissioned officer, signals officer (S-6), Operations sergeant major, company XOs, CBRN team, convoy escort team (CET), and Role II medical personnel. The key elements of MB1 are: battalion and company command post (CP) nodes, a small support package of all classes of

supply, maintenance control shop, and remainder of Role II (if not detached). The MB1 should have a representative from each company and attached unit to assist in directing follow on elements to their locations. The same Soldiers, vehicles, and equipment should deploy with the QP each time the BSA moves. These Soldiers must know where their respective companies and sections will be located in the new BSA. Any changes to composition are given to the BN SPO at the time of movement order back brief.

Main Body 1 Roles and Responsibilities

The following are unit roles and responsibilities for the main body I:

- The battle captain/non-commissioned officer (BTL CPT/NCO) serves as the focal point for battle tracking and information management in the command post. The battle captain receives and disseminates information, manages the staff journal, and tracks the battle using the Army Battle Command Systems (ABCS). The BTL CPT and S-3s duties are often not specified to the level of detail necessary to prevent overlap. This often results in the BTL CPT and the S-3 performing the same requirement.
- The operations sergeant major is responsible for establishing the BSA CP and manages the CP ECP. He or she ensures priorities of work are being followed and assigns perimeter security responsibilities to organic and tenant units. They also position organic and tenant units within the BSA. Cones, stakes, pickets, and chemical lights (low visibility) should be used to designate unit placement. Unit designation markings should be described in the BSB tactical standard operations procedures (TACSOP). Additionally, the operations sergeant major normally exercises mission command over the quick reaction force. In conjunction with the BSB command sergeant major, he coordinates BSA establishment and consolidates the BSA defense plan. Typically, the operations sergeant major responsibilities are not clearly defined and the position is not used to its maximum potential.
- The BSB S-6 is responsible for establishing internal communications as well as distant station communications with the supported brigade via OE-254 antennas. They establish and maintain networks, automation systems, systems administration, and systems/software security for the CP and BSA. They ensure integrity of the FM and digital communications networks. The S-6 also ensures sustainment automation support for the security of and use of the Very Small Aperture Terminals and wireless Combat Service Support Automated Information System Interface network. For more information of S-6 and digital systems occupation priorities, reference the Goldminer paper 'Operate and Leverage ABCS and logistics information Systems' for additional information.
- Company XOs exercise mission command over companies in the absence of the company CDR. They are responsible for the accountability of company personnel and equipment and ensure they arrive at the new BSA. Company XOs ensure priorities of work and security procedures are being followed in accordance with the BSB TACSOP and CDRs intent.
- CBRN Teams are responsible for conducting CBRN reconnaissance, detection, and decontamination operations prior to BSA occupation. If chemical agents are detected, Soldiers will assume mission-oriented protective posture 4 and egress the contaminated area. The CBRN team will report directly to the BSB XO, and on order, execute a displacement plan to occupy a different location.

- Convoy escort teams are overall responsible for convoy security. The CET will conduct security sweeps and establish a hasty defense immediately upon arrival. Convoy protection platform vehicles should be up-armored and mounted with a crew-served weapon. At a minimum, CETs must be prepared and capable to protect BSB personnel and equipment from level I enemy attacks.
- Role II medical personnel are responsible for establishing Role I and II health services support for the BSB and BCT. This includes treatment of battle injuries and disease non-battle injuries, triage of casualties, and preparation for evacuation to Role II. Role II personnel must be able to provide evacuation of patients by ground to and from the BSA. Role II is a critical capability that contributes to the sustainment warfighting function or WfF. The timely establishment of Role II capabilities is a priority when conducting field/contingency operations. Reference the Goldminer paper 'Optimally Establish the brigade support medical company For Role II Operations' for additional information.

Trail Party

The trail party (TP) is often overlooked and under planned during displacement operations and is instead used as a catch all for equipment and personnel. This diminishes its usefulness and limits its contributions and effectiveness to the overall operation. Instead, the trail party has very deliberate functions. Primarily it serves as the BN TAC during displacement, controls recovery assets for equipment break downs en route, and to close out the old BSA location. As such, the elements of a trail party should include: security vehicles, recovery assets, and a S-3 vehicle. The trail party serves as the TAC prior to the quartering party SP to allow main body 1 elements time to prepare for movement. We recommend they command and control from a high mobility multipurpose wheeled vehicle equipped with JCR and dual FM to provide redundancy in communications with forward convoys. This element should also be equipped with a minimum of two recovery vehicles, to serve as a final net for any vehicles that may have broken down en route to the new location. Caution should be used to ensure that recovery assets are dispersed across all convoys and not placed all on TP, as well as ensure that they are not already hauling equipment prior to movement. Finally, security trucks are necessary on the trail party to provide security at the old location. As the number of trucks at the old site lessen and the time observed for displacement increases, the risk of a potential attack increase.

Establish and Follow Priorities of Work

Priorities of work is a set method of controlling the preparation and conduct of BSA operations. All BSA elements execute the priorities of work. During execution, the CDR's intent spurs disciplined initiative. TACSOPs should describe priorities of work in an H-hour sequence timeline as well as format. Upon BSA occupation, security is first and foremost. Many BSBs do not prioritize BSA security upon occupation. As a result, the potential for an attack is greater. The BSA occupation must be a well-rehearsed operation and all Soldiers arriving at the BSA should have an understood task and purpose. Unit standard operating procedures should establish the priorities of work for all Soldiers during the occupation and establishment of the BSA. Load plans are critical to BSA establishment. If an item needed is buried at the back of the truck, it creates lost time and effort searching for it. Load items backward so that the critical and essential items can be off-loaded first. Some of the tasks associated with security establishment are emplacing of weapon systems, establishing communications, designation of final protective fires and final protective lines, emplacement of obstacles, and building fighting positions. For

sustainers on the BSA, additional considerations must be incorporated into the priorities of work such as constructing berms of fuel assets and the ammunition in the ATHP, identification of

Occupation will be frustrated and will require unnecessary time before full operations can begin without published, enforced, and rehearsed priorities of work.

supply evacuation routes, and establishment of decontamination sites. Once the perimeter defense is established, supplies have been received and are ready for distribution then rest and chow plans can be prepared.

Table 13-1. Example priorities of work.

Priority	Specified Tasks
1	Conduct area reconnaissance
2	Chemical/security sweep
3	Emplace and man crew-served weapons and ensure interlocking sectors of fire
4	Designate alternate and supplementary fighting positions
5	Emplace CBRNE, M22, AND M256
6	Emplace LP/OP
7	Identify company areas
8	Implement traffic pattern
9	Establish ECP
10	Emplace obstacles/passive security
11	FM/JCR communications established establish hasty FIGHTING POSITIONS
12	ESTABLISH toc
13	Triple strand concertina wire for the perimeter, TOC, and CPs
14	Establish Role II
15	Establish company CPs
16	Erect camouflage
17	Conduct communications check with company CPs
18	Complete range cards and submit them to S-3
19	Position sustainment assets
20	BSA sector sketch completed
21	Dig grey water pits/CK established
22	Establish sleeping tents
23	Improve fighting positions
24	Conduct rehearsals
25	Continue area improvement

We recommend prioritizing combat power for protection integration before other objectives are met. Other priorities of work should include establishing communications, upper and lower tactical internet, CP operations, survivability positions, and ECP operations. An effective priority of work H-hour sequence maximizes time and space while synchronizing sustainment and protection WfF tasks.

This chapter provides a starting point for the execution of BSA displacement and occupation. It covers lessons learned and best practices BSBs can use to plan, prepare for, execute, and conduct BSA displacement and occupation operations. The displacement BSA and occupation takes practice and repetition. The faster the BSA can tear down, move, and set up, the more responsive the support will be to the BCT. The BSB must be versatile and agile enough to adapt quickly and be able to shift with little effort from focus on sustainment operations to BSA defense. The military decision-making process, that once required years to implement, must now be recognized, communicated, and enacted far more quickly. BSA layout, location selection, carefully selected convoy movement elements, and priorities of work are the keys to success.

Chapter 14

Support From and Defend the Brigade Support Area

CPT Shayne Heap, CPT Rhonda Booth, and COL Brent Coryell

Brigade Support Area Operations – The Decisive Action Balance of Support versus Defend

One of the challenges faced by brigade support battalions (BSBs) and regimental support squadrons is establishing a brigade support area (BSA) able to sustain a brigade combat team's (BCT's) tactical operations. With limited BSA field training at home station and years of conducting operations from forward operating bases and combat outposts, the required skill set and institutional knowledge have atrophied. Successful BSA operations develop during the planning process where rehearsed operations set conditions that lead to a structured occupation of a BSA site after a tactical road march. After occupation, the BSB must develop a base defense plan that will secure and protect the BSA support activities during decisive action operations. You cannot support if you cannot defend and thus both BSA operations and defense must be taken into consideration from the beginning of the BSA site selection process, through occupation execution, and then refined as conditions change.

Plan and Set the Conditions for the Defense

During initial planning, the staff must consider the proposed BSA sites in relation to mission, enemy, terrain and weather, troops, time available and civil consideration factors in order to recommend a defensible location to the battalion commander while ensuring the BSA footprint enables support operations. For example, while the size of a BSA may prevent it from being completely hidden from observation, the intelligence preparation of the battlefield (IPB) can find areas that may conceal the BSA location from possible enemy avenues of approach and population centers. This IPB can assist in identifying field of view and possible locations for use of observation posts (OPs). Defense is only half the equation for the BSB staff to consider in site selection for the BSA. While sustainment operations must be protected, the BSA must be established to support the activities as well.

While it can be more difficult to defend a large BSA, some of the largest convoys on the main supply routes and alternate supply routes are sustainment convoys. Identification of road networks to, from, and inside the BSA will promote ease of maneuver of the tenant units inside the BSA and units moving to and from the BSA. During planning and site selection, the staff must look to establish a BSA that has sufficient area to conduct ammunition transfer and holding point operations, fueling missions, supply support area operations, staging areas for convoys, and medical evacuation (MEDEVAC) to the Role II medical facility. These areas should be large enough to support operations on the BSA that are conducted by the BSB units as well as both supported forward support companies and the supporting combat sustainment support battalion. In addition to calculating space for vehicle operations, the staff must consider space required for the incorporation of aviation assets and the required helicopter landing zones to facilitate aerial resupply and air MEDEVAC operations.

The BSA defense plan takes fruition during all phases of occupation of the BSA site. One of the most important pieces of the initial base defense plan is the emplacement of the BSA entry control point (ECP). The ECP maintains positive communications with the mission command element at the BSA and provides early warning of possible enemy threats traveling along any high speed avenues of approach. The ECP should be well fortified against possible attack. Soldiers occupying the ECP should be trained in ECP operations and areas such as searching of vehicles, detaining individuals, intelligence gathering, etc. Many times the ECP is the first element to come in contact with enemy and is the first in the line of defense.

Defend the Brigade Support Area

- **Establish an effective BSA defense against a Level II threat**
- **Develop the BSA layout using METT-C factors.**
- **Assign all tenant units a sector.**
- **Tie in tenant units with established and properly constructed fighting positions, concertina wire obstacles, sector sketches, and intersecting fires.**
- **Ensure all elements in or transitioning the BSA assist in defending the perimeter.**
- **Develop a BSA defensive plan that shows unit protection responsibilities, locations of mines and obstacles, planned indirect fire coverage, OP/LPs, patrol routes, and positions of automatic weapons.**
- **Ensure defensive positions are involved in threat analysis and are briefed on intelligence gathering requirements.**
- **Train and use a Quick Reaction Force.**
- **Ensure effective communications with guards on perimeter.**
- **Integrate the use of enablers in the base defense plan (fires (TRPs), engineers, MPs, etc).**
- **Ensure the final base defense plan, and any changes to the plan, are disseminated to all tenant units on the BSA.**

Figure 14-1. Key tasks of defending the BSA.

Key personnel assigned to establish and maintain ECPs consist of the following: base defense operations center (BDOC) officer in charge (OIC)/non-commissioned officer in charge (NCOIC), operations sergeant major (OPS SGM), sergeant of the guard (SOG), ECP NCOIC, and ECP sentries. Their duties are:

- OPS SGM conducts mission analysis and identifies the force protection condition (FPCON). He synchronizes protection assets with the BDOC OIC/NCOIC and coordinates manning requirements, construction material, tactical inspection equipment, and communications. The OPS SGM tasks personnel to perform as SOGs and delegates decision making authority to them.
- Sergeant of the guard is the senior NCO of the guard responsible for the training, discipline, and conduct of all ECP personnel. He supervises guard mount procedures to include the conduct of pre-combat checks/pre-combat inspections. The SOG also ensures shared understanding of current rules of engagement (ROE), escalation of force (EOF), and force protection conditions (FPCONs). Additionally, he ensures that all sentries understand their general and special orders in accordance with the BSB tactical standard operating procedure (TACSOP) and specifically, force protection and ECP operations.

- ECP NCOIC is subordinate to the SOG and has supervisory control of ECP operations. He implements the use of access rosters, security badges, challenge and passwords, and other established policies and procedures for the entry of authorized personnel. He directs all ground units entering the BSA to report to the BSB command post (CP). The ECP NCOIC provides security for the searcher by maintaining eye contact with the individual being searched. He supervises, monitors, and directs all ECP activities. The ECP NCOIC reports significant activities (SIGACTs) directly to the SOG and maintains continuous communication with the BSB CP.
- ECP Sentries are subordinate to the ECP NCOIC and perform as the guard force for ECPs. They are responsible for force protection, over watch protection via crew-served weapons, individual and vehicle searches, and SIGACTs reporting. The ECP sentries must fully understand their general and special orders, ROE, EOF, and current FPCON.

Develop the Defense Sketch from the Bottom Up

STANDARD RANGE CARD					
For use of this form see ATP 3-21.8; the proponent agency is TRADOC.					
SQD	May be used for all types of direct fire weapons.				MAGNETIC NORTH
PLT					
CO					
POSITION IDENTIFICATION			DATE		
WEAPON			EACH CIRCLE EQUALS METERS		
NO.	DIRECTION/DEFLECTION	ELEVATION	RANGE	AMMO	DESCRIPTION
REMARKS:					

Figure 14-2. Sample range card.

As an initial security posture is established and fighting positions are developed, companies are given areas of responsibility that can be divided into platoon areas, squad and section areas, and finally assigned to fighting positions. In this phase of building the defense, individual Soldier skills are used. Construct fighting positions to the standard established in the unit SOP. Ensure fighting positions are mutually supportive with interlocking fields of fire. Emplace obstacles to create engagement areas (EAs) where the unit desires to engage the enemy with their most casualty producing weapon systems. The seven steps of engagement area development found in Field Manual 3-21.10, Chapter 5 are to identify all likely enemy avenues of approach, determine likely enemy schemes of maneuver, determine where to kill the enemy, emplace weapons systems, plan and integrate obstacles, plan and integrate indirect fires, and rehearse the

execution of operations in the EA. Developing the initial security posture should be the first effort of all units within the BSA. Only after fighting positions and security have been inspected and approved should units move on to other priorities of work.

Leaders must be involved in this process and ensure that all actions are being conducted to standard. Fighting positions (crew-served weapons, and individual weapon positions) need range cards to standard which in turn, aids in developing situational understanding of the terrain the BSA occupies at all levels. Range cards from fighting positions are compiled to build sector sketches up to a complete company sector sketch. All companies provide their sector sketches to the BSB S-3. These sector sketches are compiled to give an overall picture of the BSA perimeter defense and create a BSA sector sketch that can be used in directing efforts during battle drill execution.

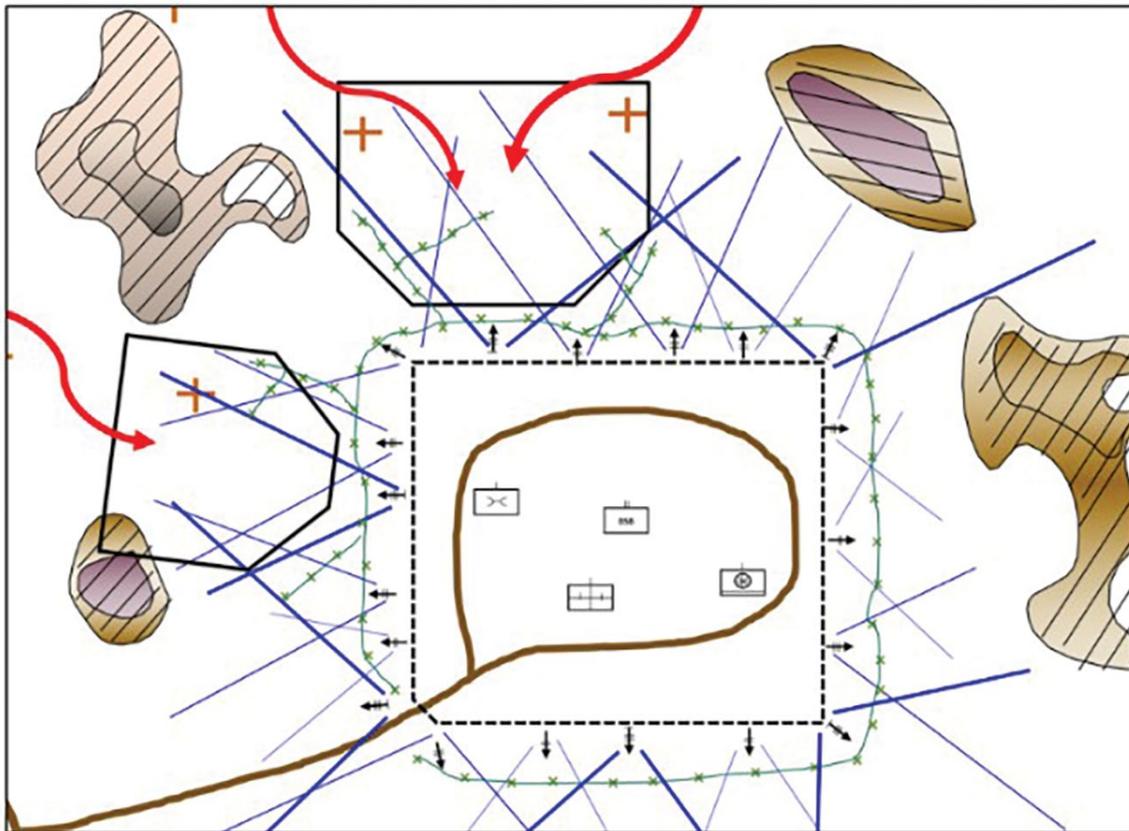


Figure 14-3. Example BSA defense sketch.

Integrate and Synchronize Defense Enablers

Commanders establish a BDOC to ensure integration of base defense plans. The BDOC is a mission command cell that serves as the focal point for base security and defense planning. It plans, directs, integrates, coordinates, and controls all base defense efforts. The OPS SGM or HHC/BSB commander (CDR) serves as the BDOC OIC/NCOIC. Simultaneously, the BDOC and S-3 should coordinate and integrate combat power in support of protection. The BDOC is responsible for managing all gun trucks and crews, assigning them for logistics package tactical convoy operations, ambulance exchange points, or forward logistics element missions. The BDOC also manages the quick reactionary force (QRF). During attacks on the BSA, the BDOC directs the QRF to neutralize the threat based on guidance from the BSB S-3 or battle captain. The BDOC maintains constant frequency modulation communications with the perimeter and maintains the analog and digital BSA defense common operational picture (COP).

With a complete picture of the initial defense perimeter, the battalion (BN) S-3 can further develop the base defense plan through coordination with the BN, the staff, and other supporting units. A QRF should be established and fall under the command and control of the S-3 battle captain. The QRF is used to provide reinforcing fire support and capability to the base defense plan during battle drill execution at any location where the S-3/battle captain sees it is needed. It is imperative that the mission authority of the QRF is clearly established and that any battle drill rehearsals conducted include participation from the QRF.

An active QRF in reserve can deter and prevent enemy actions that would affect combat power and freedom of action. An effective QRF must be flexible and adaptive in hostile, uncertain, and permissive environments. The QRF must be able to safeguard the BSA, secure routes, and protect the force while it prepares for other operations. However, many BSBs face challenges with integrating the QRF into the base defense plan. Under manning is the number one cause. We recommend that operational control requirements for QRF operations be identified in the BSB TACSOP. We also recommend that the OPS SGM manage the BSB troops to task or T2T and perform as BDOC NCOIC as opposed to the HHC/BSB CDR.

Target reference points (TRPs) are easily recognizable points on the ground, either natural or manmade, used to control direct or indirect fires. The TRPs should be placed where fighting positions or the BSB S-3 anticipate enemy contact so they can call for fire to suppress the enemy. Once identified, the TRPs are then confirmed and coordinated with the BCT fires cell and field artillery BN for support. Supporting fires are critical to a successful defensive plan.



Figure 14-4. M109 155mm Self-Propelled Howitzer providing fires support.

Observation posts locations can be identified and manned with intelligence reporting requirements that have been developed through synchronization with the BN S-2. These priority intelligence requirements are distributed to all defensive positions as well. Debriefs should be conducted at the end of guard shifts to provide intelligence feedback to the S-2. Other options that can be leveraged to provide intelligence and build defense capabilities are intelligence, surveillance, reconnaissance assets in the form of RAVEN (unmanned aircraft) operations or coordination with aviation assets to gather intelligence. All these things allow the BN CDR to see the base defense and make adjustments to the plan as required.



Figure 14-5. An RQ-11 Raven launch. Raven operations can provide real-time feedback to commanders.

Have a Flexible Plan in a Changing Operational Environment

Support activities conducted in the BSA can either be the force behind the BCT that extends operational reach or it can be the anchor that holds the BCT back in creating forward momentum in their operations. BSAs must maintain the agility to respond to the needs of the formation and must be mobile and flexible in order to move as required by the tempo of the brigade.

As conditions change in the area of operations and on the BSA, the shape and perimeter as well as the base defense plan must be flexible and adjust. When the number and composition of tenant units on the BSA change, the BSA defense plan changes. The adjustments must be communicated throughout the formation to ensure shared understanding is accomplished and all units know and can execute in their respective areas responsibility. Defense of the BSA must be rehearsed just as any battle drill. It is the responsibility of leaders to ensure that Soldiers know and understand how individual efforts support the defense plan in whole. All applications of a unit's defense plan must be captured and continuously refined in a SOP.

As units become more proficient in defense of the BSA and its internal operations, BSBs and their subordinate units will be better prepared to extend operational reach of the BCT by providing coordinated and synchronized sustainment.

Develop and Maintain a Brigade Support Area Defense Common Operational Picture

We observe that many BSB S-3s do not understand how to create a BSA defense COP. In particular, how to complete functional range cards and sector sketches. Requirements to complete this are either not adequately specified within the BSB TACSOP or are just not followed. The BSB S-3, BDOC OIC, and operations sergeant major are responsible for creating and monitoring the BSA defense COP. The OPS SGM assigns sectors to each entity that occupies the BSA in accordance with the TACSOP. The OPS SGM, S-2, and S-3 survey the terrain and perform IPB to create a defense. They use IPB to identify the most likely enemy avenues of approach and most likely enemy courses of action (COAs). Once this is determined, the OPS SGM can determine where to kill the enemy and can then emplace obstacles and OPs. Tenant units complete range cards and sector sketches and submit the products to the OPS SGM. Once all sector sketches are turned in, they are combined and the BSA Defense COP is created.

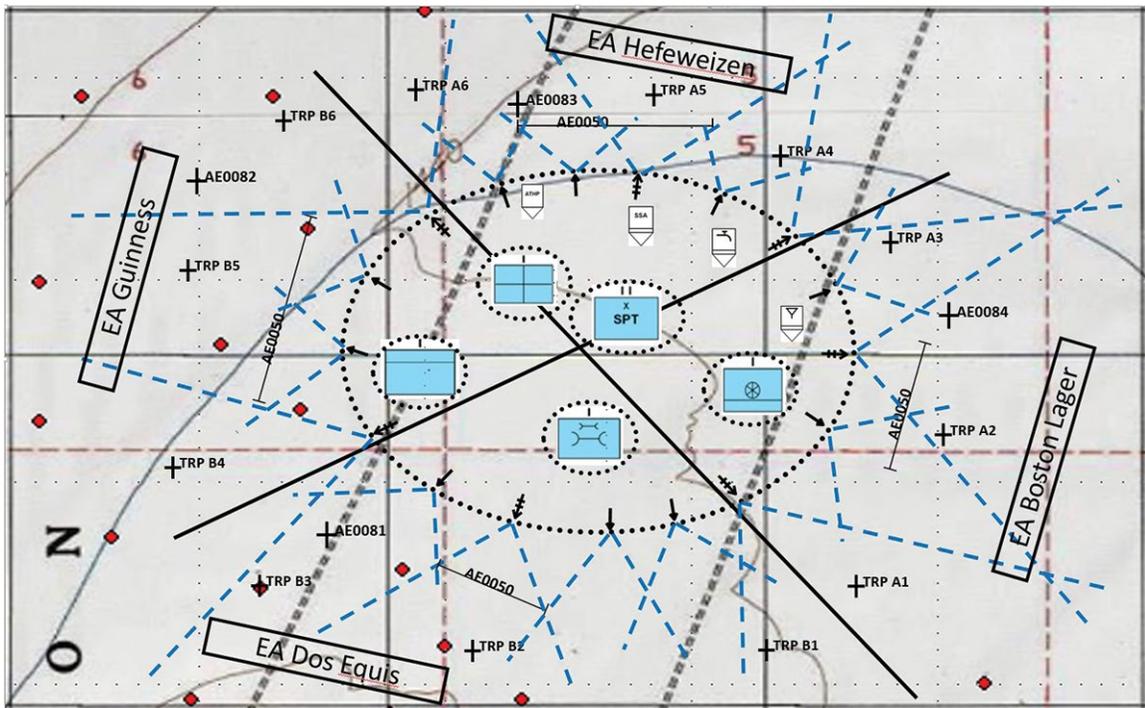


Figure 14-6. BSA defense COP with unit locations, fighting positions, TRPs, FPFs, EAs.

