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CTC TRENDS

FY2016

CTC Trends
FY 16

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Foreword

The implementation of unified land operations in a decisive action training environment (Army Doctrine Publication 3-0, *Operations*) began in earnest in 2012 when the National Training Center hosted the first rotation at a combat training center (CTC). A decisive action training environment (DATE) rotation at the Joint Readiness Training Center followed, as did DATE rotations at the Joint Multinational Readiness Center and the Mission Command Training Program. The CTCs have conducted DATE rotations since then, steadily improving the quality of the training experience.

This CTC Trends Bulletin identifies trends for fiscal year 2016 across the CTCs, based on observations from observer–coach/trainers (OC/Ts) and collection and analysis teams from the Center for Army Lessons Learned (CALL), with support from various Army Centers of Excellence. A trend is defined in Army Regulation 11-33, Army Lessons Learned Program (14 JUN 2017), as "an identified issue or best practice supported by three or more observations from multiple sources within a reasonable period." CALL collects observations, best practices, and training results from OC/Ts at the CTCs; analyzes them; and compiles them annually in a publication.

Organized by Army tactical tasks from the Army Universal Task List, these CTC trends reflect both positive performance (sustains) and areas that need emphasis (improves). CTC trends provide valuable information to units developing and executing training for deployment to a CTC or an operational environment. Each chapter includes recommendations for units to successfully execute identified tasks. This provides a reference for training emphasis at home station. Additionally, identifying and analyzing trends allow doctrine writers, training developers, and other Army problem solvers to receive successful techniques and identify gaps in capability for doctrine, organization, training, materiel, leadership and education, and personnel and facilities (DOTMLPF) solutions. Applying the lessons learned at the unit or the institutional level from trends that are identified enables the Army to be a continually learning organization.

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The Secretary of the Army has determined that the publication of this periodical is necessary in the transaction of the public business as required by law of the Department.

Unless otherwise stated, whenever the masculine or feminine gender is used, both are intended.

Note: Any publications (other than CALL publications) referenced in this product, such as ARs, ADRPs, ADPs, ATPs, FMs, TMs, etc., must be obtained through your pinpoint distribution system.

Introduction
Summary of Trends and Methodology

The 12 trends listed below were identified from numerous observations collected from 24 rotations at the three "dirt" combat training centers. The observations were aligned with tasks from Army Doctrine Reference Publication (ADRP) 1-03, *The Army Universal Task List* (02 OCT 2015), in order to compare the number of observations per Army tactical task (ART) and sub-task to identify the trends.

Trends Definition and Methodology

According to Army Regulation (AR) 11-33, Army Lessons Learned Program (14 JUN 2017), a trend is defined "as an identified lesson or best practice supported by three (3) or more validated observations from multiple sources within a reasonable period."

The National Training Center (NTC) and the Joint Readiness Training Center (JRTC) submitted significant observations to the Center for Army Lessons Learned (CALL) through their Joint Lessons Learned Information System (JLLIS) observations or trends documents. Observations from two decisive action rotations that CALL observed were used for the Joint Multinational Readiness Center's (JMRC) input to the "dirt" combat training center (CTC) trends in this publication. The observations were aligned with tasks from ADRP 1-03, *The Army Universal Task List* (AUTL), in order to compare the number of observations per Army tactical task (ART) and sub-task to identify the trends.

There are some inherent biases in this method of combining quantitative and qualitative methods. First, there is observer bias in the determination of significant observations submitted by the CTCs. Second, there is some bias in the assignment of AUTL tasks to each observation based on personal knowledge and familiarity with the AUTL. Finally, there is bias in the AUTL itself in the number of tasks and sub-tasks in the warfighting functions. For example, ART 5.0, Conduct Mission Command, has more sub-tasks than the others, and there were more significant observations from the CTCs on mission command than on any other warfighting function.

There were 406 total significant observations from JRTC, NTC, and JMRC. Of these, 302 were "improve" observations and 104 were "sustain" observations. These observations were assigned an ART sub-task based on their content. The trends were then calculated based on numbers of significant observations in each task. These trends were then correlated in three ways.

First, CALL military analysts calculated the trends by the individual ARTs. This is shown in Table 3 (based on AUTL tasks; Page 5). This had all trends but one in the mission command warfighting function. However, this did not take into account the number of observations in all the sub-tasks to show related observations. Thus, we calculated the trends based on the sum of individual tasks in each major sub-task. For example, there were 98 total observations in ART 5.1, Conduct the Operations Process, and all of its sub-tasks. This is shown in Table 1 (based on sub-tasks; next page). The chapters in this handbook are presented based on this list. We also calculated the trends based on warfighting function and tactical mission tasks (Table 2, next page). All of the trends identified meet the definition in AR 11-33 by having three or more validated observations from multiple sources during fiscal year 2016.

There were no trends for the sustain observations based on the data collected.

Table 1. Top 12 FY16 CTC Trends Based on Sub-Tasks (Improve) and Number of Observations

Task	Trends	No.
ART 5.1	Conduct the operations process	98
ART 5.2	Conduct command post operations	26
ART 4.1	Provide logistics support	22
ART 5.4	Control tactical airspace	21
ART 7.5	Conduct tactical mission tasks	19
ART 3.2	Provide fire support	19
ART 5.9	Conduct cyber electromagnetic activities	16
ART 5.3	Conduct knowledge management and information management	15
ART 7.2	Conduct defensive tasks	14
ART 1.2	Conduct tactical maneuver	11
ART 2.2	Provide support to situational understanding	9
ART 2.3	Conduct information collection	9

Table 2. Trends by Warfighting Function and Tactical Mission Tasks (Improve) and Number of Observations

Task	Trends	No.
ART 5.0	Conduct mission command	179
ART 4.0	Sustainment warfighting function	24
ART 2.0	Intelligence warfighting function	23
ART 3.0	Fires warfighting function	23
ART 7.0	Tactical mission tasks and military operations	23
ART 1.0	Movement and maneuver warfighting function	18
ART 6.0	Protection warfighting function	12

Table 3. Top 12 Trends by Individual AUTL Task (ART) (Improve) and Number of Observations

Task	Trends	No.
ART 5.1.1.4	Integrate requirements and capabilities	30
ART 5.1.1.2	Conduct the military decisionmaking process (MDMP)	18
ART 5.1.2	Prepare for tactical operations	18
ART 5.1.1.3	Conduct troop leading procedures	12
ART 5.0	Conduct mission command	11
ART 5.4	Control tactical airspace	11
ART 5.2	Conduct command post operations	8
ART 5.9.1.1	Integrate offensive cyberspace operations	7
ART 3.2	Provide fire support	6
ART 5.1.2.2	Perform rehearsals	6
ART 5.1.2.3	Task-organize for operations	6
ART 5.3.2.5	Display a common operational picture (COP) tailored to user needs	6

Chapter 1
Army Tactical Task 5.1
Conduct the Operations Process

Trend: Units Are Challenged to Conduct the Operations Process

A. Integrate requirements and capabilities

B. Conduct the military decisionmaking process (MDMP)

C. Prepare for tactical operations

D. Task-organize for operations

E. Synchronize operations

F. Perform rehearsals

G. Establish coordination and liaison

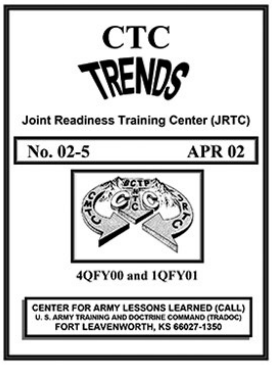
The first trend is Army Tactical Task (ART) 5.1, Conduct the Operations Process. This task accounted for nearly one-third of the total improve observations (98 out of 302). Of these observations, about one-third pertained to integrating requirements and capabilities, i.e. enablers (30 of 98). There were 18 significant observations on conducting the MDMP and 17 on prepare for tactical operations. Ten observations were on task-organize for operations, while nine were on synchronize operations. Finally, there were eight on rehearsals and six on establish coordination and liaison.

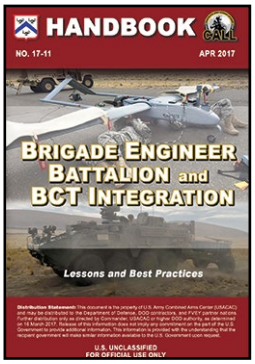
A. Integrate Requirements and Capabilities

An area that brigade combat team (BCT) and battalion staffs are challenged in is the integration of enablers and effective use of enablers in the fight. Understanding enabler capabilities and then integrating them into the fight have always been a challenge and often depend on the capabilities of the leaders of the enabler unit and the staff officer who ends up responsible for integrating them. If the staff officers have not previously trained with the enabler or at least been taught about the capabilities and mission sets in their professional military education, the chances of successful integration are low. Integration and effective use of enablers and capabilities continue to be a challenge and need leadership and institutional emphasis to improve. As more units conduct decisive action rotations at the combat training centers (CTCs), personnel will become more familiar with enabler capabilities, limitations, and likely mission sets. A plan for training new staff members in a unit to understand enabler capabilities and requirements is needed for successful integration.

CALL Resources

Integration has been a challenge since even before Operation Iraqi Freedom in 2003. Many of the issues noted in this chapter are also discussed in CALL publication 02-5, *CTC Trends*, from the Joint Readiness Training Center. See the chapter "Command and Control BOS Part 3"; https://call2.army.mil/toc.aspx?chapter=2520&live=1 (Common Access Card required). See also CALL Handbook 17-11, *Brigade Engineer Battalion and BCT Integration*; https://call2.army.mil/toc.aspx?document=7480 (CAC required).





Enabler integration issues can be traced to either misunderstanding of capabilities during MDMP, ineffective preparation after planning, or lack of synchronization during execution. Thus, this issue is tied to others mentioned above, to include conduct of the MDMP, synchronize operations, and task-organize for operations, as well as prepare for operations and perform rehearsals. This not only applies to attached enabler units but integration of like enablers with their counterpart staff sections. Integration of the signal company with the S-6 shop; the brigade engineer battalion (BEB) staff and subordinate companies with the BCT staff; and the brigade support battalion staff and support operations officer with the BCT S-4 and the forward support company commanders is challenging because personnel are often unclear of each other's roles and responsibilities. This is exacerbated with echelons above brigade enablers that have not trained with the BCT at home station. Detailed coordination and planning are required prior to the CTC rotation. With clearly defined roles and responsibilities, units and staffs can collaboratively plan and execute operations.

A successful method used by many enabler units or sections is for the officer in charge and noncommissioned officer in charge to bring a capabilities and missions brief to the company, battalion staff, and/or brigade combat team staff that they will work with.

A successful method used by many enabler units or sections is for the officer in charge (OIC) and noncommissioned officer in charge (NCOIC) to bring a capabilities and missions brief to the company staff, battalion staff, and or BCT staff that they support to enable the planners and staff to assign them appropriate missions and include them in the MDMP. Other solutions include officer and NCO development programs focused on different enablers and integrating enablers into all home station training to gain familiarity.

Best Practices Recommended by Observer–Coach/Trainers

The BEBs should develop an integration checklist by warfighting function that is modeled from an in-and-out processing checklist. The key result of the integration checklist is that the gaining unit receives updated information by warfighting function (WfF) to update running estimates; establishes a primary, alternate, contingency, and emergency (PACE) communications plan and reporting expectations between units; and understands the capabilities, limitations, and constraints of the enabler unit. A useful technique is for the BEB S-3 or executive officer to directly coordinate with his counterpart in the gaining battalion to ensure the enabler unit is successfully integrated.

The role of the brigade staff is to identify the requirements and missions for enablers and assign requirements as tasks to a battalion for execution. The battalion (maneuver, reconnaissance, or BEB) should provide mission command, battle tracking, and sustainment for assigned enablers. For example, the BCT S-2 and S-6 should provide technical guidance for the brigade communications network and intelligence collection while the BEB ensures assigned units comply with the technical guidance and receive required sustainment. This requires close collaboration between the BEB and BCT staffs.

When available, BEB units and company commanders can directly assist BCT staff during the planning phase. With detailed knowledge of unit strengths and weaknesses, company commanders can greatly assist BCT staff in the initial planning process. This is an especially useful technique for signal, military intelligence, explosive ordnance disposal (EOD), military police (MP), and chemical companies.

The signal company commander should be involved in the MDMP with the brigade S-6 to provide a clear picture of the status of teams and equipment and to influence plans which will ultimately affect the company's personnel and assets. The brigade S-6 should plan communications support for the brigade and then work with the brigade S-3 through the operations process in order to task the BEB for signal company asset utilization when necessary. The signal company commander can collaboratively plan with the brigade S-6 and subsequently provide details to aid in parallel planning with the BEB S-3. This ensures synchronization of effort, frees up time for the commander to effectively command the company, and increases the effectiveness of the one-third/two-thirds rule for planning.

B. Conduct the Military Decisionmaking Process (MDMP)

> ***The most successful units effectively managed their time by beginning to plan as soon as they received a warning order (oral or written) from BDE or higher.***

Another factor that hinders unit mission accomplishment at the CTC is lack of effective MDMP. Like enabler integration, this has been a challenge since before operations in Iraq and is best trained through repetition and leader emphasis. The staff will improve the speed and quality of its MDMP through repetition. This will lead to validating and/or updating standard operating procedures (SOP). Doing this in a time-constrained environment and on a larger scale appear to be the changed variables from how the Army did this during counterinsurgency (COIN) operations for the past decade and a half. Units that conduct MDMP more often are better able to execute the rapid decision-making process that is often required at the CTCs. The rapid decision-making and synchronization process can be done only after the MDMP has been completed on the base operation order (OPORD).

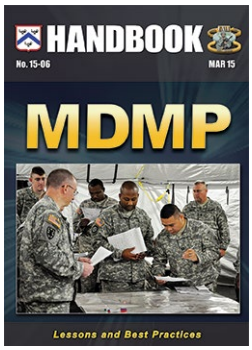
Best Practices Recommended by Observer–Coach/Trainers

Units must possess an updated planning SOP and tactical SOP. Incorporating a two-minute battle drill with key decision makers and planners as a tool to quickly gain shared understanding in a rapidly changing environment is paramount to the success of the planning process and operation management.

Staffs must conduct a thorough and detailed course of action comparison session. Execute the war game outside with a sand table or other physical model prior to presentation to the commander. Staff members can bring their estimates to the war-gaming session and demonstrate how their section will function under friendly and enemy action, reactions, and counteractions. Units should use war-game outputs to help complete a draft execution matrix. Repeat this process for each phase of the operation.

The most successful units effectively managed their time by beginning to plan as soon as they received a warning order (oral or written) from brigade or higher. They emphasize deliberate execution of MDMP and manage timelines to ensure subordinates have the maximum amount of time for parallel planning. They immediately publish the available information to maintain shared understanding across the formation and enable subordinates to effectively plan and manage resources.

CALL Resource



Use CALL CALL Handbook 15-06, *MDMP Lessons and Best Practices*, to better understand and conduct the military decisionmaking process. It is available for electronic download at http://usacac.army.mil/sites/default/files/publications/15-06.pdf.

The best execution paragraphs are comprehensive and include every aspect of maneuver for the operation. Proper schemes of maneuver will include the planning phase of the operation and every key detail and movement through and beyond actions on the objective. An even greater emphasis is required on the details and supporting maneuvers encompassing the decisive points and actions on the objective. Leaders should commit a greater focus on the planning and execution of key ancillary tasks, because disruption or failure of these tasks often compromises overall completion of the mission. Complete mission analysis and course of action comparison (war gaming) are crucial to the final course of action (COA) because they define the problem and the operational environment to identify gaps in the plan and synchronization.

Units that do not conduct MDMP in a complete and deliberate manner will struggle to develop a COA accounting for relative combat power analysis and massing of effects on the decisive point. Planning procedures within MDMP, particularly during COA development, that are not detailed enough will fail to create orders and execution products necessary to synchronize combined arms maneuver and wide-area security.

Units that trained to conduct MDMP at home station arrive at the National Training Center (NTC) prepared to conduct planning in a manner that mitigates friction and enables informed decision making. Guidelines set forth in Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*; FM 3-09, *Field Artillery Operations and Fire Support*; and Army Techniques Publication (ATP) 3-09.23, *Field Artillery Cannon Battalion*, provide battalion staffs with the necessary framework, outputs, and products that enable the production of quality fire support plans. Units that understand MDMP and are able to tailor the process to the current tactical situation consistently produce plans that enable effective fire support.

Enhanced understanding of the plan in relation to enemy activities and timings is exactly why staffs should attempt to create the synch matrix as part of COA development.

FM 6-0 provides information that can be included in the COA sketch and statement to ensure a complete product. There is a step-by-step listing of COA development in Combined Arms Training Strategies (CATS) 150-MC-5114. However, staffs can fine-tune their planning and gain some efficiencies by including a product from the COA analysis step of MDMP into the outputs of COA development. Following doctrinal COA development, staffs war-game their complete COA and record results either through a sketch note technique or a synchronization matrix. Observed staffs generally choose to record results through a synchronization matrix for two reasons. First, the synchronization matrix has proven coordination utility during the conduct of operations. Second, filling out the matrix enhances the unit's understanding of the plan. This enhanced understanding of the plan in relation to enemy activities and timings is exactly why staffs should attempt to create the synchronization matrix as part of COA development as opposed to waiting for COA analysis to develop the synchronization matrix. Creating the product earlier in the process allows staffs to focus on decisions and mitigations to enemy actions during the war game and focus on gaining a shared understanding of the plan during the combined arms rehearsal (CAR).

C. Prepare for Tactical Operations

Observations categorized in the ART prepare for tactical operations did not fit neatly in other tasks or sub-tasks of the Army Universal Task List. Many observations noted a lack of SOPs on these tasks, which hindered preparation and execution, while those units with updated SOPs (which are utilized) were more successful. These observations indicate that units likely do not get multiple repetitions of tactical tasks to move from familiarity with the tasks to mastering the tasks. Instead of "fighting the plan," when units are at the master level, they have the depth of experience to quickly adapt when conditions change.

Best Practices Recommended by Observer–Coach/Trainers

The past 16 years of war, fighting very different enemy threats in multiple theaters, have decreased the Army's ability to plan and execute combined arms breaches. As the Army returns to decisive action rotations at the CTCs, OC/Ts see company-level leaders and units struggle to plan and execute a deliberate breach. A number of factors are in play; these range from the planning process to the execution of the breaching fundamentals of suppress, obscure, secure, reduce, and assault (SOSRA).

Though terrain and missions may vary within each rotation, OC/Ts see trends in each of these live-fire iterations:

- Conceptual planning versus detailed planning
- Inability to plan and execute echelonment of fires
- Failure to understand and implement direct fire control measures
- Lack of machine gun proficiency and confidence
- Failure to address the five tenets of breaching in the planning process:
    - Intelligence
    - Breaching fundamentals of SOSRA
    - Breach organization
    - Mass
    - Synchronization

These problems lead to unorganized and desynchronized breaching operations. The solution starts with home station training. Soldiers rarely come to a CTC with a good understanding of how to conduct a company-level breach of an obstacle. More often than not, when a Soldier is asked by an OC/T about SOSRA, the Soldier is unfamiliar with the acronym and unable to explain what it means. This applies not only to junior Soldiers but to platoon leaders and platoon sergeants, as well. Subordinate leaders cannot be expected to execute the commander's intent if they do not understand what is being asked of them. A deeper understanding of doctrine and an adeptness of the fundamentals at the team and squad levels are critical to the unit's ability to become proficient at SOSRA.

The BEBs typically struggle to provide effective mission command of their functional tasks simultaneously with special tasks generally assigned to the battalion, such as engagement, BCT command post (CP) defense, area security, and terrain management.

The BEB commanders should analyze the risk to the BEB's functional mission with respect to additional tasks and communicate these risks to the brigade commander and staff in order to receive augmentation. Brigade commanders and staff need to understand that the BEB staff does not have representation from all the warfighting functions (such as fires) required for area security and terrain management. Therefore, the BEB will require augmentation in order to successfully perform additional tasks such as area security. Lastly, the BEB must train the staff to conduct the military decisionmaking process and provide mission command for area security tasks because it is very likely that BEBs will continue to receive area security and other additional tasks required to support overall accomplishment of the BCT mission.

At the company level, units must be proficient on analog systems to receive and process platoon reports. Company CPs must maintain flexibility and maneuverability, and be able to operate without the commander present. At the higher levels, analog reporting is also critical but is reinforced through digital systems.

Ultimately, tactical leaders have become comfortable fighting with digital systems at forward operating bases and combat outposts and inside armored vehicles. Many combat leaders have lost proficiency using the analog reporting systems necessary for the light infantry decisive action fight. Units must incorporate their digital systems into the fight, but they still need to maintain their analog systems in case the digital systems are not usable.

CALL Resource

For more information on breaching, see CALL Newsletter 01-19: *Trend Reversal: Combined Arms Obstacle Training*, at https://call2.army.mil/toc.aspx?document=348 (CAC required).

Units should have an SOP for establishing and maintaining an analog common operational picture (COP) through each phase of the operation and variation of the unit command post and should also develop procedures for duplicating the COP on digital systems when upper tactical internet is available. The unit should ensure command post evolution is included in MDMP sessions and final unit orders as well as fragmentary orders (FRAGORDs). A good procedure is to have analog products with frequency modulation (FM)/voice reporting for the early entry CP, transition to analog/Joint Capabilities Release (JCR) COP with FM/JCR reporting for the tactical CP, and develop all analog and digital mission command systems in the main CP.

Without effective parallel planning, the planning timeline from brigade through company level far exceeds the one-third/two-thirds rule, meaning platoons have as little as an hour to conduct troop leading procedures (TLPs) and prepare for the mission. As a result, platoons are forced to execute under severe time restrictions. A warning order from the battalion commander or staff allows companies and platoons to conduct TLPs as the orders process is executed concurrently.

Those platoons that maintained or exceeded the standard under compressed timelines were those that had or quickly developed systems to rapidly prepare for a mission. For example, the platoons that had preformatted OPORDs, a standard for rehearsals, and a standard for precombat checks and inspections effectively overcame time constraints. Platoon leadership that actively engaged the company commander, executive officer, and first sergeant for information regarding the next mission were more likely to be successful.

Units should establish an SOP in accordance with guidelines found in Chapter 1 of FM 6-0 and clearly define setup, roles and responsibilities, battle rhythm, and battle drills within the company CP. Develop both analog (large laminated map/trackers) and digital (spreadsheets and PowerPoint slides) means for battle tracking and portrayal of the company COP. Identify company CP personnel early in the training phase and develop a training plan for them. Physically set up the company CP and validate the CP team and company SOP during home station training prior to a CTC rotation.

