

// FY20

MISSION COMMAND TRAINING IN **LARGE-SCALE COMBAT OPERATIONS**

MISSION COMMAND TRAINING PROGRAM (MCTP)

KEY OBSERVATIONS

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COMMANDER, MCTP



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FY20 Mission Command Training in Large-Scale Combat Operations Mission Command Training Program (MCTP) Key Observations

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Foreword

For the past 34 years, the Mission Command Training Program (MCTP) continues to provide world-class collective training opportunities for U.S. Army Corps, Army divisions, Army Service component commands, and functional multi-functional brigades across the operating force. For the past five years, MCTP has focused on preparing Army forces to fight and win during large-scale combat operations (LSCO) against a free-thinking and peer-threat opposing force.

Fiscal Year 2020 (FY20) has seen its share of challenges for our Army and MCTP. As a result, MCTP executed three multi-echelon corps and division warfighter exercises (WFXs) prior to the outbreak of COVID-19. In March 2020, MCTP deployed over 100 leaders on short notice across the continental United States to augment U.S. Army North (ARNORTH) with our leaders in support of their COVID-19 pandemic mission. These MCTP leaders integrated within the staffs of Joint Task Force Civil Support (JTF-CS) in Fort Eustis, VA; Task Force 46 in Battle Creek, MI; Task Force 377 Theater Sustainment Command in New Orleans, LA; Task Force 76 in Salt Lake City, UT, and the Army North Headquarters in Fort Sam Houston, TX. In August 2020, MCTP re-initiated our core mission and safely executed a brigade WFX in California, and, at the time of publication, we are partnered with the National Training Center for rotation 20-10, while preparing to execute WFX 21-1, the largest WFX in our 34 year history.

The information in this bulletin is a snapshot of the Army conducting LSCO. MCTP's observations are primarily written by a collaborative group of experienced officers, noncommissioned officers, and chief warrant officers working in conjunction with our highly qualified expert-senior mentors (HQE-SMs). We would like to thank the following retired general officers (HQE-SMs) who continue to influence Army Soldiers and leader development by sharing their experience and insights: GEN(R) David McKieman, GEN(R) Daniel Allyn, LTG(R) David Hogg, LTG(R) Michael Tucker, LTG(R) David Fridovich, LTG(R) David Valcourt, LTG(R) Jeffrey Buchanan, MG(R) Walter Golden, MG(R) Richard Longo, MG(R) Bryan Watson, MG(R) Tom Richardson, MG(R) Robin Akin, BG(R) John Seward, BG(R) Paul Laughlin, BG(R) John Novalis, and BG(R) William Turner.

In previous years, MCTP published one key observations bulletin per year. In an effort to increase the frequency of sharing observations and best practices, MCTP will begin publishing the bulletin on a semi-annual basis in FY21 as a cargo pocket-sized book for easier reference. The FY21 bulletins will better prepare Army formations with enhanced training proficiency to fight and decisively win during LSCO. Winning Matters!

Warfighters!

Shane P. Morgan
COL, FA
Commanding

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Cross-Reference Guide of Observations by Unit Type

Chapter 1. Recurring Trends											
Observations	CORPS	DIV	ESC/TSC	SOF	CAB/TAB	FAB/ DIVARTY	MP BDE	EN BDE	SB	BCT	MEB
1.1 Knowledge Management	X	X									
1.2 Cyberspace Electromagnetic Activities Operations	X	X									
1.3 Planning Horizon Management	X	X									
1.4 Counterfire Analysis	X	X				X					

Chapter 2. Corps and Division Observations											
Observations	CORPS	DIV	ESC/TSC	SOF	CAB/TAB	FAB/ DIVARTY	MP BDE	EN BDE	SB	BCT	MEB
2.1: Mission Command at the Corps and Division Levels											
2.1.1 Distributed Command and Control	X	X									
2.1.2 Digital Mission Command System Proficiency	X	X									
2.1.3 Transitions Between Command and Control Nodes	X	X									
2.2: Intelligence Warfighting Function at the Corps and Division Levels											
2.2.1 Information Collection Synchronization	X	X									
2.2.2 Collecting and Evaluating Battle Damage Assessment	X	X									
2.2.3 Information Collection Level of Detail	X	X									
2.2.4 Intelligence Warfighting Function Collaboration	X	X									
2.2.5 Developing the Situation Throughout the Operations Process	X	X									
2.3: Fires Warfighting Function at the Corps and Division Levels											
2.3.1 Fire Support Coordination Line Management	X	X									
2.3.2 Integrating Nonlethal Capabilities Into the Targeting Process	X	X									

2.4: Movement and Maneuver Warfighting Function at the Corps and Division Levels											
2.4.1 Division Cavalry in Large-Scale Combat Operations	X	X									
2.4.2 Aviation Mission Planning Timeline	X	X									
2.4.3 Current Operations Integration Cell Collaboration With Other Staff Cells	X	X									
2.5: Protection Warfighting Function at the Corps and Division Levels											
2.5.1 Protection Warfighting Function Effectiveness	X	X									
2.5.2 Protection Working Group and Warfighting Function Integration	X	X									
2.6: Sustainment Warfighting Function at the Corps and Division Levels											
2.6.1 Sustainment Synchronization Between Command Posts at Division and Corps	X	X							X		

Chapter 3: Brigade Observations											
Observations	CORPS	DIV	ESC/TSC	SOF	CAB/TAB	FAB/ DIVARTY	MP BDE	EN BDE	SB	BCT	MEB
3.1: Brigade-Level Trends											
3.1.1 Distributed Common Ground System-Army Use at Brigade Level					X	X	X	X			X
3.1.2 Mission Command Systems Integration at the Brigade Level					X						
3.2: Military Police Brigades											
3.2.1 Detention Operations Planning in Military Police Brigades		X					X				
3.2.2 Creating Shared Understanding in the Military Police Brigade							X				
3.3: Maneuver Enhancement Brigade											
3.3.1 Confusion in the Consolidation and Support Areas	X	X									X
3.3.2 Route Status Definition	X	X									X

3.4: Artillery Brigades											
3.4.1 Surface Fires Lethality						X					
3.4.2 Fires Mission Processing		X				X					
3.4.3 Sustainment Synchronization						X			X		
3.4.4 Battle Tracking and Common Operational Picture		X				X					
3.4.5 Protection Operations in Field Artillery Brigades		X				X					
3.4.6 Division Artillery and Field Artillery Brigade Training Readiness						X					
3.4.7 Planning and Transitions						X					
3.4.8 Force Field Artillery Headquarters	X	X				X					
3.4.9 Knowledge Management		X				X					

Chapter 4. Sustainment Command Observations											
Observations	CORPS	DIV	ESC/TSC	SOF	CAB/TAB	FAB/DIVARTY	MP BDE	EN BDE	SB	BCT	MEB
4.1 Combat Power Reporting and Staff Synchronization	X	X	X						X		
4.2 Sustainment Planning Synchronization Across Echelons	X	X	X						X		
4.3 The Critical Path of Effective Orders Production	X	X							X		