The BSA defense COP is simply a compilation of all assigned sector sketches compiled from individual fighting position range cards. The BSA Defense COP should be both analog and digital. The analog COP works best when the BSA is under attack to quickly annotate SIGACTs using a dry erase marker as reports are coming in. The BSA defense COP should include the most likely enemy avenues of approach, BSA perimeter, OPs, engagement areas and fields of fire, obstacles, fighting position grids with left and right limits of all weapons systems, maximum effective range lines, AT-4 locations, grenade locations, and claymore systems locations, patrol routes outside perimeter, QRF location, TRPs, named areas of interest, company CP locations, ECPs, final protective fire (FPF) lines, passage points, casualty collection points (CCPs), bunker and rally points.

Determine and Rehearse Battle Drills

We observe that battle drills are not posted, readily available, or rehearsed. Battle drills standardize actions across the BSA. Common battle drills are react to contact, react to indirect fire, react to an ambush, react to a vehicle-borne improvised explosive device, and mass casualty operations. In addition to actions Soldiers must take, they also provide reporting timelines to the BSB CP consistent with the BSB and BCT commanders' reporting requirements. Post the battle drills in the CP. Have them readily available to display on one of the big screens when an event is occurring and then follow the steps of the drill. In conclusion, rehearse a minimum of two battle drills a day.

Conclusion

Establishing a BSA able to sustain a BCT's tactical operations is challenging. You cannot support if you cannot defend and thus both BSA operations and defense must be taken into consideration from the beginning of the BSA site selection process, through occupation execution, and then refined as conditions change.

Chapter 15

Conduct Effective Brigade Support Battalion Command Post Fusion Cell Operations

CPT Rhonda Booth and COL Brent Coryell

At the brigade support area (BSA) in the brigade support battalion (BSB), a digitally connected, secure, and expeditionary command post (CP) supports the leadership. Command, control, and communication (C3) is the process through which the activities of the BSB are synchronized and coordinated in order to execute successful brigade combat team (BCT) support operations. The BSB has to be proficient at C3 as well as receiving, analyzing, and disseminating information while simultaneously building and monitoring three distinct common operational pictures (COPs) for the BSB commander to make timely and accurate decisions. The most successful BSB CPs we observe create a fusion cell, integrating the primary staff officers from multiple staff sections and warfighting functions into one section in a central location. This fusion cell design creates a collaborative effort that maximizes understanding between current operations (CUOPS) and future operations (FUOPS) and allows the staff to generate and monitor maneuver, logistics, and BSA defense COPs simultaneously. This fusion center enables a one-stop C3 shop with a “swivel chair” for the BSB commander to monitor near-real time information on all three pictures. Before the commander can monitor these three COPs, it must be established and organized with an optimal layout of equipment and personnel in the fusion cell who all understand their roles and responsibilities. Discussed below are the physical structure of the cell, roles and responsibilities, the information to track, developing the COPs, and then procedures to manage information and the battle rhythm. Establishing the BSB fusion cell begins with determining the best physical structure.

The most successful BSB CPs we observe create a fusion cell, integrating the primary staff officers from multiple staff sections and warfighting functions into one section in a central location.

Determine the Physical Structure

We have observed that many BSB CPs are not very expeditionary. Although Deployable Rapid Assembly Shelter or DRASH tents have become the preferred structure for CPs, the time associated with their establishment is not conducive to operations requiring multiple BSA displacements. They also do not provide adequate cover or protection and require a large work force for set up. The BSB must be more expeditionary in a decisive action (DA) environment. We recommend establishing the BSB using connecting containerized expandable platforms. Using containerized platforms reduces the time the BSB is not operational and offers some cover from small arms and indirect fire. These platforms are prewired for electricity and communications platforms and can be mounted on flat racks for movement via the Palletized Load System (PLS). In lieu of containerized platforms, BSBs can also use expandable vans with connecting foot walks. These options usually are initially established with working communication systems in one hour. The next step is to determine how they will be arrayed in terms of space allocation for personnel and equipment.

Determine the Fusion Cell Arrangement

We observe staff sections arrayed in different physical areas within the BSB CP resulting in information becoming compartmentalized. This ineffective arrangement often results in orders or plans not being timely or possibly missing critical information which degrades subordinate commander ability to conduct troop leading procedures (TLPs), back-briefs, and rehearsals. We also observe information and COPs on laptops visible only to the operator which is not an effective technique for sharing information.

An effective fusion cell arrangement facilitates and enhances information exchange among the staff. The most conducive arrangements observed emplace all staff sections in a U-shaped formation centered on three large 60 inch LED screens. The screens must be large enough for everyone to see. One screen is the maneuver COP, one is the logistics COP, and one is the BSA defense COP. All three of these digital COPs have a backup analog COP. This array allows the staff to create and monitor digital and analog information together in the same time and space and thus increases synergy and creates a shared understanding. When all staff sections are represented in one central location with visibility of large information display screens, crosstalk increases and compartmentalized information decreases.

The fusion cell, as depicted, promotes a shared understanding across multiple staff sections and warfighting functions by combining the intelligence/S-2, operations/S-3, communications/S-6, support operations officer (SPO) plans, and SPO trans into one common area.

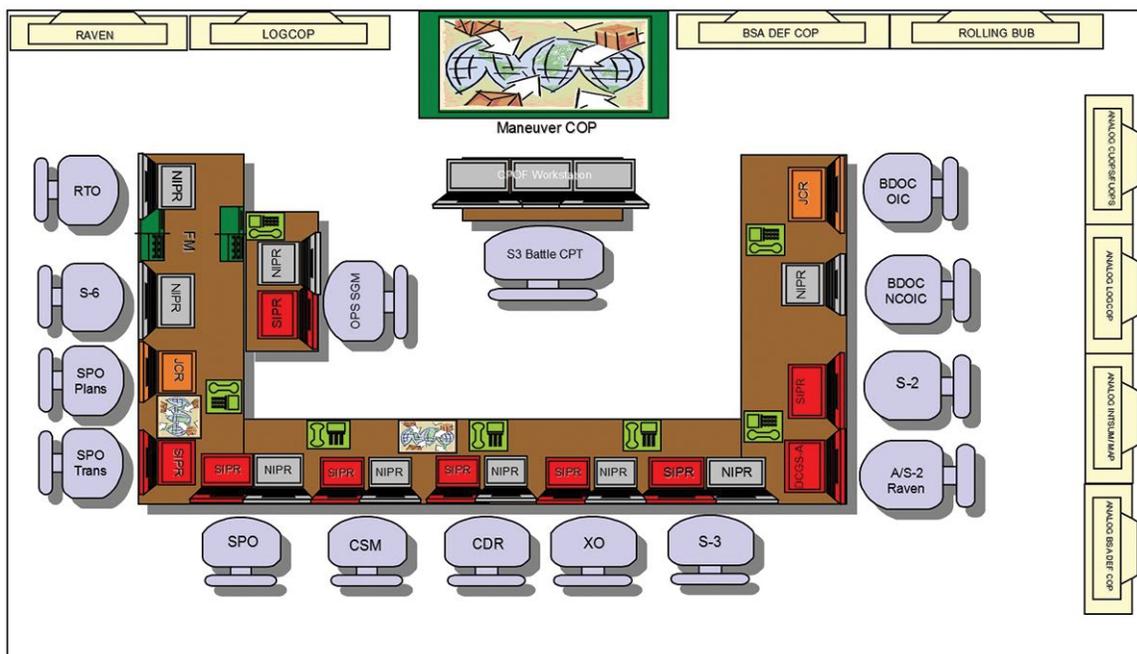


Figure 15-1. BSB CP fusion cell layout.

The fusion cell, as depicted above, promotes a shared understanding across multiple staff sections and warfighting functions by combining the intelligence (S-2), operations (S-3), communications (S-6), support operations officer (SPO) plans, and SPO trans into one common area.

Once the primary fusion cell members are identified, the remaining staff sections fall into connecting work centers. Adjacent and connecting BSB work spaces include the administrative logistics operation center (ALOC), the support operations cell, the S-6 communication cell, the briefing tent, and an entry control point (ECP). The perimeter of all of these areas is surrounded by triple strand concertina wire.

Determine the Roles and Responsibilities of Fusion Cell Individuals

Roles and responsibilities between staff elements often overlap causing redundancy and confusion. The following listed duties and responsibilities are most commonly associated with each primary position within the fusion cell.

The BSB executive officer (XO) directs all actions within the fusion cell based on the commander's priorities of work, guidance and intent. The BSB XO synchronizes the BSB staff during the military decision-making process and establishes and maintains staff fusion throughout the planning, preparation, and execution phases. Additionally, the BSB XO supervises the BSB's ALOC.

The BSB support operations officer (SPO) focuses on information contained in logistics status (LOGSTAT) reports and in maintaining and monitoring the BCT logistics common operational picture (LOGCOP). The BSB SPO is the key interface between supported units and the sustainment brigade. The SPO acts as the liaison between the fusion cell and the support operations cell to ensure synchronization of CUOPS and FUOPS. Unclear delineation of duties between the battalion S-3 and SPO cause the most friction when transitioning from future operations (in which SPO receives the mission and develops orders) to current operations (where S-3 issues the orders, executes the mission, and provides battle tracking). This imprecise handoff affects the staff's ability to produce timely and detailed orders.

The BSB S-3 section prepares, coordinates, authenticates, publishes, reviews, and distributes written operation orders, plans, or a concept of the operation (CONOP) to inform subordinate commanders. The coordination between the BSB SPO and S-3 directly correlates to whether subordinate commanders have enough time to conduct TLPs, back-briefs, and rehearsals prior to mission execution.

The BTL CPT or NCO (battle captain or non-commissioned officer) is the focal point for information management in the CP. The battle captain receives information coming in to stay abreast of the current battle using all of the Army Battle Command Systems (ABCS) assigned to the BSB. Upon receipt, the information is analyzed and distributed to subordinate commanders based on the BSB commander's intent. The BTL CPT and S-3s duties are often not specified to the level of detail necessary to prevent overlap. This often results in the BTL CPT and the S-3 addressing the same requirement.

The operations sergeant major (OPS SGM) is responsible for establishing the BSB and manages the ECP. In conjunction with the BSB command sergeant major (CSM), the OPS SGM coordinates BSA establishment and consolidates the BSA defense plan. The OPS SGM ensures the fusion cell is properly staffed. Typically, the OPS SGMs responsibilities are not clearly defined and the position is not used to its maximum potential.



Figure 15-2. Soldier employing Raven.

The BSB S-2 intelligence section continually assesses the enemy situation by conducting intelligence, surveillance and reconnaissance (ISR) analysis and by providing intelligence support to targeting and information superiority operations. Once analysis is complete, with the most dangerous and likely enemy courses of action identified, the intelligence section relays the information to operations personnel. This allows the operations section, in conjunction with the SPO plans and transportation officers, to plan FUOPS and CUOPS with a comprehensive understanding of the battlefield. The S-2 also maintains the route status with information available in the BCT intelligence summary (INTSUM) as well as information obtained during tactical convoy operation de-briefs. The S-2 tracks friendly and enemy actions that may impact logistics operations and BSA security. The S-2 produces and maintains the security clearance access roster and provides the document to the personnel. A challenge observed within the BSB S-2 is creating the

battalion INTSUM based on the BCT INTSUM. Information is often merely duplicated without any mission analysis or application specifically to the BSB's problem set regarding the terrain, weather, civil consideration and the enemy.

The Raven operator is tactical control (TACON) to the BSB S-2 but often most Raven operators are not assigned to headquarters and headquarters company (HHC). This leads to these Soldiers being assigned to missions that prevent them from flying the raven.

Raven operators provide additional ISR capabilities to the BSB which lead to early detection of enemy personnel within their area of operation.

The BSB SPO transportation officer, partnered with the assistant S-3, centrally controls and monitors distribution and resupply operations for the BCT. Together, they use the logistics synchronization (LOGSYNC) matrix and mission tracker as the source documents to track mission execution.

The BSB SPO plans officer provides information on FUOPS to the BSB S-3 based off the LOGSYNC matrix. The SPO plans officer ensures orders or concepts of operations (CONOPS)

produced contain all necessary information for the A/BSB commander to provide logistics resupply to supported units in conjunction with the BSB SPO, the support operations cell, and the BSB S-3.

The BSB S-6 is the principal staff officer for communications and is responsible for electromagnetic spectrum operations, networks within the BSB, and for the full range of tasks associated with network management, systems administration, and systems and software security for all automation. The S-6 advises the commander, staff, and subordinate units on communications and in establishing automation systems administration procedures for all information systems. The S-6's primary functions are ensuring the integrity of the frequency modulation (FM) and the digital communications networks. The S-6 also ensures sustainment automation support for the security of and use of the very small aperture or VSAT terminals and wireless Combat Service Support Automated Information System Interface (CSAISI) network.

The radio telephone operator (RTO) is responsible for receiving and disseminating guidance to all units. They maintain a Department of the Army Form 1594 for all actions that occur during their assigned shift. The RTO is TACON to the BSB S-3 or battle captain.

Determine the Information Requirements to Track in the Fusion Cell

What a TOC Should Track

- Priorities of Work
- OPORD/FRAGOs BCT/BSB
- CUOPS/FUOPS
- Mission Tracker
- LOGSTAT
- PERSTAT
- Fleet Status
- QRF status
- CULT Reports
- Combat Multiplier Slant
- Weapons Status
- Route Status
- Recovery Mission Tracker
- CASEVAC Teams/Vehicles
- 9-Line MEDEVAC
- Battle Rhythm
- Risk Assessment
- TCO Pre-Brief and De-Brief
- PMCS schedule

The battalion processes an inordinate amount of information that must be managed and filtered to provide the commander the information necessary to see the battlefield, make critical decisions, and effectively execute support operations. We observe that CPs receive so much information from so many inputs that they have a difficult time determining what is relevant. Typically, commander's critical information requirements (CCIRs) are posted but are not tied to a decision. This facilitates the filtering of this information overload and enables the commander's decision making by managing the CCIR's, priority intelligence requirements (PIRs), and essential elements of friendly information (EEFI).

CCIRs are information requirements identified by the commander (CDR) as being critical to facilitating timely decision making. Common CCIRs for BSB CDR include where casualties are most likely to occur, medical evacuation aircraft unavailable for any reason, degradation of the Role II capabilities, any supported units being black on commodities, or

commander's critical fleet assets being at less than 90 percent. CCIRs are briefed during the BSB battle update brief (BUB) and captured on the rolling BUB for shared understanding.

PIRs are intelligence requirements that support a decision affecting the overall mission accomplishment. Most PIRs for BSB CDRS center on the maneuver COP and BSA defense COP. For example, is enemy artillery within range of the BSA? If the answer yes, then what type? Is the BSA being observed by enemy? PIRs are vetted by the S-2 and is used by the base defense operations cell (BDOC) to refine the BSA defense COP.

Table 15-1. Example PIR.

Priority Intelligence Requirements					
#	TOC Battle Drill #	Requirement	Immediate (Wake Up)	First Opportunity	Next Scheduled
PIR 1	NA	Where will enemy forces attempt to attack/disrupt TCOs?			X
PIR 2	NA	Where are Level II and Higher threats that are capable of engaging the BSA?		X	
PIR 3	NA	When/where is the BSA within range of the enemy’s long range missiles, rockets, and/or chemical weapons?	X		
PIR 4	NA	Where can enemy surface to air missiles engage MEDEVAC re-supply missions?		X	
Friendly Force Information Requirements					
FFIR 1	1	TCO in contact	X		
FFIR 2	7a	Lethal incident at ECP	X		
FFIR 3	7b	Non-lethal incident at ECP		X	
FFIR 4	16	Any BCT Task Force reporting RED or BLACK status on CL III, IV or V		X	
FFIR 5	18	Any BCT Task Force reporting RED or BLACK status on Combat Slant Report		X	
FFIR 6	5	Any TCO missing its delivery window			X
FFIR 7	4	Role II Medical Facility not fully operational		X	
FFIR 8	6	MASCAL at any BCT Task Force	X		
FFIR 9	11	TacSat down for longer than 30 minutes		X	

Table 15-1. Example PIR (continued).

FFIR 1	19	LIS inoperative for longer than 60 minutes			X
FFIR 11					
Serious Incident Report					
SIR 1	2	Loss of life, limb or eyesight of BSB soldier	X		
SIR 2	3	Negligent discharge of weapon w/o casualty		X	
SIR 3	8	Misconduct by BSB officer or senior NCO			X
Essential Elements of Friendly Information					
EEFI 1	NA	ECP Procedures			
EEFI 2	NA	TCO times and routes			
EEFI 3	NA	CL III(B) storage location			
EEFI 4	NA	CL V storage location			
EEFI 5	NA	CL III(B) and CL V supply status			

Friendly forces information requirements (FFIR) for the BSB CDR mostly pertains to class of supply status on the LOGCOP. Questions include who is getting black on any class of supply? Who has not picked up class IX? Is there any combat system operations readiness (OR) rate below 80 percent?

In addition to tracking CCIR, there is other information that should be tracked. To track all of this information, it is imperative that all ABCS and logistics information systems (LIS) digital systems are used. The ABCS and LIS are used to monitor the BCT maneuver COP, the LOGCOP, and the BSA defense COP.

Determine the Most Effective Use of all Digital Systems

We observe that many BSB CPs do not use all of their information systems to collect, process, store, display, and disseminate information. Maximizing the potential of all information systems enables effective decision making. The ABCS, LIS, and communication systems available to the BSB include the following:

- Secure Internet protocol router
- Non-secure internet protocol router
- Secure voice over internet protocol
- Tactical Component Network
- Satellite transmission terminal
- Non-secure voice over internet protocol

- Joint capabilities release (JCR)
- Military Tracking System
- FM
- High frequency
- VSAT
- CAISI
- Command Post of the Future (CPOF)
- Defense Common Ground System
- Biometric Automated Toolset System
- Secure Electronic Enrollment Kit
- Global Combat Support System-Army or GCSS-A
- Command post node (CPN)
- High-capacity line-of-sight
- One system remote video terminal

To track all of this information, it is imperative that all ABCS and LIS digital systems are used. The ABCS and LIS systems are used to monitor the BCT maneuver COP, the LOGCOP, and the BSA defense COP.

For additional information refer to Chapter 16 on Operate and Leverage ABCS and LIS.

Monitor the BCT Maneuver Common Operational Picture

During DA rotations, BSBs have significant issues tracking the BCT maneuver COP. These hindrances result from connectivity problems, the BCT S-2 not pushing graphics in CPOF in a timely manner, or degraded CPOF capabilities at the BSB level due to limited training of operators. The BSB must receive, analyze, display, and distribute a myriad of data pertaining to the BCT's battle. This comes in the form of the maneuver COP which is typically displayed on the center screen and is built by the BCT S-3 CUOPS on CPOF or JCR. In theory, the BSB should simply mirror the BCT maneuver COP. If connectivity of ABCS degrades the BSB's ability to receive information from the BCT S-2, the BSB must be proactive. Either the BSB S-2 creates the graphics in CPOF based off the INTSUM and BCT operations orders (OPORDs) or they travel to the BCT headquarters to receive the graphics digitally. Either way, without a BCT maneuver COP, the BSB commander cannot provide appropriate and timely logistics to supported units.

Develop, Maintain, and Monitor the Brigade Combat Team Logistics Common Operational Picture

Arguably the most important thing the BSB does is plan, prepare, and execute sustainment operations in support of the BCT. We observe that there are often numerous LOGCOPS posted, thus negating the word "common." LOGCOPS are often missing critical data or are not

updated with the frequency required to analyze data provided by the LOGSTAT to determine the sustainability and supportability of current and planned operations. The BSB SPO must develop and maintain a BCT LOGCOP that allows maneuver and logistics CDR's to view the same data in near real time, enabling unity of command and unity of effort. The LOGCOP allows BCT leaders to see themselves in order to make informed and timely decisions. For additional information, refer to Chapter 12 on Produce and Maintain an Accurate and Functional LOGCOP.

Develop and Maintain a BSA Defense Common Operational Picture

Many BSB S3s do not understand how to create a BSA defense COP. In particular, they don't understand how to complete functional range cards and sector sketches. Requirements to complete this are either not adequately specified within the BSB tactical standard operating procedure (TACSOP) or are just not followed. The BSB S-3, BDOC officer in charge, and operations sergeant major are responsible for creating and monitoring the BSA defense COP. Once intelligence preparation of the battlefield (IPB) has been completed, the operations sergeant major can determine where to kill the enemy and can then emplace obstacles and observation posts. Tenant units complete range cards and sector sketches and submit the products to the operations sergeant major. Once all sector sketches are turned in, they are combined, and the BSA defense COP is created. The BSA defense COP should be both analog and digital. For additional information refer to Chapter 14 on Support From and Defend the Brigade Support Area.

Determine How to Disseminate Information

Information often does not make it down to those who need it. The information received, posted on COPs, and analyzed is of zero value if it is not disseminated. There are a variety of ways to disseminate information to include the following: mission orders, shift change briefs, battle update briefs, tenant meetings, LOGSYNC meetings, and sharing common operational pictures.

Issue Mission Orders

Use the operations order format for issuing all missions. Require confirmation briefs and back-briefs from company commanders and executors to ensure shared understanding. Mission orders must be produced with enough time to allow company commanders to conduct TLPs. In lieu of mission orders, a CONOP can be generated. The CONOPS contain all critical information requirements as well as a map. The S-2 and S-3 also can provide updated map graphics on the CONOPS that depict friendly locations and enemy activity along the convoy route.

Conduct Shift Change Briefs

A shift change brief ensures a smooth transition between shifts and covers all significant activity since the last brief. Shift change times are established in the battle rhythm and the SPO and XO or their acting participant should be present. If feasible, the command sergeant major, and battalion commander should spot check these briefings to ensure their intent is being met.

Conduct Brigade Support Battalion Battle Update Briefs

The daily BUB is attended by all commanders, first sergeants, and staff to include representation from tenant units. This forum discusses CUOPS, FUOPS, INTSUMs as well as pertinent updates from the staff and all subordinate units.

Display a Rolling Brigade Support Battalion Battle Update Brief

The rolling BUB consists of shared products produced by all staff members. It gives the BSB commander and CSM a quick overview of all pertinent information for the last 24 and next 24 hours. The rolling BUB plays continuously in the fusion cell. Information from the ALOC and SPO is submitted to the BSB S-3 twice a day for inclusion into the rolling BUB slides or uploaded to a shared portal or drive.

Conduct a Brigade Support Area Tenants Meeting

The tenants meeting is a forum to discuss missions of non-organic units that occupy terrain on the BSA. It allows the BSB to gain insight into their daily operations, issues or friction points, personnel, and equipment status. The daily BSA coordination meeting provides: INTSUM updates, establishes reporting requirements, coordinates reconnaissance and security (R&S) plan for the next 24 hours, and provides distribution of orders and other information. Units can also update vehicle and personnel status at this coordination meeting. Units submit reports to the BSA at the same time as they submit it to their parent headquarters. The BSA tenants meeting can be eliminated if they are integrated into the BSB BUB.

Use FM Net Calls

One of the fastest ways to get information out is via an FM net call, “Guidons, guidons, guidons, this is eagle main. Prepare to copy. Respond in sequence, over.”

Conclusion

The BSB must be proficient at C3 as well as at receiving, analyzing, and disseminating information while simultaneously building and monitoring three distinct COPs for the BSB commander to make timely and informed decisions. Use the appropriate structure for the BSB that is expeditionary to reduce setup times during displacements. Establish the layout and corresponding staff sections in a way that is conducive to information sharing at all levels. Promote a shared understanding across multiple staff sections and warfighting functions by combining the intelligence/S-2, operations/S-3, communications/S-6, SPO plans, and SPO transportation sections into one dedicated cell and work space. Include additional sections in the fusion cell such as the Raven vehicle operators, RTOs, and the BDOC OIC or non-commissioned officer in charge. Create a LOGCOP and BSA defense COP after receiving and analyzing information provided in the BCT maneuver COP. Prior to DA operations, ensure the BSB TACSOP thoroughly includes the roles and responsibilities of each staff section. Disseminate information to subordinate units in a timely manner to allow commanders to conduct backward planning, TLPs, and rehearsals. The fusion cell must track CCIR, PIR, FFIR and all other pertinent information requirements based on the BSB commander’s intent. To produce and track these requirement, all ABCS/LIS systems must be used to their maximum capabilities. The BSB must adequately integrate tenant units on the BSA into their daily battle rhythm to ensure adherence to tactics, techniques, and procedures, SOPs, and information reporting requirements. Once these tenets are achieved, the BSB will successfully and seamlessly provide on-time and on-target logistics support to all maneuver units.