Military police units should conduct deliberate unit training management focused on the execution of all three military police disciplines at the collective level. Use training and evaluation outlines from the Army Training Network and CATS to build training plans and develop proficiency across the disciplines. Cross-train on related infantry skills.

The BEB staff elements must proactively seek opportunities to conduct planning with adjacent units. The recommended technique for this planning is face-to-face coordination between operations sections to identify possible friction points during course of action development.

D. Task-Organize for Operations

This trend relates to enabler integration and MDMP. Effective enabler integration is often hindered if the command and support relationships are not clearly defined or are changed late in the MDMP so that the enabler unit does not have time to integrate successfully with the support necessary to accomplish its tasks. Late changes to task organization or during execution have a cascading effect on mission accomplishment. Good initial planning guidance and effective MDMP produce an Annex A that masses combat power at the decisive point.

Best Practices Recommended by Observer–Coach/Trainers

The BCT and BEB MDMP should result in PIRs, NAIs, and reporting requirements to ERTs and supported units that enable mobility planning within the BCT. The ERTs should integrate with supported units during home station training. ERTs should be brigade-level reconnaissance assets and should be included in the BCT intelligence collection plan. Engineers providing mobility support to the cavalry squadron should not be called ERTs; rather, they should be called mobility support teams or simply engineer teams. This will prevent confusion on the task and purpose of engineer teams supporting the cavalry squadron.

Commanders tasked with area defense must assume tactical control of adjacent units early and exercise mission command to ensure all elements understand the mission as well as the commander's intent. Units also need to implement the common defensive control measures as outlined in Army Doctrine Reference Publication (ADRP) 3-90, *Offense and Defense*.

Army Doctrine

For more information, see Army Techniques Publication 3-34.81, *Engineer Reconnaissance*, at http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/ATP%203-34x81%20C1%20INCL%20FINAL%20WEB.pdf.

Effective use of military intelligence company (MICO) assets results from carefully defining the command or support relationship so that both the BEB and supported maneuver battalion understand their roles to maximize the capability of the MICO asset.

During MDMP, the BEB staff must consider how to best use all subordinate headquarters to accomplish assigned missions. Following the process for developing COAs during MDMP will enable the BEB staff to recommend the task organization that best enables successful execution of BEB missions. The BEB commanders need to develop how they want to utilize their Sapper companies and develop appropriate training plans for their companies. For example, if one Sapper company is responsible for all three Sapper platoons and coordinates mobility/countermobility/survivability (M/CM/S) support to three maneuver battalions, while the second Sapper company controls all blade assets and the route clearance platoon, then each company should have a different mission essential task list (METL) and training plan. BEB commanders also need to set conditions for their Sapper companies by engaging maneuver battalion commanders and the BCT commander on how to best employ Sapper companies.

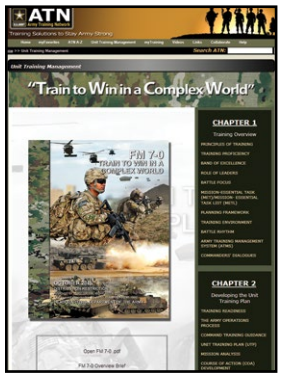
E. Synchronize Operations

This trend is related to the MDMP and integrates capabilities and requirements trends in that it involves implementing MDMP outputs to accomplish the mission. The fast pace of operations at the CTCs — and mechanized or motorized operations at NTC, specifically — requires an understanding of time and distance factors of different types of units, enablers, and munitions which often is learned through repetition and experience. Synchronization is even more important for complex operations like breaching and urban operations. Effectively setting conditions for complex operations requires: careful backward planning; accurate time estimates for completing tactical tasks; and understanding the capabilities and requirements of joint enablers. Simulations to train staffs and company-level leaders are an effective stepping stone prior to conducting multiple iterations of complex operations at home station training.

Best Practices Recommended by Observer–Coach/Trainers

Successful commanders create a detailed plan. Combined arms breaching is highly complex and requires synchronization, shared understanding, and integration of assets efficiently and effectively. Synchronizing assets and setting conditions are critical to conducting a successful combined arms breach — it is not a checklist. When commanders do not understand how to synchronize all the assets available, the breach and assault will be poorly executed.

Training Resources



Train to Win in a Complex World will assist leaders in developing a training plan that supports the company METL; https://atn.army.mil/dsp_template.aspx?dpID=446 (CAC required).

OC/Ts from JRTC created a video showing "a way" to conduct a proper OPSYNCH meeting; go to https://atn.army.mil/dsp_template.aspx?dpID=595# (CAC required).

For troop leading procedures, see Chapter 2 of FM 3-21.10, *The Infantry Rifle Company*; http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/fm3_21x10.pdf. See also ADRP 7-0, *Training Units and Developing Leaders*; http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/adrp7_0.pdf.

References. CATS is an objective tool to evaluate proficiency of a unit. Land and ammunition resources are not necessary to correct many of the current trends seen at the Joint Readiness Training Center (JRTC). Much can be accomplished with "hip pocket training" at the individual and team levels, such as blocks of instruction on machine gun theory or machine gun crew drills. To produce the greatest training effect, leaders must properly plan, prepare, execute, and assess squad, platoon, and company collective tasks. Leaders at all levels should become familiar with ADRP 7-0, *Training Units and Developing Leaders*, and the unit training management page on the Army Training Network (see Training Resources, above).

Units must arrive at the CTC having already conducted a company-level combined arms live fire exercise at home station, at a minimum. This allows company-level and below leaders to understand synchronization and echelonment of both direct and indirect fires; integration of Army aviation attack/close air support (CAS)/intelligence, surveillance, and reconnaissance (ISR); and, most important, how to conduct a combined arms breach with habitual enablers (Sapper platoons). It is also a leader responsibility at the battalion level and below to conduct leader development programs, terrain walks, or leader tactical exercises without troops to prepare junior leaders and ensure they understand the combined arms breach and SOSRA. While preparing for an offensive operation, units must always plan to conduct a breach. Successful units plan in conjunction with their habitual enablers. The Sapper platoon leader, or protection WfF lead, must be brought into the planning process early to understand the commander's intent, scheme of maneuver, and limitations of the breaching assets. The battalion fire support officer (FSO) must understand enemy disposition, composition, and strength on the objective to properly plan suppression targets. Additionally, the FSO must understand the time needed to conduct the breach to plan obscuration targets. These ideas must be shared throughout the MDMP and synchronized during the CAR.

Synchronization meetings are not consistently collaborative across warfighting functions and are not synchronized with the brigade's targeting process. The operations synchronization meeting (OPSYNCH) is the key meeting for reviewing, synchronizing, and validating the distribution of enablers to ensure that they are aligned with the commander's priorities. The OPSYNCH does not replace the shift-change briefing or operation update and assessment briefing. The OPSYNCH

includes a FRAGORD addressing any required changes to maintain synchronization of current operations and any updated planning guidance for upcoming working groups and boards. All warfighting functions are synchronized and appropriate FRAGORDs are issued to subordinates based on the commander's intent for current operations.

The OPSYNCH is one of the most critical and often overlooked meetings in a BCT battle rhythm in decisive action training environment rotations. In accordance with FM 6-0, the OPSYNCH is the key event in the battle rhythm in support of the current operation. Its primary purpose is to synchronize all warfighting functions and other activities in the short-term planning horizon. It is designed to ensure that all staff members have a shared understanding of current operations, including upcoming and projected actions at decision points.

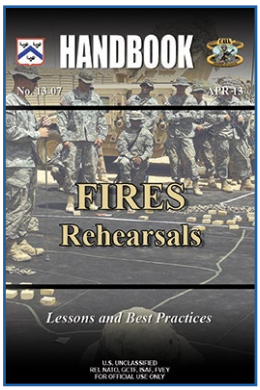
F. Perform Rehearsals

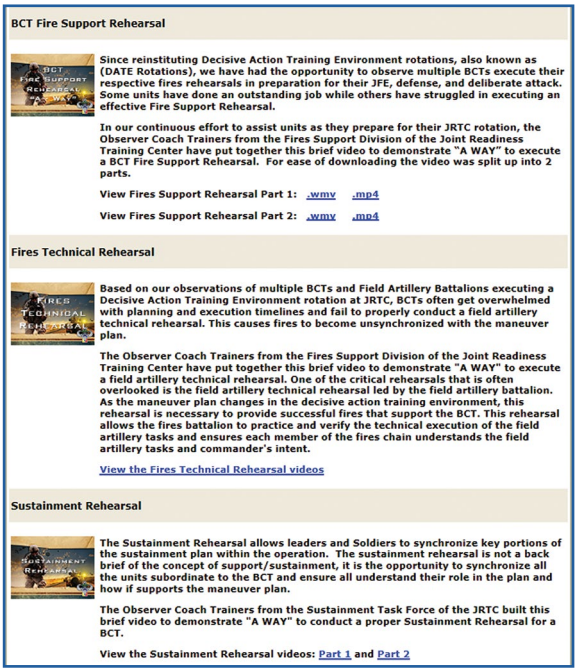
The need to conduct rehearsals or improve them is mentioned directly in six of the observations identified by the CTCs for this publication — fewer than the 25 observations from last year, which shows some improvement. Units effectively conducted rehearsals for operations during COIN operations in Iraq and Afghanistan, which may be due to repetition and lack of a time-constrained environment. If the unit was not prepared and there was not a time-sensitive target, the operation could be delayed a couple of days to allow more time to prepare and set the conditions. Unfortunately, this is usually not the case in DATE rotations, where units conduct hasty rehearsals that are more like backbriefs. For a unit to have the ability to conduct the operations process in a timely manner, it has to execute more repetitions. This can be achieved at home station training through command post exercises and leader professional development sessions.

CALL and Army Training Network Resources

To see videos on different types of rehearsals, go to https://atn.army.mil/dsp_template.aspx?dpID=595 (CAC required). More videos are available from Army Training Network under CTC Training Videos at https://atn.army.mil/dsp_videoPortal.aspx.

See also CALL Handbook 13-07, *Fires Rehearsals*, at https://call2.army.mil/toc.aspx?document=7059 (CAC required). CALL is currently updating this handbook and encourages units with best practices to submit them to CALL for inclusion in the handbook.





BCT Fire Support Rehearsal

Since reinstituting Decisive Action Training Environment rotations, also known as (DATE Rotations), we have had the opportunity to observe multiple BCTs execute their respective fires rehearsals in preparation for their JFE, defense, and deliberate attack. Some units have done an outstanding job while others have struggled in executing an effective Fire Support Rehearsal.

In our continuous effort to assist units as they prepare for their JRTC rotation, the Observer Coach Trainers from the Fires Support Division of the Joint Readiness Training Center have put together this brief video to demonstrate "A WAY" to execute a BCT Fire Support Rehearsal. For ease of downloading the video was split up into 2 parts.

View Fires Support Rehearsal Part 1: .wmv .mp4

View Fires Support Rehearsal Part 2: .wmv .mp4

Fires Technical Rehearsal

Based on our observations of multiple BCTs and Field Artillery Battalions executing a Decisive Action Training Environment rotation at JRTC, BCTs often get overwhelmed with planning and execution timelines and fail to properly conduct a field artillery technical rehearsal. This causes fires to become unsynchronized with the maneuver plan.

The Observer Coach Trainers from the Fires Support Division of the Joint Readiness Training Center have put together this brief video to demonstrate "A WAY" to execute a field artillery technical rehearsal. One of the critical rehearsals that is often overlooked is the field artillery technical rehearsal led by the field artillery battalion. As the maneuver plan changes in the decisive action training environment, this rehearsal is necessary to provide successful fires that support the BCT. This rehearsal allows the fires battalion to practice and verify the technical execution of the field artillery tasks and ensures each member of the fires chain understands the field artillery tasks and commander's intent.

View the Fires Technical Rehearsal videos

Sustainment Rehearsal

The Sustainment Rehearsal allows leaders and Soldiers to synchronize key portions of the sustainment plan within the operation. The sustainment rehearsal is not a back brief of the concept of support/sustainment, it is the opportunity to synchronize all the units subordinate to the BCT and ensure all understand their role in the plan and how if supports the maneuver plan.

The Observer Coach Trainers from the Sustainment Task Force of the JRTC built this brief video to demonstrate "A WAY" to conduct a proper Sustainment Rehearsal for a BCT.

View the Sustainment Rehearsal videos: Part 1 and Part 2

Best Practices Recommended by Observer–Coach/Trainers

According to FM 3-09, *Field Artillery Operations and Fire Support*, "a fire support rehearsal in coordination with the field artillery technical rehearsal should be conducted prior to the combined arms rehearsal and if possible include members of the targeting working group."

Artillery units must conduct thorough fire support rehearsals prior to every mission and use digital sustainment training on a daily basis to conduct frequency modulation radio technical rehearsals to validate technical solutions and databases throughout the sensor-to-shooter linkage. The brigade fire support coordinator should gather all brigade and battalion fire support and field artillery representatives before or after the combined arms rehearsal in order to rehearse the fire support plan. The rehearsal should encompass the enemy situational template including the maneuver plan, scheme of fires, fire support tasks, targets in support of the maneuver plan, observer plan to support the targets, priority of fires, position areas for artillery, sensor-to-shooter linkages, and any changes to the original plan. During the FM technical rehearsal, the brigade fires cell should validate that all subordinate elements understand call-for-fire procedures; target grid refinements; primary and alternate observers; triggers-to-fire targets; and primary, alternate, contingency, and emergency (PACE) communications plans.

Battalion staffs must take full advantage of mission command validation exercises that include all warfighting functions. Units must identify and exercise reporting procedures at each echelon within their organization. While properly configured radios are important during communication rehearsals, it is equally important for each echelon to understand what types of information must be passed and to whom. For example, to effectively conduct combat operations, fires units must conduct, at a minimum, a fire support rehearsal (from observer to gun line) and sustainment rehearsals (from sustainers to point of need).

Rotational units have shown effective rehearsals to be one of the most predictive indicators of operational success. Specifically, in preparation for joint forcible entry, rotational units that conduct detailed CARs that follow the execution checklist (EXCHECK) through the operation tend to have fewer problems than units that do not. Thorough rehearsals with a high degree of participation allow BCT commanders and staffs to prepare for or solve issues that otherwise would not manifest themselves until operations were underway.

The 17 preparation activities of the operations process are described in Chapter 3 of ADRP 5-0, *The Operations Process*. A robust CAR is critical to the success of complex operations like airborne assaults. Ideally, this rehearsal is a "session in which the commander and staff or unit practice expected actions to improve performance during execution" (ADRP 5-0, para. 3-17). The utility of this process depends on its ability to communicate a mental picture of the operation.

Rehearsing also synchronizes sustainment efforts before, during, and after combat operations. The sustainment rehearsal validates the "who, what, when, where, and how" of support. The sustainment rehearsal usually occurs after the combined arms and fire support rehearsals, which should not last more than 90 minutes.

G. Establish Coordination and Liaison

During BCT-level operations at a CTC, establishing coordination and liaison is more important than during home station training. The adage "you get what you pay for" applies to liaison officers (LNOs) and coordination with higher headquarters and adjacent units. Most BCTs and battalions are authorized one LNO on the modified table of organization and equipment to send to their higher headquarters, but this does not account for 24-hour operations during decisive action or if there is a need for LNOs at an adjacent unit. Most units have to pull additional officers or NCOs to provide the needed liaison. Also, the scale of home station training does not usually help train this task except during warfighter simulation exercises. Even then, it is usually done only at the BCT level. Early identification of the right officer or NCO to be an LNO allows for train-up and understanding of the staff and commander. Clear guidance on duties and responsibilities, along with a unit "smart book," will set an LNO up for success.

Best Practices Recommended by Observer–Coach/Trainers

Effective integration of liaison officers and teams is, like most everything else in combat, easier said than done. However, one of the key purposes of JRTC is to provide the force with observable practices that enable tactical success for units. As any unit has experienced, merely providing a liaison team to another headquarters does not solve anything. LNOs must be properly resourced and integrated.

Define what standard information requirements and tasks LNOs need to battle track and execute. Assign someone to supervise them. Doctrinally, this is the chief of staff. However, the chief of operations or the plans officer can be delegated this task. Standardize how the LNOs present information, possibly simplifying complex slides and holding LNOs responsible for briefing the information as they point to companies on the COP, and help them develop their briefing skills. Assist LNOs in developing sufficient understanding to communicate guidance and thoroughly answer questions. Commanders should understand that an LNO should be a top tier NCO or officer who can actively represent the interests of his commander in the brigade main CP or plans shop.

All subordinate units should provide liaison to higher, and higher should provide liaison to subordinates. The purpose of LNOs on staff is to ensure that the subordinate battalions are represented within the upper echelon's staff and to facilitate communication between commands. It is important to integrate the LNO into all aspects of the brigade staff's planning process early to quickly build effective relationships between the units. Additionally, the LNO must arrive at the higher echelon unit with a complete package (computer, radio, maps, plans, etc.), and the unit must provide him a work station with connectivity. For more information regarding staff integration, see FM 6-0, *Commander and Staff Organization and Operations* (Change 1), Appendix E (May 2015).

Units can benefit from adding a checklist for adjacent unit coordination in their tactical SOP (TACSOP) and rehearse its use at home station. An adjacent unit coordination checklist should include, but is not limited to, the following:

- Identification of the adjacent unit
- Mission of the adjacent unit
- Size and composition of the adjacent unit
- Adjacent unit maneuver plan

- Adjacent unit fire support plan
- Planned times and points of departure or re-entry (passage of lines)
- Planned fire support and control measures
- Adjacent unit combat service support assets available
- Frequencies and call signs
- Location of key leaders
- Challenge and password, running passwords, and number combinations
- Pyrotechnic and signal plan
- Additional information about the enemy
- Recognition signals (far and near)

Chapter 2
Army Tactical Task 4.1
Provide Logistics Support

"The sustainment staff's role in synchronizing sustainment planning with operations is necessary to assist operational commanders and staffs set the conditions for what is in the realm of the possibility."

ADRP 4-0, *Sustainment*

Trend: Units Are Challenged to Provide Logistics Support

A. Provide Class III, IV, and V resupply

B. Provide maintenance management

C. Conduct recovery operations

D. Perform preventive maintenance checks and services (PMCS)

Seven percent of all improve observations (22 out of 302) related to the task of provide logistics support. Of these observations, more than half pertained to provide Class III, IV, and V resupply (12 out of 22). There were seven significant observations on provide maintenance management. Conduct recovery operations accounted for two observations. Finally, there was one observation on the need to improve PMCS.

The Principles of Sustainment. "The principles of sustainment are essential to maintaining combat power, enabling strategic operational reach, and providing Army forces with endurance. While these principles are independent they are interrelated. The principles of sustainment and the principles of logistics are the same." Army Doctrine Reference Publication (ADRP), 4-0, *Sustainment* (14 AUG 2012).

The root causes of poor performance in many logistics tasks can be traced to tasks listed under the mission command warfighting function.

Logistics involves both military art and science. Knowing when and how to accept risk, prioritizing myriad requirements, and balancing limited resources all require military art, while understanding equipment capabilities incorporates military science. Logistics integrates strategic, operational, and tactical support of deployed forces while scheduling the mobilization and deployment of additional forces and materiel. Logistics includes maintenance, transportation, supply, field services, distribution, operational contract support, and general engineering support (ADRP 4-0).

Sustainment in decisive action and multinational environments has been identified by all the combat training centers (CTCs) as one of the fundamental skills necessary for successful operations at a CTC. Army tactical task (ART) 4.1 is representative of the sustainment experience from each of the CTCs. Brigade combat team (BCT), battalion, and brigade support battalion (BSB) staffs are challenged to provide logistics support to their brigades.

The root causes of poor performance in many logistics tasks can be traced to tasks listed under the mission command warfighting function. Issues identified by observer–coach/trainers (OC/Ts) at the CTCs include the following:

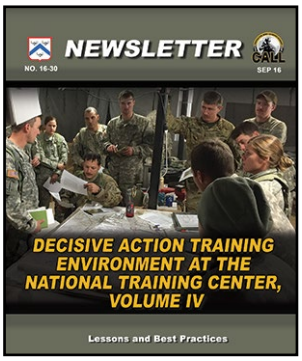
- Defining sustainment roles and responsibilities between—
  - The BCT and battalion staffs;
  - The BCT logistics officer (S-4) and the brigade support battalion (BSB) support operations officer (SPO) at the brigade level; and
  - The battalion S-4 and the forward support company (FSC) commander at the battalion level.
- Establishing and maintaining a logistics common operational picture (LOGCOP) and maintaining accurate logistics status reports (LOGSTATs).
- Forecasting logistics requirements
- Having a logistics standard operating procedure (SOP) that is understood and followed
- Having a disciplined logistics process.

Additional issues include gaps within the logistics planning process, gaps within sustainment SOPs, and inadequate or nonexistent sustainment rehearsals.

Within the sustainment warfighting function, ADRP 4-0 states, "the sustainment staff's role in synchronizing sustainment planning with operations is necessary to assist operational commanders and staffs set the conditions for what is in the realm of the possibility." In order to synchronize the sustainment plan, the BCT S-4 and the BSB SPO must understand their roles and responsibilities.

The BCT S-4 and SPO coordinate planning and execution of the brigade support mission. BCT S-4s and SPOs are often challenged to identify their roles prior to arriving for a rotation at a CTC. As noted in CTC observations, they frequently fail to identify who is responsible for which logistical function, how to ensure that everyone in the brigade knows who is doing what, and how to train at home station to provide logistical support.

CALL Resource



Fore more information on defining logistics roles and responsibilities, see CALL Newsletter 16-30, *Decisive Action Training Environment at the National Training Center*, Volume IV (September 2016), at http://usacac.army.mil/sites/default/files/publications/16-30_1.pdf.

A successful technique to mitigate the challenges of synchronization is for the BCT S-4 and SPO to understand the each other's roles while training at home station. They must identify who will be responsible for managing, preparing, and leading the logistical reports and orders for the BCT. The orders, reports, and meetings expected to be produced or organized include: Paragraph 4,

Annex F, and concept of support (per phase); LOGSTAT; LOGCOP development; logistics synchronization (LOGSYNCH) matrix; LOGSYNCH and maintenance meetings. The S-4 and SPO should work together in the production of all of these items. Each is responsible for leading specific actions. The S-4 should produce Paragraph 4, Annex F, and the initial concept of support of the operation order (OPORD) for each phase. The S-4 also is responsible for collecting the LOGSTAT from each battalion and submitting it to division. The SPO is responsible for taking the OPORD products produced by the S-4 and developing a concise and executable concept of support. Once the S-4 has consolidated the BCT LOGSTAT, the SPO should produce the brigade's LOGCOP. The SPO also produces the LOGSYNCH matrix and uses it to lead the LOGSYNCH and maintenance meetings.