Chapter 5. Special Operations Forces Observations											
Observations	CORPS	DIV	ESC/TSC	SOF	CAB/TAB	FAB/DIVARTY	MP BDE	EN BDE	SB	BCT	MEB
5.1 Special Operations Liaison	X	X		X							
5.2 Corps Utilization of Special Operations Forces	X	X		X							

Chapter 6. Noncommissioned Officer Utilization											
Observations	CORPS	DIV	ESC/TSC	SOF	CAB/ TAB	FAB/ DIVARTY	MP BDE	EN BDE	SB	BCT	MEB
6.1 Noncommissioned Officer Roles and Responsibilities	X	X	X			X					
6.2 Noncommissioned Officer Utilization	X	X	X			X					

Chapter 7. Air Component Observations											
Observations	CORPS	DIV	ESC/TSC	SOF	CAB/ TAB	FAB/ DIVARTY	MP BDE	EN BDE	SB	BCT	MEB
7.1 Integration of the Intelligence, Surveillance, and Reconnaissance Liaison Officer	X	X	X		X						
7.2 Personnel and Cargo Transportation by Air	X	X	X		X						

Executive Summary

During fiscal year 2020 (FY20), the Mission Command Training Program (MCTP) conducted three warfighter exercises (WFXs) supporting the training readiness for one corps headquarters, four division headquarters, and their associated functional/multifunctional brigades. The units trained include Active Army and National Guard component units. Two of the originally scheduled five FY20 WFXs (WFX 21-4 and WFX 21-5) were postponed in response to the COVID-19 pandemic. The training audiences scheduled for training during the postponed exercises will participate in already scheduled FY21 WFXs.

MCTP continued integration of the following U.S. Army Forces Command (FORSCOM)-directed training requirements, including displacement of division-level command and control nodes; use of tactical communications; division-level wet-gap crossing; and integration of chemical, biological, radiological, and nuclear capability. MCTP observed improved unit performance in the FORSCOM-directed training requirements and attributed the improvement to shared lessons learned and best practices among training audiences and revised MCTP pre-WFX mission command training.

MCTP uses several avenues to facilitate shared understanding of WFX experiences to educate and inform the force. MCTP recognizes that this key observations bulletin is for use not only by units preparing for WFXs, but by the total army. Beginning in FY21, the MCTP WFX key observations will be published semiannually by the Center for Army Lessons Learned (CALL). The new publications will be more portable, pocket-sized books and will remain packed with current and relevant observations. MCTP relies on units to take advantage of training opportunities to prepare for WFXs. The opportunities include the opposing force ride along and unit participation as a higher command, MCTP-assisted Command Post Exercise (CPX) 3. These initiatives better prepare units for WFXs and deployments. Units that utilize these pre-WFX training opportunities tend to field higher-performing staffs at WFXs and enter their WFX better poised to engage the scenario.

This publication starts with an executive summary of common trends that were identified throughout the FY20 WFX program and serve to frame the specific observations found later in this publication. The chapters are arranged to effectively highlight the key observations from FY20 by warfighting function (WfF) and by echelon. Many of the observations are data points that reinforce what the executive summary describes. The following trends are a distillation of observations compiled from the three FY20 WFXs.

1. Current operations synchronization and transitions. Observers saw repeated transition management difficulties that resulted in desynchronized WfFs among current operations integration cells (COICs) at all echelons from brigade to corps. This problem is most prevalent during transitions occurring between phases, critical events, and shift changes at the command nodes. Further complexity is added to this issue when command posts reposition for any reason. Transitioning operations between plans, future operations, and current operations without a transition brief leads to further desynchronization. It is recommended that staffs implement a formal transition brief to manage each transition type. The brief is a synchronization meeting dedicated to a specified transition. Transition management is further aided by simple measures such as calling “attention in the tactical operations center (TOC)” to disseminate new key information. Staffs that implement these steps are better able to manage transitions between phases and critical events, plan, follow knowledge management procedures, and follow standard operating procedures (SOPs).

2. Command, control, communications, computers, and intelligence (C4I) integration and network design and maintenance. Many units in FY20 were challenged to effectively achieve distributed mission command across three command posts using organic and supporting information systems architectures. Poor network management led to reduced understanding and visualization of the battlefield across the command posts. As a result, planning, operations execution, and commander decision making were adversely impacted. Integrating the command post computing environment (CPCE) common operational picture further compounded the network architecture issues. CPCE was introduced and used in two exercises during FY19. In both cases, the limited user training conducted was insufficient to use the systems to their full capacity. FY20 leveraging emerging mission command information systems such as CPCE requires a significant investment in individual user training. Additionally, systems such as CPCE depend on a well-developed integration plan. A peer or near-peer contested information environment will further complicate effective distributed mission command.

3. Understand the operational environment. Units struggled to understand the operational environment in FY20. There are a few contributing factors: Incomplete intelligence preparation of the battlefield (IPB), little to no cross-boundary coordination, and little deep-fight shaping efforts. Incomplete or insufficient WfF-integrated IPB was to blame in most instances. Those units that did not conduct WfF-integrated IPB or did little or no refinement of higher headquarters IPB products were adversely affected in later military decision-making process (MDMP) steps and during mission execution. Accurate visualization of the battlefield, as applied to each WfF, leads to greater synchronization during course of action (COA) development and COA analysis. In FY20, IPB tended to focus almost exclusively on the division area of operations, largely ignoring areas of interest on adjacent boundaries. Lastly, as the intensity of the close fight increases, there is a natural tendency for intelligence assessments to become reactive only to the close fight and lose focus on visualizing the enemy fight out to 72 to 96 hours. The end result is poor intelligence support to targeting, poor echelons-above-brigade shaping, and poor joint fires capabilities leveraging.

4. Information collection and targeting. Desynchronization between the intelligence, operations, and fires lead to missed opportunities to eliminate high-payoff targets (HPTs) from the battlefield. The missed HPT opportunities directly affected the success of the units in the WFXs. Observations from FY18 through FY20 found that staffs were proficient in individual tasks associated with intelligence, planning, and fires, but struggled to synchronize across staff sections. As a result, the G-5/G-35 were planning operations against enemy forces destroyed days earlier, the G-2 continued to collect on named areas of interest (NAIs) looking for conventional enemy forces well behind the forward line of own troops, and fires were planning shaping operations against enemy forces that were either already destroyed or repositioned into an adjacent division area of operations. For several years, MCTP key observations bulletins recommended a more collaborative planning effort between the intelligence, maneuver, and fires WfFs. FY18 specifically recommended an information collection matrix approved by the G-2 and G-3 that offers intelligence on enemy displacement tactics, techniques, and procedures (TTP) regarding specific NAIs. This intelligence would then be used by targeting teams to plan for specific target decay times and further assist to refine target areas of interest. Additionally, FY19 key observations bulletins recommended a holistically developed, information collection plan that uses input from the G-2 analysis and control element, field artillery intelligence officer, targeting officer, fire support coordinator, and a planner from the G-5 to ensure the collection plan supports the maneuver and fires efforts. Each recommendation mutually supports the other and both are designed to help units avoid the trap of planning information collection, maneuver, and fires independent of each other.