Chapter 16

Operate and Leverage All Battle Command and Logistics Information Systems

CPT Mahesa Suprobo and COL Brent Coryell

The brigade support battalion (BSB) must leverage the full spectrum of its communication assets to track and transmit sustainment information in a decisive action environment. The BSB mission relies on the ability to establish connectivity expeditiously and extend communication support to convoy operations and subordinate, lateral, or higher units throughout the battlefield. The BSBs sometimes fail to effectively employ and leverage the assigned capabilities of the Army Mission Command System (MCS) and Logistics Information System (LIS) in supporting command post (CP) operations. The CP operations require these systems for data collecting, processing, archiving, displaying, and disseminating information. These systems enable the BSB commander to confidently understand, visualize, describe, and make informed decisions in support of the brigade combat team (BCT) fight.

Establish Clear Roles and Responsibilities Among the Signal Community

The BSB has three separate communication support entities that operate independent of each other. These entities are the BSB S-6, communications and electronics (C&E) shop, and the sustainment automation support management office (SASMO). This overlap of responsibility between these entities sometimes leads to confusion or duplication of effort. The S-6 focus is internal to battalion automation. The electronics communications maintenance (ELM) shop provides area support or direct support to a BCT. The SASMO manages LIS communications and operations, management, and security. The delineation of roles and responsibilities between these sections

The overlap of responsibilities between the BSB S-6, C&E shop, and the SASMO sometimes lead to confusion and or duplication of effort.

is critically important because many key leaders perform very similar and vital roles. Below are some suggestions for eliminating the duplication of effort.

The BSB S-6 officer in charge (OIC) is a signal officer and responsible for managing and training all signal personnel in the battalion. This OIC's primary responsibility is to advise the commander on all things signal related. The OIC must ensure that the signal plan is fully developed and disseminated. The S-6 is also responsible for understanding the full range of limitations and capabilities of the BSB regarding communication, information assurance, and knowledge management. As a staff officer, the S-6 must maintain running estimates, conduct map reconnaissance, and understand the BSB mission. The BSB S-6 OIC should have overall responsibility for coordinating all communication equipment maintenance and technical support within the battalion. The S-6 should also take the lead to ensure communications representatives and SASMO personnel are trained and certified according to Department of Defense regulation. The S-6 should develop inspection programs to evaluate both the ELM shop and the SASMO shop.

The C&E shop should be leveraged for communication maintenance and in assisting commanders in developing their communications maintenance programs. The C&E shop provides direct support for communication system maintenance and repair for the brigade and installation. The C&E troubleshoots and repairs cryptographic radio systems, Joint Capabilities Release (JCR) logistics systems, and other electronic systems such as night vision devices and others. The C&E shop maintains and orders replacement parts for these systems.

The SASMO manages LIS communications and operations, management, and security. The SASMO plans, manages, and directs communications operations including establishment of communications networks and systems and installation and maintenance of equipment. The section performs communications reconnaissance and survey, assisting the support operations officer (SPO) in positioning key elements of logistics and sustainment nodes. The SASMO often operates with limited training, experience, and while missing proper certifications and credentials required by their military occupational specialty.

Keep the Communications Portion of the Tactical Standard Operating Procedures updated

The S-6 OIC needs to review the battalion tactical standard operating procedures and ensure that the battle drills, signal operating instructions (SOI), pro-words and call signs, challenge and responses, and other pertinent information are up to date and accurate.

Ensure Proper Communications Equipment Distribution Across the Brigade Support Battalion

Communications equipment is frequently consolidated in the “comms closet” at company or battalion level. This prevents proper preventive maintenance checks and services (PMCS), updates, and 10-level training or familiarization on the equipment. The S-6 needs to review the modified table of organization and equipment (MTOE) and property book to determine where equipment belongs, what the unit has on hand, and what is fully mission capable. The S-6 section must distribute all equipment to designated sections according to the MTOE. The JCR, frequency modulation (FM) radios, and vehicular radio configurations need to be assigned to sections and vehicles and associated with vehicle bumper numbers. All vehicles need to have the MTOE vehicle radio configurations installed. These systems must be locked in with locking bars and zeroed when not in use. The S-6 and ELM should have Electrical and Electronic Properties Measuring and Testing Instrument (AN/PRM-36) radio test sets on hand to test radio transmission capabilities. These test sets are critical to determine known good and bad systems which will be rolled up in the S-6 staff estimates.

Produce Annex H of the Mission Order

Annexes are often a “cut and paste” from the previous order or incomplete. The S-6 completes Annex H to determine signal requirements and plans. The only Soldiers that routinely review this are the S-6 Soldiers and the brigade S-6. Any critical tasking must be coordinated with the S-3 and placed in the base order. The S-6 provides voice as well as video and data to the BSB. The Annex H spells out in operations order (OPORD) format how this will be provided to the unit. Appendix D of Field Manual 6-0 provides a template that should be followed verbatim when developing the Annex H.

Situation. This section will include anything that impacts signal operations.

Mission. This section provides a mission statement for the signal plan in support of the base order for the BSB operation.

Execution. This section is where the scheme of signal support to operations is outlined. Keep in mind that any coordinating instructions or tasks to subordinate units must be placed in the base order since the likelihood of subordinate organizations reading Annex H is very small. All subsections of the scheme of signal support are drawn in their associated appendices.

Sustainment. Identification of priorities of signal support and their associated key tasks are identified in this section.

Command and signal. The SOI and network reporting requirements are listed in this section.

Appendices. These sections should always be the same and listed as identified in Field Manual 6-0. If an appendix is not used, it should be annotated as such. These appendices include details on defensive cyberspace operations, information network operations, various voice as well as video and data network diagrams, satellite communication information, spectrum management, and information services.

Establish a Communication-Friendly Command Post Location

The CPs are often set up in environments that conflict with signal throughput. The S-6 OIC must have a major influence in the placement and organization of the CP. Carefully coordinated and planned CP setup is critical to ensuring proper placement of signal assets. The S-6 must work with the executive officer, the S-3, and the SPO to get the location right. The battalion must organize the CP in a way to allow organized placement of cabling and allow the easy setup of antennae.

Follow the Priorities of Work

The S-6 personnel must be included with every quartering party. The S-6 has to establish initial communications upon arrival at a new brigade support area location. The following list provides some considerations for priorities.

Establish the Radio Telephone Operator Vehicle

The S-6 provides the radio telephone operator (RTO) with a vehicle to monitor the JCR and radio at all times during BSA reconnaissance and setup. The RTO vehicle should be equipped with JCR and constantly monitored during quartering party missions and during the setup of the CP. The RTO vehicle should also be equipped with a VRC-92 which allows for dual extended range transmissions. This allows for an approximated planning range of 20 to 30 kilometers. The RTO vehicle should be equipped with a vehicle-based high frequency (HF) and tactical satellite radio. The vehicle should have a circular HF vehicle antenna installed. The RTO should monitor both battalion and brigade nets. Two antenna masts should be on hand with the quartering party to ensure that both antennae erected can pick up long-range transmissions. The RTO does not leave the vehicle until the placement of communications equipment is set in the CP.

Establish Frequency Modulation Communications with the Brigade Main CP

This should be the first priority upon arriving at a new BSA location. The S-6 will immediately erect an OE-254 or COM201 antenna and connect into the power amplifier of the RTO vehicle radio system. Although the antenna is temporary, it will extend the range of the FM communications until the CP is established.

Establish the RTO Desk

When displacing the BSA or establishing a forward logistics element (FLE), the FLE RTO desk should be equipped with the HF and tactical satellite (TACSAT) radios to ensure redundant reach-back capabilities. The RTO will monitor both JCR and FM. The RTO will need to monitor brigade command, battalion command, and the operations and intelligence nets. Give care and attention to the proper spacing of antennae outside the CP when establishing the “antenna farm.” The JCR or Joint Battle Command Platform (JBCP) should be one of the main systems at the RTO desk. Run a VGA cable from the RTO desk JCR and connect it to a projector or Juniper system to display the content of the JCR in the CP. This creates situational awareness, shared understanding, and a common operational picture for tactical operations and the commander. When available, the command post platform, which is equipped with the BSB radios systems and the enhanced micro central switching unit (eMCSU), should be used to bridge the systems on the integrated tactical network into the upper tactical internet network through Tactical Operations Center Inter-Communication System (TOCNET). The TOCNET provides access to radio transmissions using the software based crew access unit (CAU) on secret Internet protocol router or secret voice over Internet protocol, or the hardware based CAU established at the RTO desk. The CAU enables the RTO to monitor multiple radio networks through the upper tactical network.

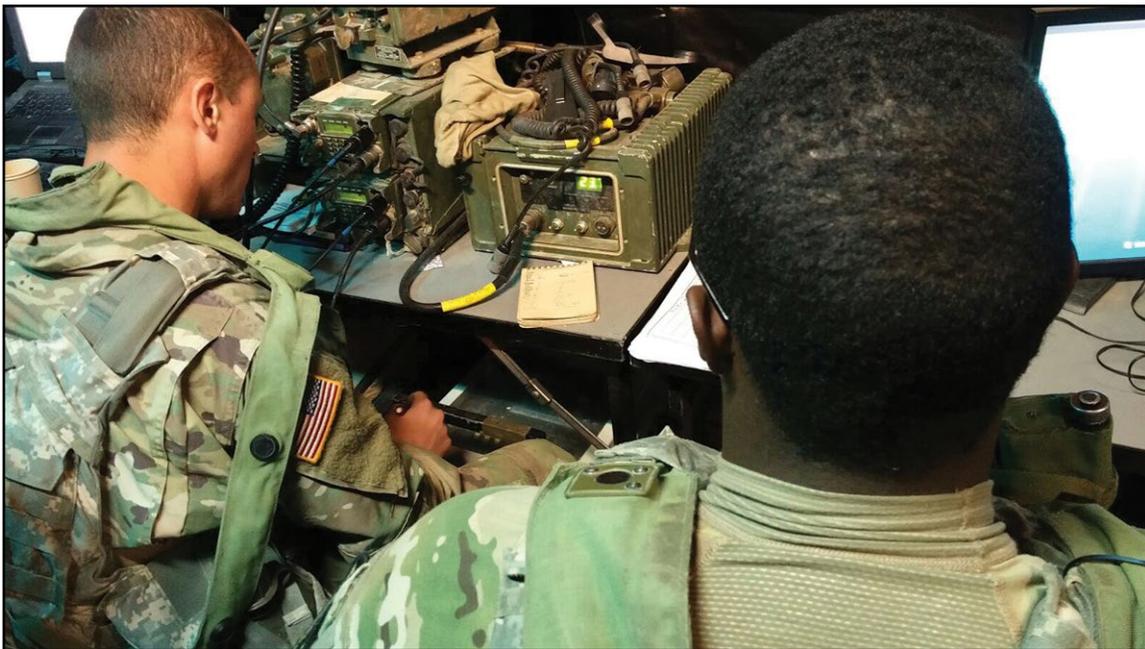


Figure 16-1. Soldiers manning the radio at the RTO desk.

Establish the Command Post MCS and LIS Systems Connectivity

The S-6 tent of the CP should be erected at the same time as the BSB CP so that the placement of the command post nodes (CPN) stacks can be established and work can begin on positioning and setting up the upper tactical Internet (TI) network. S-6 personnel should not be tasked with other duties until all communications are completely established. The high capacity line-of-sight (HCLOS) should be the primary transmission mode of upper TI and therefore established simultaneously as the satellite transmission terminal (STT).

Establish Routine S-6 Operations

After all systems are up, the S-6 will switch to help desk operations, communications security (COMSEC) fills, radio troubleshooting, routine maintenance, and CP space improvements (such as tidying cables and organizing work space). The RTO conducts radio checks with brigade and companies every hour and annotates on the log (Department of Army Form 1594, Daily Staff Journal or Duty Officer Log). The S-6 personnel should be protected from most tasks to conduct continuous troubleshooting and ensure systems remain operable.

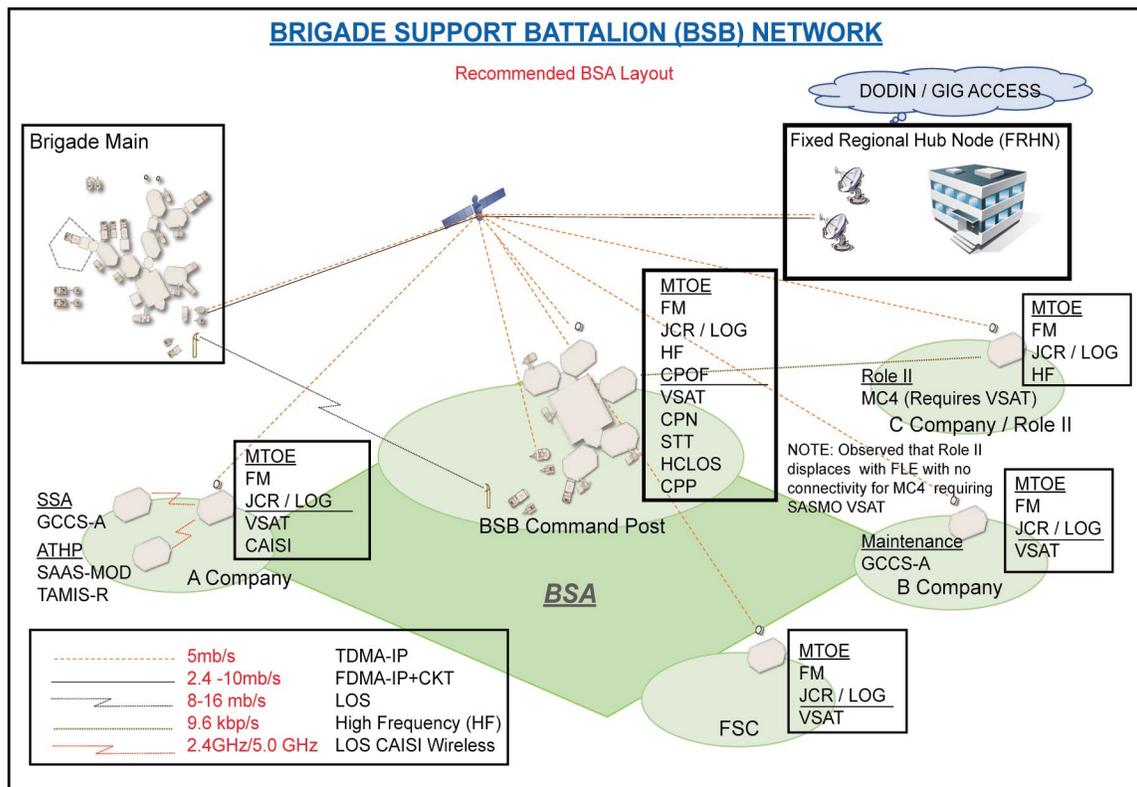


Figure 16-2. BSB Communication Network.

Transmission Platforms

The BSB transmission platforms provide the backbone support for MCS and LIS communication systems. These platforms include the CPN, HCLOS, STT, Very Small Aperture Terminal, Combat Service Support Automated Information System Interface, and Secure Internet Protocol Router/Non-secure Internet Protocol Router.

Establish the Command Post Node (CPN)

The BSB's single CPN capabilities become stretched when supporting a FLE or displacing the BSA. When conducting split operations, a second CPN is useful. This additional capability would extend the communications operational reach for the BSB. When the BSB jumps onto the FLE, the second CPN would ensure uninterrupted upper TI service in the BSB. In addition to the CPN, the BSB would require the CPN team, STT, TOCNET, and HCLOS.



Figure 16-3. Satellite Transmission Terminal (STT).

Establish and Leverage the Use of the High Capacity Line of Sight

Often the BSB does not plan for or use the HCLOS as the primary mode of transmission data. The HCLOS provides 320 percent faster routing and communication (up to 16 megabytes per second) in dedicated bandwidth between battalion and brigade. Whereas,



Figure 16-4. High Capacity Line of Sight Antenna (HCLOS).

the STT provides five megabytes per second shared bandwidth with the entire BCT and designed as an alternative mode to the HCLOS. The speed of the HCLOS network alone should warrant planning for its use as the primary transmission mode with satellite transmission assets (Joint Network Node [JNN], CPN, and STT) used as an alternate means of data transmission. The BSB S-6 section requires additional training on the capabilities and employment of HCLOS into the network plan when within range of BCT line-of-sight digital transmission assets. Units fielded with Inc 2 systems should plan to use the High-band Networking Waveform (HNW) antenna as the primary line-of-sight mode of communication. The HNW antenna needs line-of-sight to connect to any HNW.

Establish and Leverage the Use of the Very Small Aperture Terminal and SIPR/NIPR Access Point

The BSB has insufficient equipment to extend tactical Internet down to the levels that are required for sustainment operations. The very small aperture terminal (VSAT) is easy to deploy and set up takes less than 30 minutes without assistance. The SNAP provides the same capability as the VSAT with the addition of SIPR access. The BSB typically has three VSAT assigned to the SPO SASMO, supply support area, and the maintenance company. Other sections within the battalion such as the ammunition transfer and holding point (ATHP) are equipped with CAISIs. The battalion should request an additional VSAT or SNAP for the charlie company (the medical company) to ensure the Role II is able to connect the medical communications for combat casualty care or MC4.

Establish and Leverage the Use of the TOCNET

TOCNET is a widely underused system within the BSB. TOCNET enables the connection of the Integrated Tactical Network Environment into the upper TI network. This allows the BSB to extend FM communications beyond line of sight and enables access to radio transmissions through SVOIP and SIPR Internet. All BSBs should set up TOCNET in field environments.

Establish CAISI

Connect the CAISI to the VSAT established at the SSA so that a wireless link can be established with the ATHP by establishing the distant end CAISI at the ATHP. This will enable the ATHP to implement the use of Standard Army Ammunition System-Modernized (SAAS-MOD) and Total Ammunition Management Information System, redesigned as TAMIS-R.

Establish NIPR/SIPR

Work sections in the battalion often request too many systems for an austere field environment. Sections must be cognizant that they are not operating in a garrison environment. The CPN can operate a maximum of 40 NIPR and 40 SIPR systems. When the CPN is operating at max capacity, it will slow down connectivity. S-6 should advise sections to determine the bare minimum operational need for each section. The SPO and the S-3 are the S-6 primary customers. We recommend a maximum of 10 systems for the SPO and 10 systems for the S-3. These systems can be shared between personnel through 24 hour operations and shift management. The S-1 and S-4 sections are recommended to share two NIPR systems per section. The chaplain will require a NIPR system for conducting his or her work. In a tactical environment, the SIPR computer should be the primary system for maintaining all products. This reduces the risk of material falling into enemy hands. Only the bare minimum of NIPR systems should be employed for operational need. Such is the case for S-1 or S-4 accessing certain networks on NIPR.



Figure 16-5. The SIPR/NIPR Access Point (SNAP) [foreground] and the Point of Presence (PoP) platform [background] installed in a Military All-Terrain Vehicle (MATV).

Establish and Leverage the Use of VOIP

The CPN only comes with a small set number of VoIP phones. The S-6 must gather the requirements from the sections for phone need. If additional phones are needed, the unit can purchase additional phones to meet the requirement. The VoIP phones can be tethered together with computers to share the ports on the CPN.

Establish BCT Retransmission at the Brigade Support Area

FM range sometimes limits the ability of the BSB to maintain communication with logistics packages, adjacent friendly forces, and the BCT main CP. The BSB requires the capabilities of a retransmission system (RETRANS) and three 25U Soldiers to operate the admin/logistics (A&L)

net. The RETRANS system extends the FM range and allows the BSA to serve as a reliable BCT CP contingency site. BCTs should require battalions to have retransmission movement of the A&L net around the battlefield to ensure sustainment communication is constant. Although a RETRANS is not on the BSB MTOE, the BSB can create one using a VRC-92, two antennae and a fabricated retransmission cable. The S-6 should keep this capability as a contingency in case the need arises for retransmission in the BSA or otherwise. This capability is for emergency use and not necessarily considered in staff estimates.

Establish and Leverage the Use of HF and TACSAT

The BSB only has one or two of each HF and TACSAT radio systems by MTOE. These systems are often used as contingency and emergency systems on the primary, alternate, contingency, emergency plan. If only one system is on hand, the S-6 will need to request through higher or laterally for additional assets for contingency and emergency communications with the battalion tactical command post or FLE. The S-6 conducts regularly scheduled PMCS on these systems and ensures operators are proficient.

Establish and Leverage the Use of Command Post of the Future

The BCTs are replacing CPOF with JCR as the maneuver common operational picture (COP) for the BCT. There are two contributing factors driving the change from CPOF to JCR. JCR disseminates information and the COP to the executors and vehicles at the lowest level; whereas, CPOF resides at the BN and above levels, which leaves companies absent of the shared information. Secondly, the BSB staffs are untrained with operating and leveraging the full capabilities of CPOF, which reduces the system to a repository to “hang” documents.

Leverage the Use of JCR and JCR Logistics and Joint Battle Command Platform (JBCP) and JBCP Logistics (JBCP Log)

The BSB personnel need to be trained in the use of JCR and JBCP across the organization. Use in garrison will enhance field operations. Units do not use JCR logistics because it does not

Retransmission movement of the administrative and logistics (A&L) net around the battlefield ensures sustainment communication is constant.

communicate easily with the maneuver units’ JCR system. JCR logistics is an unclassified system and JCR is classified. Users are not trained on how to make these two systems communicate. JCR logistics uses the same software as JCR with additional logistics

related tools and radio frequency identification tag (RFID) trackers. JCR must downgrade its classification in chat or flash, immediate, priority, routine (FIPR) messages for the JCR logistics to receive it, making submitting a logistics status (LOGSTAT) difficult. Minimize the use of JCR logistics and maximize the use of JCR/JBCP when possible. The BSB should go to one system, JCR. This single system platform will allow one COP and the ability to communicate across the BCT. This picture is simply an incorporated sustainment overlay built from LOGSTAT reports. The JCR and JBCP enable a common operational picture and beyond-line-of-sight communications down to the individual level, especially during tactical convoy operations.

Publish a Primary, Alternate, Contingency, and Emergency Plan

The primary, alternate, contingency, and emergency communications plans (PACE) should be practical, properly disseminated, and fully tested before operations. Equipment that is not regularly used or that is not operational should not be included in the PACE plan. The best criteria to use in developing a solid plan are the following:

- **Suitability.** Each item on the PACE plan should serve a purpose and the plan should be tailored to echelon level, war fighting function, and mission oriented tasks. There can't be a "one size fits all" PACE plan because one plan may not be suitable for all functions.
- **Feasibility.** Take care to consider the assets that you have available or can acquire through higher or sister organizations. If you cannot obtain the required equipment or the correct quantities of the equipment, it should not be included in the PACE plan.
- **Acceptability.** The methods of communication in the PACE plan should be acceptable to all its users. The order in which the items placed in the PACE plan should be natural and simulate the flow of operations in the CP, during tactical convoy operations, or any other task oriented requirements by the user. If the user cannot easily switch between the items of the PACE plan, the plan will not work.
- **Distinguishability.** Each item of the PACE plan should be distinguishable from the others. Having Transverse, e-mail, and Ventrilo all in the same PACE plan is not practical because they rely on the same communication mode. If that mode is disrupted, the entire PACE plan will be eliminated. Take time to consider the transmission modes for each item as well as which type of systems they connect to.
- **Completeness.** All too often units will establish a PACE plan in which their contingency and emergency forms of communications are either non-existent or are never tested and set up. This represents a PA plan and not a PACE plan. Ensure that the PACE plan is complete, tested, and set up immediately upon arrival to your mission locations.

Monitor the Signal Common Operational Picture

The S-6 is often unaware of the BCT signal common operational picture and does not have a shared understanding of signal assets on the battlefield. The signal common operational picture should be developed and placed alongside the other planning products for the BSB. The S-6 must maintain an analog and digital common operational picture. The signal common operational picture should accurately detail the elements requiring communication support and their position on the battlefield. The S-6 should consider and incorporate the brigades signal COP into his product. This includes the locations of other communication assets such as retransmission sites and the nets that they are broadcasting. The S-6 can use tools such as Systems Planning, Engineering and Evaluation Device and CPOF to develop the COP.

Monitor the BCT A&L Net

Radio Sets should be established for easy communications within the SPO and administration and logistics operation center sections for BCT A&L net. Since BSB operations support the entire BCT, there is not a need for a battalion A&L net which only serves to further congest the transmission network.

Conduct Battle Drills

S-6 sections often do not rehearse or disseminate battle drills. The S-6 should work with the S-3 and the S-2 in developing data destruction battle drills, zeroing and destruction of equipment, information assurance response, and spillage response battle drills. The S-6 OIC should have a wake-up criteria briefed to his section to ensure that timely response to systems that are down for an unusually lengthy amount of time. The wake-up criteria is nested within the battalion or higher commander's critical information requirements. The battalion should practice a COMSEC compromise battle drill regularly and must match the BCT's battle drill.