The FSC commander assists the battalion S-4 with the battalion logistics planning and is responsible for executing the logistics plan in accordance with the BSB and supported battalion commander's guidance.

At the battalion level, successful units define the roles and responsibilities of the battalion S-4 and the FSC commander as an essential step in providing logistics support. The S-4 is the staff officer primarily responsible for logistics operations and plans. The S-4 is the staff integrator between the battalion commander and the FSC commander who executes logistics operations for the battalion. The FSC commander assists the S-4 with battalion logistics planning and is responsible for executing the logistics plan in accordance with the BSB and supported battalion commander's guidance. The S-4 has several responsibilities during battalion operations to ensure the continuous execution of support operations by the FSC. These include consolidation of the battalion LOGSTAT, requesting ammunition (via Department of the Army Form 581), planning and coordinating logistics package (LOGPAC) operations, and determining logistics release point (LRP) locations and execution time. The submission of logistics reports from the companies, their consolidation into a battalion status, and submission to brigade and the BSB are the actions necessary for accurate and timely forecasting as well as maintaining the LOGCOP.

The S-4 is generally located in the combat trains command post (CTCP), which maintains the LOGCOP for the battalion as part of being an alternate command post. This provides the S-4 with the understanding of friendly locations and future operations that is needed to properly place LRPs and coordinate LOGPAC operations. The FSC commander should assist in planning these logistics operations, but the S-4 is responsible for the plan. In units where the FSC commander, rather than the S-4, has planned the LOGPAC and LRP location and time, resupply has become desynchronized.

Accurate and timely LOGSTATs are a challenge for many units. A unit's ability to capture and report LOGSTATs at all echelons significantly affects its capability to forecast and transition to predictive sustainment planning. LOGSTAT reporting is often inconsistent and inaccurate during decisive action rotations. Effective sustainment rehearsals are necessary to ensure the operational plan can be supported. Sustainment rehearsals also are needed so that everyone understands the concept of support during each phase of the operation.

ART 4.1, provide logistics support, is a broad, overarching task. Within ART 4.1, the observations were categorized under four main tasks: provide Class III, IV, and V resupply; provide maintenance management; conduct recovery operations; and perform PMCS.

A. Provide Class III, IV, and V Resupply

Units have been challenged to forecast and manage Class III, IV, and V resupply. Each of these classes of supply relies on four essential actions: forecasting (also known as projection or requirements determination), requisition, distribution, and retrograde. During an operation, these tasks may be performed sequentially or concurrently, as required.

Observations in this area generally addressed roles and responsibilities, forecasting and distribution, Class IV preparation and distribution, locations of assets, and sustainment rehearsals.

Sustainment often is not synchronized between the support echelons. Battalion distribution plans are inconsistent in terms of the capability and Soldier skill set placed at the combat trains and field trains. Sustainment doctrine allows the BCT flexibility in the manning and arraying of sustainment forces between the field trains command posts (FTCP), CTCP, and the company echelon or trains. The concepts of support that do not work often cause emergency or immediate and unplanned resupply situations. By using known requirements, capabilities, and consumption rates for all classes of supply, sustainment planners should produce a logistics estimate with a logistics task organization (LTO) that mitigates shortfalls and backhaul.

In successful units, sustainment planners produce a continuously updated logistics estimate that takes into consideration the distance traveled by the maneuver task force, the time needed to travel those distances, and the consumption rates for all classes of supply.

BCT sustainment planners are generally challenged in conducting this anticipatory logistics analysis (forecasting) and are not informed on the science of maneuver warfare and armored tactics. This lack of understanding and poor forecasting drive multiple unplanned resupply operations. To achieve proactive versus reactive support in successful units, the sustainment planners produce a continuously updated logistics estimate that takes into consideration the distance traveled by the maneuver task force, the time needed to travel those distances, and the consumption rates for all classes of supply. This log estimate informs 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.

LOGSTAT and the LOGCOP. To avoid third-order effects that can cost Soldiers' lives, logistics planners must be able to develop a complete LOGCOP of the area of operations. However, that picture cannot be achieved unless units provide timely and accurate LOGSTATs. The LOGCOP begins with knowledge and data of the logistics status before the operation begins. Accurate and timely reporting, combined with constant updates to current status, is what provides the BSB commander and SPO, the BCT S-4, and the BCT commander and S-3 with an understanding of the sustainment status of the brigade. The LOGSTAT is what then facilitates future operations and maintains current operations. Without an accurate LOGSTAT and LOGCOP, operational planning is based on a logistical unknown. Successful units rely on a disciplined sustainment process to forecast requirements, acquire the needed logistical classes of supply, get the supplies delivered where needed, and return the distribution assets so the process can continue.

The logistics estimate worksheet (LEW) is an effective tool to facilitate logistics estimates and planning for all classes of supply. The LEW has been used during DATE rotations as a forecasting tool to avoid emergency resupply requests.

The LOGSTAT report is the feeder for the visibility, forecasting, and execution of the sustainment mission. Consequently, the LOGSTAT report must be detailed enough to be an effective tool but also easy enough for everyone to use and understand. Once the LOGSTAT format is determined, a good data transfer battle rhythm must be established to develop a good LOGCOP.

Many battalions have been observed collocating their FTCP within the brigade support area (BSA). Placing the FTCP within the BSA can facilitate coordination, security, and mutual support. Consideration must be given and a risk assessment done to ensure the FSC can remain responsive to the needs of its supported battalion. A specific consideration is the ability to maintain an emergency resupply package of Class III and V at the CTCP. If that is not possible due to manning or distance, the cavalry squadron's or other battalion's FTCP may need to be located closer to the forward line of own troops (FLOT). Any positioning of logistics assets requires a risk assessment. Designation of LRPs is another planning consideration. LRP locations and times must be followed in order to maintain adequate logistical support. Unless LRP discipline is maintained, LOGPAC resupply can be delayed simply due to time and distances involved in transit.

Synchronization within the brigade support battalion (BSB) has been a challenge for many brigades. When a battalion S-4 and FSC commander do not agree on the concept of logistical support, the process is not synchronized and the plan is at risk of failure. The reason the battalion S-4 and FSC commander have different running supply estimates is often the result of inconsistent and non-standardized LOGSTAT reports. This makes accurate tracking of on-hand quantities of supply, as well as forecasting future requirements, very difficult. Consequently, the forecasting, managing, and supplying commodities (Classes I, III, V, IX) to the supported companies can be constrained.

The S-4 should understand the required supply rate, the controlled supply rate, and the authorized basic load and be prepared to provide input to the S-3 and planners as mission analysis progresses into course of action development.

CALL Resource

For more information on defining logistics roles and responsibilities in a multinational environment, see CALL Newsletter 16-29, *Decisive Action Training Environment at the JMRC*, Volume III (September 2016), Chapters 10, 11, and 12, at http://usacac.army.mil/sites/default/files/publications/16-29.pdf.

Battalion S-4s and FSC commanders continue to struggle with Class V forecasting, resulting in desynchronized logistical plans and unscheduled resupply convoys, often under emergency conditions. This adversely affects the FSC's planning and management of its assets and increases risk from fatigue on distribution platoons. This is especially true in fires battalions. The S-4, S-1, battalion surgeon, and the FSC commander "form a sustainment planning cell at the battalion main command post to ensure sustainment plans are fully integrated into operations planning" (Army Techniques Publication [ATP] 3-09.23, *Field Artillery Cannon Battalion*). The integration of this planning cell provides critical information to operational planners that ensures the battalion has adequate amounts and types of ammunition to support field artillery tasks. As a component of the sustainment running estimate, the S-4 should understand the required supply rate, the controlled

supply rate, and the authorized basic load, as well as be prepared to provide input to the S-3 and planners as mission analysis progresses into course of action development. During mission analysis, the S-4 should use logistical forecasting tools, such as the LEW, in order to identify Class V requirements early, and then coordinate with the FSC commander to solidify the distribution plan. Integrating the S-4 and FSC commander during home station training, and using Combined Arms Training Strategies (CATS) tasks and associated key collective tasks, will facilitate Class V operations when deployed to a CTC.

Best Practices Recommended by Observer–Coach/Trainers

Once the BCT S-4 and the SPO have agreed on their roles and what they are responsible for, the BCT can replicate some of the deployed tasks at home station to train them. Units should practice all logistics meetings and submit reports at home station as though they were deployed. Units that do not practice these meetings and reports at home station often struggle with them during a CTC rotation. The BCT S-4 and SPO should ensure that the standards for each system of reporting (battle command sustainment support system/logistic response time, Joint Capabilities Release [JCR]-logistical, etc.) are enforced at home station in order to identify equipment shortages and personnel training requirements before coming to the CTC. The FSC should assign personnel who can facilitate the resupply of Classes I, III, and V as well as encourage the flow of Classes IV, VIII, and IX in the FTCP.

The OC/Ts recommend that the FTCP collocate with the BSA to benefit from and 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 very small aperture terminal (VSAT) and combat service support information systems interface.

By effectively task-organizing Class III(B) assets, units can sustain operations for a longer period of time with a larger operational reach. For example, a fires battalion attached an M978 HEMTT fueler to each firing battery. The battery closely tracked the amount of Class III(B) on hand in its LOGSTATs. The battery leadership anticipated when they would need to send the fueler back with the distribution platoon during the morning LRP to resupply at the BSA during the afternoon. The fueler would then return to the battery on the following morning LRP. Although non-standard, task-organizing the Class III assets to the firing batteries proved beneficial to this battalion during its rotation. Focusing on forecasting systems helps to prevent an emergency resupply request.

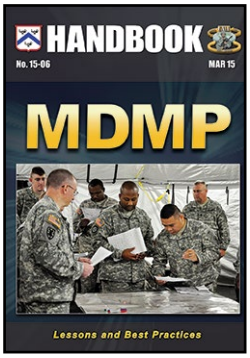
Successful FSCs and battalion logisticians significantly reduce logistics patrol and backhaul requirements through effective use of the LEW and analog tracking tools, improving commodity tracking and forecasting. FSC commanders utilized the LEW to effectively establish a baseline of consumption rates and used this tool to predict future consumption rates. They validated their estimates through deliberate confirmation of quantity distribution through the use of consumption reports delivered by the distribution platoon. The use of these products and techniques resulted in a steep reduction in backhaul requirements for both water and fuel. Prior to this observation, units typically backhauled 12,000 to 15,000 gallons of fuel and 3,000 to 5,000 gallons of water per day. Applying the best practice using the LEW, unit effective logistical techniques resulted in a backhaul of less than 1,000 gallons of fuel and 500 gallons of water. This is an estimated 85 percent reduction in fuel backhaul and 87 percent reduction in water backhaul. The LEW is not the only forecasting tool available but has been tested and proven to work well.

In recent rotations, units that used "walk-through" ordering waited an average of four days more for their parts than units that ordered similar parts through 026 requisition.

Successful units develop priorities of support, refine their procedures, and have a working knowledge of SOPs and distribution goals prior to deployment.

Other units used the LEW to design and develop analog trackers using the necessary fields (Class III[B] tab and Class I tab) to track the unit LOGCOP and provide timely observations and recommendations to both the field artillery and brigade support battalion leadership. These practices allow the staff to facilitate running estimates for use during mission planning and the military decisionmaking process (MDMP).

CALL Resource



Units and individuals can utilize CALL Handbook 15-06, *MDMP Lessons and Best Practices* (March 2015), to better understand and conduct the military decisionmaking process. It is available for download at http://usacac.army.mil/sites/default/files/publications/15-06.pdf.

Confusion over Class IV allocation, Mission Configured Load (MCL) building, and distribution hinders the brigade's ability to employ defensive and construction material in an efficient manner (ART 4.1.3.4, Provide Barrier and Construction Materials [Class IV]). The responsibility of the Class IV process has been unclear, distorted, or ignored over several CTC rotations. The points of failure in this process are defined in three places: who should allocate materials to each battalion; who should build it; and who should distribute it. Brigades should clearly define the roles and responsibilities of Class IV management in Paragraph 3 and Annex F of the brigade OPORD. Rehearse the Class IV plan in detail during sustainment rehearsals to ensure all supported units, including attached and enabler units, understand what modules they can expect.

Units have been hampered by a lack of company-level convoy SOPs and understanding of the distribution mission of the FSC. ATP 3-90.90, *Army Tactical Standard Operating Procedures*, defines SOP as "a set of instructions covering those features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness. The SOP is both standing order and standard. It instructs how to perform a prescribed and accepted process established for completing a task." ATP 4-11, *Army Transport Operations*, directs the FSC to provide its task force with field feeding; bulk water; bulk fuel; forward arming and refueling points (FARP) operations; general supply distribution and transportation; and field maintenance in a direct and habitual supporting relationship. "The overall goal for SOPs and transportation operations is to facilitate mission accomplishment and warfighting functions integration" (ATP 4-11). Due to the lack of SOPs or knowledge of FSC distribution mission, FSCs tend to continually have issues developing, organizing, and prioritizing distribution and support efforts. Successful units develop priorities of support, refine their procedures, and have a working knowledge of SOPs and distribution goals prior to deployment.

B. Provide Maintenance Management

This task is linked to the identification of roles and responsibilities previously discussed. Successful units answer the question of who is responsible for what and practice it at home station before a CTC rotation begins.

Successful units conduct regular battle-rhythmed maintenance meetings.

Units have been challenged to manage maintenance assets. A technique used by successful units has been to place field maintenance teams (FMTs) forward of the CTCP and collocated with supported maneuver companies to provide the companies the ability to quickly regenerate combat power. Each team is equipped with the tools and recovery assets for the type of company it supports. Mission command is 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 combat operations.

Another challenge in maintenance management is the movement and control of sustainment assets on the battlefield. Moving toward the FLOT with sustainment assets must be rehearsed and well understood by both the FSC elements and the maneuver company they support. 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.

Battalions are challenged to synchronize combat power status and maintenance status. Successful units conduct regular and battle-rhythmed maintenance meetings. Coordination between the battalion S-4 and the FSC maintenance technician ensures the combat power status reflects the maintenance status and provides the battalion the ability to influence generation of combat power (prioritize repairs or recovery). Synchronizing combat power trackers and maintenance status between the battalion, the FSC, and supported companies is essential in building, maintaining, and planning for combat power. Without an accurate LOGSTAT and daily coordination between the FSC and the supported battalion, units do not have a true picture of capabilities for current and future operations.

Class IX Requisition, Flow, and Tracking Challenges. Units that rely on battalion maintenance control technicians (MCTs) using a "walk-through" method of parts requisition struggle not only to track maintenance parts but also struggle with combat power generation. The "walk-through" method consists of seeing an on-hand quantity of the needed part in the local supply support activity (SSA) followed by ordering the part. This technique does not allow the MCT to properly track the parts or provide real-time maintenance updates. By doing this, the MCT generally bypasses the 026 report and thereby does not have an accurate picture to provide to the battalion executive officer of the true combat power status of the battalion. Another friction point is seen in units where multiple companies, batteries, or troops of the same type are competing for the same part in the SSA.

Units proficient in Class IX requisition put damaged or dead-lined vehicles on the 026 report and order parts against it. They are able to track that part in the system and will frequently receive the part before the unit that is attempting a walk-through. In recent rotations, units that used "walk-through" ordering waited an average of four days more for their parts than units that ordered similar parts through 026 requisition. By using the 026 Standard Army Maintenance System–Enhanced (SAMS-2), a unit also can better track its use of unit funds for Class IX. The OC/Ts recommend that maintenance control technicians and maintenance control officers limit the use of "walk-through" requisition and train on the SAMS-2 (026) system and the Global Combat Support System–Army (GCSS-A). The GCSS-A system has proven a useful tool in the tracking of parts and speeding up the process of requisition.

C. Conduct Recovery Operations

Vehicle recovery is an essential task for mechanized, armor, and Stryker units. Observations from the CTCs provide a mixed bag of results. Of the four observations on vehicle recovery, two were improve and two were sustain.

Dedicated recovery operations occur when vehicle recovery has failed or when systems have been catastrophically damaged. This process is performed by recovery operators using dedicated recovery vehicles and assets. Dedicated recovery should be a last resort. Units attempt self-recovery as the first method when a vehicle becomes stuck or immobilized. If self-recovery is unsuccessful, units attempt like-vehicle recovery. This process uses a similar or larger vehicle to free a stuck or immobile vehicle with the aid of an authorized vehicle tow bar, cable, or strap (ATP 4-33, *Maintenance Operations*). BCTs must plan for both ground vehicle recovery and downed aircraft recovery.

Battalion logistics planners must anticipate the need for vehicle recovery and understand capabilities of organic recovery assets to mitigate vehicle recovery challenges.

Maintenance Evacuation Plans. Vehicle recovery has challenged some units during CTC rotations. A multinational infantry battalion failed to plan for vehicle recovery and evacuation from the battlefield. Battalion logistics planners did not address vehicle recovery and evacuation in operation orders or fragmentary orders, which had a negative impact on the availability of combat power that could have been repaired. Battalion logistics planners must anticipate the need for vehicle recovery and understand capabilities of organic recovery assets to mitigate vehicle recovery challenges. Unit SOPs should include battle damage assessment and repair (BDAR) and designated maintenance collection points. This will increase units' ability to make swift battlefield repairs. When recovery assets are unavailable, units must coordinate for recovery and evacuation support with adjacent units or the BSB.

Recovering vehicles in Stryker brigade combat teams (SBCT) has been a challenge. M984A4 wreckers are unable to lift/tow Stryker variation vehicles due to potential damage to the M984. Additionally, SBCT units often fail to bring enough tow bars per authorization to facilitate expedient self-recovery. Soldiers were observed attempting to recover disabled Strykers by using heavy expanded mobility tactical truck wreckers (HEMTTs) to lift a front axle and tow the Stryker with the front suspended. This procedure can damage the rear suspension/hubs on the Stryker and can also damage the M984 lift cylinders. Other issues include operator proficiency in approved recovery methods and procedures for preparation for towing.

Training Downed Aircraft Recovery Teams (DARTs). A common trend among successful units has been proficiency training for Soldiers on downed aircraft recovery operations Success in a DART mission requires rehearsals; a good primary, alternate, contingency, and emergency (PACE) communications plan; initial aircraft assessment; unit maintenance aerial recovery kit (UMARK) employment; and troop-leading procedures to facilitate bottom-up refinement leading up to execution. The importance of doctrine-based training to facilitate a successful execution is paramount. Home station training recoveries may be enhanced by simulating combat conditions with safety measures applied. Recommended simulated conditions for training include: performing security operations; placing time constraints on rigging procedures to simulate enemy threat; CBRN simulations using mission-oriented protective posture (MOPP) gear; and route planning with simulated threat. A well-trained aviation task force comes to the CTC with a combination of tactical standard operating procedures (TACSOPs), battle drills, and various execution checklists for DART operations (FM 3-04.513, *Battlefield Recovery and Evacuation of Aircraft*).

A well-trained aviation task force comes to the CTC with a combination of tactical standard operating procedures (TACSOPs), battle drills, and various execution checklists for DART operations.

D. Conduct PMCS

Although conducting preventive maintenance checks and services is a task that has been frequently mentioned during company-level after action reports at all the CTCs, there were few observations directly addressing the task. Most units understand the importance of daily PMCS. The challenge often faced in the conduct of PMCS is the presence of appropriate technical manuals (TMs), supervision, and conduct of actual checks. Low-density military occupational specialty and specialty equipment is frequently a challenge for PMCS.

The one recorded observation was of a BCT retransmission (RETRANS) and the brigade engineering battalion. In this unit, the brigade signal company responsible for the RETRANS site failed to ensure the Soldiers operating the RETRANS had the TMs necessary to conduct PMCS, had an SOP for submission of a daily 026 report, and had any way of tracking any parts on order.

Chapter 3
Army Tactical Task 5.2
Conduct Command Post Operations

Trend: Units Are Challenged to Conduct Command Post Operations

A. Establish or revise standard operating procedures (SOPs)

B. Organize people, information management procedures, and equipment/facilities

C. Organize command post to support command functions

Almost nine percent of all improve observations (26 out of 302) fell under this task. These observations were split almost evenly among establish or revise SOPs; organize people and information management procedures; and organize command post (CP) to support command post functions. These trends overlap with conduct the operations process (discussed in Chapter 1) and conduct knowledge management and information management (Chapter 5).

A. Establish or Revise Standard Operating Procedures

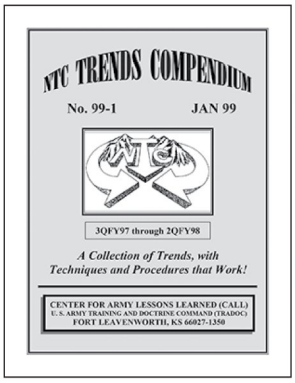
Successful units at the combat training centers (CTCs) created or modified a set of instructions at home station covering those tasks and functions that lend themselves to a definite or standard procedure without a loss of effectiveness. Units' SOPs, or their revisions, facilitated mission accomplishment and warfighting functions integration under "normal" operations as well as restoration/recovery plans and procedures when faced with critical failures. Most rotating unit staffs struggle during the initial phases of the exercise to define their respective duties and responsibilities within the section, such as those of the shift officer, or battle captain. These duties and responsibilities often are ill-defined, requiring the operations officer or executive officer (XO) to make routine decisions, detracting from his focus on other areas of CP operations. Staffs are also challenged in establishing and developing a battle rhythm that drives the operations process through the incorporation of functional and integration processes such as intelligence preparation of the battlefield (IPB), targeting, and the military decisionmaking process (MDMP).

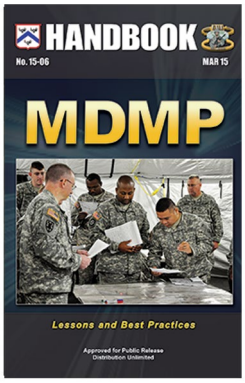
These challenges create gaps in shared understanding between current and future operations (CUOPS and FUOPS) regarding the details of named operations. One challenge in CUOPS is the initial tracking of operations with systems such as the Tactical Airspace Integration System (TAIS), dynamic airspace collaboration tool, Force XXI Battle Command Brigade and Below (FBCB2) / Blue Force Tracker (BFT), and the upgraded Joint Capabilities Release (JCR) and Joint Battle Command–Platform (JBC-P) in conjunction with analog products. Upper tactical internet systems (CPOF, AFATDS, TAIS, etc.) are often ineffective in an austere environment with frequent movements (long setup time coupled with limited bandwidth capacity), further complicating situational understanding.