5. Defining the fight at echelon over space and time. Division and corps staffs are continually challenged to maintain planning horizons. Planning horizon challenges are closely related to the comments mentioned earlier on collaborative staff planning and synchronization. Lack of synchronization impacts staff development of accurate running estimates to effectively visualize future operations out to 72 to 96 hours. It is difficult but necessary for integration cells to maintain focus on deep-fight planning horizons as the intensity of the close fight diverts staff attention and energy. The division is the highest tactical echelon in large-scale combat operations (LSCO); it has a clear role in shaping the deep fight through counterfire and operational tempo, among other things. Division planning efforts must simultaneously shape the deep fight for the next operation, manage current fights, and set conditions in the support area, all while managing key operational transitions, maintaining tempo, enabling operational reach, and preserving options for the commander. Congested battle rhythms are one contributing factor to poor planning horizon management, because battle rhythms typically do not preserve the staff ability to simultaneously focus on current operations management and future operations shaping.

6. Targeting process and shaping operations. Staff inexperience in executing LSCO individual and collective targeting tasks created target processing challenges. Repetition and learning throughout individual WFXs improved the staff targeting and shaping proficiency; however, as exercises went on, planning horizon management issues surfaced. Staffs usually develop focused fires plans that shaped efforts 72 to 96 hours out prior to the start of an exercise. However, once the exercise begins, focus quickly shifts to a 24- to 28-hour planning effort as the staff reacts to enemy operations, friendly combat power loss, and other operational factors. Stated another way, the art of targeting is quickly overcome by the science of targeting as the fires enterprise loses focus on anticipating and identifying operational tempo shifts to adjust plans and instead focuses only on enemy capabilities. Airspace coordination measures (ACMs) were also a challenge in FY20. ACMs were not proactively built as a matter of routine or executed in a timely manner to facilitate the service fleeing enemy targets. Lastly, fire support coordination lines between division areas created a challenge. Units tended to only focus on their area of operations, which allowed enemy forces to expose seams in adjacent division boundaries.

7. Air defense integration. Division short-range air defense (SHORAD) planning and execution remains a challenge. SHORAD operations require doctrinal and training solutions to improve operations. Unit maneuver brigade combat teams suffer significant combat power losses to enemy attack helicopter with little to no opposition. Often, misunderstanding of enemy air avenues of approach lead to misplaced friendly radar capabilities, which resulted in enemy exploiting unmonitored air corridors. Often, air defense radar placement is only discussed in protection WfF working groups, which is a recurring negative trend. Successful units viewed their air defense artillery radar as a collection platform and integrated the radar into their intelligence collection plan. Misplaced radars are usually the result of unsynchronized intelligence, protection, and maneuver WfFs and leave maneuver forces unprotected from enemy attack aviation.

8. Command post roles and responsibilities. Divisions and corps struggled to define the roles and responsibilities of the main command post, tactical command post, and sustainment command post (SACP) during FY20 WFXs. Lack of clear delineation of responsibilities leads to ineffective allocations of personnel and resources to support the function of each command post during the course of operations. In the recent past, divisions made concerted efforts to establish a SACP from their modified table of organization and equipment (MTOE) and employ that command post at the WFX per FORSCOM directive. These efforts continued in FY20. Although broad doctrinal roles and responsibilities exist for the three command posts, effective TTP and best practices for how best to man, equip, and train personnel during various phases of the operations, especially during transitions, are emerging.

CHAPTER 1

Recurring Trends

1.1: KNOWLEDGE MANAGEMENT

Observation: Division staffs did not use effective knowledge management to create shared understanding among the staff and subordinate units.

Discussion: On several occasions, products associated with operation and fragmentary orders were not published or easily accessible on the SharePoint portal. For example, order annexes and attachments were typically stored on the unit's internal file share, which was not accessible by all subordinate units. As a result, shared understanding of operational products for subordinate and task-organized units was not achieved.

By contrast, one observed G-2 section fostered shared understanding in the division intelligence enterprise through knowledge management procedures. First, the unit effectively managed and routinely updated digital and analog intelligence products. Second, this particular unit relied on two primary outputs to provide a common intelligence picture—the graphic intelligence summary—and a focused, productive G-2 and S-2 intelligence synchronization meeting. Third, division enablers such as cyberspace electromagnetic activities (CEMA) and information operations were integrated into the intelligence enterprise through collection operations, synchronization meetings, and briefings. G-2 current operations (CUOPS) sections produced a running estimate, briefed the battle update brief, and remained integrated with the analysis and control element through multiple touchpoints during the operation. Finally, knowledge management in the intelligence enterprise was further enhanced by giving noncommissioned officers (NCOs) a clearly defined responsibility to provide version control and abate redundant products.

Recommendation: At each echelon, the knowledge management officer must understand and implement the knowledge management cycle to ensure effective knowledge management practices are adhered to by the staff to support operations. Further, future operations (FUOPS) and CUOPS must develop systems to better integrate information tracking to improve shared understanding. Finally, develop and publish Annex Q (knowledge management of the operation order) with guidance from the division chief of staff.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): Training an organizational knowledge management officer to use knowledge management concepts such as the knowledge management cycle, components, and tasks is crucial to information management throughout operations. The appointed knowledge management officer at every echelon must be able to perform the knowledge management assessment and implement solutions to fill gaps in the knowledge transfer process.

References: Army Techniques Publication (ATP) 6-01.1, *Techniques for Effective Knowledge Management*, 6 March 2015; Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

1.2: CYBERSPACE ELECTROMAGNETIC ACTIVITIES OPERATIONS

Observation: Division CEMA staff struggled to effectively synchronize and integrate into FUOPS planning and the targeting process.

Discussion: The division CEMA section began with a synchronized plan that was briefed by phase during the combined arms rehearsal. The electronic warfare officer produced and published Appendix 12 to Annex C, which contained information to support a strong staff estimate with the division base order. The division requested effects in support of the current scheme of maneuver and high-payoff target list in the air-tasking order cycle for the first 48 hours of operations. However, once the division passed the line of departure, the CEMA section was unable to plan for FUOPS while maintaining focus on CUOPS. This lack of planning led to desynchronization with the division planning and targeting efforts. The division CEMA section did not receive updated intelligence estimates on changing enemy threats or enemy and friendly schemes of maneuver. Therefore, based on information provided by the CEMA section, many effects requested were not focused on actual threats that supported maneuver objectives.