Conduct Communication Equipment Maintenance

Use the appropriate 10-level manual for PMCS of radios systems in vehicles. Ensure deficiencies are annotated on the 5988-E for the vehicle and bumper number it is assigned to. Many ABCS and LIS systems take hours for proper PMCS. The manual followed for surface checks of systems and its operating features. This part only takes a few minutes. The systems powered on and virus scan run on the system during PMCS only. The virus scan takes a long time. The system must be left on for 3-5 hours to pull any over-the-air updates to keep the system running optimally.

Conclusion

The BSB S-6 OIC has many challenges when planning and managing the BSB communications effort. Care must be taken to work closely with all participating parties. Requirements need to be gathered and a well thought out plan formulated in Annex H. Ultimately the battalion S-6 needs to be able to take ownership of all signal assets including equipment and personnel and be the sole signal advisor to the commander.

Chapter 17

Optimally Employ the Forward Support Companies at Echelon

CPT Christopher Devenport and COL Brent Coryell

The brigade support battalion (BSB) maintains responsive (proactive versus reactive) support by echeloning sustainment capability. Often, units are reactive because they do not prepare a carefully planned logistics estimate of the tactical operation in order to align sustainment capabilities against the requirements of the operation. Proactive brigade combat team (BCT) sustainment begins with a thorough log estimate and logistics task organization (LTO) that optimally positions the BSB and forward support companies (FSC) sustainment assets between the company/battery/troop, the combat trains, the field trains, and the brigade support area (BSA). This chapter begins with a review of the FSC design, then provides recommendations regarding effective FSC employment, and lastly highlights contemporary challenges with FSC mission command, distribution, and maintenance in a decisive action (DA) environment based on recent National Training Center observer, coach/trainer (OC/T) observations.

In BCT DA operations, many FSCs are not providing maximum operational reach and optimal logistics support because they are not effectively organized across all sustainment echelons. Task organizing the leadership and capabilities of FSCs at the proper echelon fully extends the operational reach of the BCT and reduces immediate resupply operations.

Why FSCs Were Created

The shift from forward support battalions (FSBs) and maintenance support teams (MSTs) to BSBs and FSCs started in 2003 with the 3rd Infantry Division (3ID) as the Army transitioned to the modular BCT and the Army Forces generation cycle. It can be argued that it actually started in 1999 at Fort Hood with the 4ID and the Force XXI concept. The concept and creation of modular FSCs was certainly sound and made good sense because FSBs were creating ad hoc FSCs anyway. FSBs were routinely “attaching” MSTs to maneuver battalion support platoons and building them up with additional sustainment capability as needed. It was not uncommon for medical, water, fuel, and ammo personnel and equipment to be removed from the FSB and attached to the MST supporting the maneuver battalion in accordance with the concept of support. Much of the FSC capabilities already resided in the Headquarters and Headquarters Company of the maneuver command. So, if units were building forward support capability anyway and had much of it already residing in the HHC, why not just make it permanent with a modified table of organization (MTOE) change? After all, the Army was on a force structure move to modularity to become more expeditionary and the BSB and FSC construct fit this modular model.

Employment of Forward Support Companies in Iraq and Afghanistan

Immediately after the BSBs and FSCs were structured and resourced, the Army went straight into the wars in Iraq and Afghanistan. The proverbial “building the airplane in flight” commenced as we restructured the Army of excellence into modular BCTs with BSBs and FSCs. The Army moved from fighting a near-peer force during OPERATION DESERT SHIELD/DESERT STORM to combating a hybrid threat during OPERATION IRAQI FREEDOM (OIF) and OPERATION ENDURING FREEDOM (OEF). Years of conflict in OIF and OEF limited the BSB commander’s influence over FSC training and employment. As the areas of operations (AO) matured, the fast expeditionary BSB and FSC became part of a forward operating base (FOB) infrastructure of logistics in a mature theater. Company elements moved between established nodes within the sustainment network and worked directly for the maneuver commander (CDR) running scheduled resupply missions based on steady state operations. These relatively new companies were not employed per their flexible design and the usefulness and uniqueness was lost in a network of sustainment nodes, often run by contracted logistics support across the AO. The BSB commander did not require the flexibility of being able to leverage all of the organic sustainment assets and personnel in the steady state operations of FOB-based logistics. In most cases, the BSB CDR fell in on a system that only required him/her to replace people in kind with the unit they were relieving. There were many times when BSB CDRs did not need to conduct a detailed analysis of the problem set when moving into theater because it was usually already defined. The FSCs could complete their mission without the oversight from the BSB CDR and only had to ensure support of their maneuver battalion CDR. Additionally, current BSB CDRs spent the majority of their company grade time under main support battalions (MSBs) and FSBs. If they spent time as an FSC CDR, they may have only experienced the dysfunction of trying to apply an expeditionary concept of support to a steady state construct. Now, as battalion CDRs, they yearn for what is familiar and the last sustainment framework they remember being mostly functional is the Army of excellence model.

The Forward Support Company Design

Although sustainment OC/Ts observe many FSC challenges in the DA fight, the structure of the FSC is sound. It was designed to be somewhat flexible and tailorable. The BSB’s six organic FSCs provide direct support to each of the BCT maneuver battalions (BNs) and squadron, the field artillery BN, and the BCT engineer BN. Each FSC is organized slightly differently to support a specific combined arms, infantry, Stryker, engineer, field artillery BN or cavalry squadron. FSCs provide field feeding, bulk fuel, general supply, ammunition, and field maintenance support. FSCs are organized to provide sustainment support where it is needed most which is at the front. In a DA conflict, as maneuver elements move forward and task organize, sustainment elements are designed with the mobility and flexibility to support. For example, if the cavalry squadron gets a platoon of tanks attached, they should get the maintainers, fuel, and distribution assets to go with them. Conceptually, each maneuver BN can carry one-unit basic load (UBL) of all commodities of supply or one day of supply (DOS) on its combat systems. The FSC is designed to carry the BN’s second UBL/DOS with the third residing with the BSB in the rear echelon of support at the BSA. The FSCs are linked from the BSB to the maneuver BNs and are the organizations that provide the BCT with the greatest flexibility for providing logistics support with assets at the field trains command post (FTCP) and combat trains command post (CTCP). Both the FTCP and the CTCP are mobile mission command posts (CPs) for logistics that execute supply break points to build combat configured support packages for forward units. The design is sound but the challenge is determining how to best array these FSC personnel and assets based on what capabilities are required where and when.

Task organizing the leadership and logistics capabilities of FSCs at the proper echelon. As the Army focuses on training for DA operations, OC/Ts are observing some challenges associated with the optimal employment of the FSC. Sustainment is often desynchronized between the support echelons, and BN distribution plans are inconsistent in terms of the capability and the Soldier skill set placed at the combat trains and field trains. Sustainment doctrine is intentionally not prescriptive to allow the BCT flexibility in the manning and arraying of sustainment forces between the FTCP, CTCP, and the company echelon or trains. Because there is no specified doctrinal solution, BCT sustainment planners devise numerous concepts of support to employ FSC assets at these different echelons and some work but some do not. Ones that do not, often cause emergency or immediate and unplanned resupply situations. Additionally, by using known

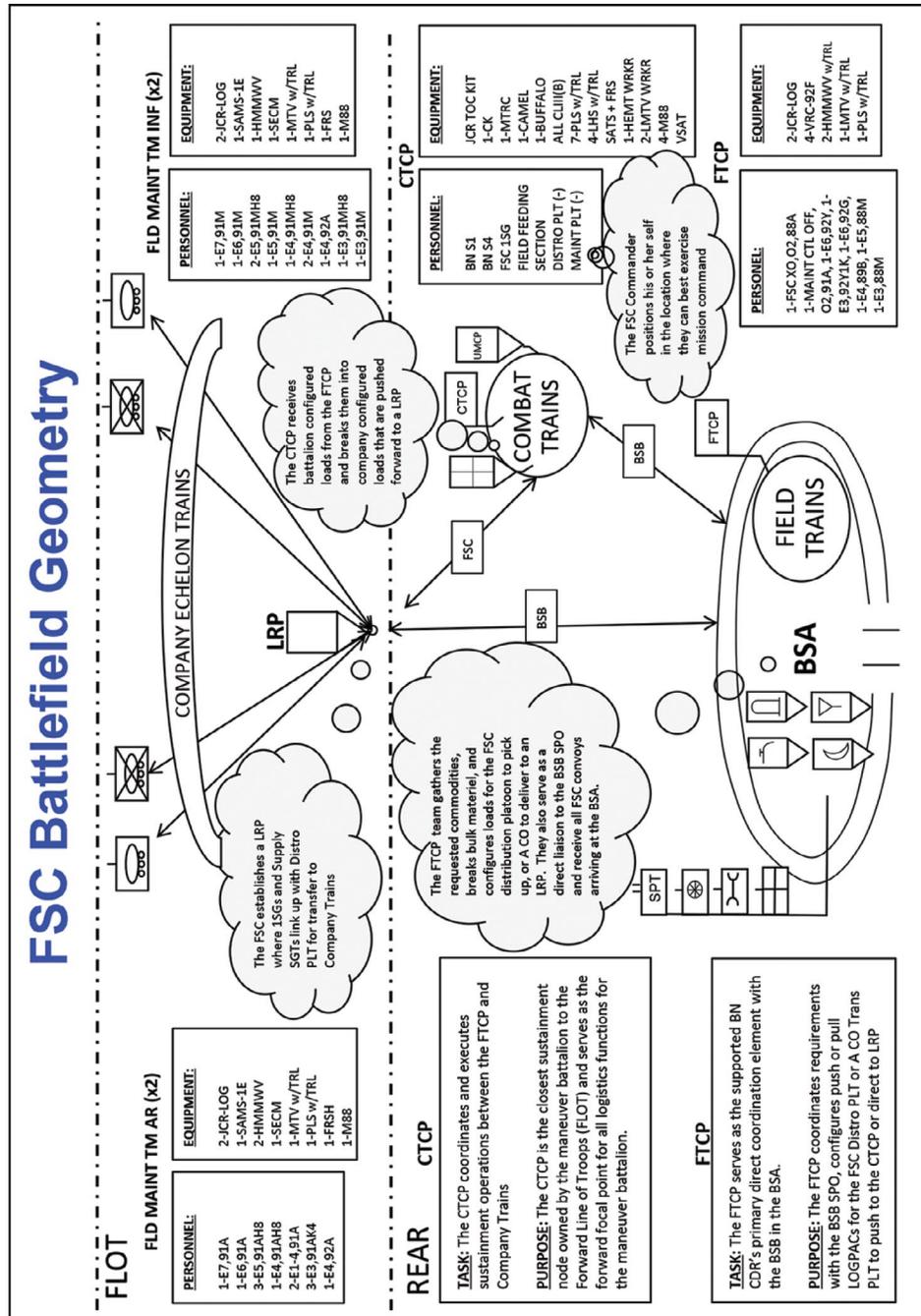


Figure 17-1. FSC battlefield geometry.

requirements, capabilities, and consumption rates for all classes of supply, the sustainment planners should produce a logistics estimate with a LTO that mitigates shortfalls and backhaul. This is an area that OC/Ts routinely observe that the Army is extremely deficient in from a training and education perspective. BCT sustainment planners are generally challenged in conducting this anticipatory logistics analysis (forecasting math) and are not educated on the science of maneuver warfare and armored tactics. This lack of understanding and poor forecasting drives multiple unplanned resupply operations. To achieve proactive versus reactive support, the sustainment planners must produce a continuously updated logistics plan.

Task organizing the capabilities of the FSCs at the right echelon will limit immediate resupply operations, and fully extend the operational reach of the BCT estimate which takes into consideration the distance traveled by the maneuver task force, time needed to travel those distances, and the consumption rates for all classes of supply. This log estimate will inform the concept of support that specifies the LTO of the FSC assets between the FTCP and the CTCP. Thorough logistics estimates and concepts of support assist in the emplacement of FSC assets optimally at these echelons.

Task organizing the capabilities of the FSCs at the right echelon will limit immediate resupply operations, and fully extend the operational reach of the BCT.

Forward Support Companies Operations at the BSA and FTCP

The OC/Ts observe FSC capabilities at the BSA range from none to the entire FSC. Too little FSC representation at the FTCP presents a challenge, as does too much because BSA size becomes unmanageable and support is less responsive. FSCs do not have organic long-range communications assets outside of Joint Capabilities Release (JCR) and the Very Small Aperture Terminal (VSAT). Many times the maneuver BNs feel like they have zero communication with the FTCP. They also do not have the weapons and personnel to secure themselves in a static location and provide adequate convoy security. Therefore, OC/Ts recommended that the FTCP collocate with the BSA in order to benefit from and to augment the security of the BSA, as well as to use the communication network established by the BSB.

Locating the FTCP near the BSB CP allows for Warfighter Information Network – tactical support from the BSB Command Post Network. FTCPs should maximize the full capability of the VSAT and Combat Service Support Information Systems Interface. Regarding capabilities, the FSC should place personnel in the FTCP that can facilitate the resupply of Class (CL) I, III, and V, as well as the flow of CL IV, VIII, and CL IX. The OC/Ts see successful use of the FSC executive officer (XO) to provide mission command at the FTCP while being in close proximity to the support operations section to coordinate emerging requirements. A food operations sergeant, ammo handler, fuel handler, and supply specialist at the FTCP can provide the expertise for commodity management needed from the BSB. Additional vehicle operators and supply specialists can assist the alpha distribution company distribution platoon in accurately breaking and building configured loads for movement forward.

The FTCP equipment required in the BSA can be limited to mission command systems, general supply transport, troop transport, and a Load Handling System/Palletized Load System to augment the accessions distribution center (ADC) as needed. A gun truck is also needed to assist in defending the FSC's assigned sector of the BSA. FSC commodity teams at the FTCP prepare assets requested on the logistics status report which is validated in the logistics synchronization (LOGSYNC) meeting and incorporated in the LOGSYNC matrix. The team gathers requested

commodities, breaks bulk materiel, and configures loads for the FSC distribution platoon to pick-up if supply point distribution is used or for the ADC transportation platoon to deliver to a logistics release point (LRP) if using unit distribution. The FTCP team receives and directs all FSC convoys arriving and departing the BSA and serves as a direct liaison to the brigade support battalion support operations (BSB SPO) section.



Figure 17-2. Bulk fuel exchange from BSB assets to FSC assets.

Forward Support Company Operations at the CTCP

The CTCP is the closest sustainment node to the forward line of troops (FLOT) commanded by the maneuver BN and it serves as the focal point for all logistics functions for the maneuver BN. It doctrinally operates four to 12 kilometers behind the maneuver task force. Combat trains usually consist of elements of the BN S-1, S-4, Role I aid station, the maintenance collection point (MCP), and the FSC distribution platoon. The CTCP usually stocks emergency CL I, III, and V. The CTCP is a good location for the FSC CDR, mainly because the CDR needs flexibility to attend planning sessions with battalion task force (BNTF) S-3 and XO and this location is closer to the BN CP where they operate. The BN S-4 or headquarters and headquarters company CDR often serves as the CTCP officer-in-charge (OIC) and the maintenance control officer serves as the OIC for the MCP. The maintenance control sergeant, maintenance control technician, and the maintenance platoon leader and platoon sergeant also usually operate at the CTCP. The bulk of the FSC's distribution platoon, maintenance control, field maintenance and service and recovery sections reside at the CTCP for distribution and maintenance support. Consequently, the distribution platoon leader and shop officer should also be at the CTCP. The distribution platoon located at the CTCP receives BN-configured loads from the FTCP and BSA and breaks them into company-configured loads that are pushed forward on logistics packages (LOGPACs). The maintenance sections in the CTCP provide general support to the BN at the MCP and report through Standard Army Maintenance System-Enhanced (SAMS-E) at the FSC to the SAMS-E at the BSB.



Figure 17-3. Flat rack exchange conducted at a CTCP.

Forward Support Company Operations at the Forward Line of Troops (Company Trains)

Forward of the CTCP, in the company trains, field maintenance teams (FMT) are frequently collocated with supported maneuver companies to provide the companies the ability to quickly regenerate combat power. Each team is fielded with the forward repair system, specialized tools, military occupational specialties, and recovery assets for the type of company they support. Mission command usually lies with the FMT senior mechanic who uses JCR/JCR-Logistics to communicate with the CTCP about vehicle faults and requirements for additional support. FMTs are the executors of the “fix-forward” concept to enable the BCT’s success in tactical operations. Moving toward the FLOT with sustainment assets must be rehearsed and well understood by both the FSC elements and the maneuver company CDRs. Maneuver first sergeants and company supply sergeants are critical in synchronizing the movement of sustainment assets and commodities to the warfighter on the forward line. The next section will address specific challenges observed with, distribution, maintenance, and mission command of the FSC.

Table 17-1. FSC challenges.

FSC Challenges						
Forecasting and Conducting Logistics Estimates	Terms of Reference WRT command and support relationship between the BSB and Maneuver BN	Determining the Optimal FTCP Composition at the BSA	Determining the Optimal CTCP Composition and Function	Overuse of FSC Distribution PLT and undersuse of Alpha Company Transportation PLT	Technical Abilities of FSC Mechanics (Not Fixing Forward) Evacuating repairs to FMC in BSB	TF S4 and FSC CDR Friction (Roles and Responsibilities)

The OC/Ts are observing challenges associated with the optimal employment of the FSC as the Army moves forward training for decisive action operations.

Distribution

Often, FSC distribution platoons are overused while the transportation platoon from the ADC in the BSB is underused. The FSC distribution platoon regularly covers long distances and runs multiple LOGPACs daily to support their battalions. They frequently operate between the field trains and combat trains, breaking loads and then again pushing forward to the company trains. Using the BSB transportation platoon to regularly move commodities between the FTCP and CTCP can help offset this imbalance. The ADC transportation platoon can support multiple FSCs and CTCPs through synchronized and rehearsed LRP operations to help balance the use of limited distribution assets. LRPs are an excellent way to extend operational reach but they are not often used. Modular system swaps — that is, flat-rack, HIPPO, and modular fuel system tank exchange — are additional useful techniques. These systems are designed to decrease sustainment asset time on station, thus increasing efficiency and thereby extending operational reach. Units are often not observed exchanging these systems because of fear of loss of property accountability and equipment damage. Also, FSCs that position all of their distribution capabilities with the FTCP in the BSA do not have the assets forward in the CTCP to conduct LRP operations with the ADC transportation platoon. Conversely, if all FSC distribution assets are at the CTCP it forces the FSC distribution platoon to return to the BSA to get supplies in order to push from the CTCP. An effective solution is meeting in the middle at an LRP. At the LRP, the first sergeants and supply sergeants link up with the FSC distribution platoon or the ADC transportation platoon to conduct LOGPAC operations.

Mission Command

There is often confusion in the delineation of duties between the BN S-4 and FSC CDR. The maneuver BN S-4 is the logistics planner and is responsible for developing the BN concept of support which should be nested with the BCT concept of support. The FSC CDR is the executor of the missions derived from the concept of support. Typically, BN's assign a pre-career course first lieutenant in the S-4 slot and by MTOE, it is a post-career course combined arms captain position. Often, the lieutenant in the BN S-4 slot is in his/her first staff position, is inexperienced in the military decision-making process, and does not understand the fundamentals of sustainment. This drives the maneuver BN CDR direct to the FSC CDR, who is the senior and most experienced logistician in the task force, which often marginalizes the effectiveness of the BN S-4. This challenges sustainment execution by shifting staff duties to a CDR. FSC CDRs should position themselves in an area that best allows them to execute mission command and the support mission. The BSB and maneuver BN CDRs need to ensure the duties of the FSC CDR and BN S-4 are spelled out and are functional. If there is confusion on who is responsible for what, then they need to help delineate.

Conclusion

The BCT sustainment planners must clearly understand requirements derived from effective forecasts and the functions and capabilities of the FSCs in order to develop the battlefield geometry required to maximize the operational reach of the BCT. Optimal FSC asset emplacement in DA operations requires thorough staff analysis, complete understanding of FSC capabilities, and clearly defined personnel functions to support the tactical operation. Accurate and continuous logistics running estimates will determine what is needed where and when on the battlefield. The sustainment planners (with BSB CDR involvement) need to have the flexibility to move and adjust sustainment forces across the CTCP and FTCP, use LRPs as required, and enforce the use of modular system exchanges to best support the BCT. The BN S-4 ought to be used as the sustainment planner with the FSC CDR used as the sustainment executor. BCT sustainment planners need to establish the right balance of distribution assets and methods between the FSC distribution platoon and the ADC BSB transportation platoon so that one or the other is not being overused or underused. Conduct training and mentorship for low density maintenance MOSs in order to develop the skills of Soldiers in the FSCs and prevent the pooling of mechanics and evacuation of non-mission capable equipment to the BSB FMC. Positioning the capabilities of the FSCs at the right echelon will limit immediate resupply operations, fully extend the operational reach of the BCT, and provide proactive versus reactive support.

Chapter 18

Establish and Provide Sustainment Using a Forward Logistics Element

COL Brent Coryell and MAJ Dennis Williams II

Observation. Units are not advantageously employing forward logistics elements (FLEs) due to their inability to forecast, plan, and synchronize activities between supported units, the brigade support battalion (BSB), and the combat service support battalion (CSSB). Poor forecasts make it difficult for the sustainment planner to develop the composition of the FLE which leads to

Considerations for FLE Planning

- Future Operations (duration)
- Future site for BSA or Leapfrog
- Mission Command until BSA jumps
- Task and Purpose
- Officer and NCO in charge
- Communication (JCR/FM)
- Supplies and Services (commodities)
- Resupply of the FLE
- Medical Assets (Role I/II, MATP, PHA)
- Security

allocation of an arbitrary percentage of the BSB's capability. Most units send the support operations officer (SPO) to perform initial set up and command of the FLE and then replace that person with either the SPO deputy or an officer in charge (OIC) from (alpha company) A/BSB. There is often more than one officer of the same rank at the FLE and it is unclear who is in charge. Many units fail to ensure communication assets are properly resourced at the FLE. For example, some FLEs will not have Joint Capabilities Release (JCR) and rely on frequency modulation (FM) or very small aperture terminal to communicate with the BSB SPO. Units often do not clearly identify which supported units 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 often unclear of the displacement criteria to establish the FLE and the

duration it will remain in place causing units to miss linkup or return to the brigade support area (BSA). The FLE location is often chosen without knowledge of where all of the future combat trains command post (CTCP) locations will be which results in a less than optimal location for the FLE. Weapon platforms are usually limited in the BSB, forcing commanders to make a decision on whether to assume risk at the BSA or the FLE.

Discussion. The FLE operates out of a forward logistics base or support area. The FLE represents the BSB commander's ability to weight the effort of the operation by drawing on all sustainment assets across the brigade combat team (BCT). Sustainment planners typically plan a 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 to jump beyond. The FLE shortens the line of communication (LOC) between the forward maneuver CTCPs and the supplies located on the BSA because forward support company distribution platoons conduct supply point distribution from the FLE vice the BSA. Most sustainment planners realize that since the logistics LOC has exceeded the BSB's ability to conduct resupply, then the medical LOC has also been exceeded, reducing the maneuver operational reach. Most units push the Role II and all of its accompaniments including patient holding area (PHA) and mortuary affairs collection point (MACP) with the FLE.

Recommendation. Sustainment planners must consider several factors when planning a FLE. These include future operations, mission command, commodities and services, medical assets, requirements to maintain communications, operational boundaries, enemy artillery ranges, extended LOCs by time/distance, and security. Determine the task and purpose of the FLE, who is supported from the FLE and will the BSB jump to the FLE site or beyond it and when. Mission command of the FLE is critical especially during BSA jumps. The BSB commander (CDR) and staff must identify who will be the OIC of the FLE. We have observed that the deputy SPO or alpha company-A/BSB CDR are good choices as FLE OICs. The mission typically is not the best place for the SPO, however, the CDR may understandably want a field grade officer on the ground. Next, determine how units will communicate. JCR has proven to be the most effective and consistent platform. A hasty command center with JCR can be established from the OIC's vehicle and monitored 24 hours a day.

With the decision to employ a FLE, sustainment planners needs to consider the location, amount of commodities needed and duration of the FLE. These factors will also allow him or her 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.

A big decision is whether or not to push Role II and the components that accompany it with the FLE. A consideration when pushing Role II forward with the FLE are the security assets required to conduct ambulance exchange points (AXPs), location of the BCT medical supply officer for Class VIII resupply, and non-secure internet protocol router connectivity (defense medical logistics standard support customer assistance module, medical communications for combat casualty care, and armed forces health longitudinal technology application). Units must also consider pushing the MACP and the personnel holding area with the Role II in order to conduct reconstitution operations.

Finally, The FLE must be able to secure itself. Security must be planned for 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. If the FLE plans to conduct a logistics release point or execute AXPs, additional security is required.



Figure 18-1. A FLE providing forward operational reach.

Chapter 19

Conduct Effective Resupply Using a Logistics Release Point

COL Brent Coryell and MAJ Dennis Williams II

Logistics release points (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 a flat rack of Class IX in exchange for an empty flat rack.