The CP two-minute drills are an effective way to focus the CUOPS cell during missions. Continue event- and time-driven "huddles" to enhance situational awareness and understanding within the entire main CP and to help anticipate unit requirements and commander decisions. Successful units develop and execute two-minute drills for brigade mission command.

CALL Resources

SOP development and CP operations have been habitual challenges since before Operation Enduring Freedom. Many of these issues are discussed in CALL publication 99-1, *NTC Trends Compendium* (January 1999), from the 3rd quarter of fiscal year 1997 through the 2nd quarter of FY98 at the National Training Center; https://call2.army.mil/toc.aspx?document=2505 (Common Access Card required). For a better understanding of the military decisionmaking process, see CALL Handbook 15-06, *MDMP Lessons and Best Practices*, at http://usacac.army.mil/sites/default/files/publications/15-06.pdf.





There are some considerations for executing a two-minute drill. During initial announcement, the battle captain can give specific focus areas or questions he wants answered and discussed. Briefers should focus on updates to running estimates and status. Briefers should analyze rather than regurgitate data.

Two-Minute Battle Drill

What systems can be put into place to ensure that the staff sections cross-talk? Is there a system that is a forcing function for staff sections to update running estimates? What about those times between battle update briefs (BUBs) and commander's update briefs (CUBs)? At JRTC, observer–coach/trainers (OC/Ts) continually coach a two-minute drill with staff sections. It works.

The two-minute drill is basically a mini-CUB. OC/Ts refer to this as a two-minute drill based on a football analogy. A well-run staff will continuously update its running estimates. The challenge has always been ensuring that the staff sections update their running estimates. Staff officers must understand that their main purpose is to give the commander the right information at the right time so that the commander can make sound decisions. As FM 6-0 states, "Staffs support the commander in understanding situations, making and implementing decisions, controlling operations, and assessing progress by providing timely and relevant information and analysis." This causes leaders to come up with good forcing functions to ensure that the running estimates are updated. The two-minute drill can provide this forcing function.

Best Practice

Observer–coach/trainers recommend the two-minute battle drill to help unit staffs struggling during the initial phases of the exercise. The two-minute drill allows staff sections to quickly inform the commander, XO, command sergeant major, or a distinguished visitor of any pertinent information as of a specific date and time. The article at the following link was written by OC/Ts from Task Force Sustainment at the Joint Readiness Training Center (CAC required): https://call2.army.mil/toc.aspx?document=7456&filename=/docs/doc7456/7456.pdf

B. Organize People, Information Management Procedures, and Equipment/Facilities

Rotating units often fail to adequately track and process information that is relevant for the commander to make decisions or to convey a common operational picture due to inability or failure to identify and manage relevant information within their operational environment through systems and processes to generate and maintain situational understanding under ideal and degraded conditions. Units fail to develop and test a CP SOP at home station.

The shared understanding between levels of command and staff sections is hindered due to desynchronized battle rhythms/SOPs, not exploiting mission command information systems integration, and not fully leveraging information-sharing capabilities (systems are complicated). Some of those challenges were as simple as shift changes or as complex as battle tracking and processing relevant information to enable the commander to make decisions or to convey a common operational picture.

The SOP should include unit specific information, occupation and layout standards, staff requirements, duties and responsibilities, necessary equipment, tracking products, tools, battle tracking methods, and standards. At a minimum, the CP should include FM communications, analog tracking, and Joint Capabilities Release.

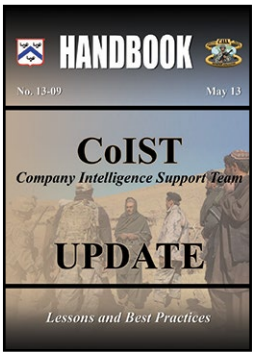
Brigade Engineer Battalion (BEB) Battle Rhythm

Observer–coach/trainers recommend linking the battle rhythm to functional and integration processes (IPB, targeting, and MDMP) to drive the operations process. The commander should receive a morning BUB from his staff to update current and future operations and to provide planning guidance to the staff. The BUB gives the commander information from the same running estimates that feed IPB and mission analysis. This will help the staff maintain accurate running estimates. The commander then should make time to circulate among subordinate units or higher headquarters while the staff conducts planning activities throughout the day. During the day, the staff should conduct, at a minimum, a logistics synchronization meeting and operations synchronization using targeting methodologies. These meetings will help the BEB apply appropriate resources to operational requirements, identify risks, and develop risk mitigation measures. These synchronization meetings are similar to course of action (COA) development and war gaming. They allow the staff to identify and solve problems for the commander. At the end of the day, the commander should conduct a CUB with his subordinate commanders. The CUB is similar to COA approval and allows the staff to backbrief commanders on the results of the logistics and operations synchronization meetings and what adjustments are required to the BEB's plan. The CUB will help to ensure shared understanding between the commander, staff, and subordinate commanders. It is especially important that the BEB establish and rehearse its battle rhythm prior to the rotation. The BEB should develop an SOP to describe the battle rhythm. The SOP should list roles, responsibilities, and reporting requirements. The SOP should also cover the purpose, frequency, composition, agenda, and input/outputs for all meetings.

C. Organize Command Post to Support Command Functions

At the CTCs, units tend to struggle with when and how to use Force XXI Battle Command Brigade and Below (FBCB2)/BFT and the upgraded JCR and Joint Battle Command–Platform (JBC-P) to facilitate mission command. Units struggle with planning a concept of signal support that successfully incorporates the different forms of combat network radio communications for redundancy. As a result, they rely on JCR as a primary means of communication. In most cases, units tend to employ several JCR chat groups to separate conversations into different categories (operations and intelligence, sustainment, and others). This leads to a significant increase in the volume of data a JCR operator must navigate in order to find information relevant to the current situation. This increase in messages becomes very problematic, especially while maneuvering when in contact with the enemy, and can lead to missing critical information. The overuse and saturation of these JCRs causes systems to freeze or crash. This problem results in capability down time. Units often fail to take advantage of the JCR's ability to increase situational awareness to help build the common operational picture (COP). The JCR can significantly speed up the process of creating and disseminating orders, they can hold extensive databases of information, and can increase the speed and fidelity of coordination and synchronization of battlefield activities.

CALL Resource



CALL Handbook 13-09, *CoIST Update* (May 2013), captures lessons learned and tactics, techniques, and procedures that will enable company intelligence support teams to support operations across the spectrum. It provides detailed information on CP operations at the company level. Go to https://call2.army.mil/toc.aspx?document=7101 (CAC required).

Battalion main command posts (main CPs) do not battle-track unit locations to the level of detail required. They only track company headquarters locations. Battalions pull unit locations from the JCR; however, most companies have only one or two JCR platforms and those are at the company CP. Battalions struggle to keep their analog COP updated with platoon locations. The failure to battle track unit locations has hindered the ability of many battalions to clear ground for fires (artillery, close air support, and aerial weapons teams) and prevents the commander from making informed decisions because the commander does not know where the units are or he does not have a good understanding of the situation.

The lack of standardized reporting formats also hinders a battalion's battle tracking of subordinate and adjacent units. Subordinate leaders are either unsure of exactly what information the battalion needs them to report or they do not understand the importance of relaying relative information to higher. Companies may not necessarily understand the bigger picture, and if they feel they can handle the situation at their level, then they might not report it to higher. On the other side, the battle captains and radio operators often do not know what information they need from companies as they receive reports. The battle captain is not pushing for updated unit locations or updated situation reports from the companies.

In addition, companies and platoons conduct operations without a clear COP because they fail to put a competent noncommissioned officer (NCO) in charge of CP operations. While there is no table of organization for a company intelligence support team (CoIST) in company CPs, effective company CPs will maintain the same level of understanding that a CoIST cell used to provide. Often the company commander performs the duties and responsibilities normally associated with CP operations but only for that commander's own use. The company commander gathers information either digitally or on one analog map from intelligence and planning cells at battalion but rarely disseminates that information. Furthermore, the company commander's radio operator is not part of an analysis section, and the operator does not log or pass useful information beyond the company commander. Platoons lack any type of updated situation or enemy disposition. Often intelligence gathered from the battlefield is not passed along to intelligence analysis cells on the battalion staff.

Army Doctrine

Battle tracking (not icon tracking) operations are outlined in Field Manual 3-21.20, *The Infantry Battalion*; http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/fm3_21x20.pdf

See also FM 6-0, *Commander and Staff Organization and Operations*; http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN3747_FM%206-0,%20C2%20Incl%20-%20FINAL%20WEB.pdf

Best Practices Recommended by OC/Ts

Establish an SOP that allows the battalions to establish and define the system they use to battle track subordinate and adjacent units. Once they establish the products they need for a COP, it should be captured in their command post SOP. Additionally, battalion staffs need to refine the duties and responsibilities of the main CP personnel, to include specifying which personnel are responsible for updating each portion of the COP. Battalions should track subordinate units down to platoon. The battle captain and the battalion executive officer should hold individuals accountable for updating their portion of the COP.

Chapter 4
Army Tactical Task 5.9
Conduct Cyber Electromagnetic Activities

Trend: Units Are Challenged to Conduct Cyber Electromagnetic Activities

A. Integrate offensive cyber operations (OCO)

B. Conduct defensive cyber operations (DCO)

This trend has 16 total observations, including seven on offensive cyber operations and four on defensive cyber operations. Most of these observations occurred at the cyber electromagnetic activities (CEMA) support to corps and below rotations at the National Training Center. Other observations are from the Joint Multinational Readiness Center. Units with support from U.S. Army Cyber Command (ARCYBER) during their home station training, as expected, performed better during combat training center (CTC) rotations because of improved knowledge about cyber and electromagnetic spectrum capabilities, allowing them to integrate CEMA into operations more effectively. These CEMA rotations highlighted the need to provide more tools to the brigade combat team's network defense personnel across the U.S. Army and improve equipment and doctrine for offensive cyber operations.

A. Integrate Offensive Cyber Operations

An area that challenges brigade combat teams (BCTs) is the integration of offensive cyber operations. The OCO capabilities are just coming into existence at the BCT level, and the pilot program has shown there are changes needed to doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF) to increase the effective use of cyber enablers in the fight. These trends are directly related to the integrate requirements and capabilities topic discussed in Chapter 1. Understanding cyber capabilities and then integrating them into the fight present a new challenge. Many leaders and staff officers have little or no experience in cyber at the tactical level or any other level. Expeditionary cyber equipment is needed to make effective use of offensive cyber capabilities at the tactical level. Units become partially effective at integrating offensive cyber capabilities if they have been part of the pilot program for cyber at the CTCs and cyber capabilities have been taught to the unit by the ARCYBER training team during the home station train-up. Most units will lack training and experience in offensive cyber capabilities because this program is still relatively new. If the BCT commander and staff have not trained with the cyber capabilities previously,

Integration and effective use of offensive cyber capabilities will continue to be a challenge and needs leadership and institutional emphasis to improve.

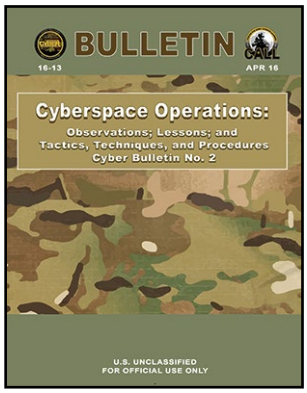
Army Doctrine

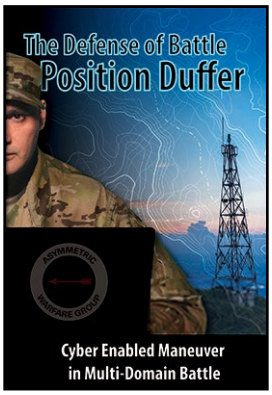
See newly updated doctrine in Field Manual 3-12, *Cyberspace and Electronic Warfare Operations* (April 2017), at http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN3089_FM%203-12%20FINAL%20WEB%201.pdf.

CALL and Asymmetric Warfare Group Resources

For more information, see CALL Bulletin 16-13, *Cyberspace Operations: Observations; Lessons; and Tactics, Techniques, and Procedures* (April 2016); https://call2.army.mil/toc.aspx?document=7375 (Common Access Card required).

See also AWG publication *The Defense of Battle Position Duffer: Cyber Enabled Maneuver in Multi-Domain Battle*; https://call2.army.mil/toc.aspx?document=7437 (CAC required).





or at least been taught about the capabilities and cyber mission sets in their professional military education (PME), the chances of successful integration are low. Integration and effective use of offensive cyber capabilities will continue to be a challenge and need leadership and institutional emphasis to improve. As more units conduct decisive action rotations at the CTCs with cyber capabilities, personnel will become more familiar with offensive cyber capabilities, limitations, and likely mission sets. The institutional Army will need to acquire and field expeditionary cyber equipment to achieve success in tactical-level offensive cyber operations.

The commander should only request the effect and let the subject matter experts pair the correct capability to meet the commander's intent.

Lessons and Best Practices Recommended by Observer–Coach/Trainers

Operators need to be vigilant about establishing an optimal collection and attack position that maximizes support to a BCT's scheme of maneuver. If the operator identifies that the position is sub-optimal, the operator should inform the maneuver unit and request authorization to move to a more advantageous position. The OCO teams should also build a standard load that allows for maximum flexibility to collect and attack from any location without any additional resources.

The U.S. Army needs to develop reliable methods of conducting cyber reconnaissance in denied areas, to include increased sensor platforms and more powerful operator equipment. There is a need to create tactical cyber authorities that allow cyber teams to collect, process, and disseminate data at a level of classification commensurate with the maneuver operations they support, rather than treating everything as top secret sensitive compartmented information (TS/SCI) by default. These authorities would allow expeditionary cyber teams to circumvent unreliable TS/SCI communication systems and would allow the execution of cyber fires in a tempo consistent with what is required for a decisive action fight. The U.S. Army can improve OCO team effectiveness by equipping expeditionary cyber teams with appropriately classified communication platforms that can capably transmit large amounts of data over long distances. Equipping cyber teams with an independent communications package will enable mission command of cyber effects.

OCO and EA should be considered within the targeting process as preparatory fires as well as an aspect of concentration against the enemy decisive point.

The U.S. Army should facilitate the integration of cyber intelligence and effects with a maneuver force that operates at the secret level. The U.S. Army should also continue to augment supported tactical units with a dedicated cyber intelligence element that contains trained military occupational specialty 35Qs.

PME should reinforce effects-based capabilities at all echelons for cyber. The commander should only request the effect and let the subject matter experts pair the correct capability to meet the commander's intent, much like lethal targeting using indirect fires.

As the primary CEMA planners on the BCT staff, electronic warfare (EW) personnel need to continue to develop understanding of how to employ OCO and electronic attack (EA) in tactical operations. Electronic warfare is one of the eight forms of contact according to Army Doctrine Reference Publication (ADRP) 3-90. Cyberspace operations should also be considered. OCO and EA have the capability to desynchronize enemy operations through disruption of mission command and intelligence reporting. OCO and EA should be considered within the targeting process as preparatory fires as well as an aspect of concentration against the enemy decisive point. OCO and EA can isolate enemy elements, assist in their destruction when synchronized with long-range fires and air support, and provide obscuration before a critical operation.

DOTMLPF Recommendations

Doctrine: Update doctrine concerning offense and defense (Army Doctrine Publication [ADP] 3-90, *Offense and Defense*; ADRP 3-90; FM 3-90-1), to include cyberspace operations as a form of contact along with electronic warfare.

Training: Brigade combat team EW personnel require more training on effects and capabilities of cyberspace operations as well as integration into tactical maneuver.

Leadership and Education: Maneuver Center of Excellence (CoE) and Cyber CoE should include instruction on cyberspace operations and EW as forms of contact during offensive and defensive operations.

In decisive action, the integration of conventional and unconventional forces truly leverages terrain and enemy considerations into the BCT's operations. The expeditionary cyber team identified and improved its technical skills to provide advanced cyber reconnaissance where tactical forces did not have freedom of movement. The human intelligence (HUMINT) operations allowed the BCT to access denied areas held in enemy strongpoints that supported future planning for cyber effects in support of the BCTs priority intelligence requirements (PIRs).

BCT fires planning staff would benefit from a mechanism to assign targets to the expeditionary cyber team (ECT)-provided cyberspace capabilities. As an example, the fire support element (FSE) with the BCT S-2 overlays broad named areas of interest (NAIs) on population centers with templated computer networks. The NAI size should not exceed the ECT's collection capability;

that is, if the cyber–intelligence, surveillance, and reconnaissance (C-ISR) capability can only collect within 700 meters, than the NAI should not exceed a 700-meter radius. If C-ISR is desired over the whole population center, then NAIs should be staggered to accommodate. When hostile content or intent is discovered within the NAI, it becomes a targeted area of interest and the ECT aligned against it becomes the firing platform. The FSE should sub-categorize the FSE targeting block and designate a portion for targets developed for cyber fires; that is, out of the FSE target block of AE0001-9999, portion AE0900-0999 is allocated for cyber use.

It is recommended that Fires CoE evaluate fires doctrine changes to reflect cyber tasks as part of division fire support tasks. Also, Fires CoE should consider updating training at all echelons of fire support, to include cyber effects and capabilities, so units are better prepared to synchronize fires in support of a commander's scheme of maneuver.

Establish and enforce a recurring CEMA working group that includes the BCT S-2, S-6, fire support officer, electronic warfare officer, CEMA lead, and OCO planner. The intent of the meeting is to establish a common operational picture in cyberspace that includes depicting adversaries both physically and logically, identifying blue forces' critical infrastructure and key resources, and displaying network topologies in the area of operations. In addition, each warfighting function should receive training that depicts how to integrate and employ cyber capabilities at the BCT level.

The BCT's expeditionary cyber team that is task-organized into four cyber teams was effective to support operations. Limitations included logistics, communications, terrain, and time — all essential to coordinate cyber effects. The tactical employment across four maneuver battalions in company/platoon formations requires dedicated time to inform the force on the true limitations and constraints to employ cyber capabilities. Integration should occur during all phases of the BCT's collective training, to include field training exercises and command post exercises. Training should emphasize reporting to both the BCT and battalion command posts. The development of a cyber reporting format and the utilization of the operations and intelligence (O&I) net should improve communication across the task force.

B. Conduct Defensive Cyber Operations

An area where BCTs are challenged is defensive cyber operations. The augmentation of cyber personnel to the BCT upgrades the BCT's defensive posture significantly. While this augmentation of personnel is not part of the BCT modified table of organization and equipment (MTOE), the tools they have can be given to the BCT S-6 personnel to increase the cyber defense of all BCTs. Additional training of BCT S-6 personnel at PME with the right tools can reverse this trend.

Lessons and Best Practices Recommended by Observer–Coach/Trainers

The augmented personnel proved to be combat multipliers for the BCT, allowing it to improve its already strong firewall. Their analytic skills and knowledge of additional security monitoring tools enabled the BCT to distinguish friendly from suspicious anomalous activity. The combined efforts of the BCT S-6 and embedded Soldiers prevented the cyber opposing forces from advancing beyond network reconnaissance. Had the BCT's firewall been penetrable, the specialized skills of the embedded Soldiers would have been relied upon much more.

Not all BCTs and firewalls are created the same. The Army should not expect similar results across the force. The Soldiers' collective specialized skills demonstrated at the CEMA support to corps and below pilot program provide evidence to support changes to the MTOE of the BCT S-6 section.

As the units continue to become more proficient at hardening networks, training and tools are required to keep the world-class cyber opposing force one step ahead of the blue forces.

The CEMA working group (WG) should collectively develop a cyber situation template that integrates intelligence, fires, targets, blue space/gray space/red space infrastructure, and enemy intent. As part of integration with the WG, the DCO team should help drive product development that can be used by the BCT S-6. This should also help build a critical infrastructure order of merit list that will help the BCT S-6 transition from Department of Defense information networks operations to DCO when necessary.

DCO planning must be synchronized with S-6 planning as part of the BCT's military decisionmaking process (MDMP). Without DCO reach support, the defensive support team (DST) is limited in available defensive capabilities. Any DCO support to the BCT must include a capability to focus defense on key mission command systems or key terrain in cyberspace.

S-6 and DST Soldiers' knowledge of the network security threats and the hacker methodology enables them to conduct their own predictive analysis. This should result in enough knowledge to tailor the network defense posture appropriately.

Chapter 5
Army Tactical Task 5.3 Conduct Knowledge Management and Information Management

Trend: Units are Challenged to Conduct Knowledge Management and Information Management

A. Display and disseminate the common operational picture (COP)

B. Conduct information management

There were 15 improve observations (out of 302) pertaining to this task, two-thirds of which related to display and disseminate the COP. There were five observations on conduct information management.

A. Display and Disseminate the COP

An area in which brigade combat team (BCT) and battalion staffs are challenged is the display and dissemination of the COP. The biggest issue is defining what information needs to be in the COP for the commander to make decisions, codifying this into a tactical standard operating procedure (TACSOP), and enforcing its use during all training. During high operations tempo, everyone needs to know where to find the information needed to support decision making and execution. Some of the considerations are the requirements to have both analog and digital COPs and the training to keep both updated. This relates to the trend on use and enforcement of unit TACSOPs that clearly delineate who is responsible for updating the COPs and how often. Material issues also contribute to this trend as not all warfighting functions in the main command post (CP) have a Joint Capabilities Release (JCR) tactical operations center (TOC) kit and therefore sections must share the use of them. This reinforces the need for analog COPs, as the combat trains command post is authorized even fewer digital systems and must be prepared to assume the fight when the main CP displaces.

Battalion executive officers (XOs) and operations sergeants major should take ownership of the battalion COP. An effort must be made during home-station training to develop an effective method for maintaining a COP to increase shared understanding across the formation.