Recommendation: Division CEMA representatives must integrate into staff working groups (targeting, intelligence, sustainment, etc.) across the staff integration cells to synchronize CEMA efforts with the staff sections. Briefing the most up-to-date CEMA running estimates during these meetings helps identify information gaps about future planning or targeting efforts. Also, in an effort to improve understanding of CEMA capabilities, the division electronic warfare officer or NCO must be prepared to brief staff representatives on CEMA capabilities, limitations, and constraints based on division priorities and asset availability in the theater of operations.

DOTMLPF-P: This observation is a training issue. Many staffs are still unfamiliar with CEMA capabilities and limitations. As more training is conducted, leaders will become more familiar with CEMA. CEMA equipment fielding to support operations remains a materiel gap, while equipment fielding is ongoing.

References: ADP 5-0, *The Operations Process*, 31 July 2019; ATP 3-12.3, *Electronic Warfare Techniques*, 16 July 2019; ATP 3-60, *Targeting*, 7 May 2015; FM 3-12, *Cyberspace and Electronic Warfare Operations*, 11 April 2017.

1.3: PLANNING HORIZON MANAGEMENT

Observation: Failure to enforce planning horizons and efforts led to desynchronization among the staff members.

Discussion: The transition of responsibilities and efforts among integrating cells is essential to focus the organization's planning efforts and shape future events. A lack of planners in the CUOPS, FUOPS, and plans cell often resulted in planning operations occurring within 24 hours of execution. This truncated planning effort led to a lack of focus and effort on the mid- and long-term planning horizons, and less synchronization of staff efforts. In turn, this drastically reduced the predictive analysis needed to support the targeting process and assess operations. Transition briefs were also rarely conducted with leader involvement, resulting in informal handover of critical information and responsibility for planning between individual planners. The transition brief enabled the integrating cell staff members to understand the future operation, identify friction points prior to execution, and achieve greater synchronization of staff planning priorities.

Recommendation: Planning horizon management should be codified in unit standard operating procedures (SOPs) and enforced by senior leaders. These efforts set the conditions for effective handover between integrating staff cells. Augment the current operations integration cell (COIC) with additional planners to prevent FUOPS and plans cells from planning short-term horizon events. Establish on-call operational planning teams for anticipated events, opportunities, or threats, which require additional short-term planning. Transition briefs between integrating cells must be an established, formal battle-rhythm event that follows the five-paragraph operation order format.

DOTMLPF-P: Organization of the integrating cells should account for work requirements to maintain established planning horizons. Training each integrating cell on rapid-planning adjustments will prepare planners for rapid adjustments inside each horizon.

References: ADP 5-0, *The Operations Process*, 31 July 2019; ADP 6-0, *Mission Command*, 31 July 2019; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

1.4: COUNTERFIRE ANALYSIS

Observation: Effective counterfire analysis was challenging for units.

Discussion: Units consistently struggled with two components of counterfire analysis: Displaying density of fires on a micro-level for effective targeting, and predictive analysis of future enemy position areas of artillery as operations evolved. The heat maps produced by most S-2s display density of fires on a macro-level and are helpful in identifying which areas are most active. However, analyzing heat maps for changes in fires volume per target area allows commanders to achieve fires objectives by focusing fires into high-volume areas. Although the end product contributes to mission success, it often represents large areas of operation and prevents visualizing of details. Utilizing the heat map analysis of each target area from the situation template allows the staff to identify key positions such as enemy position areas of artillery. Units can further increase targeting effectiveness by incorporating moving target indicators into counterfire analysis. Moving target indicator use would identify additional patterns to analyze. This analysis leads to more refined target areas of interest to focus collection platforms for observation, and increases the accuracy of battle-damage assessments.

Recommendation: Produce heat maps for each target area to allow sufficient detail to assess specific position areas of artillery locations. Analyze the maps for volume of fire to find focus areas for fires. Incorporate the use of moving target indicators to allow additional pattern analysis. Participate in division information collection synchronization meetings to maintain situational awareness and inform the division information collection plan.

DOTMLPF-P: This is a doctrine and training issue. Incorporate heat-map analysis into doctrinal references. Train the analysis process.

References: ATP 2-01.3, *Intelligence Preparation of the Battlefield*, 1 March 2019; ATP 2-33.4, *Intelligence Analysis*, 10 January 2020.

CHAPTER 2

Corps and Division Observations

2.1: MISSION COMMAND AT THE CORPS AND DIVISION LEVELS

2.1.1: Distributed Command and Control

Observation: Divisions were challenged with distributed command and control (C2).

Discussion: Divisions routinely designed C2 architecture across different nodes, which can simplify decision-making processes. However, the added distance to C2 nodes tended to make reporting and collaboration more difficult. Divisions tend to utilize the Command Post of the Future (CPOF) as the primary platform for distributed C2. Alternate platforms included network SharePoint portals that typically duplicate information on the CPOF. Although the intent of using the network share drive was to make information available to a wider audience outside the CPOF, it necessitated creating and updating the same reporting products on two or more platforms. Many times, more information is reported than C2 nodes could analyze and update on primary and alternate systems, which typically led to staffs choosing to create systems outside of established unit standard operating procedures (SOPs). For example, one division staff used an Excel version of an execution checklist during a division air assault and gap crossing instead of using the primary and/or alternate means of reporting across C2 nodes. Using the Excel method instead of the planned architecture meant that neither the air assault nor gap crossing was tracked in real time by C2 nodes or subordinate brigades. The lack of readily available and accurate information in the current operations integration cell (COIC) and division tactical command post led to leaders making decisions based on inaccurate information.

Recommendation: Leaders should develop an information architecture, refine it during training exercises, and then codify the process in SOPs. Leaders must enforce their SOPs and ensure subordinates are disseminating complete and relevant information using the approved architecture. An SOP that worked for one staff was on the utilization and maintenance of CPOF pasteboards to improve information flow between C2 nodes. The pasteboard updating permissions were limited to the sections or subordinates who analyzed and reported the information. Then, by using the CPOF mirror function, consumers of the information in other C2 nodes could see the pasteboard updates in real time. For example, as brigades reported combat power on the mirrored pasteboard sections, all C2 nodes utilizing the mirrored pasteboard could see the updated information. Using the CPOF in the described manner was a way to increase information accuracy and creating shared understanding across C2 nodes.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): Training CPOF proficiency across staff sections at all echelons is vital to giving the commander options to implement the CPOF system in innovative ways.

References: Army Doctrine Publication (ADP) 3-0, *Operations*, 31 July 2019; ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; Field Manual (FM) 3-0, *Operations*, 6 October 2017; FM 6-0, *Commander and Staff Organizations and Operations*, 5 May 2014.

2.1.2: Digital Mission Command System Proficiency

Observation: Battle staffs often had limited user-level training on mission command information systems and could not fully leverage fielded digital information systems due to lack of familiarity or training.