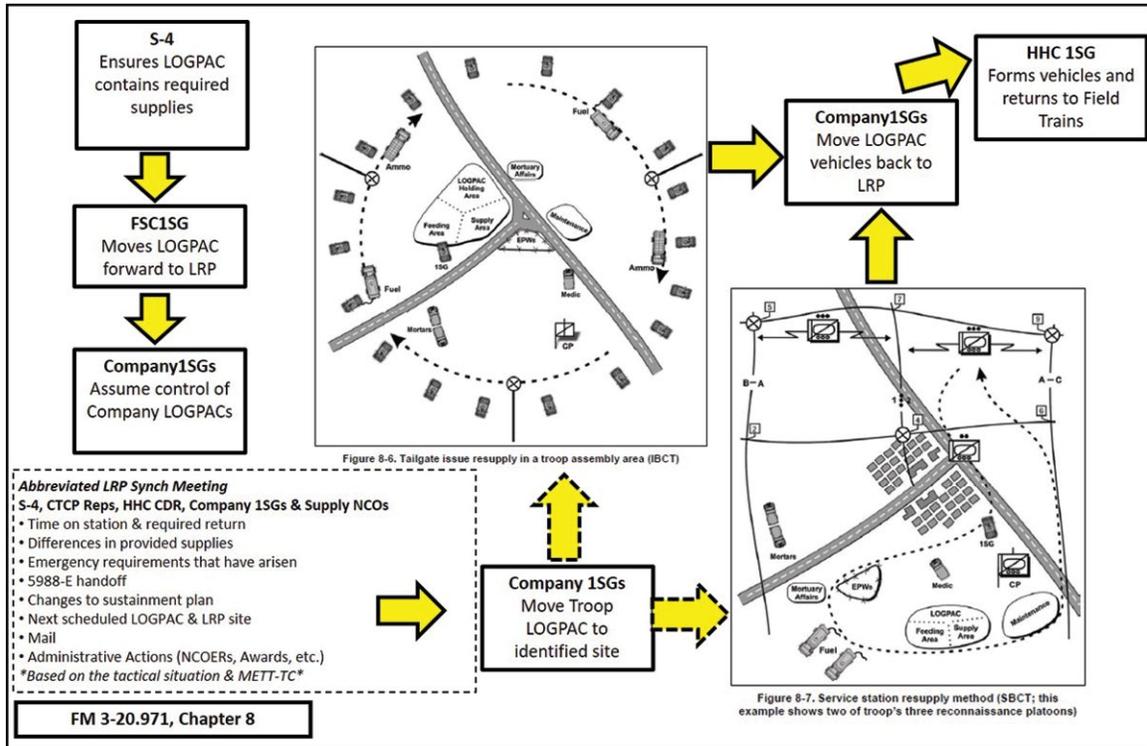


Figure 19-1. Example Logistic Release Point (LRP) process.

Observation. Logistics release points are a very effective means of unit distribution but most brigade combat teams need practice executing them. Many units practice supply point distribution but rarely train on LRP operations at home station. Often alpha company of the brigade support battalion (A/BSB) and the forward support companies (FSCs) are not synchronized, which leads to failure to link up at the right location at the right time. It is important that the FSCs have resupplied the maneuver units to empty their assets before they are resupplied by A/BSB. Night operations are also a challenge for units to conduct LRPs, as they are not confident in night land navigation and in the transfer of supplies in limited visibility. Ineffective logistics synchronization meetings also contribute to the FSCs not understanding the required lift assets to bring to the LRP, causing them to return later, or an incomplete transfer of supplies. Hand receipt holders are anxious about property accountability leading to trans-loading supplies between assets instead of exchanging load handling system compatible water tank rack or HIPPOs, modular fuel systems (MFSs), and flat racks 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. Logistics release point operations are a good way of shortening the lines of communication in support of one or more battalions (BNs). Use the modular distribution systems for increased velocity to shorten the time on ground. The Army designed these systems for a rapid turn-around. The A/BSB transportation platoon is often underused, and 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 logistics package missions in a 24-hour period will begin to wear down the distribution platoons.

A/BSB and FSC Distro Platoons must train on LRP operations using the exchange of flatracks and modular systems during home station exercises and CTC rotations. Although the distances during these training events may not seem to warrant an LRP, practice and repetition is the only way to achieve proficiency.

Recommendation. Plan for A/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, MFSs, and flat racks as designed for efficient and expedited transfer of supplies. Drop the empty and pick up the full. The BCT, BN, and company commanders must underwrite system exchange and manage the risk of loss or damage. The odds are minimal that a system or flat-rack will get lost. Temporarily misplaced perhaps but not likely lost. Damage to a system is the often main concern. This can be mitigated by holding operators accountable.



Figure 19-2. An example of inefficient flatrack unloading using a forklift from a Palletized Load System Flat-rack. It's better to drop the flatrack and pick up an empty one.

Chapter 20

Coordinate Responsive Air Resupply Operations Using Aviation Assets

COL Brent Coryell

Observation. Air assets as a method of distribution are rarely used. The majority of units observed are either hesitant or unwilling to use rotary-wing assets either 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 and this 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 (HLZ) and pickup zones (PZ).

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 support operations transportation officer conducting mission analysis 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. Then fill out and submit the AMR to the brigade aviation element (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 course of action to support the air request.

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

Recommendation. The BAE, support operations officer (SPO), S-4, and aviation task force S-3 must develop relationships, potentially through combined training to understand capabilities and limitations. We recommend that they practice submitting an AMR. The BAE/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 pre-planned 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 item [BII]) sling load teams are available at PZs and HLZs. Lastly, make sure to plan sling and cargo net recovery.

Please Fill in all sections marked in RED (as applicable).
DO NOT CHANGE ANY FORMATTING ON THIS DOCUMENT

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		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

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

Special Requests

Figure 20-1. Example AMR. Not understanding how to fill out and process the AMR is the number one reason units do not receive air for commodity movement.

Chapter 21

Conduct Effective and Efficient Health Service Support Planning and Operations

CPT Lauren Teal and COL Brent Coryell

Brigade combat team (BCT) health service support (HSS) planning and operations observed during decisive action rotations at the National Training Center (NTC) are usually more reactive than proactive. HSS needs to be completely integrated with tactical maneuver plans and mission orders and it generally is not. Reactive and unintegrated HSS plans result in died of wound (DOW) rates for casualties requiring evacuation to Role II (urgent and priority patients) averaging 54 percent. This means that one out of two wounded Soldiers requiring urgent care will die and this rate is unacceptable. We must get better at HSS planning.

Purpose

This chapter presents the best practices as observed by observer, coach/trainers for efficient HSS planning and operations. It discusses how to best delineate BCT medical personnel roles and responsibilities. It covers challenges and best practices observed with the development, publishing, and execution of the HSS plan to include the production of casualty estimates and the use of maneuver triggers. It provides insight into how to best integrate the HSS plan into the sustainment rehearsal. It talks about how to develop and monitor a medical common operational picture (MEDCOP) that is fed by medical information reporting and provides a shared understanding of the medical situation in the BCT to those who need it. It provides details on the best observed techniques for the setup and placement of Role I and Role II medical facility operations. Lastly, it delivers best observed procedures for both ground and air casualty and medical evacuation (CASEVAC/MEDEVAC) operations.

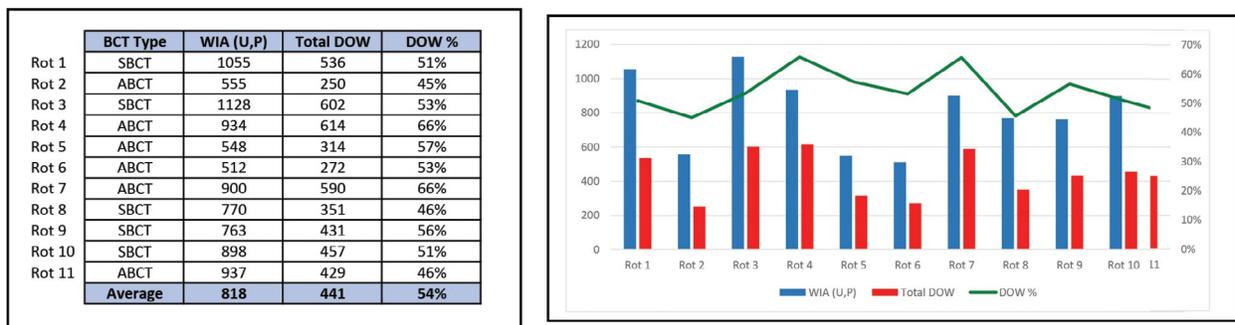


Figure 21-1. Average Died of Wounds (DOW) rate over 11 rotations at NTC.

Statistics include only urgent and priority casualties, showing the population of patients requiring evacuation to higher roles of care rapidly (one to four hours).

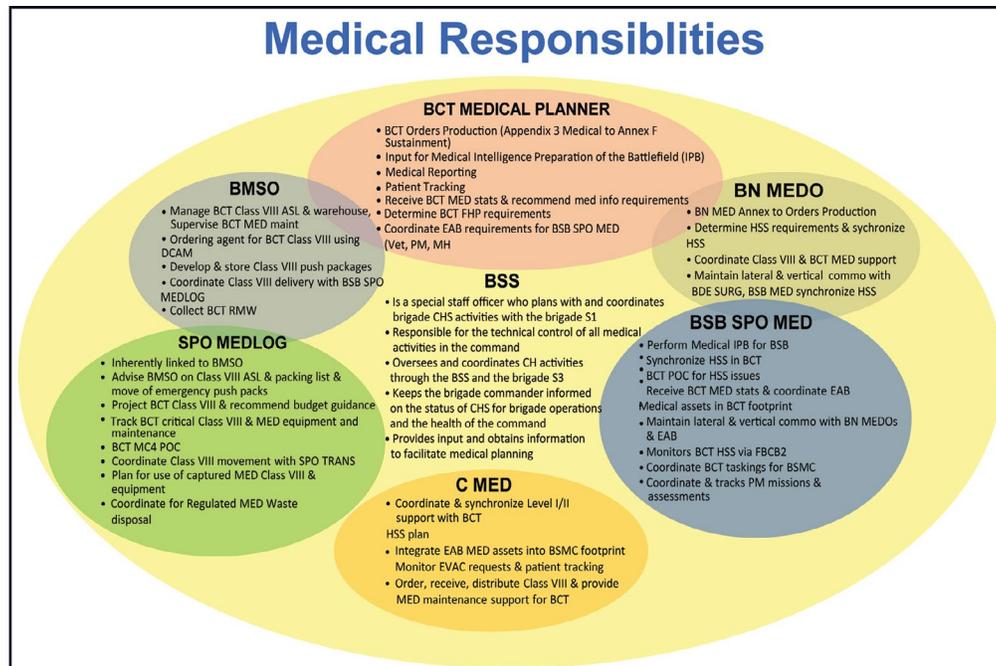


Figure 21-2. Delineating and understanding the roles and responsibilities of all medical positions in the BCT are important in developing and executing the HSS plan.

Delineate BCT Medical Personnel Roles and Responsibilities

Prior to HSS planning and execution, roles and responsibilities of key medical personnel must be clearly identified. Roles and responsibilities for the brigade surgeon section (BSS), brigade support battalion (BSB), support operations office (SPO) medical (MED), and brigade support medical company (BSMC) commander (CDR) are typically unclear and produce friction during the development and execution of the BCT HSS plan. The friction points that arise when the BSS, SPO MED, and BSMC CDR do not effectively communicate during HSS planning and execution can usually be traced directly back to delineating who is responsible for what. HSS planning requires collaboration between the SPO MED, BSS, and the BSMC CDR to build a fluid, comprehensive, and executable HSS plan. We recommend using the chart above as a starting point for establishing defined roles and responsibilities for these individuals.

The Brigade Support Battalion Support Operations Medical Team

The SPO MED section consists of a medical operations officer, a medical logistics officer, and a medical operations noncommissioned officer (NCO). The SPO MED section’s ability

The SPO MED section is the main point of contact for all HSS issues within the BCT.

to synchronize the HSS plan, coordinate medical assets, communicate requirements, and manage reporting, is often overlooked. The SPO MED section is frequently not staffed or integrated into the development of the HSS plan. Many times, the battalion (BN) medical officers (MEDOs) bring HSS issues

straight to the BSS or the BSMC CDR for assistance because they do not understand the role of the SPO MED section. The SPO MED should serve as the main point of contact for HSS issues within the BCT by receiving medical status reports and coordinating for echelon above brigade (EAB) medical assets when required. The SPO MED section should also synchronize current HSS operations and conduct medical intelligence preparation of the battlefield (IPB) for the BCT.

We recommend that the SPO MED work directly with the BSMC CDR to identify and articulate capabilities, requirements, and shortfalls in the HSS plan to the BSS.

The Brigade Support Medical Company Commander

The BSMC CDR frequently reacts when supporting the BCT's HSS plan because he or she is rarely part of the planning process. When the BSMC CDR does not receive bottom-up

The BSMC CDR is likely the senior AMEDD officer in the BCT and usually has the most experience in medical plans and operations.

feedback and refinement to the HSS plan, the BSMC just ends up adjusting as the battle occurs. Per modified table of organization and equipment (MTOE) and in most BCTs, the BSMC CDR is likely the senior Army medical department (AMEDD) officer with tactical experience. Prior to command, many BSMC CDRs served as a BN MEDO and may have served in a planning capacity such as a SPO MED planner or

BCT medical planner. As a result, the BSMC CDR has accumulated more experience in medical plans and operations than other BCT medical personnel. The BSMC CDR also maintains an understanding of current personnel and equipment status at the Role II, giving him or her the ability to help the BCT medical planner gain a better understanding of capabilities, requirements, and shortfalls within the HSS plan. Because the BSMC CDR has the most HSS planning and operational experience, we recommend the commander coordinate and synchronize Role I/II support within the BCT HSS plan. We also recommend the BSMC CDR integrate echelons above brigade medical assets into the BSMC footprint, monitor and support evacuation and ancillary service requests, and monitor patient tracking.

The Brigade Surgeon Section

The BSS is a small section that only consists of the BCT surgeon, the BCT medical planner, and one AMEDD NCO. Because the section is so small, they are challenged managing future operations simultaneously with current operations, casualty tracking, and MEDEVAC request prioritization around the clock. Additionally, many BSSs have inexperienced personnel which makes management of all tasks difficult. The BCT surgeon is a provider and usually has little to no experience operating in a tactical environment prior to assignment as BCT surgeon. Similarly, the medical planner is a pre-command captain or senior lieutenant without the requisite experience. Ultimately, the BSS is responsible for developing the HSS plan and distributing the guidance to subordinate medical elements prior to execution. The BSS's physical proximity within the BCT staff allows the section to understand the BCT commander's intent as well as the developing maneuver plan. The BSS must understand the capabilities of each medical element and additional requirements at echelon in order to support the maneuver plan. Specifically, the BCT surgeon is responsible for the technical control of all medical activities within the BCT and keeps the BCT CDR informed of the status of the brigade's combat health support operations and the health of the command. The BCT medical planner is responsible for developing the plan and producing the order, along with conducting medical reporting and input into the medical IPB. We recommend that with such a small and inexperienced section, everyone should understand the roles and responsibilities of the other personnel within the BSS. This creates shared understanding and allows the BSS to operate on all shifts.

Battalion MEDOS

At the battalion level, MEDOs play an integral role in developing the sustainment plan in conjunction with the BNs maneuver plan. The problem is that many MEDOs are junior officers (lieutenants) that do not understand their responsibilities to the BN during the developing, refining, and execution of the HSS plan. The BN MEDOS should work with the BSS and BSMC CDR during military decision-making process (MDMP) to refine the BCT HSS plan. Instead, BN MEDOs scramble to fit in and support the BCT HSS plan late in the planning and preparation phase. As a result, one or two things happen: either the MEDOs misunderstand their role on the staff as a planner and primarily serve only to manage casualty reporting and tracking or they are unprepared or apprehensive to communicate realistic support capabilities of the platoon, not giving the commander and staff a realistic sense of how the medical platoon will be able to support various battalion courses of action. With incomplete battalion medical staff work comes an inability to communicate specific concerns, requirements, and shortfalls to the BSS and BSMC CDR. We recommend senior medical personnel within the BCT, to include the BCT medical planner, BSMC CDR, and BSB commander provide mentorship to BN MEDOs on their role in MDMP and shaping BCT HSS operations.

Develop and Publish the Health Service Support Plan

During preparation of the HSS plan, all medical personnel at all echelons must be involved in MDMP. What we observe time and time again is that HSS planning is rarely collaborative between the BSS, BN MEDOs, and the BSMC CDR. Yes, this is the same group of individuals that struggle with roles and responsibility delineation. This stove-pipe planning situation creates disjointed and desynchronized HSS plans, mismanagement of limited medical assets, and ultimately makes adherence to Army HSS planning principles difficult. The best HSS plan ensures resources are available at the appropriate proximity, in appropriate concentration, to support anticipated requirements derived from a complete comprehension of the maneuver plan. The HSS planners must understand the tactical task and purpose of main and supporting efforts in order to identify requirements in the treatment and evacuation aspects of the HSS plan.

Key elements of BCT HSS plan	
Location of all medical assets	Primary and alternate evacuation routes
BN CCPs	Maneuver-based triggers
Casualty estimates	CASEVAC security
Capabilities/limitations	PACE communications plan (BNs and BDE)
Priorities of support for ground and air MEDEVAC	Patient decontamination (DECON) locations
Time distance analysis	Clean and dirty routes
BCT AXP locations	CL VIII status/requesting

The HSS plan should include casualty estimates, maneuver tasks and triggers, and specific medical treatment and evacuation capabilities. The HSS plan should adhere to the principles of Army HSS, which include conformity to the maneuver effort, mobility consistent with supported

The HSS plan must be synchronized and tied to maneuver triggers. It should be focused on anticipated engagement areas and the subsequent casualty zones resulting from enemy contact.

elements, proximity to the forces supported, flexibility to shift scarce resources where needed, continuity of care through all echelons, and control of resources to provide the greatest good to the greatest number within the operational environment (Field Manual 4-02). The HSS plan should be focused on anticipated engagement areas and the subsequent casualty zones resulting from enemy contact. There are other important and often overlooked tasks related to HSS that rely upon outside personnel to execute: including chemical, biological, radiological and nuclear (CBRN) casualty decontamination;

non-standard CASEVAC planning and coordination; and mass casualty (MASCAL) plan development. No HSS plan is complete without identifying and planning for these circumstances.

Execute the Health Service Support Plan

Once the HSS plan is developed, it must be executed. The biggest challenge for the BSS with the HSS plan is the transition from future operations (FUOPS) to current operations (CUOPS). The BSS owns the plan during future operations but as it transitions to current operations the SPO MED, BSMC commander, and BSB commander manage the plan with BN MEDOs and command sergeants major execute the plan. If the handover from FUOPS to CUOPs does not occur or the plan is not well understood following the sustainment rehearsal, the BSS usually gets pulled into managing current operations. This creates voids in developing the HSS plan for future phases of operations. The BSS must identify the point in which the plan is transitioned from future operations and planning within the BSS and current operations and management by the SPO MED section and BSMC CDR. Handing the plan over to personnel managing current operations allows the small BSS section to continue future planning and manage current operations requirements inherent of the section such as casualty tracking and air MEDEVAC management. As the HSS plan is executed, medical personnel managing FUOPs and CUOPs must constantly revisit the following:

- Does the plan conform to the task and intent of the maneuver commander?
- Does the plan allow me to remain mobile and provide support quickly?
- Does the plan keep me proximate to the supported force?
- Does the plan allow me to easily flex assets where needed?
- Can I provide continuity of care to my patients?
- Can I control the plan and HSS assets?

Produce casualty estimates. Casualty estimates provide useful information at all echelons and help anticipate casualty volume at battalion aid stations, MEDEVAC and CASEVAC requirements, expected MASCAL situations, and projected Class (CL) VIII requirements. Many units produce a casualty estimate and even brief the estimate at rehearsals but few units conduct

the additional staff work to identify the impact of estimated casualties to reallocate resources, ask for task-organization changes or additional support, or identify additional evacuation requirements necessary. Working with the BCT S-1, the BSS must produce casualty estimates and analyze those estimates. Concurrently, BN MEDOs must do the same with the BN S-1. These estimates must be correlated with BN capabilities to identify shortfalls and additional requirements necessary to support the commander's plan. The BSS and BN MEDOs must understand the maneuver plan by phase, maneuver triggers associated with the plan, and produce corresponding casualty estimates by phase. Though a rough approximation, casualty estimates help take some guesswork out of planning. With casualty estimates, the BSS and BN MEDOs can begin to reallocate resources, work with company first sergeants to identify additional CASEVAC platforms, reinforce an aid station with an additional treatment team from BSMC for a specific operation, or identify a period of time to request non-standard air CASEVAC resources.

Develop and use maneuver triggers in the HSS plan. Brigade combat team units often identify Role I and II anticipated locations and ambulance exchange point (AXP) or evacuation support requirements but rarely develop maneuver based triggers associated with movements, creating shared understanding over time and space. As a result, support elements revert to internally developed time-based triggers. When medical personnel use time-based triggers for medical support while the maneuver forces use maneuver-based triggers to progress through a fight, the end result is AXP or treatment team jumps occurring before specific requirements are necessary and medical support elements are positioned at inappropriate locations to support the fight. Additionally, without well-understood triggers, executing area medical support becomes difficult as units plan to rely on others but do not understand how the plan will shift and change over time. The HSS plan must be specifically synchronized and tied to maneuver triggers. This can become more manageable through the development and use of a HSS matrix.

Medical personnel must understand the maneuver plan and triggers associated with operations. Digital and analog products in medical command posts need to include not only sustainment and medical graphics but also maneuver graphics and objectives.

Develop and follow a HSS synchronization matrix. The HSS synchronization matrix is great synchronization tool that's seldom used to create understanding and manage the HSS plan. A HSS sync matrix outlines each battalion's proposed locations, capabilities or requirements at each treatment or evacuation node, triggers associated with movements, and AXP locations supported during phases. The matrix can also include communication considerations such as alternate means of communications during BCT command post or BSMC jumps and information for distributing CL VIII needs anticipated prior to or following a phase. Similar to a logistics synchronization (LOGSYNC) matrix, a HSS synch matrix outlines when and where the BCT can expect area medical support. While it may be difficult to provide specific locations (grids) prior to execution, the matrix must contain the detailed information discussed and rehearsed at the sustainment rehearsal. Use of a HSS sync matrix also

Similar to a LOGSYNC matrix, a HSS synch matrix outlines when and where the BCT can expect area medical support.

helps identify potential issues with AXP management and scarce BCT evacuation resources and helps identify ground and air evacuation priorities by phase.

Integrate the HSS plan into the sustainment rehearsal. The HSS plan is often not well distributed or understood by MEDOs and the BSMC CDR prior to the sustainment rehearsal. As a result, units tend to make last minute changes that are not socialized with other parts of the plan or that take capabilities into account. This affects the sustainment community's ability to create shared understanding during the rehearsal as planning often occurs instead. The BCT sustainment rehearsal must be detailed and rehearse points of friction within the HSS plan to truly help synchronize assets and create shared understanding of the plan. The HSS portion of a sustainment rehearsal must mirror the most important aspects of the HSS plan.

A comprehensive HSS rehearsal includes the following. The BCT surgeon briefs the overall CASEVAC plan. The surgeon discusses ground and air evacuation capabilities, anticipated bands of casualties, possible friction points in the HSS plan, patient decontamination locations, proposed support locations once patients are clean, and clean and dirty routes based on the CBRN assessment. The BCT S-1 briefs casualty estimates and personnel replacement operations. The BN MEDO's brief on aid station locations (main and forward) and responsibilities, standard and nonstandard evacuation platform capacity, casualty collection point (CCP) locations, and actions from the point of injury to CCPs and Role Is. The BSMC commander briefs the Role II location, AXP locations, capabilities, and triggers to provide and shift support. Once briefed, the plan must be rehearsed with injects over time and space correlated with phases to create understanding. This is the time to voice shortfalls and concerns not previously identified during planning and development. Details, such as identifying support requirements for casualty density versus available capabilities, are essential.



Figure 21-3. Sustainment rehearsal.

Units must discuss friction points during the sustainment rehearsal, including asset relocations and area medical support, and shortfalls in the current plan to help rehearse solutions.

Develop and monitor a medical common operational picture. Brigade combat team units sometimes develop a proposed MEDCOP for a battle during planning but are not able to maintain the reporting and communication flow that enable accurate reporting and subsequent updates and dissemination of the ever-changing MEDCOP through execution. Without a clear understanding of the MEDCOP, real-time synchronization is difficult for the BSMC CDR and SPO MED officer to ensure medical assets are efficiently and effectively employed. During execution, continuous communication is essential and drives development and refinement of the MEDCOP. The MEDCOP must be simple, easily understood, and readily available and widely disseminated. Recommend the use of Joint Capabilities Release (JCR) overlays to depict locations, proposed and current, of treatment and evacuation nodes.