Best Practices Recommended by Observer–Coach/Trainers

The primary observed reason for this difficulty is the lack of available JCR systems, specifically JCR TOC kits, to the BCT staffs. Armored brigade combat team (ABCT) headquarters are authorized two AN/GYK-62 variants (CP kits) for the plans cell and tactical command post (TAC) current operations (CUOPS), while Stryker brigade combat teams (SBCTs) are authorized five variants for CUOPS, sustainment and TAC CUOPS. Some units cover this gap by "remoting" vehicle-mounted systems into the CP and or pulling systems from vehicles to create non-standard stand-alone systems. However, these approaches are unit-specific and temporary solutions that are often hindered by the need to utilize the "host" vehicle or lack of

additional cables to remote the systems. Each warfighting function (WfF) in the main CP benefits from dedicated access to a Force XXI Battle Command Brigade and Below (FBCB2) system to allow them to create and disseminate graphic control measures (GCMs)/overlays, update locations of friendly units that do not have position location information (PLI) capability (i.e., scout observation posts), and disseminate the location of friendly or enemy obstacles/minefields/chemical effects using the provided battle report and auto-post functions of the FBCB2. These challenges, if not overcome, will continue to hamper BCT headquarters from achieving a shared understanding due to their inability to disseminate critical information. Access to FBCB2 systems also increases the BCT headquarters' ability to communicate with subordinate echelons via flash, immediate, priority, and routine messaging, which further enhances their primary, alternate, contingent, and emergency (PACE) communications plan. At the conclusion of every rotation, OC/Ts use an objective instrumentation system to show the rotational training unit that its headquarters had situational awareness of a friendly unit, friendly/enemy obstacle or minefields, chemical munition effects (persistent or non-persistent), or enemy forces, but failed to pass the information down to the vehicle commander level. Lack of situational awareness at the tactical level leads to fratricide or destruction from enemy engagement that could have been prevented.

The lack of situational awareness is the direct result of the lack of an established SOP for CP operations. In particular, units lack an SOP for the use of digital systems. The CP personnel must have an understanding of how they are to receive, distribute, and analyze information, submit recommendations, and integrate and synchronize resources with their digital systems. Individual staff sections often develop products and maintain information separately, often on maps of different scales and in different locations, leading to a lack of shared understanding across the battle staff and diminishing the ability of key leaders to effectively surmise the situation and make critical decisions.

To ensure each WfF has dedicated access to JCR, adjust/increase the modified table of organization and equipment (MTOE) authorization of JCR TOC kits for SBCT headquarters from five to eight, and distribute per below, at an approximate cost of $48,000 per SBCT. Adjust/increase the MTOE authorization for ABCT headquarters from two to eight, at an approximate cost of $96,000 per ABCT.

- **CUOPS Section:** Two each (battle track and message traffic)
- **Intel Cell/S-2X:** Enemy situational template (SITTEMP)
- **Plans Cell:** Build WfF GCM overlays during planning
- **Fire Support/Protection — Air Defense Airspace Management/Brigade Aviation Element (ADAM/BAE):** Dissemination of airspace coordinating measures (ACMs)
- **Movement and Maneuver Cell:** Obstacle and chemical information
- **Sustainment — S-4/Medical:** GCM creation and tracking
- **Tactical CP CUOPS:** Battle track

B. Conduct Information Management

The TACSOP entries should address manning, roles and responsibilities, reports and formats, orders and graphics sharing, and data management. The SOP should also address maintenance of an analog COP.

Emphasize JCR/Blue Force Tracker (BFT) readiness tracking and exercise existing JCR/BFT systems when generating graphic control measures in a home-station training environment. Use a COP that works for subordinate leaders two echelons down. For most battalions operating in a decisive action environment, JCR/BFT systems are the best medium for a battalion-level COP because both company- and platoon-level leaders have these systems available on their mounted combat platforms. Accurate analog graphics must still be developed to facilitate execution by dismounted forces and attachments that do not have JCR/BFT capabilities. Units must also bring applicable JCR monitor extension cables, monitors, and/or JCR/BFT CP kits to facilitate monitoring the JCR/BFT COP in the CP while JCR operators simultaneously perform duties receiving/transmitting JCR chat messages on a separate monitor/screen system. Units at the battalion and lower echelons should not rely on Command Post of the Future (CPOF) for their COP because the bandwidth for transferring graphics from CPOF to JCR or vice versa is not supportable. The only function that is supportable is the capability to pull PLI for friendly units from JCR to CPOF (minus graphics).

Decisive action and effective mission command require shared understanding and decentralized planning and execution.

Brigade and battalion CPs should conduct staff exercises throughout the course of field training with injects that would require leaders to maintain situational understanding (CAT 63-1-4048) and establish a COP (Task 150-MC-5315). Field artillery battalion fire direction centers must continue to use their equipment as designed. This includes the JCR (TM 11-7010-326-10) and the CP system software user's manual while executing collective task 06-2-1063 (establishing a field artillery operations center) and its supporting tasks and drills. Units should continue to train and exercise all the capabilities of their equipment during the course of their field training exercises to maintain proficiency on the tasks associated with employing it.

Each battalion task force should choose a standard map for all operations with a common scale that will be used by all subordinate organizations (typically, this is a 1:50,000 topographical map). Once an appropriate map is selected and standardized throughout the task force, the unit can begin to develop acetate overlays that are properly labeled by date, operation, etc. Overlays to consider, though not all inclusive, would be an operations overlay (Annex C, Appendix 2), a fire support overlay (Annex D, Appendix 1), a sustainment overlay (Annex F, Appendix 1, Tab A), an obstacle overlay (Annex G, Appendix 1, Tab A), and an information collection overlay (Annex L, Appendix 2). This same information can be developed in digital systems as overlays that can be turned on and off as the mission requires. The organization should also determine the best method of displaying administrative data to include commander's critical information requirements (CCIRs), significant activities, aircraft status, crew status, forward arming and refueling point (FARP) status, ground maintenance status, upcoming missions, and other key information the commander and battle staff require in order to make decisions.

Decisive action and effective mission command require shared understanding and decentralized planning and execution. This is a shift from the way operations have been conducted in the counterinsurgency environment, when companies relied on their parent units to conduct the majority of mission planning, including detailed operations and intelligence briefs. Company commanders and platoon leaders must now maintain the same level of understanding as the battalion staff regarding missions.

Troops need to layer digital graphics the same way analog graphics are layered to ensure subordinates can "lift the graphics off" if necessary.

Army Doctrine

See Training Circular 3-25.26, *Map Reading and Land Navigation*, at https://www.apd.army.mil/epubs/DR_pubs/DR_c/pdf/web/tc3_25x26.pdf (Common Access Card required).

Having a system for creating and disseminating analog graphics is a lost art that needs to be trained and tested in a time-constrained environment at home station. It is simple for all leaders to have current graphics when units occupy a tactical assembly area for 24 hours or more during troop leading procedures. However, spread that same troop over 10 kilometers during a security mission and the problem of disseminating graphics becomes exponentially harder. There are three steps to creating a map overlay: orienting the overlay material, plotting and symbolizing the detail, and adding the marginal information. Tracing the grid intersections in two opposite corners is the most crucial part of ensuring the overlay remains oriented in the correct position. Plotting the detail is simply creating the graphics; use standard military symbols. The most commonly overlooked step is adding the marginal information as close to the lower right hand corner as possible. This includes, but is not limited to: the title, time and date, map reference data, author, legend, and security classification. A big reason for not having current graphics is last-minute changes by the troop, squadron, or brigade. Troop commanders are hesitant to push out graphics because they are afraid of subsequent changes. There needs to be a "cut-off time" for creating or changing any graphic control measure to eliminate friction and ensure subordinate elements have time to disseminate accurate information across the battlefield. Once graphics are created, prior to dissemination, there needs to be a system of approval to certify accuracy and quality. At the troop level, it should be the commander who is the final stop before graphics are pushed to the platoons. When units are able to have current graphics in all leaders' hands, situational awareness and understanding of the mission are common across the unit. This allows the troop to create a common operational picture.

Knowledge Management. The other area in this trend that units are challenged with is knowledge management (KM). Without an authorized KM position in the MTOE, the battalion or BCT must assign this as an additional duty – often the S-6 or one of his/her subordinates is assigned this duty. However, the XO of the staff must enforce knowledge management from his/her staff to ensure the right information, data, analysis, or knowledge is accessible to enable decision-making. This trend is related to the need for a unit to have a TACSOP and use it. Knowledge management and information management affects situational understanding, conducting the operations process, information collection and many more tasks and processes. Knowledge management goes beyond standard naming conventions, correct labeling of hierarchy trees in CPOF, and other basics. It requires the staff to understand how the commander makes decisions, in which format or medium the information needs to be so it is understood and supports decision-making, and how to disseminate the decisions and a COP to display them.

Best Practices Recommended by Observer–Coach/Trainers

The duty of managing enterprise services includes the responsibility to monitor performance, manage change, and manage the backup process for all virtual servers. Performance monitoring using systems center operations manager would provide situational awareness on the health of services and allow them to be more proactive in troubleshooting issues. A change management process would assist the shop in planned outages, scheduled changes, upgrades, and virus scanner updates, etc. Implementing these processes would help ensure standard methods and procedures; efficient and prompt handling of incidents, minimizing impacts; and risk reduction, minimizing friction points which could lead to loss of services. Information assurance (IA) teams should develop a solid SOP, battle drills, policies, and an IA working group to identify cyber threats and IA issues. In addition, IA teams should educate the staff on cyber threats and what to do in the event of a cyber attack. This could be done by posting incident flyers and publishing IA-related fragmentary orders to address concerns and ensure subordinate units are in compliance. The IA team should work closer with the network operations team to ensure cyber threats are addressed quickly and the proper measures are taken to remediate security gaps.

Army Doctrine

See Army Techniques Publication 6-01.1, *Techniques for Effective Knowledge Management*, at http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/atp6_01x1.pdf.

With the removal of the knowledge management officer and the S-7 from a BCT staff's MTOE, there is no staff proponent responsible for integrating and synchronizing a BCT's information-related capabilities (IRCs) and knowledge management issues.

Utilize the BCT civil-military operations planner (S-9) as the synchronizer and integrator of all information-related capabilities. The S-9 is the most senior and experienced BCT staff officer who is primarily focused on engagement. Furthermore, the S-9 is the primary staff proponent for planning stability operations in decisive action. As such, the S-9 should be responsible for synchronizing the IRCs organic and attached to a BCT, including information operations, military information support operations, civil affairs, public affairs, and electronic warfare.

Fire support TACSOPs at echelon should establish standardized formats for call for fire, spot reports, and operating location reports, through JCR chat to consolidate information in one line and streamline the processing of information. This will reduce fire mission processing times and provide greater situational understanding for adjacent units.

Units must maintain analog copies of trackers and reports such as DA Form 1594 to safeguard against the failure of digital means. Units should adhere to a "three-click rule" (no more than three computer mouse clicks) when organizing files using SharePoint information systems.

Chapter 6
Army Tactical Task 3.2
Provide Fire Support

Trend: Units Are Challenged To Provide Fire Support

A. Conduct counterfire operations

B. Employ fires

Six percent of all improve observations (19 out of 302) pertained to this task, and were split almost evenly between conduct counterfire operations and employ fires. These trends also relate to the trends conduct the operations process and conduct command post operations.

Targeting is the key component in getting fires in the right place at the right time to achieve the desired results.

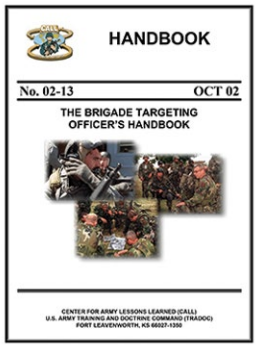
In order to be successful in providing fires, units need to provide collective and coordinated use of Army indirect fires, joint fires, and electronic warfare to include nonlethal capabilities through the targeting process to support operations against surface targets. Targeting remains a critical element in providing fire support to the maneuver commander. In many ways, targeting is the key component in getting fires in the right place at the right time to achieve the desired results. Targeting encompasses all elements of fire support: artillery, air support, and organic indirect fires. Just as the maneuver commander seeks to coordinate, integrate, and synchronize all warfighting functions, the targeting officer seeks to do the same with fire support. Coordination and synchronization of indirect fires is a complex and diverse task. To bring fires at the time and place necessary to influence the outcome of battle, every part of the fire support community, from the maneuver commander to the forward observer to the cannoneer on the gun line, performs myriad tasks. Without all parts functioning correctly, timely and accurate fires cannot occur.

A. Conduct Counterfire Operations

Units conduct counterfire to destroy or neutralize enemy weapons, which includes counter-battery and counter-mortar fire. Counterfire will protect friendly forces, combat functions, and facilities from enemy indirect fires by disrupting, neutralizing, or destroying enemy indirect fire weapons systems. Radar planning and employment are challenges to rotating units because guidance for the positioning and employment of radars to the target acquisition platoon leader and counterfire officer does not occur on a consistent basis. Counterfire is a function the force commander must address and is not solely the function of the fire support coordinator (FSCOORD). Emphasis on the counterfire process enables the brigade combat team (BCT) to gain freedom for maneuver by destroying or neutralizing enemy indirect fire capabilities. The counterfire process is proactive, reactive, or a combination of both. Units habitually spend most of their time in the reactive mode and have little to no effect on enemy weapons systems. Detailed target pattern analysis developed at the counterfire cell and passed to the BCT targeting cell has the potential to pay dividends when used for proactive counterfire. This pattern analysis conducted by the counterfire officer

CALL Resource

The BCT is the first level of command where a commander has the opportunity and requirement to synchronize all battlefield operating systems (now warfighting functions). The BCT has the capacity to deliver a wide spectrum of fires throughout the battlefield. For more information, see CALL Handbook 02-13, *The Brigade Targeting Officer's Handbook* (October 2002); https://call2.army.mil/toc.aspx?document=79 (Common Access Card required).



and assistant counterfire officer leads to the development of named areas of interests (NAIs) that become target areas of interest (TAIs) when synchronized with an intelligence, surveillance and reconnaissance (ISR) platform to confirm or deny enemy activity. After the confirmation of enemy activity, units that focus on reactive counterfire typically do not have assets to engage targets due to range limitations or because targets are denied due to improper utilization of the high-payoff target list (HPTL).

Detailed target pattern analysis developed at the counterfire cell and passed to the BCT targeting cell has the potential to pay dividends when used for proactive counterfire.

Techniques and Procedures Recommended by Observer–Coach/Trainers

The FSCOORD or fire support officer (FSO) must engage the brigade commander in an effort to establish guidance for the employment of radar assets and the development of radar zones. Personnel involved in planning fire support must have a clear understanding regarding capabilities, employment techniques, and radar zone management in order to establish an effective radar plan. As the fire support plan develops, the FSO must understand how counterfire fits into the BCT fight and must ensure that delivery assets are available when radars detect enemy indirect fire. The incorporation of radar zones and the briefing of the radar plan during rehearsals are critical steps allowing units to identify gaps in coverage, mitigate friction points, and ensure that delivery assets are available for counterfire as required.

B. Employ Fires

Units employ fires weapon systems to achieve a specific effect on a target. Units provide collective and coordinated use of Army indirect fires, air and missile defense, and joint fires throughout the targeting process to support operations against surface targets (Field Manual [FM] 3-09, *Field Artillery Operations and Fire Support*).

Brigades come to the combat training centers (CTCs) without a developed targeting methodology to integrate the brigade's fires into operations. The brigades do not share a common understanding of targeting as an integrating process, and sometimes mistakenly use it as a planning process for operations. According to Army Techniques Publication 3-60, *Targeting*: "Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. The emphasis of targeting is on identifying resources (targets) the enemy can least afford to lose or that provide him with the greatest advantage, then further identifying the subset of those targets which must be acquired and attacked to achieve

The BCTs should always train at home station with a set battle rhythm that includes a targeting working group, a targeting decision brief, and an OPSYNC.

friendly success. Denying these resources to the enemy makes him vulnerable to friendly battle plans. These resources constitute critical enemy vulnerabilities. Successful targeting enables the commander to synchronize intelligence, maneuver, fire support systems, nonlethal systems, and special operations forces by attacking the right target with the best system at the right time." Furthermore, brigades tend to fail to anticipate the time constraint of the missions at the CTCs, and are basing the brigade's experience on a much longer time between targeting cycles.

Successful units arrive at the CTC and use targeting methodology that they developed and honed during home station training. The brigade fires cell conducts intelligence preparation of the battlefield and targeting academies, respectively, at home station. Synchronizing these integrating processes is critical to execution of the brigade's operations. The BCTs should train on targeting with all staff members and focus on the fact that targeting is an essential operations process. Therefore, BCTs should always train at home station with a set battle rhythm that includes a targeting working group, a targeting decision brief, and an operations synchronization (OPSYNCH) meeting. If trained, the BCT staff will be able to synchronize assets and identify shortfalls. When shortfalls are identified, the BCT staff must request support from higher headquarters to mitigate those shortfalls.

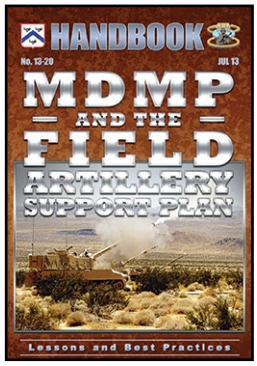
Many units fail to properly plan for the movement of the battalion mortars to support the operation with indirect fires.

On the other hand, company fire support teams are generally proactive in bottom-up refinement of targets, assisting higher unit headquarters that are struggling to produce robust fire support plans. Fire support planning includes developing fire plans (target list worksheets, fire support execution matrix, and a scheme of fires) and integrating fire support into the commander's scheme of maneuver as well as executing the plan in a timely manner. Although brigades and battalions often struggle with fire support planning, those shortfalls are somewhat mitigated by the ability of company and platoon fire support teams to refine or submit fire support products. Typically, the sharing of bottom-up refinement with the higher headquarters is lacking or is submitted so late that the disbursement of those refinements to other units is not possible. Basing refinements on battle positions, engagement areas, and available observation post and/or platforms allows for synchronization and the execution of all fires.

Battalion FSOs consistently fail to produce a fire support execution matrix (FSEM) during the military decisionmaking process (MDMP). The lack of an FSEM causes a lack of synchronization of fire support assets, fire missions, and employment of mortars throughout the execution of operations. Battalion FSOs often do not develop an FSEM because they focus all of their efforts on developing and refining a target list worksheet (TLWS) throughout the MDMP. The targets are important but the TLWS does not inform subordinate fire supporters when to execute targets in time and space. Specific targets need to be executed and fire support assets need to be employed during specified times and/or the setting of specified conditions by phase of the operation in order to support the maneuver plan. The FSEM is a product that allows the battalion FSO to show subordinate leaders, by phase, what targets to execute. **The FSEM must list each pre-planned target by phase along with the subordinate units responsible as the primary and/or alternate observer.**

CALL Resource

The first step of the military decisionmaking process is to receive the mission from higher headquarters, usually in the form of a written order. However, prior to this first formal step, the field artillery battalion must initiate planning in conjunction with the supported maneuver brigade as soon as it receives the initial brigade warning order. Staff officers must "cross talk" with their respective counterparts on the brigade staff to acquire as much information as early as possible regarding the upcoming operation. For more information, see CALL Handbook 13-20, *MDMP and the Field Artillery Support Plan* (July 2013), at https://call2.army.mil/toc.aspx?document=7097 (CAC required).



The FSO must specify primary and alternate observers on the FSEM to ensure target observation is achievable. The FSEM should also include a clear breakdown by phase according to subordinate unit on who has field artillery and mortar priorities of fire. Additionally, the FSEM is a product that clearly states where the battalion's mortars move throughout each phase of the operation. Many units fail to properly plan for the movement of the battalion mortars to support the operation with indirect fires. The FSEM allows the battalion FSO to ensure mortars are in mortar firing points (MFPs) that support the execution of mortar targets and preferably with two-thirds to three-quarters of the mortar maximum effective ranges forward of the line of troops. According to Army Tactics, Techniques, and Procedures 3-21.90, *Tactical Employment of Mortars*, "a mortar unit leader and a battalion FSO have a close relationship. They must both understand a battalion or company commander's intent for fires, and they must work closely to ensure it is properly executed." The battalion FSO must ensure the mortar plan is on the FSEM, so that all fire supporters within the battalion understand where the mortars are located in time and space. The inclusion of the battalion mortars on the FSEM must be developed with a clear understanding of the battalion commander's guidance for fires and guidance for the tactical employment of his mortar platoon.

Best Practices Recommended by OC/Ts

By using the FSEM during the war game, the battalion FSO can identify issues in the scheme of fires supporting the scheme of maneuver, adjust the observation plan, and identify issues in the movement and positioning of mortars.

At a minimum, units should have a standardized shell FSEM in their unit SOP. Development of the FSEM must occur early during the MDMP and then refined during course of action (COA) analysis in conjunction with development of the battalion's synchronization matrix. Developing the FSEM early allows the battalion FSO to refine the FSEM throughout MDMP. A best practice is for a battalion FSO to execute the MDMP war game using his FSEM. By using the FSEM during the war game, the battalion FSO can identify issues in the scheme of fires supporting the scheme of maneuver, adjust the observation plan, and identify issues in the movement and positioning of mortars. Lastly, the FSEM is a pre-formatted tool for the battalion FSO and all fire supporters to use during the combined arms rehearsal (as well as the battalion fires rehearsal), facilitating quick reference of all information related to fire support by phase of the operation. FM 3-09 guidelines for fire support recommend using the fire support execution matrix to brief the fire support portion of the operation order (OPORD) during rehearsal and rehearsing the fire support portion of the OPORD directly from the FSEM. See Figure 6-1 (next page) for an example.

Phases	I (LD)	II (Attack I)	III (FPOL)	IV (Attack II)	V (Defense)
BN	4 x F16 Sorties	2 x F16 Sorties	2 x F16 Sorties	4 x F16 Sorties	4 x F16 Sorties
A Co. 1-12 IN	FA POF A1B, AB1000 FPF Blackbird 2 x F16 Sorties 2 x AH 64s Shadow	A2B, A3B, AB1001, AB 1002 4x AH 64s	AB1004 AB 1005		
B Co. 1-12 IN			FA POF AB2001, AB 2002, AB2003 6xF16 Sorties 2 x AH 64s Shadow	B2B, B3B, AB2004, AB 2005 4x F16 Sorties 4 x AH 64s	
C Co. 1-12 IN					FA POF FPF Redbird 2 x F16 Sorties 2 x AH 64s Shadow
BN MTRS	MFP 1 → MFP 2 Trigger for move is A Co PL Red		MFP 2 → MFP 3 Trigger for move is A Co PL Blue		
2-32 FA	A: PA 1, PA2 B: PA 4, PA 5	A: PA 6, PA7 B: PA 8, PA 9	A: PA 10, PA14 B: PA 11, PA13	A: PA 1, PA5 B: PA 4, PA 8	A: PA 1, PA6 B: PA 4, PA 9
Attack Aviation	2 x AH 64s	4 x AH 64s	2 x AH 64s	4 x AH 64s	2 x AH64s
CAS	6 x F16 Sorties				
FSCMs	CFZ : 1,2 CFL: PL Blue FSCL: PL Red NFA: 21, 13	CFL: PL White NFA: 21,13	CFL: PL Green NFA: 11,17	CFL: PL Orange NFA: 11,18	CFL: PL Pink NFA: 19,20
FA Org for Combat			Restrictions		
-B/1-6 FA (HIMARs) (GS to BCT) - 1-2 FA (R to BCT) - 1 B/1-12 attached A co 1-12 IN (I, II); attached to C Co 1-12 IN (V)			- No DPICM on OBJs or MSRs - FASCAM release is maintained at DIV level		
Ammunition Available			Communication Plan		
- B/1-6 FA GMLRa, 112 x rockets - B/2-32 FA: 236 x HE 17 Excalibur, 46 x Illum, 64 x Smoke - 1-2 FA: 168 x HE, 68 x Smoke			- All GS and R fires requests will be submitted through BCT FSE on BCT Fires Net - All CAS requests will be submitted through JTAC at BCT		
Refinement Cutoff: H-6			FS Rehearsal: 13 0900 at BCT HQ		
Coordinating Instructions					
-All BN Targets and refined BCT targets need to be submitted to BNFSE NLT 130200. -Voice and digital comms check will be conducted with BCT FSE prior to movement.					