Discussion: Successful units have trained digital master gunners for each warfighting function (WfF) and conducted refresher training for operators of each information system fielded. Without deliberate training and refresher programs, staffs will build and use few overlays and briefing tabs on CPOF. As a result, manual workaround methods will be used rather than data exchange between systems. The configuration of the Army Battle Command System (ABCS) on the tactical network is complex and easily misunderstood. The lack of training decreases utilization of technical rehearsals, further reducing the realization of fielded capabilities. Specifically, limited experience with intelligence and fires information systems results in incomplete configuration and use of manual processes for time-sensitive, dynamic fire missions.

Recommendation: Specific and deliberate identification of fielded systems should lead to a training program for digital proficiency on all information systems (digital master gunners). Consider including refresher and advanced training to improve proficiency and leverage new technologies fully.

DOTMLPF-P: Training digital master gunners and system administrators for each system is the first step. Digital master gunners should conduct additional training for each operator and user to deepen proficiency and familiarity.

References: ATP 6-0.5, *Command Post Organization and Operations*, 1 March 2017; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2015.

2.1.3: Transitions Between Command and Control Nodes

Observation: Transitions between C2 nodes.

Discussion: Division command nodes faced challenges when transitioning C2 of the close fight from the division main command post to the division tactical command post. The primary cause was a lack of battle handover SOPs. The division staff did not execute its SOP and conduct a formal handover by WfF or system (CPOF, Advanced Field Artillery Targeting and Direction System [AFATADS], Tactical Airspace Integration System [TAIS], etc.), creating the potential for a loss of situational awareness and C2 of the division. This led to the loss of the common operational picture (COP) across the command posts during transition and the inability to support subordinate commands with joint fires; intelligence, surveillance, and reconnaissance (ISR); and other enabling support. Additionally, personnel were not managed adequately to mitigate gaps in key staff at the alternate command post taking the fight. For example, there were consistently known manning shortages within the division tactical command post. Also, the sustainment area command post and division artillery were not filled from the division staff, even when it was known that these nodes would take C2 of a critical event or the operation during a transition of the division main command post.

Recommendation: Deliberately plan C2 transitions and conduct rehearsals to ensure proficiency. When transitioning control of operations from one C2 node to another, there must be a clear handover of key information by WfF and by system to ensure the node assuming C2 of the fight has complete situational awareness before taking control. Pay attention to timelines and key staff members and their locations and roles during C2 transitions. C2 transition is a deliberate process requiring leader involvement and oversight.

DOTMLPF-P: This is a unit training and SOP issue. Units can better manage transitions from one C2 node to another by establishing and training all staff members in executing SOPs. Adding a transition rehearsal to the combined arms rehearsal will assist units in managing this type of C2 changeover.

References: ADP 3-0, *Operations*, 31 July 2019; ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; FM 3-0, *Operations*, 6 October 2017; FM 6-0, *Commander and Staff Organizations and Operations*, 5 May 2014; ATP 3-91, *Division Operations*, 17 October 2014.

2.2: INTELLIGENCE WARFIGHTING FUNCTION AT THE CORPS AND DIVISION LEVELS

2.2.1: Information Collection Synchronization

Observation: Information collection was not synchronized with the commanding general's decision support matrix and targeting priorities.

Discussion: Units did not layer the various echelons of collection assets against information requirements in support of the commander's decision support matrix. Collection assets were repeatedly retasked by the chief of operations, either dynamically or ad hoc, in support of targeting tanks or to collect battle damage assessment (BDA) rather than collecting against priority intelligence requirements (PIRs). Frequent PIR changes can exacerbate this issue, requiring changes to the information collection matrix on a daily basis. The unit focused its collection to support the next objective, rather than confirming or denying the enemy course of action (COA). This process was ineffective for ensuring assets were collecting on the correct requirement with the right capability.

Recommendation: During the military decision-making process (MDMP) the following products should be created: Most likely and most dangerous enemy courses of action, and an enemy event template and matrix to distinguish between each separate enemy COA. Also create PIRs that determine which COA the enemy adopts based on the enemy courses of action. These should support the commander's decision-making process. The G-2 staff should include the field artillery intelligence officer into its planning and synchronization meetings to assist in informing the targeting cell of enemy COAs. Analysis and control elements use their running estimates, which are based on enemy COAs. These are modified using real-time enemy response to inform the staff of changes in the decision support matrix and targeting priorities.

DOTMLPF-P: This is an organization and training issue. Units must task-organize their staffs for combat and utilize integration cells. Dedicate personnel to specific integration cells until individual proficiency is reached before moving personnel to another integration cell for further training and development.

References: FM 3-55, *Information Collection*, 3 May 2013; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

2.2.2: Collecting and Evaluating Battle Damage Assessment

Observation: The G-2 process for obtaining and evaluating BDA did not effectively influence the commander's understanding or ability to visualize the battlespace, which resulted in subordinate brigades' inability to maintain momentum.

Discussion: The G-2 targeting section did not have an effective process for collecting BDA reports from data sources or tracking the number of destroyed systems across the battlespace. The BDA was not effective in delivering an assessment of relative combat effective strength to inform the commander, planners, or targeting cycle. The lack of a combat-effective strength assessment of enemy forces in the briefings and targeting working group resulted in an incomplete understanding of the enemy's remaining capability and intent. Additionally, the subordinate maneuver brigades did not have a clear understanding of the enemy situation beyond the forward line of own troops to the coordinated fire line and the intelligence handover line. The G-2 targeting section is a critical node in the intelligence support to targeting concept for understanding the current enemy situation and effectively assessing BDA and the enemy's combat effective strength.

Recommendation: G-2 analysts should process the assessments and deliver the significances of the assessed combat effective strength to inform the commander's understanding of the battlespace, determine a high-confidence level in the enemy's current strength and disposition, and identify any changes to the assessed COA.

DOTMLPF-P: This is a training issue. The Mission Command Training Program (MCTP) can provide training on ways to collect, report, and track BDA geospatially using analog and digital products.

References: FM 3-55, *Information Collection*, 3 May 2013; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

2.2.3: Information Collection Level of Detail

Observation: Division collection management sections struggled to provide the necessary level of detail to conduct effective information collection.

Discussion: Division collection management sections did not produce a quality intelligence collection matrix that provided collectors and analysts the requirements needed to effectively answer intelligence requirements. The section produced a collection synchronization matrix for each air-tasking order (ATO) cycle, but the document lacked the level of detail required in the intelligence collection matrix. The unit developed named areas of interest (NAIs), but their placement was not derived from intelligence analysis. Named areas of interest did not have a specific task and purpose, and were not refined to target areas of interest. Divisions did not synchronize aerial assets across the battlespace and struggled to use intelligence handover lines that could have prevented unnecessary redundancy.