Determine medical information and reporting requirements. Few BCT units are trained on medical information reporting which is critical to developing and executing the HSS plan,

building the MEDCOP, and answering medical commander critical information requirements (CCIR). Units that do well with medical reporting identify specific reporting information requirements, specify the reporting method and time, and dictate specific events requiring additional spot reports. Medical situation reports (MEDSITREP) including location, personnel strength, maintenance strength, CL VIII shortages, and treatment and evacuation capability feed the development and synchronization of the MEDCOP. MEDSITREPs give the BSS, SPO MED, and BSMC CDR a greater understanding of proximity, allow those entities to make decisions that facilitate flexibility and control to provide resources, help to build future medical staff running estimates during MDMP, and provide situational understanding for commanders at all levels. Units must identify what information is necessary for use during MDMP, MEDCOP development and maintenance, and medical CCIR. If the information does not feed a higher purpose, then the reporting requirement is unnecessary and wastes time. In a time-constrained or communications-constrained environment, identifying and refining only the reports that feed planning or execution is necessary. If

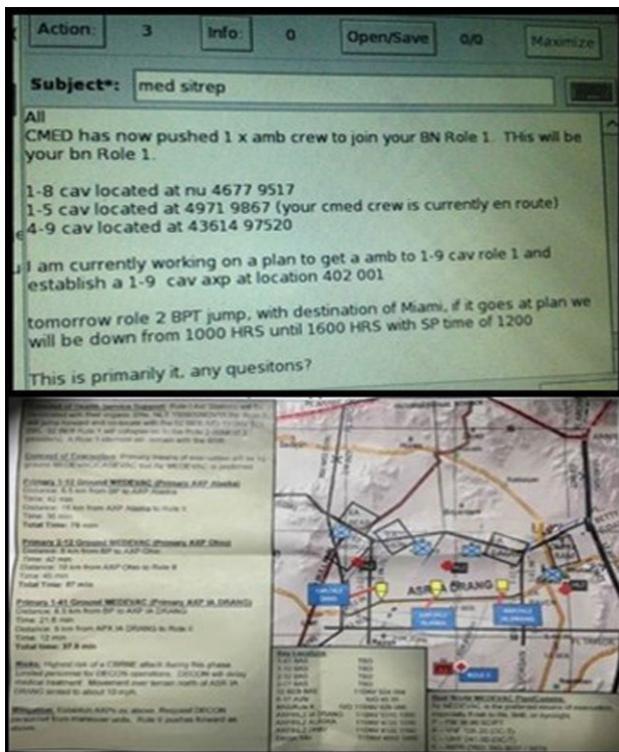


Figure 21-4. Medical SITREPs, CL VIII requirements, treatment and evacuation capabilities, and medical CCIR reporting all feed into building the MEDCOP.

casualty reports are required, which they should be, the BSS must be clear and succinct about the required information. BN MEDOs have limited time between planning, platoon operations, and BN execution of medical operations. If specific formats or details are not disseminated and trained, the BSS and SPO MED sections rarely receive the information those sections need. Additionally, reporting requirements within the BCT must be identified and standardized within BCT standard operating procedure (SOP).

Develop and publish a HSS primary, alternate, contingency, emergency (PACE) plan. Many units underestimate the importance of developing and exercising a PACE plan. Without effective and timely communication, the BSS does not understand the capabilities and shortfalls at the Role I or Role II that will affect execution of the HSS plan. Similarly, the SPO MED and BSMC CDR do not fully understand the maneuver plan and medical requirements necessary to effectively support if timely communication is not occurring. BCTs are challenged with communications due to modified table of organization and equipment authorizations. Many of the platforms available to the BSS (command post of the future, Ventrilo, Secure Internet Protocol Router, Non-Secure Internet Protocol Router, and JABBER) are limited at the BN level to the command post and not available to company or medical platoons organically.

Units can greatly increase communication by developing and validating a medical communications card, listing PLT, CO, BN, and BCT Role names for JCR, email addresses, and FM frequencies at echelon

Rather, at the Role I and Role II, units are authorized JCR and frequency modulation (FM) communications. As a result, the BCT medical community often develops elaborate PACE plans requiring multiple communication platforms and a relay of information. This does not facilitate timely or continuous communications, creates barriers to ease of reporting, and makes dissemination of a plan, once developed, difficult. If BN MEDOs participate in BSS meetings, consider periodically conducting these meetings over field mission command nodes to refine the PACE plan. This will help build and refine a medical communications card containing JCR Role names at all echelons, email addresses if email is used, and frequencies at echelon.

Determine the Optimal Role I Location

Though several medical functions are available in the BSMC, they are not widely dispersed at the battalion level. Role I care only consists of trauma life support (treatment), evacuation resources (track ambulances), and medical mission command. Role I's provide the first form of definitive care for injured Soldiers, and as such, need to maintain proximity to the supported force. Role I's must be able to provide life-stabilizing treatment while not being too bogged down with equipment or tent setup that can affect rapid relocation. Role I locations must rehearse efficient setup and tear down of equipment and trauma beds. If using tents or camo nets, platoon load plans should facilitate the hasty employment of these shelters. The ability to efficiently occupy and displace from a location is essential, along with the ability to relocate and use terrain features effectively for survivability. A geographically dispersed forward line of own troops may drive the need to split a battalion aid station. Conducting split operations in team A and team B (main and forward aid stations) can provide flexibility to the HSS plan. This can provide continuous coverage, especially if the teams bound successively to provide support as supported units continue maneuver. Battle tracking within the Role I is imperative to help anticipated future moves once maneuver elements disperse more than a few kilometers from the Role I location.

Split aid station operations may facilitate better support to a widely-dispersed force, and can also be a useful method to bound resources forward while the other treatment section completes treatment and evacuation of injured personnel.

imperative to help anticipated future moves once maneuver elements disperse more than a few kilometers from the Role I location.

Conclusion

Success of the BCT HSS plan relies on integration through all stages of staff work and MDMP with the maneuver plan. Medical personnel at all echelons must identify and understand their roles and responsibilities that drive planning, synchronization, asset management, reporting and bottom-up feedback, and execution. Planning must be collaborative and planners must use reporting tools and casualty estimates to identify capabilities, requirements, and the subsequent shortfalls that require additional attention and coordination. Once developed, the HSS plan is disseminated through tools such as effective sustainment rehearsals and a medical sync matrix. During execution, the HSS plan is managed using maneuver-based triggers, ensuring all personnel pulling support from the HSS plan are speaking the same language. It also relies upon an effective PACE plan that ensures all personnel can communicate changes and new friction points that arise. Through this communication and the analysis of reports, the BCT must manage and distribute a MEDCOP frequently, allowing all personnel access to the ever-changing area medical support situation. Finally, medical leaders must ensure that once casualties are sustained, the BCT has timely access to Role I and Role II medical functions through the efficient movement and employment of BCT medical assets.

Chapter 22

Conduct Effective and Efficient Casualty Evacuation/Medical Evacuation and Ambulance Exchange Point Operations

CPT Lauren Teal and COL Brent Coryell

Brigade combat team (BCT) medical evacuation (MEDEVAC) and casualty evacuation (CASEVAC) planning and operations create major challenges to getting Soldiers definitive medical care in a timely manner at Role I or Role II. The MEDEVAC/CASEVAC plan needs to be completely integrated with tactical maneuver plans, mission orders, and needs to be rehearsed and synchronized prior to execution at all levels. The MEDEVAC/CASEVAC operations need to occur simultaneously during maneuver operations and cannot wait until fighting has ceased to ensure the survivability of urgent and priority patients. While the MEDEVAC/CASEVAC plan is just one portion of the BCT's health service support (HSS), it is integral to medical success.

Purpose

This chapter presents the best practices as observed by observer, coach/trainers for efficient MEDEVAC/CASEVAC planning and operations. It discusses how to best delineate BCT evacuation responsibilities at the battalion (BN) and BCT level. It provides insight into how to best employ standard MEDEVAC and non-standard CASEVAC platforms. It covers challenges and best practices observed with the use of evacuation planning tools to include casualty collection points (CCPs), ambulance exchange points (AXPs), an ambulance shuttle system, and direct support planning. It discusses the delineation between mission and launch authority for ground and air MEDEVAC and provides recommendations for planners at all levels to consider during BCT evacuation planning and execution. Because MEDEVAC/CASEVAC planning is part of the overall HSS plan, important topics such as understanding maneuver operations, casualty estimates, and the importance of rehearsals will not be discussed here. Reference Chapter 21 on Conduct Effective and Efficient Health Service Support Planning and Operations, for additional information.

Evacuation Responsibilities – Who Owns What?

Due to manning shortages, maintenance issues, or a hesitance to push evacuation assets forward as part of forward evacuation section responsibilities, many brigade support medical company (BSMC) roles divert to evacuating a large number of casualties to an ambulance exchange point or directly to Role II, putting further strain on already limited standard evacuation asset availability at the BN level.

Evacuation from a role of care to a higher role of care is the responsibility of that next higher role of care (Army Techniques Publication 4-02.2). For example, patients requiring evacuation from a task force Role I to the BSMC Role II are the responsibility of the Role II to evacuate. While this is a general rule, there are some other considerations that drive deviation from this methodology. For example, units residing in the rear area in close proximity of the Role II, such as Role I's belonging to field artillery battalions or brigade engineer battalions commonly plan to evacuate their own casualties to Role II due to their proximity and low-anticipated casualty numbers based on rear area enemy threat. Units must plan to execute the operations they are manned and equipped to support, not the operations they want to be able to support based on modified table

of organization and equipment. If a unit has 80-percent manning or is short three evacuation platforms due to crew shortages or maintenance, medical planners and BSMC commanders need to be clear about what they can and cannot support. With that said, the primary function of the evacuation platoon in a BSMC is to help the BCT evacuate casualties from Role I to Role II or provide area evacuation support to units with no organic evacuation capability.

Medical Evacuation and Casualty Evacuation Platform Planning

The BCT medical planners need to understand at each echelon the unit capability to MEDEVAC patients and provide en route care. Without an understanding of MEDEVAC capability by task force and location of anticipated casualty zones, planners are challenged to identify shortfalls and deliberately conduct CASEVAC planning to fill the gap.

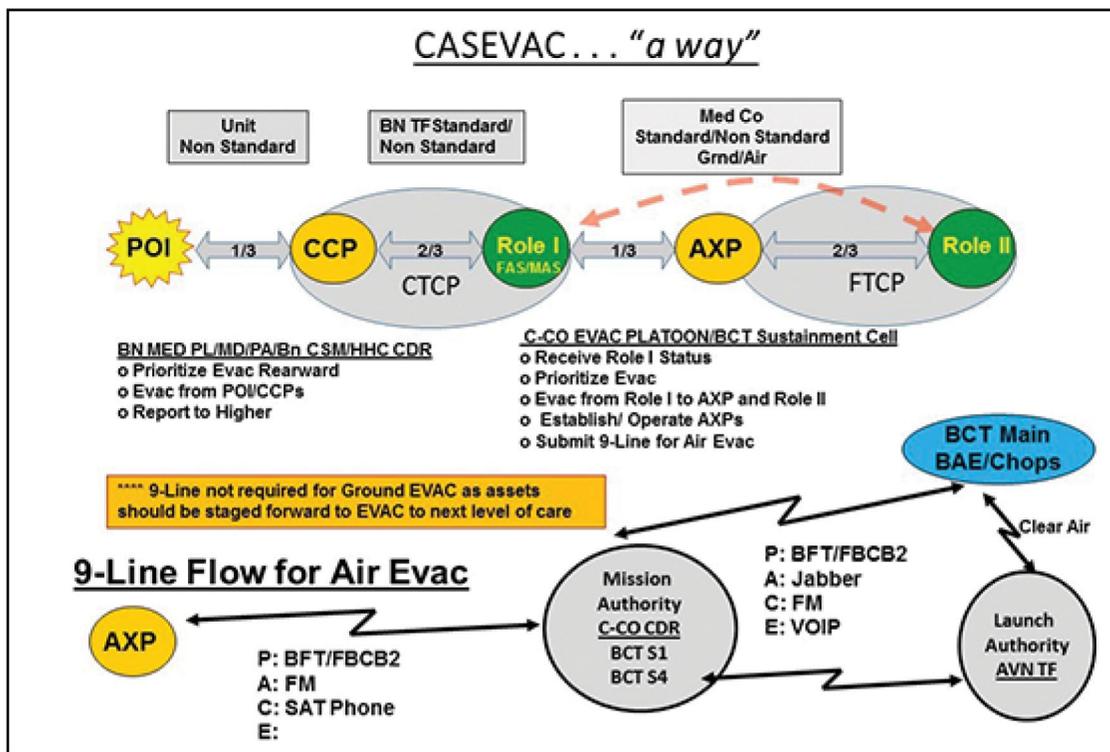


Figure 22-1. The responsibility to transport injured Soldiers to the next higher echelon of care falls upon that next higher level.

Breaking the battlefield into more manageable segments through the use of CCPs and AXPs helps planners and executors to maximize limit.

Medical evacuation platforms (M113, M997, M1113, and HH-60) give units the ability to rapidly move wounded, injured, and sick personnel between roles of care while providing en route medical care. An efficient MEDEVAC system provides care to casualties quickly, provides treatment and monitoring en route to improve the prognosis of patients, and helps clear the battlefield of casualties so the maneuver fight may persist. It's not enough for planners to know the number of standard evacuation platforms. they must also understand where those MEDEVAC platforms are located with respect to expected casualty zones. This understanding gives planners

an idea of the standard litter and ambulatory capability of a task force. When analyzed against casualty estimates, BN medical operations officer and the brigade surgeons section can then identify shortfalls in the plan. These shortfalls drive deliberate CASEVAC planning. CASEVAC refers to the movement of casualties on non-medical platforms (M1083s, M1151/M1097, CH-47, and UH-60) without the benefit of en route medical care and monitoring. CASEVAC is recommended to move less severely injured patients to appropriate roles of care and should be used when MEDEVAC platform capabilities are overwhelmed. When possible, providing a medic or combat lifesaver (CLS) trained Soldier on those platforms with a CLS bag or medic bag is preferred. While not equipped to provide standard en route care, these personnel can monitor patient conditions and reassess medical interventions.

Since CASEVAC operations can reduce combat power and degrade the efficiency of the Army health system (AHS), units should only use CASEVAC to move Soldiers with less severe injuries when medical evacuation assets are overwhelmed (ATP 4-02.2).

Medical planners must understand and allocate or reallocate MEDEVAC assets in conjunction with casualty estimates and anticipated casualty zones. These planning tools, when compared to casualty transport capability, help to identify shortfalls and drive CASEVAC planning. CASEVAC planning must be deliberate. Personnel executing CASEVAC must understand their role in the evacuation plan and the routes they need to take to the next higher level of care.

Evacuation Planning Tools – Casualty Collection Points

The CCPs are planned, designated, and briefed at BN sustainment rehearsals and combined arms rehearsals but often not leveraged or staffed to streamline the evacuation process from point of injury to BN Role I. CCPs can be an effective tool to pool casualties in one or multiple locations giving a platoon or company a reference point to transfer casualties, reassess medical treatment, and arrange for further evacuation to a higher level of care, generally a BN Role I or BCT Role II facility. CCPs should be planned in a secure area offering protection from both indirect and direct fires. The location of CCPs should allow for ground access and offer the rapid turnaround

Once casualties are sustained, evacuation to CCPs and role I must occur concurrently with maneuver operations.

of evacuation platforms to return to their supported element once casualties are transferred at a CCP. If available, the CCP should also allow for the use of air MEDEVAC assets. CCPs should be planned and staffed as far forward as the tactical situation permits and be clearly marked by natural terrain features or manmade structures or marking devices. Staffing and running the CCPs is the responsibility of the next higher

level of care. For example, a company first sergeant oversees the evacuation from platoon to company CCPs with the senior company medic. The senior company medic triages and treats casualties at the CCP and coordinates with the first sergeant for the evacuation of those personnel to the BN Role I.

As the company maneuvers forward during operations, preplanned CCP locations should be designated. Once activated, company personnel should consider manning the CCP with either combat medics or CLS personnel to provide initial lifesaving medical treatment. Also consider positioning the company first sergeant at the CCP with evacuation platforms, either standard ground ambulances or non-standard evacuation assets to quickly direct the evacuation of personnel higher once triaged by the company senior medic or CCP staff.



Figure 22-2. When properly staffed and equipped, CCPs are effective in treating, triaging, and transporting most injured Soldiers.

Evacuation Planning Tools – Ambulance Exchange Points

The AXP's can be very effective tools for multiple reasons: AXP's can help a unit transfer patients from a slower medical platform such as an M113 tracked ambulance to an M997 wheeled ambulance or air MEDEVAC platform, gaining speed during transport; they can maximize the use of limited evacuation assets by directing casualties to a limited number of locations for further transport; and they can help return supported unit ambulances to their respective units more quickly. However, there are several challenges that units face when executing AXP's. First, some units choose to not use AXP's at all but rather allocate Role II evacuation platforms as direct support assets. Second, some units that do choose to use AXP's are co-locating those AXP's with task force (TF) Role I locations instead of planning traditional AXP's. Finally, many units are averse to manning AXP's.

AXP's are a tool to provide a manned or planned location as far forward as tactically allowable. This is generally one third of the distance from the supported unit to the next higher role of medical care. Medical planners should take into consideration the terrain of the operational environment, locating AXP's in areas that provide natural or manmade cover and considering time-distance analysis. Breaking the operational environment into smaller segments through the use of AXP's allows supported units to exchange casualties from one MEDEVAC platform to another and return to their supported elements rapidly. The use of brigade AXP's also allows many units to access the brigade medical company's assets simultaneously, maximizing the use of those evacuation platforms. Unfortunately, there is an emerging trend to use the brigade medical company's evacuation assets for direct support to TF Role I locations. While direct support to TF Role I's may help fill shortages in available MEDEVAC assets within that specific

unit, they limit the rest of the brigade's ability to evacuate large numbers of casualties effectively from multiple locations. Also observed during the use of direct evacuation support is a trend of allocating that support to "spread the wealth." Units even the number of available evacuation platforms across each battalion instead of allocating resources based on mission risk, main effort versus supporting efforts, or projected casualty estimates. Additionally, units often use direct support assets to transport casualties directly from Role I to Role II. While this is effective over short distances, as BCTs maneuver forward and casualty evacuation distances increase, travel time increases and direct support becomes less effective. After the first load of sick or wounded, direct support ground ambulances must travel long distances to do subsequent flips and this affects the survivability of many urgent casualties. Similarly, when units choose to co-locate AXP's with TF Role I's, the AXP becomes problematic for both the co-located Role I and other battalion task forces. By collocating AXP's with battalion aid stations, the AXP increases the Role I's footprint and forces the Role I to deal with an influx of BCT casualties. Co-located AXP's also decrease the Role I's mobility and ability to provide care to their battalion as they move forward during the active phases of the battle. Finally, when possible, consider manning AXP's. Manned AXP's provide a visible location for incoming ambulances and make linkup in time and space more manageable, especially during night operations. Supported task force ambulances do not have to wait for Role II ambulances to arrive and can quickly transfer casualties. Also, medical mission command at a manned AXP can be an asset for the BSMC commander, providing a communication node at the AXP to triage incoming casualties, prioritize ground support, and leverage air MEDEVAC. AXP's help to gain speed when transferring injured Soldiers from a slower platform to one with more speed.



Figure 22-3. Manned AXP's can be a useful tool to move a large number of casualties with limited resources.

Use of direct support medical assets from the brigade medical company to task force Role I's and co-location of AXP's with Role I's decrease the efficiency of medical assets from Role I to Role II evacuation. Consider using direct support for ambulance allocation over shorter evacuation distances or in situations in which task force ambulance support is unavailable. Also, avoid a "spread the wealth" allocation of assets. Each mission is unique and casualty estimates should be referenced when reallocating BCT level evacuation assets to BN task forces. When planning AXP's, avoid co-locating AXP's with TF Role I's, as this course of action does not decrease evacuation timelines and the return of ambulances to supported units. It also decreases Role I mobility and ability to provide care on the move. When possible, recommend the manning of AXP's. This may not be feasible over long periods of time but is very effective when supporting major operations or during periods of anticipated casualties. Manning AXP's ensures a rapid transition of casualties from supported elements, makes linkup easier, and can provide medical mission command at the AXP which makes use of air MEDEVAC and an air AXP much easier.

Evacuation Planning Tools – Ambulance Shuttle System

An ambulance shuttle system is a useful tool to manage evacuation resources and provide flexibility to medical planners during the evacuation of BCT casualties. However, units rarely employ a shuttle system. Ambulance shuttle systems allow for flexibility and efficiency in the movement of casualties from the battlefield. Army Techniques Publication 4-02.2 details the components of an ambulance shuttle system as the following:

- Ambulance loading point. This is a point in the shuttle system where one or more ambulances are stationed ready to receive patients for evacuation.
- Ambulance relay point. This is a point in the shuttle system where one or more empty ambulances are stationed. They are ready to advance to a loading point or to the next relay post to replace an ambulance that has moved. As a control measure, relay points are generally numbered from forward to rear.
- Ambulance control point. This consists of a Soldier (from the ambulance company or platoon) stationed at a crossroad or road junction where ambulances may take one of two or more directions to reach loading points. The Soldier, knowing from which location each loaded ambulance has come, directs empty ambulances returning from the rear. The need for control points is dictated by the situation. Generally, ambulance control points are more necessary in forward areas.

When managing multiple AXPs, consider using an ambulance shuttle system to flex assets where necessary. If challenged with limited security to protect ambulances during evacuation, employing a shuttle system and positioning security at relay or control points can help manage limited security forward. Placing a mission command element within the ambulance shuttle system, commanders or platoon leaders may exercise more control of the movement of assets either forward or rearward. Additionally, the shuttle system avoids massing evacuation assets forward and reduces the risk of enemy contact.

Mission and Launch Authority – Ground Versus Air

Units are frequently challenged to effectively employ air MEDEVAC and fully leverage the BSMC's ground evacuation assets, instead relying heavily on the Role I to move casualties to higher roles of care. Usually, the BSS section maintains mission authority for air MEDEVAC requests, prioritizing those requests for the BCT. Often the BSMC commander or BSB commander maintains mission authority for ground MEDEVAC requests. Synchronization becomes difficult if not all entities maintain situational awareness through monitoring requests for both methods of MEDEVAC. Often, BNs request assets and the BSS or BSMC act on the request but fail to notify supported BNs. As a result, BNs launch assets to conduct evacuation to Role II while BCT ground assets or division air assets are simultaneously launching to provide support. Coordination and feedback is required from the BSS and to the BSMC, support operations medical, and the requesting unit once air or ground assets are requested, approved, and launched. Additionally, prior to execution, units must discuss who takes mission authority for air MEDEVAC when the designated entity is jumping or when communications are limited.

Conclusion

Success of the BCT MEDEVAC/CASEVAC plan relies on an understanding of the maneuver plan to properly plan for assets against forecasted casualties, prioritize and allocate limited evacuation assets, and plan for employment of air and ground ambulances. Once the evacuation plan is developed and published, it must be rehearsed during the HSS portion of the sustainment rehearsal. Medical and non-medical personnel at all echelons must understand their roles in the evacuation process, providing treatment and planning resources to care for and transfer wounded Soldiers. During execution, the MEDEVAC/CASEVAC plan becomes effective through the use of mission command nodes managing evacuation planning tools such as CCPs, AXP, and a shuttle system. Mission and launch authority for air and ground ambulances must be discussed, rehearsed, and a contingency plan developed during limited communications or BCT command post and brigade support area operations center jumps to avoid confusion and missed 9-line requests. Finally, leaders must ensure that once casualties are sustained, those casualties are quickly moved to lifesaving care through a robust MEDEVAC/CASEVAC system and plan.

Chapter 23

Optimally Establish the Brigade Support Medical Company for Role II Operations

CPT Lauren Teal and COL Brent Coryell

The brigade support medical company Role II is the only medical facility in the brigade combat team (BCT) capable of providing laboratory, X-Ray, and patient holding. Therefore, it is important to establish these services quickly. Role I depends on the Role II to provide further diagnostic support to patients. During Role II relocation, a Role I may need to hold a patient for several hours awaiting Role II establishment and services. Becoming functional to receive patients, enables the Role I to transfer patients and remain mobile. It also allows the Role II to support the BCT while the rest of the company continues to setup additional tents for treatment space, command post (CP) operations, and other ancillary workspaces. This chapter presents the best practices as observed by observer, coach/trainers at the National Training Center for efficient Role II operations. It discusses best practices during layout design and covers priorities of work upon initial occupation and setup. It also discusses best practices for location within the brigade support area (BSA) and helicopter landing zone (HLZ) location. The purpose of this chapter is to provide a general understanding of Role II best practices at a very basic level and is most appropriate to familiarize junior lieutenants and noncommissioned officers unfamiliar with medical unit setup to gain a better understanding of brigade support medical company (BSMC) employment within their unit.