Figure 6-1. Example of a fire support execution matrix.

Throughout CTC decisive action rotations, units have struggled with planning, clearance, ownership, survivability considerations, and actions on contact with their mortar platoons. This has reduced the ability of the task force to effectively mass fires.

Best Practice

Have a leader book for all leaders in the platoon that includes: an OPORD format or shell; established pre-combat checks and pre-combat inspections (PCC/PCIs); and range cards incorporating many of the products outlined in the mortar platoon mission training plan.

A maneuver battalion possesses one organic mortar platoon consisting of four 120mm mortar systems and a fire control system to increase the capability to survive, tactically employ, and occupy mortar firing points. Historically, mortar platoon leaders are senior platoon leaders who are Infantry Mortar Leaders Course (IMLC) qualified and have considerable time as a platoon leader in a maneuver company of armor, infantry, etc. The IMLC, given at Fort Benning, Georgia, focuses on fire direction versus tactical employment, survivability constraints, logistical support, etc. Additionally, mortar platoons at the CTCs are unfamiliar with the mission training plan for the infantry mortar platoon as well as the standards associated with external evaluations and tactical employment and survivability.

Commanders at all levels must fully understand the capabilities and characteristics of their organic mortar platoons as well as their unique training considerations. Additionally, evaluations from outside the brigade combat team/combined arms battalion (BCT/CAB) may improve effectiveness, efficiency, and knowledge, as discussed in ATTP 3-21.90. As the IMLC is a highly limited course, it is recommended that units place increased emphasis on sending 11C-series noncommissioned officers to IMLC to increase technical and tactical proficiency across the mortar platoon and sections serving as the battalion's most timely and responsive indirect fire support asset.

Chapter 7
Army Tactical Task 7.5
Conduct Tactical Mission Tasks

Trend: Units Are Challenged to Conduct Tactical Mission Tasks

A. Attack by fire

B. Clear enemy forces

C. Support by fire

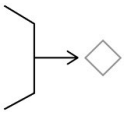
D. Conduct counterintelligence and signals intelligence (SIGINT)

About 4 percent of all improve observations (11 out of 302) pertained to this task, eight of them relating to lethal tasks. There were four significant observations on attack by fire. Clear enemy forces accounted for two observations, and support by fire accounted for two observations. There were three observations on conduct counterintelligence and SIGINT.

A tactical mission task is the specific activity performed by a unit while executing a form of tactical operation or form of maneuver. Tactical mission tasks describe lethal and nonlethal results or effects the commander wants to generate or create to accomplish the mission. They are the what or why of a mission statement. Tactical mission tasks are often given to units as the tasks or purpose of their mission statement. The most critical measure for all tactical mission tasks is if the mission is accomplished (Field Manual [FM] 3-90-1, *Offense and Defense*, Volume 1).

Tactical mission tasks rely on proficiency in fundamental skills for success. Successful units employ a commander-driven operations process providing clear, well-understood commander's intent to form the basis of what the commander wants to do to accomplish the mission. Having a common visualization, especially in a multinational environment, is key to unity of effort. Lethal and nonlethal effects should be planned to support the mission. Tactics involves the employment and ordered arrangement of forces in relation to each other. Tactical-level commanders use combat power to accomplish missions. Direct action by individuals or units accounts for many tactical mission tasks. These tasks may be accomplished using battle drills, weapons employment (lethal activity), or nonlethal activity such as reconnaissance, information gathering, and surveillance. Tactical operations require judgment and adaptation to the unique circumstances of a situation.

A. Attack by Fire



Attack by fire uses direct fires supported by indirect fires to engage an enemy without closing to destroy, suppress, fix, or deceive the enemy (FM 3-90-1).

Engagement Area Development. Companies and platoons frequently lack proficiency in planning a defense and developing the engagement area. Their terrain analysis, positioning of their weapon systems, trigger planning, obstacle planning and emplacement, and employment of direct fire and indirect fire weapons are inadequate. As a result, units are frequently penetrated

and overrun before they can inflict effective fires on the enemy. Their inability to plan for the use of enablers such as engineer assets and associated Class IV barrier materiel or pre-planned fires indicates a lack of adequate home station training.

Direct Fire Planning. Successful maneuver companies are proficient in direct fire planning. This begins with an understanding of direct fire control measures such as target reference points, maximum engagement lines, triggers for direct and indirect fires, and engagement criteria.

Gridded Reference Graphic. A technique used by successful commanders is a gridded reference graphic (GRG). Commanders provide copies of the GRG for leadership down to the team leader level. GRGs need, at a minimum, graphic control measures such as restrictive fire lines, phase lines, and target reference points. GRGs will enable all elements in the company to operate on a common operational picture.

Antitank Weapons Systems. In the defense, many units do not effectively employ antitank (AT) weapons systems at the company level. In defensive operations, various AT systems (Javelins, Carl Gustoff, and TOW) may be organic or attached to infantry companies. Many maneuver companies do not understand how to establish anti-armor positions. They often fail to plan appropriate trigger lines in the employment of their AT weapons. Companies frequently attempt to employ AT systems in keyhole engagements but do not consider minimum arming distances, target detection, vehicle recognition and classification, maximum engagement lines, and enemy vehicle mobility in their planning. As a result, the weapon selection for the designated engagement is incorrect. Time to acquire a target, time of flight, target movement, and total time the target is visible must all be considered for planning keyhole shots. Poor terrain analysis, lack of familiarity with weapon systems capabilities, and poor selection of firing positions create challenges for the employment of AT systems.

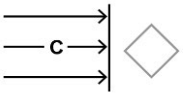
Time to acquire a target, time of flight, target movement, and total time the target is visible must all be considered for planning keyhole shots.

Employment of scout platoons and snipers during the offense has challenged some battalions. Successful units have used their scouts in area and route reconnaissance to identify enemy observation posts, to find key routes to objectives, to identify breach points in enemy defenses, and to guide breach/assault companies to those points. Snipers have been used to destroy key weapon systems crews and disrupt enemy personnel with precision fires. Despite improvements in the employment of scout platoons, their use as a reconnaissance tool has been limited by some units.

Some weapons companies have been successfully employed in platoons or sections moving independently around the battlefield instead of being task-organized to other companies.

War gaming and course of action analysis should include force protection issues with a goal of determining effective countermeasures to enemy actions that will maintain combat power.

B. Clear Enemy Forces



Clearing requires the commander to remove all enemy forces and eliminate organized resistance within an assigned area. Physical conditions of the area affect the specific tactics, techniques, and procedures employed (FM 3-90-1).

Dismounted Enemy. As the Army has shifted focus from counterinsurgency to decisive action, many units have had difficulty with combined arms maneuver-oriented protection tasks. War gaming and course of action analysis should include force protection issues with a goal of determining effective countermeasures to enemy actions that will maintain combat power. Units have shown proficiency in countering improvised explosive devices, vehicle-borne improvised explosive devices, and suicide vests, but they struggle with conventional threat systems, including indirect fires, snipers, chemical munitions, and attack helicopters. Friendly assembly areas, hasty fighting positions, and logistics areas are especially vulnerable to attack. Understanding the operating environment and the enemy threat facing the unit is critical to successfully implement force protection.

In successful units, Soldiers and leaders have made the transition from counterinsurgency operations to decisive action. Companies have addressed the enemy's ability to wage mechanized warfare against a near-peer threat that possesses similar vehicle types and tactics. However, even successful units have underestimated the threat to armored vehicles posed by dismounted antitank teams and have failed to adequately address this threat. Tank crews, in particular, have difficulty locating dismounted teams due to their low signature, ability to use the terrain, and capability to move rapidly after deploying their weapon systems. Companies must deliberately approach contested areas with dismounted infantry forward and armor in support. Experienced units place dismounted infantry on high ground, plot smoke to obscure platoon moves, and preplan indirect fires. The OC/Ts have noted that crew scanning techniques; thorough intelligence preparation of the battlefield (IPB) at the platoon and company levels; adequate terrain analysis, coupled with an enemy situation template; a detailed fire support plan; and tactical patience help to minimize or eliminate the enemy's effective use of dismounted AT weapons.

Mission Command Validation Exercise (MCVE). Despite continuing advances in communications technology, many units struggle to be proficient on internal tactical communications systems at brigade and below. Most units conduct a communications exercise (COMMEX) as part of their reception, staging, onward movement, and integration (RSOI) process. In a COMMEX, the unit validates that its various communications systems are able to communicate with each other. The COMMEX simply confirms that a system is technically operational. Many units struggle to make this happen. A COMMEX does not provide the commander a clear understanding of his ability to exercise mission command. Successful units use an MCVE that focuses on how units will communicate. The MCVE operationalizes communications. It goes beyond a COMMEX by validating standard operating procedures (SOPs) of everything from tactical internet data networks to analog voice networks and how those networks will be used.

A further technique employed in the MCVE is to have all units, especially enablers, validate primary, alternate, contingency and emergency (PACE) plans; exercise how graphics will be shared (common operational picture and parallel planning); determine primary and alternate systems operators; and practice reporting. Including both communications and operations personnel, the MCVE provides the opportunity to exercise both the science and the art of mission command before deployment to the field.

CALL Resource

For more information on communications, see CALL Newsletter 15-18, *Decisive Action Training Environment at the National Training Center*, Volume III (September 2015), Chapters 4 and 7, at https://call2.army.mil/toc.aspx?document=7316 (CAC requited to access).

C. Support by Fire

This task applies when a maneuver force moves to a position where it can engage the enemy by direct fire to support another maneuvering force (FM 3-90-1).

Support by fire can be challenging. Even when initially successful, units must remain flexible in the application of direct fire support. During offensive operations, a unit providing support by fire must move its support position as the supported force moves across an objective. Failure to do so can cause fires that were originally effective to become masked. This is especially relevant in an infantry brigade combat team (IBCT) heavy weapons company. OC/Ts have noted that commanders need to leverage the full spectrum of heavy weapons company capabilities to maximize their firepower, mobility, and long-range surveillance capabilities even after direct fires are lifted. The tube-launched, optically tracked, wire-guided (TOW) improvised target acquisition system can also be used as a reconnaissance tool to assist companies during all operations (especially in urban environments), to include observation in support of indirect fire missions versus threat forces.

When employed, MUM-T has the ability to maximize the combined capabilities of manned and unmanned assets while minimizing their individual limitations to create an asymmetric advantage.

OC/Ts have noted that units can be challenged in the conduct of manned-unmanned teaming (MUM-T) when aviation units conduct support by fire of another maneuver force. The relative stealth and range of unmanned aircraft systems (UAS) integrated with the versatility and lethality of Army aviation rotary-wing aircraft combine to enhance the effectiveness of a maneuver element's offensive, defensive, and security operations. MUM-T enables increased depth and breadth to aviation reconnaissance and facilitates longer persistence over the reconnaissance objective, increased ability to gain and maintain enemy contact, greater survivability, and more options to develop the situation, with options for maneuver, fires, and mission command. When employed, MUM-T has the ability to maximize the combined capabilities of manned and unmanned assets while minimizing their individual limitations to create an asymmetric advantage. MUM-T mission planning allows the rotary-wing aviator to refine engagement area development by utilizing UAS sensors to identify the safest way in and out of enemy weapons engagement zones and to assist in engaging the target from maximum range, either autonomously or via a cooperative engagement.

It is recommended that aviation units conduct MUM-T training as an integral part of unit training and coordinate assets appropriately to support company/troop-level training at home station. This training should be in coordination with supported ground forces before deployments.

D. Conduct Counterintelligence and SIGINT

Counterintelligence (CI) at the tactical level is primarily focused on CI support to protection. The CI assets at the tactical level are instrumental in protecting bases from infiltration, collection, and targeting by foreign intelligence and security services and international terrorist organizations. The decision at which level to employ a CI team is situation-dependent. The risk to the CI assets must be balanced with the need to collect against priority intelligence requirements and to protect the force as a whole. Rules of engagement, status-of-forces agreements, directions from higher headquarters, and the overall threat level may also restrict the deployment and use of CI teams.

Open Source Intelligence (OSINT) Processing, Exploitation, and Dissemination (PED). Units are challenged in the employment of OSINT PED. Proper employment of OSINT PED can significantly improve a commander's understanding of the information environment. The OSINT PED team provides situational awareness of enemy activity during all phases of the operation. The OSINT PED teams must understand the operational context of their collection and determine how to get that information to the maneuver unit on the ground in near real time. OSINT PED supports the entire staff's common operational picture and is not just a cyber enabler (ART 7.5.31, Conduct Intelligence Operations).

Recommendations for Improving OSINT PED Support of BCT Operations. Embed a senior military occupational specialty (MOS) 35F with the OSINT team, which is manned primarily with 35Ps. Ensure MOS 35P languages are matched with the operational target area. Teams operating remotely must maintain situational awareness with current operations graphics, situation templates, common operational picture, and other BCT staff planning tools.

Forensic Analysis. Evidence collection and processing are a challenge for some units. Forensic analysis is important in both intelligence and law enforcement. Units must establish SOPs to ensure collection and processing are accomplished to standard and will hold up under review. Explosive ordnance disposal units, in particular, frequently collect evidence but they have limited capabilities of establishing non-contaminated processing and packaging areas. When evidence is not properly processed, it loses value (ART 7.5.21.4, Employ Forensic Tools).

Units successful in conducting contaminant-free processing of evidence segregate an area for a clean work surface. They identify and assign a responsible individual to be in charge of the processing site and ensure the area is free of any cross-contamination. They must also establish adequate measuring and photographing procedures for the evidence to be processed and sealed.

Army Doctrine

For more information, see Army Techniques Publication 2-22.2-1, *Counterintelligence Volume I: Investigations, Analysis and Production, and Technical Services and Support Activities,* at https://www.apd.army.mil/epubs/DR_pubs/DR_c/pdf/web/atp2_22x2_1.pdf (Common Access Card required), and Field Manual 2-0, *Intelligence Operations,* at https://www.apd.army.mil/epubs/DR_pubs/DR_c/pdf/web/fm2_0.pdf.

Contamination-free identification of key pieces of forensic evidence will yield a product with a greater value for intelligence and legal use.

The SIGINT chief, located in the information collection platoon, must take on the role of special staff officer and coordinate with the BCT electronic warfare officer to determine the type of communications the enemy is using, and correctly assess the threat capabilities during IPB.

Signals Intelligence Collection. Prophet collectors can be effectively employed in support of combined arms maneuver during decisive action operations (ART 7.5.31.4, Conduct Signals Intelligence).

The majority of units that deploy to combat training centers (CTCs) do not successfully employ Prophet (a dedicated all-weather, 24-hour, near-real-time, ground-based tactical signals intelligence and electronic warfare system) as an intelligence collection asset. This is largely attributed to a misunderstanding that SIGINT is a counterinsurgency fight intelligence discipline and is often overlooked, misinterpreted, and underutilized at CTCs. Sensor teams must be employed forward, and have clear task and purpose for each phase. By correctly matching capability to threat, providing clear collection focus and tactical task and purpose to BCT enablers, SIGINT teams can absolutely become a force multiplier in decisive action.

Prophet enhanced sensors have a direction-finding capability within the sensor. Additionally, the sensor has a dismountable digital receiver technology man pack that has effectively replaced the AN/PRD-13 for low-level voice intercept operations. During a recent rotation, the SIGINT teams supported a cavalry squadron by correctly identifying the enemy's encrypted military communication frequency hop set. Once this was identified, the sensors were able to use direction-finding tools to locate enemy emitters and pass locations to reconnaissance elements. By employing the Prophet teams forward on screen lines, the BCT was able to leverage direction-finding capabilities to provide early warning and indications of enemy movement. The BCT and brigade engineering battalion staff must understand that SIGINT can detect and identify military communications of a near-pear threat. The SIGINT chief, located in the information collection platoon, must take on the role of special staff officer and coordinate with the BCT electronic warfare officer to determine the type of communications the enemy is using and correctly assess the threat capabilities during IPB.

Chapter 8
Army Tactical Task 5.4
Control Tactical Airspace

Trend: Units Are Challenged to Control Tactical Airspace. Seven percent of all improve observations (21 out of 302) pertained to this task. This Army tactical task (ART) does not have any sub-tasks. This trend is related to the trends of conduct command post operations and conduct knowledge management and information management. This ART covers how units maximize the combat effectiveness of all tactical airspace users, to include manned and unmanned aircraft systems, munitions, and directed energy systems in support of the operation. Units prevent fratricide, enable responsive offensive and defensive fires, and permit greater flexibility of tactical operations. Units plan, prepare, and execute the unit airspace plan. This ART covers how units continuously assess airspace use and adjust the plan as required to resolve conflicts while supporting commanders' priorities and risk guidance.

Army Doctrine

For more information, see Field Manual 3-52, *Airspace Control* (20 OCT 2016), at http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/FM%203-52%20FINAL%20WEB.pdf.

Brigade combat teams are challenged to adequately plan, synchronize, and integrate airspace to enable fires, Army aviation maneuver, and information collection, and to prevent fratricide (Task 011-300-0006, Integrate Airspace Command and Control into Army Airspace Requirements for the Brigade Combat Team). Brigade staff members have relied on their counterinsurgency (COIN) experience to separate aircraft using restricted operating zones (ROZ) and using ROZs for gun-target lines, commonly called "hot walls." The ROZs often prohibited Army aviation or unmanned aircraft systems (UAS) from maintaining continuous reconnaissance or security, even to the point of breaking enemy contact in order to employ artillery fires or launch small UAS.

Compounding the airspace management issue is the lack of planning and integration of Army aviation into the brigade's maneuver, causing Army aviation to rely on COIN experiences. In a COIN environment, Army aviation would expect to have freedom of maneuver within a brigade's airspace as ROZs were left active 24 hours a day, seven days a week because large-caliber artillery missions were not typically utilized during the latter part of Operation Iraqi Freedom or Operation Enduring Freedom, especially in locations with the potential for collateral damage. Aircrew experience under these operating conditions has led to a lack of airspace understanding. This lack of understanding by aircrews has led to several airspace violations at the combat training centers (CTCs), such as flying through active ROZs, not adhering to air corridors provided in the airspace control order (ACO), or aircrews not relaying intent to the brigade in order to gain the advantage in a battle that would cause aircrews to stray from published ACOs. This lack of airspace understanding is a result of deficiencies in mission command, common air and ground graphics, and rehearsals between the brigade and the aviation task force. Furthermore, this causes delays in artillery fires.

The CTCs have established a divisional airspace plan that serves as the baseline for air operations. In the past, the brigade with a tactical control aviation task force would maneuver Army aviation similar to COIN, utilizing dynamic re-tasking when communications were established,

Army and Joint Doctrine

For more information, see Army Techniques Publication 3-52.1, *Multi-Service Tactics, Techniques, and Procedures for Airspace Control* (April 2015), at https://www.apd.army.mil/epubs/DR_pubs/DR_d/pdf/web/atp3_52x1.pdf (restricted; Common Accesss Card required).

Note: FM 3-52 uses the joint term "airspace control," replacing the Army term "airspace command and control" (AC2). The intent of the terminology change is for Army forces to integrate all airspace users (i.e., Army aviation, fires, close air support, and unmanned aircraft systems) while minimizing adverse impacts. This doctrinal name change is not currently reflected on the Combined Arms Training Strategy (ART 5.4, Control Tactical Airspace).

potentially desynchronizing a subordinate battalion's maneuver or fires plan as discussed earlier. The rotational brigade does not establish airspace, such as air routes/corridors, that would facilitate maneuver of army aviation for sustainment of the brigade, employ attack aviation as a maneuver force, or allow UAS to be utilized for information collection or as another artillery observer.

CTCs' divisional airspace construct, consisting of air corridors, is the baseline airspace that enables maneuver, sustainment, and fires for Army rotary-wing aircraft. Field Manual 3-52, *Airspace Control*, defines an air corridor as a bi-directional or restricted air route of travel specified for use by aircraft. The air corridors at the CTCs provide a baseline airspace plan for the brigade to permit Army aviation to provide sustainment, maneuver, and fires in support of the brigade while permitting freedom of maneuver for transient aircraft moving through the brigade's area. The brigade must coordinate with division to restrict movement along division-owned airspace, particularly for utilizing the brigade's artillery or small UAS.

The brigade's airspace element is the air defense airspace management/brigade aviation element (ADAM/BAE) cell, which integrates the brigade's airspace to include air and missile defense and aviation functions (FM 3-52). The ADAM/BAE manages a working group that facilitates and synchronizes airspace contributions from all elements that perform an airspace collective task. The working group consists of the air liaison officer, airspace element, aviation element, fires cells, tactical air control party, and the UAS element (FM 3-52). Brigade airspace control typically employs airspace coordination areas (ACAs), which are fire support coordination measures to enable attack aviation to establish battle positions, attack or support by fire positions, or holding areas. ACAs are established in a target area to reasonably protect friendly aircraft from friendly indirect surface-to-surface fires (ATP 3-52.1). An ACA is restrictive for fires, not restrictive for aircraft. Additionally, ACAs can be formal (disseminated via fire support channels or airspace control order) or informal (established as required by the ground commander and supporting aircraft). ACAs require a higher degree of dissemination. As a fire support coordination measure (FSCM), ACA graphics are transmitted via fire support channels (ATP 3-52.1) but should also be included on the ACO.