Recommendation: The collection management section produced an ATO cycle-linked intelligence collection matrix that contained indicators, special intelligence requirements, named areas of interest, and collection times for each collection asset tasked or requested. This matrix was submitted to the G-3 for review and distributed as a fragmentary order. The G-2 fusion section assisted with indicator development, produced a detailed event template containing each NAI, and timed phase lines the unit could use to predict future enemy unit locations. Analysts conducting collection, processing, exploitation, and dissemination should use the intelligence collection matrix when conducting collection and analysis. Division staffs should conduct a collection management working group with higher and lower echelons and use intelligence handover lines.

References: ATP 2-01, *Plan Requirements and Assess Collection*, 19 August 2014; and ATP 3-91, *Division Operations*, 17 October 2014; FM 3-55, *Information Collection*, 3 May 2013.

2.2.4: Intelligence Warfighting Function Collaboration

Observation: Data shared within the intelligence WfF, between staff sections, and across echelons rarely occurred and was frequently one way with no feedback or acknowledgment from the receiving end.

Discussion: The primary observed method for sharing new intelligence information and reports within most G-2s was through chatrooms or email with no follow-up mechanism to ensure all, any, or correct receivers received or understood the message. This method can provide a log, but review of the log has never been observed as part of a synchronization meeting or shift change. Additionally, the same chatroom used for passing high-payoff target list information was regularly used to send reminders to fill generators, chow timelines, and other administrative data, which obscures critical information. Rarely did anyone call “attention in the analysis and control element” to disseminate new or time-sensitive information. Even intelligence critical to high-payoff target list targeting was often passed in the chatrooms or worse, point-to-point whisper chats, which often bypassed the field artillery intelligence officer. The G-2 teams often waited to disseminate new information or assessments to people outside the G-2 until scheduled battle-rhythm events. Even G-2 current operations (CUOPS) on the COIC floor rarely alerted or confirmed receipt of targeting or operationally relevant information until prompted by the recipient or battle captain.

Recommendation: Ensure the staff and stakeholders in the intelligence enterprise understand and adhere to the intelligence WfF's primary, alternate, contingency, and emergency (PACE) plan. Recommend building G-2 battle-rhythm events and methods to ensure collaboration and communication across echelons. Promote a culture comfortable with junior analysts calling "attention in the analysis and control element" or "attention in the COIC" and acknowledging receipt of information.

DOTMLPF-P: Formal training venues must have exercises that require intelligence professionals to interact with non-intelligence WfF personnel who utilize intelligence efforts. The interaction should be a two-way exchange to impart an understanding of how intelligence is being used.

Reference: ATP 2-33.4, *Intelligence Analysis*, 10 January 2020.

2.2.5: Developing the Situation Throughout the Operations Process

Observation: The intelligence WfF set a low priority in conducting intelligence preparation of the battlefield (IPB) iteratively throughout the operations process to refine products and tools. This often degraded unit-collection focus, which then hindered developing the situation to improve understanding, which is the basis for decisions.

Discussion: The IPB process was the primary means by which the G-2 staff supported the creation of shared understanding regarding threats, the operational environment, weather effects, and civil considerations. Throughout observed operations, many intelligence sections generally maintained NAIs sizes and locations developed from initial MDMP estimates. ISR assets remained focused on known enemy free areas in the unrefined NAI. The lack of NAIs refinement and resulting ISR asset use excessively challenged organization fusion sections in maintaining a detailed updated picture of the enemy on the digital and analog COP. The end result was that formal PIRs were not refined or briefed in enough detail to support the targeting process. Micro-analysis to support corps-specific missions, such as corps deep attacks, did not occur until after the missions have been completed. Further, event templates of the enemy's perceived scheme of maneuver were also generally lacking the appropriate amount of detail, or were not briefed during battle-rhythm events. Therefore, subordinate echelons did not have sufficient time to support subordinate unit planning.

Recommendation: Continuously refine the intelligence picture by using an iterative IPB process during operations to amplify asset effectiveness and assist the commander in understanding situations and decision making.

DOTMLPF-P: Intelligence training during MDMP exercises should incorporate iterative IPB analysis that updates the COP. Analysis should provide new intelligence assessments and give insight to emerging threats or unanticipated events on the battlefield, which leads to better shared understanding.

References: ADP 2-0, *Intelligence*, Table 2-1, page 2-3, 31 July 2019; ADP 5-0, *The Operations Process*, paragraph 1-31, 31 July 2019; ATP 2.01.3, *Intelligence Preparation of the Battlefield*, paragraph 1-1, 1 March 2019.

2.3: FIRES WARFIGHTING FUNCTION AT THE CORPS AND DIVISION LEVELS

2.3.1: Fire Support Coordination Line Management

Observation: Corps headquarters was slow to predict, request, and implement fire support coordination line (FSCL) shifts based on division schemes of maneuver.

Discussion: Corps initially created triggers to shift FSCL, based on the shaping efforts by the ATO. Generally, aggressive maneuver operational tempo of subordinate division elements necessitated the need for more rapid adjustments. Consequently, the FSCL was frequently on the same phase line as a division coordinated fire line and at times co-located with the forward line of own troops. This hindered corps and division shaping operations, overtasked the counterfire headquarters, and required additional coordination among echelons. In summation, these effects all created a system that slowed the responsiveness and lethality of fires. Corps headquarters did sufficiently create and then refine a checklist and decision support matrix for FSCL shifts. Unfortunately, these products did not clearly articulate the conditions, triggers, and reporting requirements that subordinate elements must have to effectively use them in large-scale combat operations.

Recommendation: Corps fires planners should establish triggers for moving the FSCL based on shaping conditions and the movement of subordinate divisions. It may be necessary to control a division's operational tempo to maintain synchronization across the corps and prevent gaps from forming between the divisions. A method of doing this is to establish a division forward boundary or a limit of advance. This synchronizes FSCL shifts with maneuver and fires conditions, and allows the corps and divisions the largest amount of flexibility. The FSCL decision support matrix needs to clearly outline the conditions and tasks that subordinate units must achieve prior to an FSCL shift. Clearly define, publish, and revise the projected FSCL shifts through the targeting and orders processes.

DOTMLPF-P: This is a doctrine issue. Identify in FM 3-09, *Fire Support and Field Artillery Operations*, conditions and considerations for moving the FSCL. Currently, doctrine only states that the FSCL is moved "to keep pace with operations." (FM 3-09, paragraph B-3).

Reference: FM 3-09, *Fire Support and Field Artillery Operations*, paragraphs B-3 to B-12, 30 April 2020.

2.3.2: Integrating Nonlethal Capabilities Into the Targeting Process

Observation: Division and corps staffs missed opportunities to integrate nonlethal capabilities against high-payoff targets.

Discussion: The division and corps did not integrate nonlethal effects into each ATO throughout the targeting process. Although the nonlethal staff worked to employ organic and joint assets to disrupt enemy operations, these efforts were often not aligned against high-payoff targets in time and space. The lack of synchronization between lethal and nonlethal assets limited the division and corps' ability to accomplish their targeting objectives.