Determine the Best Location in the Brigade Support Area for the Role II Facility

Location, Location, Location! Location within the BSA is important for the Role II. Most units locate the Role II toward the center of the BSA. There are a few factors to consider when choosing a suitable location. The first is security and communication. With no modified table of organization and equipment crew served weapons, a location toward the center of the BSA offers both the BSMC and its patients a more secure location. It may also offer additional communications support if close enough to the battalion tactical operations center to run support for secure internet protocol router (SIPR). The SIPR connection support may enable a more robust primary, alternate, contingency, emergency or plan with the BCT surgeon section and the aviation task force for air medical evacuation (MEDEVAC) support.



Figure 23-1. Establishing an HLZ near the Role II makes transportation of patients from aircraft to Role II easier, but requires a larger BSA footprint.

One of the most important considerations for the Role II location is the availability of a suitable (HLZ). Placing the landing zone within the BSA close to the Role II enables patient pick-up and drop-off, especially if patients will be carried by litter to and from aircraft. An HLZ location within the BSA requires a larger Role II and BSA footprint, especially if CH-47 platforms are to be used for non-standard patient transport or logistics support. Placing the HLZ outside the BSA may enable a smaller and more defensible BSA perimeter but requires a more robust transportation plan

for casualties to and from the HLZ by vehicles, increasing transport time. It may also require some consideration within the entry control point (ECP) support plan. Consider establishing a primary HLZ within the BSA for HH-60 aircraft and an alternate HLZ outside the BSA for larger platforms.

A final important consideration for the placement of the Role II is the transportation road network. While the Role II should be situated on a visible, trafficable road network, it should not sit along a road with high traffic or on a logistics supply route. In doing so, units run the risk that ambulances will get caught in a traffic jam of logistics convoys trying to pick up or drop off supply commodities at the BSA. Consider establishing the Role II along a route that diverges from the flow of logistics packages (LOGPACs). Similarly, consider the use of an emergency ECP for ambulance traffic. While this may create an additional point that requires manning and defending, it can help to cut down on ECP traffic and will keep ambulances from being held-up behind incoming or outgoing logistics elements. If an emergency ECP is not feasible, perhaps consider an ambulance bypass route at the main ECP to facilitate quick entry and exit.

Establish the General Role II Layout

Units can successfully execute Role II operations with a variety of layouts. Layout is largely driven by available tentage, services available due to personnel or equipment shortages, and any additional equipment resourced. Placement within the BSA and orientation to BSA road networks and entry ECP may also influence the Role II layout. Regardless, a functional setup should include all services and functions of the BSMC.

Role II layout is largely dependent upon available tents. A variety of different layouts can be effective as long as patient flow from triage, through treatment, and on to evacuation works well. Additionally, orienting the Role II within the BSA traffic flow plan is important to facilitate efficient entry and exit of ambulances. The following is a list of recommendations for specific areas.

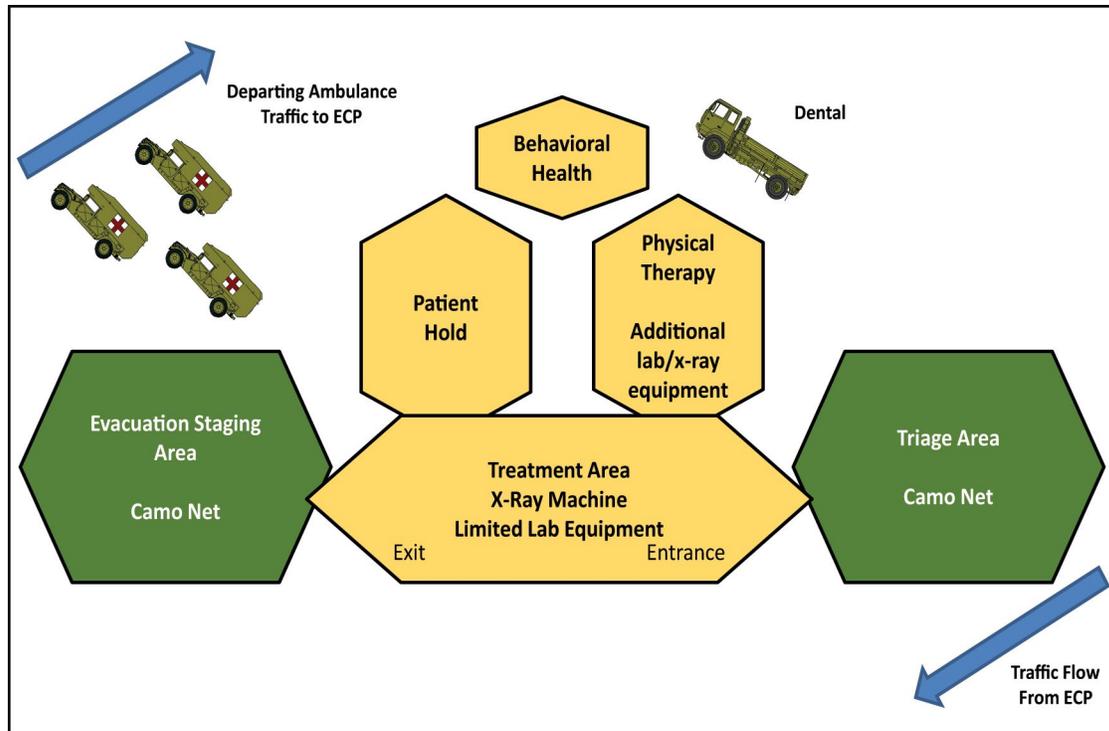


Figure 23-2. Example Role II Layout.

- 1. Establish the treatment area.** Establish a clearly-defined triage area marked with immediate, delayed, minimal, and expectant areas. All areas include medical supplies necessary to sustain patients prior to transition into the treatment area. Clear the entrance and exit in and out of the treatment area. Stock and equip trauma beds uniformly to ensure all personnel working know where to find supplies on every bed. Ensure it is a respectful area that is out of the general view of passersby and maintains shade and quiet while expectant patients are with the unit chaplain.
- 2. Establish the evacuation area.** Create a clearly-defined evacuation holding area for patients requiring further evacuation (urgent, priority, routine). The area should be stocked with supply in such a manner to facilitate checking interventions and continuing care until evacuation occurs.
- 3. Establish the dental area.** Units that are authorized the M1087 Expando van (armored BCT) need to use it for the dental area. This setup allows for quick power generation when towing a generator, storage for all equipment during movement, and a more sterile environment for field procedures.

4. Establish the laboratory and radiology area. Ensure easy and efficient access to laboratory and x-ray equipment. If space is limited, recommend at least the x-ray machine and iStat lab supplies are maintained in the trauma area if there is not enough space for the x-ray computer and reader or manual lab equipment.

5. Establish the patient holding area. Ensure the patient hold area is not within the flow of patients from treatment to evacuation. Do not use the patient hold as a thoroughfare during evacuation for patients requiring immediate evacuation. Doing this not only adds an additional patient handover but also impedes the recovery of appropriate patient hold personnel (return to duty within 72 hours).

6. Establish the behavioral health area. Create a behavioral health area that is private and allows providers and patients to conduct treatment efficiently and that gives patients privacy.

7. Establish the brigade medical supply office (BMSO) area. The BMSO must maintain connectivity for medical communications for combat casualty care to facilitate receiving orders, processing orders, and sending requests to higher medical supply echelons. Consider colocation of at least part of the section with the supply support area for very small aperture terminal connectivity and synchronizing distribution of Class VIII through LOGPACs.

8. Determine the priorities of work. Establishing and relocating the Role II can be a daunting task with the amount of equipment needed to provide all Role II services. An efficient setup includes well devised and executed priorities of work. While units may prioritize specific tasks differently based on patient needs, generally the priorities should include the following.

9. Establish tailgate medicine and Role I capability upon occupation. Once security is established and communications are established or maintained in mounted platforms, the next priority of work for the BSMC should be establishing a treatment footprint capable of at least tailgate medicine and then Role I capabilities. This can transition later to a more established footprint once tents begin to be set but the company must be capable of treating casualties once on ground. Become functional, then work to get comfortable.



Figure 23-3. Establishing tailgate medicine upon initial occupation helps to provide immediate support to incoming patients while the rest of the Role I and Role II assets are established.

10. Establish a helicopter landing zone. Units may choose to have this task performed by the evacuation headquarters section or other members of the evacuation platoon. Establishing, clearing, and reporting a HLZ immediately upon occupation facilitates patient pickup and drop off with air MEDEVAC. The HLZ location should immediately be sent to the BCT headquarters and the aviation task force.

11. Adjust other priorities prior to occupation. The priorities above should remain constant at each new location. However, setup priorities may vary from location to location in a decisive action environment based on the amount of time the Role II is anticipated to remain in place. If the Role II will only remain in a location for 24-48 hours, perhaps not all camouflage netting or shade areas are needed. Conversely, being in a location for four days or a week or more may warrant more tents, resupply sets, or shaded work area setup. Prior to relocation, set and distribute those variable tasks, assigning or adjusting section responsibility to alleviate confusion. Recommend units develop a hasty setup plan and a more established setup plan with corresponding priorities of work.

Conclusion

The BSMC's Role II provides necessary and unmatched services within the BCT's health service support plan. As such, it is vital that those services are established in a timely and efficient manner. From layout design to priorities of work, occupation setup must be deliberate and rehearsed. Additionally, location within the BSA's security plan, road networks, and air MEDEVAC HLZ all contribute to patients' timely and safe access to medical care.

Chapter 24

Conduct Effective and Efficient Brigade Medical Supply Office Operations

CPT Lauren Teal and COL Brent Coryell

Planning for medical material or Class (CL) VIII, is crucial for patient care. This CL VIII often becomes the forgotten class of supply and obtains little visibility until there is a complaint or issue. Brigade combat teams (BCTs) rarely synchronize CL VIII operations with the rest of the BCT's planning and distribution cycle. When planning for CL VIII, units often plan to stock up but rarely do so using medical intelligence preparation of the battlefield (MIPB) analysis, historical data of medical materiel ordering, or anticipated needs based on deliberate forecasting. This chapter presents the best practices for efficient CL VIII resupply and brigade medical supply office (BMSO) operations and discusses how to best forecast CL VIII requirements. It covers challenges and best practices observed with the development and management of authorized stockage list (ASL) and medical push packages. Lastly, it provides guidance on developing a CL VIII primary, alternate, contingency, emergency (PACE) plan and managing CL VIII distribution.

Integrate the Support Operations Medical Logistics Officer and Brigade Medical Supply Officer into MIPB

Very few BCTs integrate the Support Operations (SPO) medical logistics (MEDLOG) officer and the BMSO into the BCT's MIPB. From MIPB analysis, the SPO MEDLOG and BMSO officers gain an understanding of the battlefield environment along with the effects of that environment on Soldier health as well as the resulting health risks and considerations that will drive CL VIII needs at Role I and Role II aid stations. The SPO MEDLOG and BMSO officers need to understand the BCT task organization, mission, and scheme of maneuver. They need to understand the size of each unit formation including enabler attachments and detachments in order to accurately forecast CL VIII requirements. These two brigade support medical planners should understand the operational casualty estimates inherent to offensive, defensive, and stability operations. Different operations produce more casualties. More casualties mean additional CL VIII.

Use Casualty Estimates and Historical Data to Help Forecast CL VIII Requirements

Casualty estimates obtained from the BCT S-1 section or BCT surgeon section (BSS) are necessary to forecast CL VIII resupply requirements. While medical planners often produce casualty estimates, the SPO MEDLOG and BMSO are rarely aware of those projected casualties and the effect that sustaining those casualties will have on CL VIII supplies at each battalion aid station. An analysis of historical CL VIII order data and turn-in records can also be useful for setting and managing CL VIII budgets. Historical records show seasonal ordering trends for sick call medication needs. Turn-in records from customers to the BMSO and the BMSO to the issuing installation medical supply activity (IMSA) for expired medications and supplies also helps provide analysis of items over-ordered or rarely used in the quantities issued.

Manage the CL VIII Authorized Stockage List (ASL)

Validating the BCT's ASL is incredibly important. However, few BCTs conduct periodic ASL reviews. The BMSO ASL review board should be managed just like a CL IX review board.

The CL VIII ordering often occurs when the BMSO runs out of an item instead of when a stocked item reaches a preset reorder point.

Participants should include all physician assistants from the BCT with final approval from the BCT surgeon and brigade support battalion (BSB) SPO. In many units, the BMSO's ASL is a list of supplies currently on-hand, rather than a compilation of items deemed critical where the customer wait time exceeds mission requirements and an immediate resupply to the unit is required. Frequently, the ASL is either too small to support

the BCT's medical needs or has not been validated by the BCT surgeon and BSB commander to ensure the BMSO carries an appropriate inventory. Similarly, few BMSOs set stock levels within the ASL for items or identify reorder points that drive consistent restocking. The BCT surgeon, SPO MEDLOG, and BMSO must deliberately build an ASL based on unit medical equipment sets (MES), critical items often ordered, and items with longer wait times all while keeping in mind item shelf life and temperature control considerations to minimize waste. Intentionally building an ASL helps to stock items requested regularly based on medical set capabilities. Set stock levels and reorder points for the ASL inventory using historical ordering data to cut down on pass-back ordering and to decrease wait times. Once built and resourced, units should conduct yearly ASL reviews to validate quantities and validate the continuing need of certain items.

The ASL should be built on the unit medical equipment sets, with input from the BMSO, SPO MEDLOG, and unit providers.

Manage Medical Equipment Sets CL VIII Stock

Once the BMSO and BCT surgeon have compiled and validated an appropriate ASL for the unit's mission requirements, the BMSO must then manage the ASL stock. CL VIII stock is managed in two ways in that the BMSO must carry and forecast the items and quantities at the BCT level while battalion customers inventory, forecast, and order to meet their needs. Within a BCT, most battalions are authorized between one to four tactical combat medical care sets and six to eight ground ambulance medical sets. Because these sets cover a large portion of most battalion's medical set needs, stocking the expendable components of one to two of these sets within the BMSO ASL helps to ensure items are available to customers. Since many items in medical equipment sets have limited shelf life, BMSO offices should adjust the stock level prior to field exercises and deployment to ensure large quantities of items do not expire before issue. At the user level of the battalion aid station, sets should be inventoried quarterly and after all major exercises. Inventories identify items in lower quantity and items within 90 days of expiration which drives routine ordering.

Manage Combat Lifesaver Bag CL VIII Stock

Treatment in the BCT begins at point of injury with self-aid and buddy-aid. One of the medical tools that facilitates point of injury treatment is the combat lifesaver bag (CLS) bag. The CLS bags are distributed to the squad or equivalent level and the Army requires at least 10 percent of a unit's Soldiers maintain CLS certification. This equates to hundreds of CLS bags within a BCT. Management of the supplies in the bags falls on the individual user at the squad or section level but forecasting and acquiring supplies is the responsibility of several other entities. The company senior line medic and platoon medics need to make sure all CLS bags are inventoried regularly, checking for serviceability and expiration of items. Medics within the battalion aid station resupply company line medics and order bulk supplies through the battalion aid station CL VIII account. Finally, the BMSO and SPO MEDLOG officers must plan for and budget CLS bag resupply requirements annually, tracking historical ordering to help forecast needs.

Manage Individual First Aid Kit CL VIII stock

Every Soldier carries an individual first aid kit (IFAK) for self-aid and buddy-aid. While the IFAK pouch is usually issued at the central issue facility upon in-processing to a unit, rarely are the medical contents issued. Similar to CLS bags, it is the responsibility of the individual Soldier to check for serviceability and expiration of the IFAK. Acquiring supplies works much the same as CLS bag resupply. The battalion aid station orders bulk supply to distribute to each company and platoon and company medics request and distribute IFAK contents to their supported Soldiers. Because most Soldiers are issued IFAK pouches without contents, the BMSO and SPO MEDLOG officers must plan for and budget IFAK supplies annually. We recommend units budget IFAK needs based on anticipated Soldier turnover. For example, if 25 to 30 percent of a unit is anticipated to permanently change station within the next year, the SPO MEDLOG officer and BMSO should budget IFAK supplies to issue to 25 to 30 percent of the unit's population.

Build and Validate CL VIII Push Packages

While many BMSOs develop CL VIII push packages prior to operations, few validate the contents of the push packages with supported units and providers or distribute a list of the standardized push packages to ensure that units understand the contents. Many BMSOs develop CL VIII push packages for the treatment of certain types of injuries such as burns, hemorrhages, or airway management. If customers are unaware of the contents or existence of push packages or the BMSO has not assembled and prepared the packages for distribution, the lack of preparedness negates the convenience of such packages. Similar to validating an ASL, the BMSO needs to work with supported units and providers to build and validate the contents of push packages. Once validated, a list of each push package should be distributed to all supported units and included in the BCT medical standard operating procedure (SOP) or BMSO SOP.

CL VIII push packages are ideal for quick resupply during early entry operations, in emergencies when casualty density is greater than anticipated, or for general scheduled resupply.

Develop a PACE plan for requisitioning CL VIII

BCTs usually identify a PACE plan prior to mission execution. However, the communication methods are often infeasible, impractical, and inconvenient for customers and not rehearsed or validated. Systems must be in place to communicate, track, stock, and distribute CL VIII prior to mission execution. The BCTs PACE should include the Medical Communication for Combat Casualty Care (MC4) as well as the Joint Capabilities Release (JCR). These systems are proven and great tools to order CL VIII and communicate status. The MC4's Defense Medical Logistics Standard Support (DMLSS) Customer Assistance Module (DCAM) application is the Army system of record and the preferred CL VIII communication tool. However, BCTs rarely employ MC4's DCAM application to order and track CL VIII at the level I (battalion level) and level II (BMSO) user level. This is because few units validate certificates, Internet protocol addresses, and the very small aperture terminal (VSAT) connections and locations during home station training.



Figure 24-2. Example Push Packages, CL VIII.

Many units also face challenges using JCR effectively if system role-name validation does not occur or the unit does not establish a medical communications card prior to execution. This results in many units reverting to a hard copy Department of the Army Form 3161 or handwritten notes for ordering. While this works, it increases customer wait time and does not feed into an automated tracking system for either the BMSO or pass-back ordering with higher MEDLOG entities. Medical personnel at all levels must validate CL VIII ordering PACE plans prior to execution through a validation exercise. Produce a medical communications card to facilitate all alternate forms of ordering and communication. When establishing a PACE plan, consider the unique challenges that ordering CL VIII produces. While JCR is a quick and effective way to order push packages by push package number, it becomes more difficult to conduct line item order since BMSOs are not authorized the system and much transition of information must occur to turn JCR messages into order documents. Units must strive to use the MC4 DCAM system, allowing connectivity with

the BMSO and negating the need for the BMSO to create DCAM orders for customers. This system helps to decrease both ordering and requisition timelines, and helps the BMSO maintain accountability of items ordered and due in through a digital document register.

Distribute the Class VIII To Customers and Track the Delivery Status

The BMSO is often not synchronized with the SPO MEDLOG officer and does not have visibility of scheduled logistics packages (LOGPACs) or logistics resupply point operations that contain CL VIII. The lack of visibility on CL VIII distribution operations on routine logistics convoys puts distribution of CL VIII almost entirely on ambulance backhaul or customer pickup. While ambulance backhaul is convenient, it does not always occur on a consistent basis, thereby creating increased customer wait times and variability. The CL VIII resupply operations must be integrated with the SPO and already established LOGPAC distribution operations. The BMSO should maintain situational awareness of both planned logistics operations and operational considerations to ensure CL VIII distribution plans conform to the BCT's sustainment operations. Equally, a friction point to customers is the infrequent basis for which BMSOs provide CL VIII order status. The MC4 connectivity and failure to establish digital system access, coupled with no regular status updates from higher, result in BMSOs not providing an order status or due out register to their customers. Providing periodic due out registers to customers allows battalion aid stations to identify problems that the BMSO may have overlooked such as items not ordered during pass-back, items not received, or problems with cancelled items. The BMSOs need to pull the CL VIII catalog, request statuses, and provide customers with feedback on the status of orders and cancellations on a frequent basis.

Units should use the MC4 DCAM system to order CL VIII. It helps the BMSO maintain digital accountability of items ordered and due in through a digital document register.

Brigade Medical Supply Office Operations During Brigade Support Medical Company (BSMC) Relocations

Relocating or displacing the brigade support medical company (BSMC) during decisive action operations is often a deliberate plan. However, relocation of the BMSO is generally an afterthought. Without deliberate planning, relocating the BMSO with forward logistics element (FLE) operations may create breaks in ordering connectivity and uncertainty in distribution. The BCTs often choose to jump the BSMC forward of the brigade support area (BSA) during operations in which the BCT fight outpaces the medical company's ability to provide ground evacuation support from the BSA. In these situations, it is imperative the SPO weigh the benefit and risk of displacing the BMSO or leaving the BMSO in the BSA. If moving with the BSMC,

While ambulance backhaul is convenient for CL VIII delivery, it does not always occur on a consistent basis, creating increased customer wait times, and variability.

the BMSO must consider a heavy reliance on ambulance backhaul for distribution and alternate means of communicating with both higher MEDLOG support and customers since VSAT support will unlikely be available. If remaining with the BSA during FLE Role II movements, pushing prebuilt packages with the medical company will help mitigate issues with emergency resupply through ambulance backhaul and resupply to the BSMC during mass casualty operations. Within the BSA,

consider locating at least part of the BMSO with the supply support area (SSA). Proximity to the SSA facilitates distribution of routine CL VIII orders to supported units via field trains command post (FTCP) personnel and connectivity through the VSAT.

Conclusion

Medical supply activities at the BCT level are geared toward satisfying immediate health service support and force health protection requirements and rely heavily on the effective application of agility, velocity, and situational understanding (Army Techniques Publication 4-02.1). It is vital that the BMSO integrates with support operations to help support timely distribution and a general understanding of current and future requirements to facilitate forecasting. The BCT surgeon, SPO MEDLOG, and BMSO must deliberately build an ASL based on unit MES, critical items often ordered, and items with longer wait times. Units should then conduct yearly ASL reviews to validate on-hand quantities and ensure the ASL continues to meet the needs based on the unit's mission. Deliberate validation and rehearsals of the PACE plan will allow units to be more effectively prepared to execute effective CL VIII operations. When faced with rapid relocation, units need to weigh the pros and cons of relocating the BMSO with the BSMC in a FLE and how that relocation may disrupt operations if not deliberately executed. Successful BCT CL VIII operations are dependent upon integration with the health service support plan and sustainment operations with supervision by the BCT surgeon, SPO, and SPO MEDLOG officer.

Chapter 25

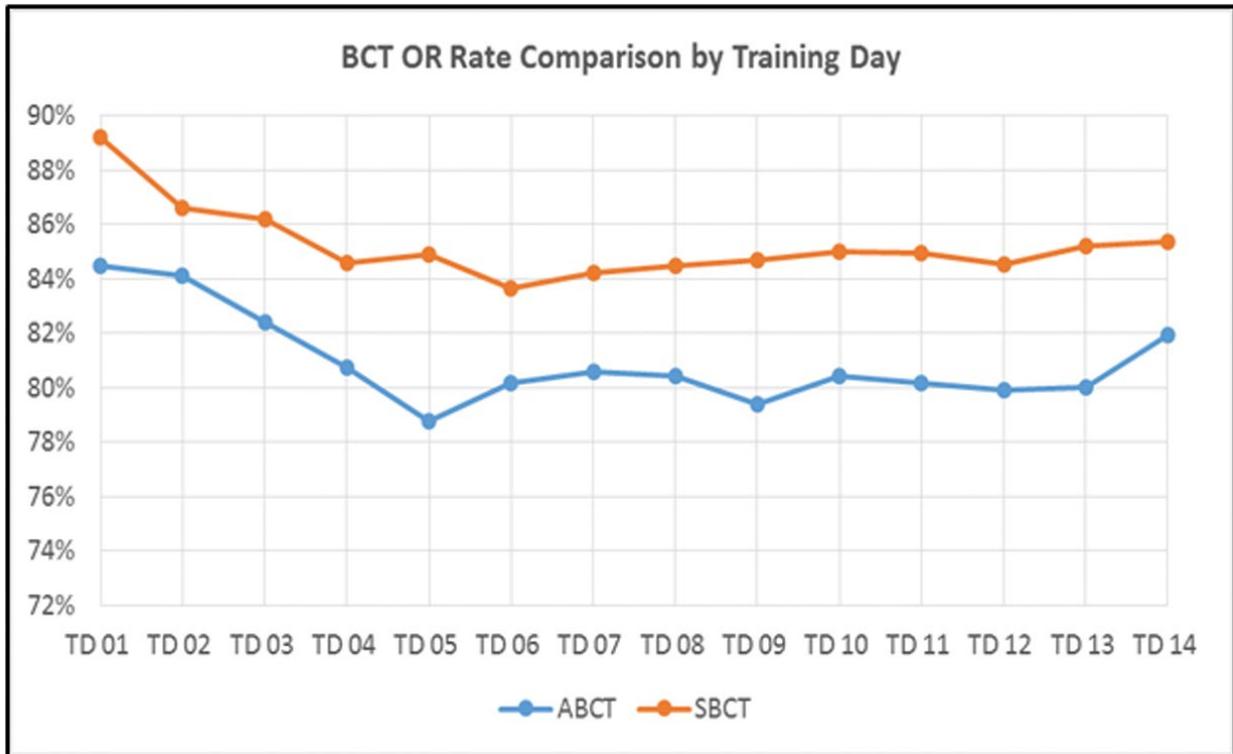
Maintenance Management, Field Maintenance, and Recovery Operations

CW4 Brian Blake and COL Brent Coryell

The average rotational unit operational readiness (OR) rate for all combat systems combined at the National Training Center (NTC) is 87 percent at arrival and 84 percent on training day 14. There are many maintenance management factors that contribute to the decline of the OR rate. This article will discuss maintenance management lessons and best practices noticed by observer, coach/trainers (OC/Ts) at the NTC. The article will cover: maintenance preparatory tasks prior to NTC, maintenance culture, maintenance battle rhythms, unit maintenance collection point (UMCP) placement, maintenance meetings, non-mission capable (NMC) reporting procedures, 5988E processing, repair parts tracking, use of brigade logistics support team (BLST), shop stock management, and management of line replacement units (LRU).