Best Practices Recommended by Observer–Coach/Trainers

Brigades must understand that Army aviation utilizes maneuver graphics and tactical mission tasks (minus those that require a unit to hold terrain) the same way an armor unit would utilize graphics.

Brigades must establish a baseline airspace plan prior to any operation based on mission, enemy, terrain and weather, troops, time available and civil considerations (METT-TC) and the operational environment. Units must understand that the airspace control authority may reside several echelons above, sometimes at the joint forces commander level, and must fit their plan into the airspace control authority's plan to support joint air operations (FM 3-52). At maneuver CTCs, the airspace control authority resides at higher headquarters. Additionally, the brigade must be able to have line-of-sight communications, retransmitted or otherwise, as a primary means to procedurally command and control aircraft within the brigade's airspace.

Brigades must understand that Army aviation utilizes maneuver graphics and tactical mission tasks (minus those that require a unit to hold terrain) the same way an armor unit would utilize graphics. When developing Army aviation maneuver into the brigade's maneuver, airspace should be developed during mission analysis and course of action development as a separate overlay. For example, the brigade wants to utilize attack by fire positions for AH-64s to attack within an engagement area (EA). The attack by fire positions should be graphically depicted with the EA, as this more accurately portrays the aviation mission for the aviation and ground commander, versus depicting an ACA with an EA on the same graphic which may not accurately allow the commander to conceptualize Army aviation maneuver. Again, an ACA is an FSCM, not a maneuver graphic; therefore, using this to show Army aviation maneuver is inappropriate (ATP 3-52.1).

Finally, ADAM/BAEs must coordinate with all of the brigade's airspace users to ensure that an airspace common operational picture (COP) is accurate and continually updated with all airspace user graphics across all systems, such as analog COPs and digital COPs, Advanced Field Artillery Tactical Data System (AFATDS), Tactical Airspace Integration System, Command Post of the Future, etc. When aircraft occupy planned airspace, the ADAM/BAE can use an aircraft icon and attach it to the analog COP. A technique like this will help fires conceptualize where airspace users are on the battlefield to minimize the time to clear airspace for fires. It also allows the commander to visualize where his maneuver elements are within his battlespace.

Chapter 9
Army Tactical Task 7.2
Conduct Defensive Tasks

Trend: Units Are Challenged to Conduct Defensive Tasks

A. Conduct an area defense

B. Defend a battle position

Only 2 percent of all improve observations (six out of 302) pertained to this task, of which four related to conduct an area defense and two related to defend a battle position.

A defensive task is a task conducted to defeat an enemy attack, gain time, economize forces, and develop conditions favorable for offensive or stability tasks. Defense alone normally cannot achieve overarching mission objectives. However, it can create conditions for a counteroffensive that allows Army forces to regain the initiative. Defensive tasks can also establish a protective barrier behind which stability operations can progress. Defense counters the enemy's offensive operations. Defensive tasks defeat attacks, destroying as much of the attacking enemy force as possible. They also preserve control over land, resources, and populations. Defensive tasks retain terrain, guard populations, and protect critical capabilities. They can be used to gain valuable time and economize forces to allow execution of offensive tasks elsewhere. Three tasks are associated with the defense: mobile defense, area defense, and retrograde. Defending commanders combine the three tasks to fit the situation (Army Doctrine Reference Publication [ADRP] 3-0, *Operations*).

A. Conduct an Area Defense

The area defense concentrates on denying an enemy force access to designated terrain for a specific time rather than destroying the enemy outright. The bulk of the defending force combines static defensive positions; engagement areas; and small, mobile reserves to retain ground. Keys to successful area defense include effective and flexible control, synchronization, and distribution of fires. Area defense can also be part of a larger mobile defense (ADRP 3-90, *Offense and Defense*).

Failure to employ fire control measures can result in fratricide, inadequate distribution of fires, failure to cover obstacles and engagement areas, and ultimately in mission failure.

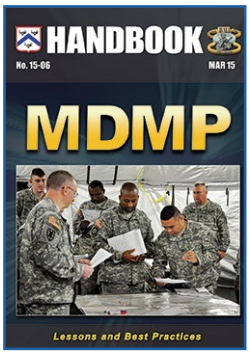
Direct Fire Control Measures. Units have been challenged in the use of direct fire control measures. Observer–coach/trainers (OC/Ts) have noted that companies, heavy weapons companies in particular, do not use direct fire or other graphic control measures in their planning. They either rely on graphics issued by battalion or no graphics at all. Failure to employ fire control measures can result in fratricide, inadequate distribution of fires, failure to cover obstacles and engagement areas, and ultimately mission failure. Use of graphic control measures is a fundamental skill in planning an operation. Units must plan for fire distribution in all operations, but especially in the defense, where failure to service targets can result in penetration of a defensive position.

Engagement Area Development. Many battalions are consistently challenged in successfully executing defensive missions. The orders process is essential in ensuring a shared understanding between the task force (TF) and the attached engineer units. OC/T observations confirm that the orders process is often circumvented. As a result, engineer platoons do not link up with the receiving maneuver company on time, engineer digging assets remain idle at battle positions for hours before starting construction, and engineer platoons arrive with equipment to construct obstacles but with no one there to tell the platoons where the obstacles go. These problems occur because engineers are not integrated into the orders process. The orders process helps inform the entire TF, to include the units receiving engineer support, on the capabilities and equipment they are receiving.

Engagement area development is a team effort between maneuver units, engineers, and indirect fires.

The TF engineer or his representative must be part of the TF military decisionmaking process (MDMP) to ensure that the TF staff understands the engineer capabilities and how to employ engineer assets. This is especially true in engagement area planning.

CALL Resource



To better understand and conduct the military decisionmaking process, units and individuals can use CALL Handbook 15-06, *MDMP Lessons and Best Practices* (March 2015). It can be downloaded at http://usacac.army.mil/sites/default/files/publications/15-06.pdf.

When the TF engineer or his representative is not part of the orders process, obstacles are not effectively integrated into engagement area planning or tied to direct and indirect fires. As a result, the obstacles may not be sited properly, they may not be constructed to standard, or they may be poorly coordinated throughout the brigade. Frequently, units receiving engineer assets are not ready to provide the location for fighting positions or tactical obstacles when the engineers arrive. It is not clear how many positions must be built and where they are needed. Obstacle emplacement often is not integrated with the direct fire and indirect fire plan.

During one rotation, OC/Ts observed enemy forces attempting to breach an obstacle that was blocking the pass along the enemy's axis of advance. After 45 minutes, the enemy breaching force reduced the obstacle and began assaulting through the breach. The rotational unit, which was providing overwatch in the pass, could not mass fires against the enemy breaching force until the enemy vehicles reached the unit's battle positions. This was because the obstacles were not coordinated with the direct and indirect fires plan, creating a blind spot where the rotational unit was unable to mass its fires at the enemy's point of breach.

Brigades that are successful in engagement area development use a team effort approach between maneuver units, engineers, and indirect fires. The TF engineer needs to maintain contact with the brigade combat team (BCT) engineer to ensure that all engineer efforts are synchronized. The engineer companies and platoons must be proficient in their assigned tasks and follow the direction of the maneuver units they support.

CALL Resources

To better understand engagement area development, see Chapter 3 of CALL Newsletter 13-17, *Operations in the Decisive Action Training Environment at the JRTC*, Volume III, at https://call2.army.mil/toc.aspx?document=7197&file=true (CAC required). Although focused at platoon level, it is a solid reference for learning the basics.

For more information on engineer integration into the combined arms team, see Chapters 26 and 27 of CALL Newsletter 15-18, *Decisive Action Training Environment at the National Training Center,* Volume III (CAC required), at https://call2.army.mil/toc.aspx?document=7316 (CAC required).

Security Zone. A successful defense relies on the deliberate and timely execution of engagement area development. However, before an element can begin its engagement area development, the unit must secure itself through establishment of a security zone. Successful establishment of the security zone enables battalions the freedom of maneuver required to build obstacles in support of the defensive plan. The absence of obstacles prevents battalions from effectively massing the effects of both direct and indirect fires.

During the brigade defense, a battalion received a change of mission and, as a result, conducted a hasty defense. While establishing its engagement area, the battalion made contact with an enemy platoon and sustained a significant loss of combat power. This engagement disrupted the engagement area development. As a result, the battalion did not fully integrate tactical obstacles or build survivability positions. During the engagement with the enemy's fixing force, the enemy commander exploited his success and overwhelmed the battalion (ART 7.2.2, Conduct an Area Defense).

Engineers should train for and conduct thorough reconnaissance to identify areas to target enemy mounted and dismounted formations and identify where the enemy can bypass obstacles.

Maneuver battalions are challenged by ineffective countermobility and survivability efforts in the defense. Engineers are not well integrated into the seven steps of engagement area development, causing ineffective obstacle emplacement. The result is idle blade time because units lack a survivability matrix, do not follow it, or receiving units are not ready to employ the blade effort. At the team and squad level, Sappers are proficient in emplacing wire obstacles, but obstacles are not always sighted in properly or tied into terrain. Direct and indirect fires are not always planned to cover the obstacles. Poor Class IV and V synchronization delays obstacle emplacement.

OC/Ts recommend engineers improve how obstacles are integrated into the supported maneuver unit's direct and indirect fire plans. Developing an obstacle hand-over checklist is a way to help young engineer leaders integrate with maneuver counterparts. Engineers should train for and conduct thorough reconnaissance to identify areas to target enemy mounted and dismounted formations and identify where the enemy can bypass obstacles. Brigade engineer battalion (BEB) staff and company command posts must develop better Class IV and V plans to ensure resources reach platoons in time to construct required obstacles. The BEB staff must develop a survivability matrix that companies and platoons strictly enforce.

B. Defend a Battle Position

This task involves denying an enemy force access to the terrain encompassed by a specific battle position. The battle position is a tactical control graphic that depicts the location and general orientation of the majority of the defending forces. Five kinds of battle positions exist to include the strong point (ADRP 3-90).

BEBs lack processes and procedures to track friendly and enemy engineer unit locations, commander's critical information requirement (CCIR) status updates, obstacle control measures, planned and executed obstacles, survivability preparations, obstacle locations, barrier material availability and locations, and key engineer Class V. The result is delayed, incomplete, and ineffective engineer support to the BCT defense.

The BEB should increase collaborative planning with the assistant brigade engineer to develop tracking tools such as synchronization matrices.

The BEB should increase collaborative planning with the assistant brigade engineer to develop tracking tools such as synchronization matrices and commander's cards as outlined in Appendix C of Army Techniques Publication (ATP) 3-37.34, *Survivability Operations,* and Figures 2-3, 3-3, and 3-5 in ATP 3-90.8, *Combined Arms Countermobility Operations*. These tracking tools will increase shared understanding among BCT and BEB staffs, supported maneuver battalions, and emplacing engineer units. Additionally, the BEB should establish reporting procedures and standard reports such as reports of intention, initiation, completion, and transfer in order to track the status of obstacles and survivability effort.

Chapter 10
Army Tactical Task 2.3
Conduct Information Collection

Trend: Units Are Challenged to Conduct Information Collection

A. Develop the information collection plan

B. Direct information collection

C. Execute collection

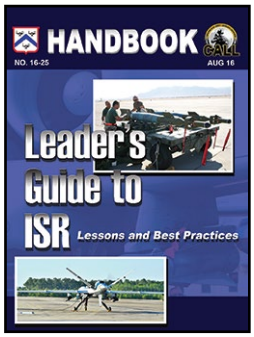
There were eight significant observations (2.6 percent) on information collection (IC), split among develop, direct, and execute IC.

An area in which brigade combat team (BCT) and battalion staffs are challenged is development, direction, and execution of the IC plan. Observer–coach/trainers (OC/Ts) at the maneuver combat training centers (CTCs) mentor the brigade and battalion intelligence officer (S-2), staff sections, and the military intelligence company (MICO). These trends were observed across multiple echelons throughout the BCTs that deployed to the CTCs. The trends captured here are some of the most common and critical to unit success at the CTC. BCT information collection managers lack training and experience to effectively employ MICO collection systems; leverage echelon above brigade collection systems; or plan processing, exploitation, and dissemination (PED).

The current BCT modified table of organization and equipment (MTOE) does not have an authorized position for an IC manager or an IC management section. Some BCTs fielded IC teams with as few as one officer (second lieutenant or captain) or as many as four personnel. BCTs with small IC teams (one to two personnel) struggled to keep up during decisive action training environment (DATE) rotations because they could not support 24-hour operations during intense planning periods and command post transitions.

CALL Resource

For information on information collection management and synchronization, see Chapter 9 of CALL Handbook 16-25, *Leader's Guide to ISR* (August 2016), at https://call2.army.mil/toc.aspx?document=7406 (Common Access Card required).



Often the IC plan fails to provide the commander early warning to make effective decisions. While the unit bears responsibility for its lack of effectiveness in providing early warning, all organizations within the BCT need to emphasize the synchronization of IC plans at their levels. Without a deliberate plan of synchronization, even the best IC plans will prove ineffective for a brigade fight. The S-2 must manage the IC plan and make recommendations when the plan becomes desynchronized.

Many battalions struggle to develop robust IC plans quickly enough to shape their scheme of maneuver under the accelerated operations tempo typical of rotations at the CTCs. A significant contributing factor is that commanders frequently do not approve initial commander's critical information requirements (CCIRs) or issue guidance on anticipated decision points early enough in the planning process.

Roles and responsibilities for MICO and BCT S-2 members are not properly assigned or clearly identified while deployed to the National Training Center. The lack of CLEAR roles and responsibilities results in improper utilization of organic intelligence, surveillance, and reconnaissance (ISR) and analytical capabilities.

Army Doctrine

The roles of both the brigade combat team intelligence cell and the military intelligence company are defined in Army Techniques Publication (ATP) 2-19.4, *Brigade Combat Team Intelligence Techniques*; https://www.apd.army.mil/epubs/DR_pubs/DR_c/pdf/web/atp2_19x4.pdf (CAC required).

For information pertaining to cavalry squadrons, see ATP 3-20.96, *Cavalry Squadron*; http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/ATP%203-20x96%20FINAL%20WEB.pdf.

Best Practices Recommended by Observer–Coach/Trainers

Information collection teams that include an established team lead (senior first lieutenant or captain) and at least two supporting personnel have the highest likelihood of success in enabling mission planning, completing IC requests, and providing 24-hour coverage within the S-2 shop. While the Q7 identifier is an enhancing skill, interaction between the IC team and single-source discipline subject matter experts (SMEs) in the brigade intelligence support element provides the greatest probability that IC requests will be approved because the SMEs fully understand capabilities of the IC systems and how to best compose justifications. IC managers must also understand and consider BCT organic PED capabilities at all times to ensure that the BCT can conduct PED internally in support of answering the commander's priority intelligence requirements (PIRs).

As an alternative paradigm, ATP 2-19.4 also states: "Depending on the situation, the commander and selected staff meet before the mission analysis briefing to approve initial CCIRs and essential elements of friendly information. This is especially important if the commander intends to conduct information collection activities early in the planning process. Approval of initial CCIRs early in planning assists the staff in developing the initial information collection plan." Along similar lines, ATP 2-01, *Plan Requirements and Assess Collection*, states that "requirements development begins as early as possible — in some cases before receipt of mission, when only partial information about the general location or category of a mission is known." Under accelerated planning timelines, it is critical for the commander to issue guidance on anticipated decision points and to approve the CCIRs as soon as possible. This allows the staff, during mission analysis, to develop an IC plan that supports the commander's priorities and informs his decisions. This in turn allows the scout platoon to begin focused collection with sufficient lead time to affect changes in the battalion scheme of maneuver while retaining time for companies to conduct the necessary troop leading procedures and rehearsals.

Remembering the acronym SMART (Stick to doctrine, Make recommendations, Arrange workspace appropriately, Require subordinate and enablers to meet planning timelines, Train the process) will assist any intelligence section in executing an IC plan. (See Table 10-1, next page.)

Table 10-1. Intelligence Collection Planning Matrix

PIRs	Indicators	SIRs	NAIs	Time	BCT Assets					IMINT	SIGINT	HUMINT	Division				Corps	
					1st BN	2d BN	1-1 CAV	1-14FA	52d BEB	Shadow	Prophet/ LLVI	HCT	IMINT	SIGINT	ELINT	HUMINT	RC-12	Predator UAS
PIR 1 : Where are the Donovian and BFB reconnaissance teams and indirect asset targeting 1/52 ABCT?	DRT elements consisting of five- to seven-man teams	Report the composition, disposition, strength, and activity of DRT elements consisting of five- to seven-man teams.	3009 3017	H-1	X		X				X			X				
			3004 3005			X	X				X			X				
	Enemy movement consisting of at least one BRDM		3006	H-1	X		X				X			X				
			3012			X	X				X			X				
	Identification of BM-21, 2S19, 9A52, IL-220	Report the composition, disposition, strength, and activity of BM-21 (wheeled 122-mm MRLS). 2S19 (SP 152-mm Howitzer). 9A52 (wheeled 300-mm MRLS). and IL-220.	3015	H-1				X							X			
			3016					X							X			
			3014					X							X			
			3019					X							X			

Legend:
ABCT— armored brigade combat team
BCT— brigade combat team
BRDM— combat reconnaissance/patrol vehicle
BEB— brigade engineer battalion
BFB— Bilasuvar Freedom Brigade
BMP— tracked infantry fighting vehicle
BN— battalion
BSB— brigade support battalion
CAV— cavalry
DRT— division reconnaissance team
ELINT— electronic intelligence
FA— field artillery
HCT— human intelligence collection team
H-Hour— specific hour at which a particular operation commences
HUMINT— human intelligence
IMINT— imagery intelligence
LLVI— low-level voice intercept
mm— millimeter
MRLS— multiple rocket launch system
NAI— named area of interest
PIR— priority intelligence requirement
SIGINT— signals intelligence
SIR— specific information requirement
UAS— unmanned aircraft system

Two-Minute Drill. The purpose of the two-minute drill is to integrate warfighting functions and not simply state information. Within the two-minute drill, the intelligence leader states the current enemy situation, a battle damage assessment, enemy key weapons systems remaining, any higher collection assets available, and recommends reallocation of IC assets. Table 10-2 (next page) offers an example of a two-minute drill.

A technique to assist with making recommendations is to create analog and digital templates of the two-minute drill. This will keep personnel focused and can have leading questions the commander wants answered, such as, “What is the enemy scheme of maneuver?”; “What is the time and distance analysis and where can we next integrate fires?”; “Have we confirmed the enemy’s most likely or most dangerous course of action?” Templates synched with the commander’s decision-making criteria are a forcing function to provide relevant and timely information.

Table 10-2. Example of a Two-Minute Battle Drill

Current friendly situation: i.e., combat strength, location	Battle captain
Internal / external assets available (priority of fires, attack weapons teams, etc.)	Battle captain
Current enemy situation; be sure to note battle damage assessment of high-value targets and enemy key weapon systems	Intelligence leader
What is the enemy's next course of action? State as enemy scheme of maneuver. Provide detail; conceptual hand-waves are not enough	Intelligence leader
Current status of priority intelligence requirements (PIRs); how / when will the remaining PIRs be answered?	Intelligence leader
Any higher collection assets coming in the next 24 hours?	Intelligence leader
Upcoming major events and decisions to be made. Refer to decision support matrix; is it still accurate?	Battle captain
Any significant changes to the brigade fight?	Battle captain
Any CP concerns	Battle captain
Current battalion commander's intent	Commander

The most effective IC plans begin with the construction of a comprehensive and detailed enemy event template identifying both enemy decision points and named areas of interest (NAIs). Next, the intelligence sections should develop the IC planning matrix based on the commander's PIRs with the associated indicators and expected times of observation to confirm, deny, or differentiate between enemy courses of action. The IC planning matrix identifies redundant sensors able to observe NAIs focused around the commander's PIRs. The IC planning matrix also shows battalion-level information collection gaps, which drives requests for collection for higher headquarters. Some intelligence sections choose to skip these steps due to over-confidence or a perceived lack of time. While the IC planning matrix is typically an internal intelligence section product, it may be necessary to provide the operations officer all possible collection assets in order to plan friendly courses of action. The IC planning matrix is not only a systematic approach to ensure the IC plan answers the commander's PIRs, but becomes extremely useful in making recommendations when the IC plan becomes desynchronized during the course of operations.

Chapter 11
Army Tactical Task 2.2
Provide Support to Situational Understanding

Trend: Units Are Challenged to Provide Support to Situational Understanding

A. Perform intelligence preparation of the battlefield (IPB)

B. Determine threat courses of action

Only three percent of all improve observations (eight out of 302) related to this task. Of these observations, they were split evenly between perform IPB and determine threat courses of action.

A. Perform Intelligence Preparation of the Battlefield

S-2s struggle to complete IPB with enough detail to support the military decisionmaking process (MDMP) in the time constraints of the decisive action training environment (DATE). Specifically, S-2s struggle to produce a detailed terrain analysis, a detailed threat model, and an event template (EVENTEMP) that depicts the enemy in time and space. These deficiencies hinder information collection, course of action development, and targeting.

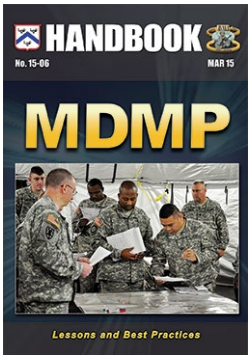
Threat templates provide a basis for understanding how the threat/adversary normally organizes for combat and how it deploys and employs its assets.

S-2 sections often produce incomplete IPB products during mission analysis for all phases of their decisive action training environment (DATE) and mission rehearsal exercise (MRE) rotations. For example, for brigade combat team IPB sessions between November 2015 and October 2016 at the Joint Readiness Training Center, S-2 sections adequately completed IPB step 1, define the operational environment, usually by providing a road to war during joint forcible entry (80 percent of the time) along with an orientation identifying areas of operation, interest, and influence (100 percent of the time). S-2 sections did not sufficiently complete step 2, describe environmental effects on operations, specifically developing a modified combined obstacle overlay (MCOO) only 61 percent of the time and accounting for civil considerations only 54 percent of the time. Step 3, evaluate the threat, was the most overlooked aspect of IPB during this period. S-2 sections identified and analyzed threat capabilities and threat system capabilities only 38 percent of the time. Moreover, S-2 sections included threat templates during IPB only 38 percent of the time. Threat templates provide a basis for understanding how the threat/adversary normally organizes for combat and how he deploys and employs his assets. All S-2 sections adequately completed step 4, determine threat courses of action, by identifying and producing course of action statements (100 percent of the time) and depicting threat courses of action in space (100 percent of the time). However, S-2 sections produced EVENTEMPs and/or matrices only 69 percent of the time.