Recommendation: Develop a cross-WfF, multi-echeloned effort to employ all nonlethal capabilities in support of shaping efforts and operations. Nonlethal assets should support the targeting objectives for each ATO day as laid out by the commander, similar to lethal assets. All nonlethal assets require a clear task and purpose that support a given ATO cycle. CEMA, electronic warfare, space operations planning, and decision making require full integration into targeting meetings. Leverage battle-rhythm events such as the electronic warfare or nonlethal activities working groups to refine submitted electronic warfare support, cyber, and air requests. Also address any changes to the scheme of maneuver. Operations and fragmentary orders should include nonlethal capabilities to ensure support is effectively prioritized.

DOTMLPF-P: This is a training issue. The existing simulated training environment requires external intervention “white carding” of nonlethal and information-related effects.

References: ADP 5-0, *The Operations Process*, paragraphs 2-67 through 2-72, 31 July 2019; ATP 3-60, *Targeting*, paragraph 1-3, 7 May 2015; FM 3-13, *Information Operations*, paragraph 7-39, 6 December 2016; FM 6-0, *Commander and Staff Organization and Operations*, paragraph 9-111, 5 May 2014.

2.4: MOVEMENT AND MANEUVER WARFIGHTING FUNCTION AT THE CORPS AND DIVISION LEVELS

2.4.1: Division Cavalry in Large-Scale Combat Operations

Observation: Successful divisions created a division cavalry task-organized with necessary enablers and protection assets to accomplish a clear task and purpose appropriate for their capabilities.

Discussion: Successful units understood that a near-peer threat would employ its own reconnaissance capabilities across a wide front on the battlefield. Division cavalry organizations able to accomplish their assigned tasks were task-organized to include protection enablers like AH-64s, short-range air defense assets, and maneuver enhancers such as bridging capabilities. Task organization included, at a minimum, an armored reconnaissance squadron (served as command headquarters of the formation), engineer company, chemical company, mechanized M109 artillery battery, avenger platoon, and attack helicopter company. Successful units also employed the “push” form of reconnaissance to gain and maintain contact with the enemy. This method allowed them to confirm or deny PIRs and validate estimates of enemy composition, disposition, strength, and COA. Enhanced survivability enabled units to accomplish their tasks and maneuver to exploit opportunities as they appeared.

Recommendation: When forming a division cavalry, units must consider their specific task and purpose to ensure they are task-organized appropriately. Enhanced sensors from the air defense artillery platoon and M109 artillery battery provided early warning for the most forward units and greater situational awareness for the entire division. The intelligence gathered from the division cavalry allowed the commander and staff to shape the close fight and make decisions that positively impacted the scheme of maneuver.

DOTMLPF-P. As an organization issue, current corps and division modified table of organization and equipment (MTOE) does not have the organic enablers to support the division cavalry core mission of guard and cover during large-scale combat operations. As a training issue, corps and division units should add division cavalry training objects to their training unit plans to support mission-essential task list assessment.

References: ADP 5-0, *The Operations Process*, 31 July 2019, Chapter 1; ADP 6-0, *Mission Command*, 31 July 2019, Chapter 4; ATP 3-91, *Division Operations*, 17 October 2014, Chapter 2.

2.4.2: Aviation Mission Planning Timeline

Observation: Aviation mission planning and tasks were not effectively synchronized with the joint air-tasking cycle (JATC) timeline.

Discussion: The JATC provided the means for the effective and efficient employment of joint air capabilities and forces. A product of the JATC was the ATO, which had a 72- to 96-hour planning cycle. This planning cycle allowed units at echelon timeframes to plan, prepare, and conduct joint air operations. Despite the pre-established ATO planning cycle, planning and tasking of aviation assets often occurred within 24 hours of execution. Divisions had a responsibility to provide mission and planning guidance with sufficient lead time to allow subordinate echelons to conduct detailed mission planning. When this did not occur, the combat aviation brigade conducted hasty mission planning, which increased risk. Divisions had meetings embedded in their battle rhythm such as the targeting working group, operations and intelligence working group, and assessment working group that addressed operations 72 to 96 hours in advance. These working groups can provide a means to forecast aviation mission requirements in accordance with the JATC, allowing the combat aviation brigade to conduct deliberate mission planning and reduce risk. Units that had full staff integration throughout the operations process, routinely executed more deliberate and efficient aviation operations.

Recommendation: Integrate aviation mission planners into all established unit meetings and working groups to forecast mission requirements in conjunction with the ATO planning cycle.

DOTMLPF-P: As an organization issue, current combat aviation brigade MTOE does not have liaison officer sections at the brigade level to adequately integrate into the division planning horizons. Liaison officers at division and brigade will enhance the synchronization effort. As a training issue, integration and establishment of a working group agenda to include aviation planners input into shaping operations will enable future maneuver unit operations such as reconnaissance and deep-strike capabilities.

References: FM 3-04, *Army Aviation*, 6 April 2020; FM 3-52, *Airspace Control*, 20 October 2016; Joint Publication (JP) 3-30, *Joint Air Operations*, 25 July 2019.

2.4.3: Current Operations Integration Cell Collaboration With Other Staff Cells

Observation: There was a lack of effective COIC collaboration with other staff cells.

Discussion: Information and knowledge management processes in the division staff eroded effective staff collaboration with the COIC. Information continued to be stove piped through functional chatrooms and individual email. Staff functional focus created stovepipes of information among each WfF section, preventing collaboration with the other sections. Two of three divisions observed had over 30 active chatrooms on their digital C2 systems. Running staff estimates were poorly managed and underutilized by WfF representatives and enabling attachments in the COIC. Digital C2 systems and analog products had stale information (beyond 12 hours) and did not routinely provide the information needed to make informed decisions.

Recommendation: If chatrooms are utilized, focus chatroom participants on who needs to know versus WfF-specific rooms. However, a major drawback of using chatrooms is that collaborative effort, typically found in a synchronization meeting, is missing. Ensure the COIC staff is prepared to discuss its section's running estimate. Disseminate its assessments more efficiently during the COIC synchronization meetings (i.e., seven-minute drill, staff synchronization drill, staff synchronization, staff synchronization update, and COIC synchronization). Utilize the division digital C2 systems to disseminate and maintain active staff estimates. This will assist the separate command nodes in understanding the COP. Duplicate digital staff estimates in an analog format to ensure the information is readily available for utilization. The ability to provide current and accurate running estimates to the commander and staff facilitates assessment and the rapid decision-making and synchronization processes. A best practice is to maximize COIC representatives' participation into a staff synchronization update. The intent of the update is twofold: All staff members articulate significant changes to their estimates that may affect future decisions and present updated analog and digital products. The staff can optimize the synchronization by focusing on the commander's critical information requirements, changes to the operational environment, and setting conditions in the next 24 hours in support of operations. Another best practice observed is integrating the other division command nodes into the COIC synchronization update digitally to ensure a COP across all command nodes.

DOTMLPF-P: This is a unit training and SOP issue. Units should establish and strictly follow the SOP to maximize the time spent in meetings.