Conduct maintenance preparatory tasks before arriving at NTC. There are numerous tasks BCTs and separate units need to complete before arrival. Some of the most important tasks are to build and fund deployment exercise (DEPEX) Department of Defense Activity Address Codes (DODAAC), establish the zone (Z-Park [zone parking of funds]) approval process, order CL III (P), conduct technical inspections, and check load tests on forklifts and cranes.

Table 25-1. Average Operational Readiness Rates at the NTC.



Build and Fund DEPEX DODAACs for Enabler Units

Twenty percent of enabler units cannot participate in the logistics information system gunnery because they fail to build and fund Department of Defense Activity Address Codes (DODAACs) 60 days prior to arriving. Brigade combat teams (BCTs) can start to integrate the enabler units early by reviewing the task organization for the rotation. The brigade combat team (BCT) maintenance officer (MATO) should reach out to the attached enabler units' maintenance point of contact 90 days prior to arrival at the NTC to begin to build and fund the DEPEX DODAACs at 60 days prior. When building the DEPEX DODAAC, ensure to align the correct forward supply support activity (SSA) with either lines WOB1 or WDM1 within the DODAAC and confirm the remote indicator. Units must request a work center alignment with the DEPEX DODAAC. The work center allows units to pull a consolidated equipment status report (ESR) of equipment rather than pull all of the BCT's equipment.

Establish the Z-Park Approval Process

The 02 priority parts process to Z-Park through the material requirements planning. Identify the Z-Park approval personnel and determine the daily time to run Z-Park. It is important to note that requisitions are processed on the home station local time. The Z-Park manager has to be available on weekends and holidays. If the request does not pass all the business rules, then the request waits for the level I material manager to pass the parts through the release strategy. The request will wait until the next batch file pull to look for stock in the SSA.

Order Class III (P)

Units should forecast and requisition 14 days of supply of Class (CL) III (P). Order CL III (P) on D-60 when the DEPEX DODAAC is built and funded in order to have the items on hand for the beginning of the rotation.

Conduct Technical Inspections of all Equipment

Conduct a thorough technical inspection of the BCT critical combat fleet before shipping.

Ensure Load Tests are up to Date

Many units arrive with an out-of-date load test stenciled on at least one Forward Repair System (FRS) or recovery crane. Units need to ensure cranes and booms are load tested annually during service and the date needs has to be stenciled on the side.

Complete Vehicle Services

Vehicle services are not conducted at NTC and units usually arrive with services overdue. With proper maintenance management, equipment services can be maintained within the authorized 10 percent variance. Complete services before arrival.

Establish an Honest Maintenance Reporting Culture

Promoting a culture of honest maintenance reporting is integral to building and maintaining combat power. Some commanders feel it is more beneficial to have a false 90 percent OR rate than a true and accurate readiness picture of the fleet. This culture has resulted in a disproportional percentage of NMC equipment not reported on the ESR, formerly known as the 026. Leaders and Soldiers at all levels should know the commander expects them to take care of their equipment and fix it if it is broken. Units that do not make maintenance and accurate maintenance reporting a priority have a difficult time conducting basic preventive maintenance on equipment. The maintenance culture should encourage operators to take pride in their equipment. The culture should attain a state of maintenance training and discipline where every Soldier becomes completely knowledgeable on his or her equipment. A positive maintenance and accurate reporting culture will provide the setting for early fault detection and correction for the operator, the lowest practical level of maintenance.

Establish and Follow a Maintenance Battle Rhythm

One of the first things BCTs can do to manage maintenance is establish and follow a maintenance battle rhythm. Many units do not establish or adhere to the published maintenance battle rhythm in their tactical standard operating procedure (TACSOP). A maintenance battle rhythm establishes set times to complete an action. The battle rhythm should address the BCT's preventive maintenance checks and services (PMCS)/5988E turn in, dispatching cycle, when the MATO pulls the ESR, and Z-Park approval times. Units need to update their NMC data before the MATO pulls the ESR. The battle rhythm also identifies the frequencies and venue of the daily maintenance meetings. We recommend synchronizing the battle rhythm with the brigade support battalion support officer (BSB SPO) to include the expected arrival of CL IX resupply on logistics packages.

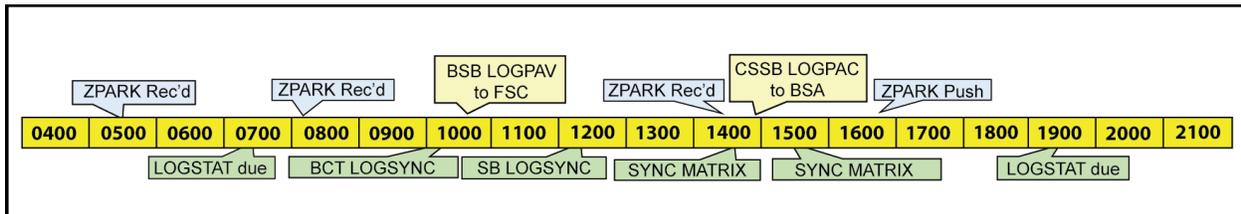


Figure 25-1. One of the first things BCTs should do to manage maintenance is establish and follow a maintenance battle rhythm.

Determine Unit Maintenance Collection Point Locations on the Battlefield

The BCTs have a wide dispersion on how their forward support companies (FSCs) are arrayed across the battlefield, specifically in regard to the location of the UMCP. The UMCP should be located within four kilometers of the forward line of own troops to prevent multiple movements and allow mechanics to fix forward in order to decrease downtime. Site selection should be based from mission requirements with consideration to mission, enemy, terrain, and weather, troops, time available, and civil considerations. Some units will have the entire FSC located in the brigade support area (BSA) which creates larger lines of communication and increases the amount of time it takes to evacuate equipment and return it to the fight once repaired. The UMCP must be forward of the BSA and repair forward, especially during offensive operations in order to allow for expedient recovery.

Conduct Effective Maintenance Meetings

Many units do not have key leaders in regular attendance at the maintenance meeting and do not provide the appropriate command emphasis. Maintenance meetings are the forum for units to brief their current and projected combat slant, parts status, external support needed, and allow for cross communication among the units. Typically, attendance is at its lowest in the first four training days as it's usually attended by the movement control teams who are briefing the MATO. If battalion executive officers (XOs) do not start out attending the meetings, it often takes the BCT commander or even the commanding general to turn the unit's focus on maintenance. Units have successfully leveraged Defense Connect Services (DCS) and command post of the future (CPOF) to conduct maintenance meetings, however CPOF is typically limited by conflicting requirements. The preferred method of conducting a maintenance meeting is over DCS since it can be accessed through the Very Small Aperture Terminal, slides can be shown, and units can talk to each other and even chat privately when information does not need to be shared with everyone. Units that practice meetings over DCS are more successful, with all attendees able to hear and speak. Be sure to order and have spare headsets on hand. The meeting should take under one hour and follow a prescribed agenda. The ultimate end state of the maintenance meeting is a shared understanding of current and projected combat power. We recommend the BCT XO chair the meeting and act as the "hammer." The BCTs that conduct effective maintenance meetings, both remote and in person, have more visibility on available combat power and maintenance readiness across the battlefield than BCTs that do not.

Preventive Maintenance Checks and Services Equipment and Turn in 5988Es

The average number of 5988Es turned into the UMCP is 52 percent each cycle. Some units use dispatch procedures to force the PMCS but this is only marginally effective. Most 5988Es are only turned in to the UMCP when the equipment needs to be re-dispatched or there is a major fault. This is a compelling reason why dispatches should not go through the entire rotation.

Some battalions push 5988Es out every 72 hours but only a third of them are returned to the maintenance section after PMCS. Some BCTs allow flexible

The OC/Ts recommend a PMCS cycle of every third day with a DA 5988E returned to the UMCP with a seven-day dispatch cycle. This cycle is easily maintained and does not put a huge burden on the units.

PMCS and dispatch standards because they do not want to dictate the battalion timelines. This "laissez faire" approach usually only results in more equipment breakdowns due to operators not being required to conduct a PMCS of their equipment. We recommend a PMCS cycle of every third day with a Department of the Army Form 5988E that is returned to the UMCP with a seven-day dispatch cycle. This cycle is easily maintained and does not put a huge burden on the units.

Leaders must enforce the PMCS standards in accordance with the TACSOP and vehicle technical manual to ensure longevity in their combat power. This helps ensure junior leaders and operators are looking at their equipment.

Maintenance Meeting

A brigade maintenance meeting is a battle drill that should be conducted in one hour. All participants must know their roles and responsibilities to maximize combat power.

Meeting Time Planning Factors?

- METT-TC
- When can you produce an accurate 026?
- Maximize the time that maintenance managers have to build combat power
- Choose a predetermined location and time so that if communications fail, units can still attend

Actions Prior to the Meeting

- The goal is to synchronize efforts and resolve issues prior to the BCT Maintenance Meeting
- SPO and SPO Maintenance Officer conduct pre-meeting
- Scrub and distribute 026 Report
- SSA Accountable Officer identifies critical parts awaiting customer pick-up and critical parts on ASL
- Identify jobs that require evacuation from the FSC to the FMC

Attendees

- BCT XO
- BCT S4
- BN XOs
- FSC Commanders
- FSC Maintenance Officers
- TF Maintenance Techs
- TF Maintenance NCOs
- BSB Commander
- Support Operations Officer
- SPO MATO
- SSA Accountable Officer
- Maintenance Control Officer
- BLST
- LARS/FSRs

Agenda

- Roll call
- BCT mission next 24/28/72 hrs
- BCT priority of support/maintenance
- BCT XO issues
- Support operations issues
- FTP status/requisition volume
- LIS issues
- ESR Scrub
- Closing Comments

026 Scrub
The most important process

- Current Combat Power
- SSA AO comments on parts availability
- LAR comments on long-lead-time parts
- Contract generation
- Projected combat power based on contracts/maintenance meeting

End Result

- All key maintenance personnel have a clear picture of who is conducting what actions, when these actions must occur, and who will close the loop (i.e. report or FMC Status)
- All maintenance resources allocated to effect Combat Power
- A functional and accurate ESR



Figure 25-2. BCTs must hold effective maintenance meetings with the right attendees and agenda in order to provide a clear picture of the BCT’s current maintenance posture and to set the conditions for producing maximum combat power.

Place Non-Mission Capable Equipment on the Equipment Status Report Immediately

There is roughly a 10-percent average deviance between what is truly NMC and what is annotated as NMC on the ESR. This deviance provides a false combat readiness picture to the BCT commander and makes tracking BCT combat readiness very difficult. An inaccurate ESR is the biggest maintenance management challenge experienced by the BCT with the ESR rarely matching the combat slant reported by units. Units on the move and not blasting, awaiting logistics assistance representative (LAR) or field support representative (FSR) support, not reporting equipment intended for a part walk up, and extending troubleshooting times all contribute to decreased accuracy. Every BCT has a different policy regarding the timeline as to when maintenance personnel have to place NMC equipment on the ESR. The time ranges from first identification of the fault to upward of 96 hours. The average BCT policy is 24 hours for the mechanics to troubleshoot, diagnose, and attempt to repair the equipment before placing it NMC on the ESR. Many units troubleshoot NMC equipment “off the record” for an unreasonable amount of time in an effort to maintain a higher OR rate. It’s also been observed that some units try to maintain a higher OR rate by annotating NMC faults as safety deadlines or by ordering a 02 non-dead lining priority part. In Global Combat Support System (GCSS)-Army, you can

There is roughly a 10 percent average deviance between what is truly NMC and what is annotated as NMC on the ESR.

add an ‘X’ symbol next to the equipment but still have it read as fully mission capable (FMC) and thus not counting NMC time. We recommend that units do not try to cover up NMC equipment. Call it as it is and get it on the ESR in the correct status. Deadline the equipment in GCSS-Army with the appropriate status code as soon as a mechanic is able to verify the fault and if the repair is not something that can be fixed

immediately. Commanders should expect to get an accurate picture of the fleet readiness by what is listed on the ESR.

Monitor and Manage the Class IX Parts Flow

On average, CL IX parts released from Fort Irwin’s alpha company direct support unit (A-DSU) take three to four days for maintainers to receive and install them. It takes one day to process the parts at the A-DSU SSA and then be picked up and delivered by the combat sustainment support battalion (CSSB) to the BSA. The A/BSB usually takes another day to receive and process the parts at the BSA SSA. Then it spends another day at the FSC before it finally makes it to the mechanic to install at the UMCP. The average battle phase at the NTC is three to four days which means a critical combat system may not be used for an entire battle phase even though the repair part required is located on Fort Irwin. Critical parts delays can be minimized by synchronizing movement between CSSB pushes and logistics packages (LOGPACs) with the FSC. LOGPACs which are not synchronized with CSSB movements mean the SSA can still be processing CL IX from the CSSB but would have to wait until the following day.

Time can be saved by having SSA personnel that are working at A-DSU to process parts (parts good issue – PGI) before they are picked up by CSSB. This takes some of the work load off of the forward SSA as they only need to place the part in the customer bin when it arrives. By processing parts at A-DSU, units can also look into using aviation assets to move critical parts directly to the UMCP location which would cut out one to two days in getting the part into the customer’s hands. Units often discuss and plan to establish an air resupply ring route for CL IX but OC/Ts

Units often discuss and plan to establish an air resupply ring route for Class IX but OC/Ts very rarely observe them.

very rarely observe them. A pre-established ring route where the part is picked up from main post going directly to the UMCP is the fastest way to get a critical CL IX part forward. If timing is synchronized properly, the UMCP can potentially get that part the same day it is requested.

Inventory, Replenish, and Bring Bench Stock and Shop Stock

Shop stock is the first level of repair parts essential to readiness. Most units do not bring their shop stock list (SSL) to the NTC to support their fleets. Many units claim that they do not have the mobile storage containers required to internally store and transport the SSL. Army Regulation (AR) 710-2 and Forces Command (FORSCOM) guidance states that all units must be able to transport their entire SSL in one lift using organic assets only. We recommend that units conduct a thorough inventory of all CL IX parts on hand and if it is not on a bench stock or shop stock listing, add it. Shop stock should be demand supported.



Figure 25-3. SSL Storage.

Integrate the Brigade Logistics Support Team

Some BLST team chiefs wait to be called upon to push out FSR support and sparingly attend maintenance meetings. The BCTs display a varying level of proficiency integrating the capabilities of the BLST. The BLST team chief is the BCT's link to a wide array of LARs and FSRs who are able to provide higher-level technical support for accurate fault diagnosis. The BSB should integrate the BLST team chief into BSA operations and ensure they deploy forward to assist supported units as well as establish communications with Army Material Command, Army Sustainment Command, and original equipment manufacturers. On the reverse side, FSRs and LARs are relied on very heavily to the point where Soldiers are requesting support without completing troubleshooting at the operator or maintainer level. Some FSC warrant officers do not check parts availability before ordering CL IX as they rely on the logistics management specialist (LMS) to do it. The LMS should spend their time researching long lead time parts and getting them released from depots and war stock. The BLST team FSRs and LARs are not allowed to move freely throughout the training area except to the BCT command post (CP) and the BSA. If support is needed forward to one of the units outside of those two areas, an armed escort must transport them to one of the two locations mentioned previously and return before night. Transportation assets should be leveraged in order to move the LARs and FSRs around the battlefield as required and create the right level of synergy with the BCT's maintenance

FSRs and LARs are relied on very heavily to the point where Soldiers are requesting support without troubleshooting at the operator or maintainer level.

technicians in producing combat power at the optimal time. The FSRs and LARs should know the day prior if they should stage themselves at BCT CP or the BSA for a morning escort to a unit's location to assist an FSC. The BLST team chiefs need to attend every maintenance meeting to provide real-time feedback on LAR and FSR requests, long lead-time parts status and project manager support. This includes communicating with the brigade S-6 and support management office technician

on command, control, communications, computer, intelligence, surveillance and reconnaissance issues.

Do Not Allow the Brigade Support Area to Become a Dumping Ground for Non-Mission Capable Equipment

The evacuation of NMC equipment to the BSA for repairs in a decisive action training environment is an extreme challenge. Owning units often lose accountability of their equipment at the BSA and do not take responsibility for moving NMC equipment when the BSA jumps requiring the BSB to move all equipment itself.

Train Low-Density Military Occupational Specialty Repairmen at the Forward Support Companies

The NMC equipment requiring low-density military occupational specialty (MOS) experience is often sent back to the BSA due to a lack of proficiency at the FSC maintainer level. The underlying issue is that Field Maintenance Team mechanics are not getting the low density specialty MOS training (maintenance training to repair radios, small arms, night vision devices, and ground support equipment are the main commodities) they need from the specialty technicians who reside in the BSB shops. Thus, equipment is not being repaired forward. This is particularly apparent with small arms, night vision device, generator and radio repair. The broken equipment gravitates to the BSB because that is where the warrant officer technician resides. The BSB often pulls the forward mechanics in these specialties back to the BSB field maintenance company (FMC) so they are under the commodity warrant officer technician's supervision. In other cases, items are not repaired because the untrained forward FSC mechanics have been missioned to do other things. Because these mechanics are incapable of doing their jobs, many maneuver commanders use them outside of their MOS as unit armorers or orderly room clerks. The BSB SPO and MATO, along with battalion task force S3s and XO's, could resolve this by publishing a training plan that develops the necessary technical skills in these maintainers to enable them to troubleshoot and fix equipment forward. Commodity (specialty) maintenance technicians assigned to the FMC should take an active role in conducting training and mentorship for low density maintenance MOS personnel in order to develop the skills of Soldiers in the FSCs. To ensure repairs are conducted as far forward as possible, warrant officers should conduct battlefield circulation to forward maintenance shops to provide assistance at the UMCP which in turn may prevent wasted transportation time of equipment.

Manage Maintenance Work Orders in Global Combat Support System-Army

Bravo company is often tasked with security missions, such as manning the entry control point and quick reaction force. This situation has contributed to very few FMC work orders opened and processed in GCSS-A. In other words, maintenance jobs that need repaired by the commodity shops do not routinely go through the maintenance control section. Most jobs are taken directly to the commodity repair shops where they are repaired and returned to the user without the section leaders or technicians taking the necessary steps to open the job with the maintenance control sergeant. Most commonly, the sections that have generally quick maintenance fixes, such as general support equipment, communications and electronics, and service and recovery (S&R) will work on equipment without ever opening a job order and accounting for man hours or work completion. The justification is usually that it takes less time to complete the job than to conduct the proper work order process. This prevents the company commander from having an accurate picture of available assets as well as the current workload of their unit.

Manage Direct Support Electrical Systems Test Set Placement and Account for Line Replacement Units

The OC/Ts have observed over a course of several rotations that the bravo field maintenance company is primarily used as a security force for the BSA rather than as a maintenance company.

The direct support electrical systems test set (DSESTS) shop van is usually placed in the BSA in order to pool repairman experience. This forces units to evacuate LRUs longer distances



Figure 25-4. DSESTS Operations.

in order to receive support and counteracts the ‘fix forward’ mentality. Most units have not successfully optimized work order management with DSESTS, often waiting until the end of rotation in order to account for DSESTS jobs. LRUs needing repair by DSESTS are not managed effectively by most armored brigade combat teams (ABCTs). An average of 65 LRUs are turned into the armament section DSESTS for repair during a rotation. Less than 10 percent of the affected combat systems, mostly tanks and Bradleys, are listed as NMC for a bad LRU on the BCTs ESR. The FSCs do not carry LRUs as shop stock. When LRUs are removed from a tank or Bradley, they are replaced with an FMC LRU that is stored “off the record” by the battalion maintenance technician (BMT) on a shelf or in a container. The bad LRU is then job ordered to the DSESTS team for repair with no clear information on the exact system it came from. This is like a backwards repairable exchange system. This

system gives the Army no visibility of what LRUs are deadlining systems, no mean time between failure data, and no depot-level reset of LRU stock. We recommend that LRUs be added to the authorized stockage list (ASL) as repairable exchange lines stored at the SSA. When a combat system becomes NMC for that particular LRU, it is added to the deadline report and the LRU is ordered. The crew then turns in the bad LRU to the SSA and receives the replacement. The faulty LRU is then job ordered to the DSESTS section for repair. DSESTS can now order necessary circuit cards against a demand supported shop stock. Upon completion of the repair, the LRU is returned to the SSA to be added back to the ASL. We recommend the Division G-4 request and add a stockage code to the LRU to ensure that it does not get released outside of the BCT. The main reason the BMTs are hoarding the LRUs is for fear of losing them to the national level stocks if they turn them in.

The Army has little visibility of LRU repairs or demand because units hold on to serviceable LRUs without adding them to a system of record like SSL or ASL.

Maintain the M7 Forward Repair System

The M7 Forward Repair System (FRS) has proven to be a critical asset to maintenance teams



Figure 25-5. Example FRS Drawer.

across the battlefield. However, the FRS is often not maintained and is showing significant wear across the force. Services and inventories are not conducted at regular intervals, calibrations are not conducted, and shortage annexes are not on hand or processed. This results in significant tool shortages that degrade the units maintenance capabilities. Many units arrive at NTC with 30 to 45 percent of tools missing and not enough tools to accomplish their jobs as maintainers. Mechanics improvise by using tools from the general maintenance tool kits to fill the shortage. This limits the individual mechanic's mobility and flexibility in conducting small but necessary repairs. Commanders should provide appropriate funding for units to acquire necessary shortages through the Army supply system. Commanders must make this a frequent conversation with higher headquarters to ensure that a level of priority is placed on the shortage of tools to repair equipment. Commanders must also hold individual Soldiers accountable in accordance with AR 710-2 when tools

are lost due to negligence. FRS hand receipt holders need to conduct frequent inventories of the FRS and keep the shortage annexes updated when tools arrive.

The FRS is showing significant wear across the force with upwards of 50 percent of tools missing.

Perform Safe Recovery and Evacuation Operations

Recovery operations typically are not covered in the TACSOP and units arrive with unqualified operators that are not H8 recovery operations certified. Soldiers often take an hour or more to perform simple recovery operations. Units rarely conduct a hasty recovery to move the vehicle out of the kill zone but instead they conduct a full recovery on site. This greatly increases the risk to all Soldiers for enemy attacks. Like-item towing is a common practice but every rotation has at least one towed vehicle accident. The majority of like-item towing is conducted by operators that do not read the technical manual on how to properly tow a disabled vehicle often resulting in damaged equipment or injuries. As stated in AR 750-1, any wheel recovery vehicle must have a trained certified H8 operator and any track recovery vehicle must have two certified H8 operators. A Soldier with multiple years of experience does not count as being a certified H8 operator. Stryker brigade combat teams (SBCTs) are incorrectly towing Stryker vehicles. SBCTs are outfitted with M984 wreckers, which are not authorized to lift-tow Strykers. If the Stryker's steering component is damaged, the secondary means of using a M870 lowboy trailer poses a significant risk to personnel and equipment due to increased difficulty maneuvering the vehicle onto the trailer. A common issue is the drive shaft of the vehicle in tow is not reengaged. Soldiers fail to disconnect transmission drive shafts prior to movement and then upon completion of the operation reengage the drive shafts and brakes before removing the tow bars. Additionally, there are insufficient tow bars on hand for Strykers to conduct towing operations. Half of a Stryker

tow bar must be attached to each Stryker. Make it a pre-combat check/pre-combat inspection and add it to a load plan before any movement. The TACSOP should include wrecker recovery and towing operations to include how units will combat load equipment and how many tow bars are

SBCTs are incorrectly towing Stryker vehicles. SBCTs are outfitted with M984 wreckers, which are not authorized to lift-tow Strykers. There is a prevalent shortage of Stryker towbars in SBCTs.

needed within a convoy based on the quantity of vehicles. The brigade TACSOP should include recovery rehearsals including tow bar to vehicle ratio within a convoy so like-item towing can occur. The most experienced H8 Soldier (rank independent) should be in control of the operation. If a unit is short H8 trained operators, they need to get mechanics into the training so all wrecker assets can be used. Stryker crew members along with S&R recovery teams need to be fully trained on like vehicle recovery methods for Strykers. When like-towing a Stryker, maintain a maximum speed of 20 miles per hour on

smooth terrain or roads not to exceed 10 miles. The S&R sections must have tow bar extenders to help facilitate in the recovery of Strykers with M984 Heavy Expanded Mobility Tactical Truck wreckers.

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