Best Practices Recommended by Observer–Coach/Trainers

IPB, in the time constraints of DATE rotations, requires extensive pre-rotation preparation, very similar to how IPB in real-world operations involves extensive preparation and research in advance deployment. S-2s should train on the most time-consuming steps of IPB at home station. Specifically, S-2s should emphasize terrain analysis and threat modeling as part of pre-deployment training. Units that arrive with a proper MCOO and understanding of terrain effects will be able to quickly choose and exploit terrain to best support the mission. Units that arrive with detailed threat models have threat templates available which, when applied to terrain, become situation templates and, when applied to time, become EVENTEMPs against which the operations staff can synchronize their plan.

CALL Resource



Use CALL CALL Handbook 15-06, *MDMP Lessons and Best Practices*, to better understand and conduct the military decisionmaking process. Download it at http://usacac.army.mil/sites/default/files/publications/15-06.pdf.

A detailed set of enemy courses of action overlaid and depicted in an event template will provide the operations section not with a "most likely" or "most dangerous" course of action but with a comprehensive set of decisions and options the enemy commander can implement for a battle. Additionally, an enemy event template would provide named areas of interest driven by intelligence estimates as well as time phase lines that would help to show how the enemy will move and where commanders can expect to make contact with the enemy. This tool is powerful and predictive in nature and can help to identify indicators of enemy decisions that will influence friendly commanders in enough time to execute their own decisions.

B. Determine Threat Courses of Action

This activity determines possible threat courses of action (COAs), describes threat COAs, ranks COAs in probable order of adoption, and, at a minimum, identifies the most probable and the most dangerous COAs (ATP 2-01.3). As the MDMP progresses to COA development, the level of thinking becomes more abstract. Up to now, the MDMP steps have involved more "science" than "art." However, in COA development, art dominates science, as the operations officer/planner must craft one or more schemes of maneuver. Each scheme must account for the commander's guidance and intent, the terrain, the expected and most dangerous enemy COAs, as well as the projected combat power of the unit. In COA analysis, the staff identifies which COA accomplishes the mission with minimum casualties while retaining the most flexibility for future operations. Other aspects of this step include anticipating battlefield events, determining where and when to apply force capabilities, and identifying coordination requirements to synchronize combat power. Key to this step is the process of maximizing combat power against the enemy. The process of synchronizing and maximizing combat power against the enemy revolves around the war game.

Rotational unit staffs do not use enemy event templates to identify multiple enemy courses of action and lack coordination during the planning and analysis phases. This causes rotating units to fail transition from movement into maneuver prior to the likely line of contact (the enemy's maximum engagement line). As a result, the unit sustains heavy losses.

A maneuver plan cannot account for and mitigate tactical risk if the plan is developed prior to conducting a detailed enemy analysis. Likewise, enemy analysis is ineffective if it is conducted separate from terrain analysis, which enables the commander to develop the enemy's doctrinal template (DOCTEMP) into a situational template (SITTEMP) depicting the most likely course of action and the most dangerous course of action. In company-level troop leading procedures, a company intelligence support team (CoIST) may provide valuable input to the commander, but it is no substitute for the commander's analysis of the mission, terrain, civil considerations, and enemy prior to the development of his scheme of maneuver, including development of graphic control measures supporting transitions from movement to maneuver and the distribution and massing of both direct and indirect fires. If the CoIST is the sole analyst of enemy considerations, the Soldiers must be trained to account for the effects of terrain and the friendly mission's effects on enemy actions. Analysis must be conducted prior to developing the friendly scheme of maneuver in order to identify where the commander may accept some tactical risk and how he will mitigate that risk through the application of fires and maneuver.

CALL Resource

CALL Handbook 13-09, *CoIST Update* (May 2013), captures lessons learned and tactics, techniques, and procedures that will enable company intelligence support teams to support operations across the spectrum. It provides detailed information on CP operations at the company level. Go to https://call2.army.mil/toc.aspx?document=7101 (Common Access Card required).

Best Practices Recommended by Observer–Coach/Trainers

Develop a tentative plan using relative combat power analysis between enemy and friendly forces. At the company level, this is best achieved by conducting METT-TC analysis in a logical order such as time, mission, terrain, civil considerations, enemy, troops available during step 3 of the troop leading procedures (make a tentative plan). The commander must understand his own timeline for planning, which drives his available time for creation of an effective operation order (OPORD). Once his timeline is understood, the commander must understand his own mission and the effects of terrain (both physical and human) on himself and enemy forces before he can effectively develop an enemy SITTEMP. The CoIST may assist the commander to better understand enemy capabilities and the DOCTEMP but the commander's analysis of the terrain will drive the creation of a SITTEMP. Only once a realistic enemy SITTEMP is developed may the commander develop a friendly scheme of maneuver and identify a decisive point. Upon identifying the decisive point, the commander can backward plan to identify support, assault, and breach locations and create graphic control measures which account for direct and indirect fires, probable lines of contact, and probable lines of deployment to facilitate his transition to maneuver.

The commander must understand his own timeline for planning which drives his available time for creation of an effective OPORD.

Chapter 12
Army Tactical Task 1.2
Conduct Tactical Maneuver

Trend: Units Are Challenged to Conduct Tactical Maneuver

A. Employ combat formations

B. Employ combat patrols

C. Conduct survivability moves

Only 2 percent of all improve observations (six out of 302) pertained to this task, and four of the six related to employ combat formations. There was one significant observation on employ combat patrols, and conduct survivability moves accounted for one observation.

The movement and maneuver warfighting function is the related tasks and systems that move and employ forces to achieve a position of relative advantage over the enemy and other threats. Direct fire, reconnaissance, and close combat are inherent in maneuver (Army Doctrine Reference Publication [ADRP] 3-0, *Operations*). Maneuver is employment of forces in the operational area through movement in combination with fires to achieve a position of advantage in respect to the enemy (Joint Publication 3-0, *Joint Operations*). Commanders take full advantage of terrain and combat formations when maneuvering their forces (ADRP 3-90).

A. Employ Combat Formations

Units use an ordered arrangement of troops and vehicles for a specific purpose. Commanders use one of seven different combat formations: column, line, echelon (left or right), box, diamond, wedge, and vee. Their use depends on the factors of mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (METT-TC) (ADRP 3-90).

The likelihood of enemy contact determines the movement formation and techniques that units should use.

Transitions From Movement to Maneuver. Observations from the combat training centers (CTCs) indicate that units often do not understand when or why to transition from movement to maneuver. The likelihood of enemy contact determines the movement formation and techniques that units should use. Extensive enemy analysis is not typically conducted at the company level and the probable line of contact either is not identified or is identified based on inadequate analysis (ART 1.2, Conduct Tactical Maneuver).

Leaders should focus on the likelihood of enemy contact when planning operations and determining movement formations and techniques. The probable line of contact needs to be annotated on the map and briefed to ensure a common understanding throughout the unit. Company commanders need to brief a thorough plan during operation orders (OPORDS), to include movement formation and techniques, reconnaissance focus, and tempo, for refinement at the platoon level. The company and platoon leadership needs to have a good understanding of movement formations and techniques.

In successful units, movement formations are incorporated into tactical standard operating procedures or in the OPORD brief to help focus maneuver planning. In experienced maneuver units, platoon and section movement is usually conducted as a battle drill, which is practiced until proficient. Battle drills are a collective action rapidly executed without applying a deliberate decision-making process (FM 3-21.10, *The Infantry Rifle Company*). Characteristics of a battle drill are that they require minimal leader orders to accomplish and are standard throughout the Army.

Understanding when and where to transition from movement to maneuver is critical to the success of the unit. The likelihood of enemy contact needs to drive these decisions.

It is important for leaders to understand the transition from movement to maneuver because they lead the forward-most elements on the battlefield. Therefore, understanding when and where to transition from movement to maneuver is critical to the success of the unit. The likelihood of enemy contact should drive these decisions. Leaders must stay disciplined and focus on maneuvering their platoons and the company, especially when enemy contact is likely. This ensures contact is made with the smallest element possible and also maximizes use of direct-fire weapon systems.

Stryker and Bradley Probable Line of Deployment. Many Stryker/Bradley companies are challenged to define the probable line of deployment (PLD) to transition from movement to maneuver and deployment of their dismounted infantry. Leaders either transition too early or after contact is made due in part to company commanders failing to conduct intelligence preparation of the battlefield (IPB) after receiving their missions. Some battalion intelligence officers do not produce enemy situational and weapons templates to assist commanders in their IPB analysis.

The transition from movement to maneuver is a critical decision point for maneuver company commanders. The decision to transition from movement to maneuver at the appropriate time and location enables audacity, concentration, and survivability. Army Techniques Publication (ATP) 3-21.11, *Stryker Brigade Combat Team Infantry Rifle Company*, describes actions at the PLD. According to ATP 3-21.11, "the probable line of deployment is normally a phase line or checkpoint where elements of the attacking company transition to secure movement techniques in preparation for contact with the enemy." The manual does not necessarily specify dismounting infantry at the

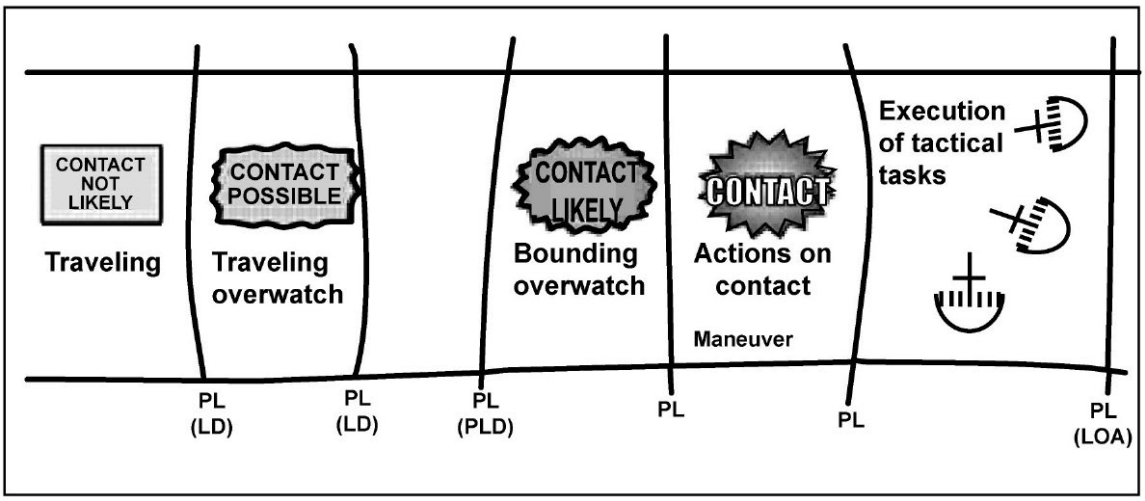


Figure 12-1. Battlefield relationship of tactical movement, actions on contact, maneuver, and tactical tasks (FM 3-21.11, superseded by ATP 3-21.11).

PLD; however, it does define the PLD as a transition to "secure movement techniques." Figure 12-1 (Page 78) illustrates how the PLD is identified by a phase line and acts as a tactical trigger for a maneuver element to deploy into a fighting formation.

IPB is "the systematic process of analyzing the mission variables of enemy, terrain, weather, and civil considerations in an area of interest to determine their effect on operations" (ATP 2-01.3, *Intelligence Preparation of the Battlefield*). IPB is an integrated staff function and should continue at all echelons. Battalion intelligence officers must present threat models to explain the capabilities, strengths, weaknesses, and vulnerabilities of the threat to accurately predict threat activities in time and space. The intelligence officer presents the threat models in the mission analysis briefing and should depict the enemy's range fans based on suspected enemy positions and key weapon systems (ADRP 2-0, *Intelligence*, 5-16 and 5-17).

An effective best practice for intelligence officers is to request imagery intelligence when available and create enemy range fans to enable shared understanding. Company commanders have a responsibility to conduct IPB prior to and during the planning for an operation but also during the execution of the operation. Company commanders must incorporate IPB into mission planning as a part of METT-TC.

Employment of Attack Aviation. Aviation task force leaders, specifically in general support aviation battalions, assault helicopter battalions, and attack reconnaissance battalions, struggle to employ their attack (AH-64s) assets effectively. This trend is most punctuated during the defense phase of decisive action. Aviation task forces and brigade combat teams have tended to revert to employment techniques that are effective in wide area security and counterinsurgency operations. These techniques include: 24/7 aerial weapons team coverage, troops in contact response, convoy security, aerial escort security, counter–indirect fire, and forward operating base/tactical assembly area local area security.

Units at all levels need to recognize the deficit of experience and knowledge of employment techniques in the decisive action and combined arms maneuver fight. The same tactics, techniques, and procedures that emerged, or worked well, in a predominantly nonlinear and unconventional operation are not the same TTPs that will work well against a conventional near-peer threat.

Utilizing Terrain to Enable Aviation Maneuver. Aviation units training at the CTCs have shown improvement in their ability to maneuver aircraft while utilizing terrain to mask their movement as well as staying below the crest of the hills to avoid being silhouetted (ART 1.2.5, Exploit Terrain to Expedite Tactical Movements).

Effective movement techniques make it very difficult for enemy personnel to identify and engage the aircraft. Aircrews are consistently able to engage the enemy and reposition for additional engagements while remaining undetected. One key to units' success is establishing assault by fire positions that are outside the maximum effective ranges of enemy weapon systems but within the

CALL Resource

For more information on Stryker rifle company employment, see Chapter 9 of CALL Newsletter 15-18, *Decisive Action Training Environment at the National Training Center*, Volume III (September 2015), at https://call2.army.mil/toc.aspx?document=7316 (Common Access Card required).

maximum effective range of the Hellfire missile. This allows the AH-64 to conduct engagements without taking effective fire from the enemy.

Units should include engagement area development and maneuver planning into their training plans at battalion, company, and platoon levels to ensure that staff planners and aviators who are part of company planning cells understand how to maximize the effects of the AH-64 weapons systems while also maximizing survivability.

B. Employ Combat Patrols

Units use ground and air detachments to provide security and harass, destroy, or capture enemy troops, equipment, or installations. Companies and platoons are challenged to properly execute priorities of work in platoon- and company-level patrol bases. See Figure 12-2 for a patrol base example.

Army Doctrine

Priorities of work in defensive positions are described in ATP 3-21.8, *Infantry Platoon and Squad*, at http://www.apd.army.mil/epubs/DR_pubs/DR_a/pdf/web/ATP%203-21x8%20FINAL%20WEB%20INCL%20C1.pdf.

As units establish patrol bases at the platoon and company levels, they do not properly manage priorities of work. Frequently, they begin all other activities before they have security established. Once security is established, hygiene, weapons maintenance, chow, and the rest plan occur simultaneously on the line next to other Soldiers pulling security. Priorities are neither clearly defined nor enforced by leaders.

Successful units have an established standard operating procedure (SOP) for patrol base activities. Additionally, as priorities may change depending on METT-TC, the senior leader must bring his leaders in and describe the priorities for each long halt or patrol base.

This supervision of priorities of work by the senior leader ensures priorities of work actually happen and that the unit maintains security throughout the process. This process requires good communication between senior and subordinate leaders.

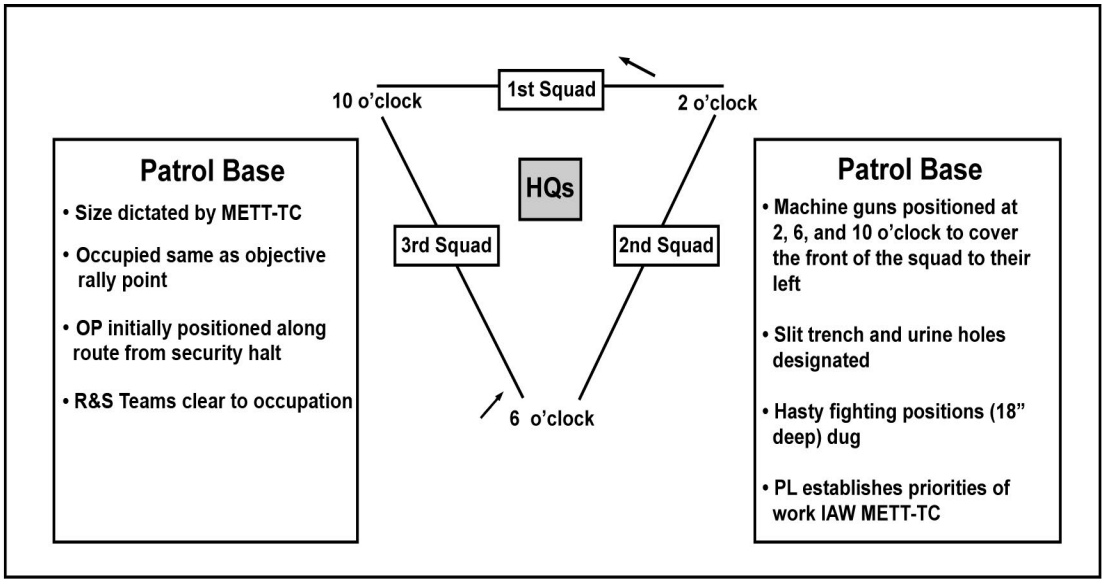


Figure 12-2. Patrol base.

C. Conduct Survivability Moves

Units rapidly displace a unit, command post, or facility in response to enemy direct and indirect fires in response to the approach of an enemy unit or as a proactive measure based on IPB and risk analysis (ADRP 3-90).

Artillery formations at the CTCs understand the need for survivability move criteria but often do not execute movement when criteria are met. Additionally, howitzer movements are not tracked to avoid repositioning in an area previously occupied.

Failure to follow survivability move criteria causes preventable casualties and degrades combat power.

Indirect fire is the greatest threat to the field artillery. The preferred defense technique against indirect fire is a combination of dispersion, hardening, and survivability moves. Survivability moves decrease vulnerability to counterfire but take time and may limit the unit's ability to provide fire support. Battery commanders obtain the survivability move criteria from the battalion operations center and apply it to their formations. Criteria should be developed at battalion by the S-3 with input from the S-2 and guidance from the fire support coordinator. While units at the CTCs routinely have survivability move criteria, disseminated to formations through operation orders, the criteria are not always strictly followed. For example, the criteria could be eight rounds fired from one tube, two fire missions, or four hours in one position. Under these criteria the unit would move a minimum of six times in a 24-hour period. Typically a unit, if not firing and not taking indirect fire, will move only three to four times in that time period, even under the criteria above. Not adhering to survivability move criteria causes preventable casualties and degrades combat power.

Conclusion

A rotation at a combat training center (CTC) is a capstone training event against a near-peer and free-thinking opposing force in a demanding environment to prepare a unit for combat operations. The trends in this bulletin are similar to trends prior to the Global War on Terror. Army units continue to improve with experience at the CTCs. However, the higher the level of proficiency a unit can attain before a CTC rotation, the better trained it will be at the conclusion.

The key to entering a CTC rotation at a higher level is disciplined training management by units — conducting progressive levels of collective training at home station with more repetitions of tasks at multiple echelons. Conduct training with a train-as-you-fight mentality augmented with professional development down to the lowest level to enable mission command. When time is short, adaptive leaders with situational awareness and a solid understanding of the commander's intent can make timely decisions with disciplined initiative to accomplish the mission. Understanding enabler capabilities, staffs can help the commander synchronize operations and maneuver units to positions of advantage and mass effects against the enemy.

Staffs that deploy their command posts when their subordinate units are training and conduct the operations process with a full military decisionmaking process (MDMP) will be training themselves to plan future operations while current operations tracks the training. They will also get more repetitions for planning and better understand their commander's information requirements to make timely decisions.

Finally, conducting home-station training with as many enablers as possible provides units and staffs a better understanding of enabler capabilities, mission sets, and support requirements. Exposure to other units and their capabilities in a training environment develops all levels of leaders and provides a train-as-you-fight environment to enable the Army to be a learning organization.

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COMBINED ARMS CENTER (CAC)
Additional Publications and Resources

The CAC home page address is: **http://usacac.army.mil**

Center for Army Leadership (CAL)

CAL plans and programs leadership instruction, doctrine, and research. CAL integrates and synchronizes the Professional Military Education Systems and Civilian Education System. Find CAL products at <http://usacac.army.mil/cac2/cal>.

Combat Studies Institute (CSI)

CSI is a military history think tank that produces timely and relevant military history and contemporary operational history. Find CSI products at <http://usacac.army.mil/cac2/csi/csipubs.asp>.

Combined Arms Doctrine Directorate (CADD)

CADD develops, writes, and updates Army doctrine at the corps and division level. Find the doctrinal publications at either the Army Publishing Directorate (APD) <http://www.apd.army.mil> or the Central Army Registry (formerly known as the Reimer Digital Library) <http://www.adtdl.army.mil>.

Foreign Military Studies Office (FMSO)

FMSO is a research and analysis center on Fort Leavenworth under the TRADOC G2. FMSO manages and conducts analytical programs focused on emerging and asymmetric threats, regional military and security developments, and other issues that define evolving operational environments around the world. Find FMSO products at <http://fmso.leavenworth.army.mil>.

Military Review (MR)

MR is a revered journal that provides a forum for original thought and debate on the art and science of land warfare and other issues of current interest to the U.S. Army and the Department of Defense. Find MR at <http://usacac.army.mil/cac2/militaryreview>.

TRADOC Intelligence Support Activity (TRISA)

TRISA is a field agency of the TRADOC G2 and a tenant organization on Fort Leavenworth. TRISA is responsible for the development of intelligence products to support the policy-making, training, combat development, models, and simulations arenas.

Capability Development Integration Directorate (CDID)

CDID conducts analysis, experimentation, and integration to identify future requirements and manage current capabilities that enable the Army, as part of the Joint Force, to exercise Mission Command and to operationalize the Human Dimension. Find CDID at <http://usacac.army.mil/organizations/mccoe/cdid>.

Joint Center for International Security Force Assistance (JCISFA)

JCISFA's mission is to capture and analyze security force assistance (SFA) lessons from contemporary operations to advise combatant commands and military departments on appropriate doctrine; practices; and proven tactics, techniques, and procedures (TTP) to prepare for and conduct SFA missions efficiently. JCISFA was created to institutionalize SFA across DOD and serve as the DOD SFA Center of Excellence. Find JCISFA at <https://jcisfa.jcs.mil/Public/Index.aspx>.

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