References: ADP 3-0, *Operations*, 31 July 2019; ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; FM 3-0, *Operations*, 6 October 2017; FM 6-0, *Commander and Staff Organizations and Operations*, 5 May 2014.

2.5: PROTECTION WARFIGHTING FUNCTION AT THE CORPS AND DIVISION LEVELS

2.5.1: Protection Warfighting Function Effectiveness

Observation: The protection WfF struggled to function as an integrated and effective staff section.

Discussion: ADP 3-37, *Protection*, Introduction, page IV, states: “The protection WfF establishes the protection tasks and systems that are synchronized and integrated throughout the operations process and, with the other elements of combat power, preserves the force so that commanders can apply maximum combat power to accomplish the mission.” The protection WfF ensures the integration of protection assets and capabilities throughout operations via integrating processes; continuing activities; conducting the MDMP, working groups, and planning sessions; and coordinating between WfFs. However, the protection WfF experienced challenges in synchronizing efforts due to key members of the WfF being physically separated between the various command posts and the breadth of disciplines integrated into one WfF. This often reduced units’ ability to protect the force and provide a shared understanding to the staff and commander. Furthermore, the protection working group was often of limited value to the unit. Without a focused agenda designed to identify and mitigate threats, analyze subordinate unit’s scheme of protection, or generate recommendations to the commander for protection related issues, the protection working group often regurgitated information from other battle-rhythm events. Additionally, a critical piece to protection planning and a key topic at the protection working group was the protection prioritization list, which is a tool to evaluate friendly assets, threats, and mitigation measures to facilitate commander decisions on prioritization and resource allocation. During operations, the unit protection prioritization list often devolved into just a list that neither evaluated nor reprioritized protection assets. Ineffective integration, unproductive meetings, and underutilized tools resulted in lack of unity of effort for the protection cell and a lack of shared understanding across the staff.

Recommendation: Establish the protection cell early in exercise planning and consistently train the cell together. Units should account for protection cell manning in the SOP and roles and responsibilities must be clearly defined. The protection chief should attend relevant executive meetings and synchronize protection efforts. Establish a protection working group that nests with other operational meetings (including subordinate units) and supports the commander’s decision making. The protection working group must include an analysis of protection prioritization list, staff estimates, threat assessments, CUOPS, and recommendations for the commander’s decisions. The protection prioritization list must be timely and relevant to resource allocation and commander decisions.

DOTMLPF-P: As an organization issue, some units lacked a dedicated MTOE position for the protection chief. Typically, the protection chief is dual-hatted. This can lead to task saturation and no long-term continuity. As a training issue, units must address the protection cell, protection working group, and protection prioritization list requirements in their SOPs and implement SOPs during training and exercises. As a leadership and education issue, the protection WfF consisted of several basic branches (military police; air defense artillery; engineer; explosive ordnance disposal; and chemical, biological, radiological, and nuclear), but there was insufficient institutional education on the protection WfF.

Reference. ADP 3-37, *Protection*, Introduction, paragraph 1-8, paragraphs 3-45 through 3-55, and paragraphs 3-19 through 3-23, 31 July 2019.

2.5.2: Protection Working Group and Warfighting Function Integration

Observation: The most successful protection sections were those that integrated representatives from all WfFs into their protection working group.

Discussion: Improvements observed in protection working groups included updates to the protection prioritization list, task-organization changes of protection assets, and a determination of risk. MCTP observer controller/trainers (OC/Ts) observed that protection working group products were not always updated or distributed outside of the protection working group and were at times only seen by division staff. However, MCTP OC/Ts observed that the most successful protection working groups improved the quality and distribution of their products by incorporating all WfFs, especially the intelligence WfF, into the daily protection working group. The intelligence WfF representatives at the protection working group provided updates to the enemy's high-payoff target list, which determined the priority of friendly critical assets. The protection cell utilized the information provided to develop the protection prioritization list. By incorporating all WfF representatives at the protection working group, greater shared understanding of protection tasks and priorities across the division was achieved.

Recommendation: The protection working group leads must invite representatives from all WfFs to its daily meetings. Protection working groups especially should integrate the intelligence WfF into their meetings to assist in updating protection prioritization lists and determining the priority of friendly critical assets. The protection working group must formally submit changes to the G-35 for incorporation into the fragmentary order production process on a daily basis to ensure shared understanding across staffs.

DOTMLPF-P: This is a unit training and SOP issue.

Reference: ADP 5-0, *The Operations Process*, 31 July 2019.

2.6: SUSTAINMENT WARFIGHTING FUNCTION AT THE CORPS AND DIVISION LEVELS

2.6.1: Sustainment Synchronization Between Command Posts at Division and Corps

Observation: Division sustainment WfF elements did not synchronize sustainment operations between the division main, division tactical, and sustainment area command posts.

Discussion: The division did not use a uniform sustainment COP among the three command posts, which led to inaccurate sustainment reporting. Each command post had its own sustainment reporting product resulting in major information discrepancies. Further confusion resulted when sustainment personnel from the division main and division tactical command posts did not participate in sustainment area command post synchronization meetings, which resulted in a lack of situational understanding across all three command posts. In another instance, inaccurate reporting resulted in the division G-4's inability to forecast sustainment requirements beyond 24 hours. In this case, the division was unable to achieve synchronization between the sustainment brigade, expeditionary sustainment command, and corps G-4, which hindered the commanding general's decision making.

Recommendation: Establish one COP for use by all command posts to assist in shared understanding among echelons. Adhere to the seven-minute drill. Adjust current sustainment battle-rhythm events based on inputs and outputs, which feed into decision making. The logistics synchronization should become a sustainment synchronization that enables synchronization for the deputy commanding general in charge of sustainment (DCG-S) to facilitate decision making.

DOTMLPF-P: This is a training issue. Units must establish COPs that assist in reporting and forecasting sustainment needs. Once established, units should test SOPs during training exercises and refine them as necessary. Upon completion of refinement, SOPs should be maintained and consistently used to maintain proficiency.

References: ADP 4-0, *Sustainment*, 31 July 2019; FM 4-0, *Sustainment Operations*, 31 July 2019.

CHAPTER 3

Brigade Observations

3.1: BRIGADE-LEVEL TRENDS

3.1.1: Distributed Common Ground System-Army Use at the Brigade Level

Observation: Brigades struggled to utilize the Distributed Common Ground System-Army (DCGS-A) during warfighter exercises (WFXs).

Discussion: Although brigades were authorized DCGS-A machines and the associated military occupational specialty Soldiers by the modified table of organization and equipment, the units rarely brought the machines up to fully operational. This is attributed to a number of issues to include improper configuration, lack of systems integrators, limited training on the system, and the inability to connect to intelligence fusion server stacks. As a result, units used workarounds, such as pulling intelligence products from higher and adjacent units, but lacked the ability to fully analyze and synchronize intelligence collection.

Recommendation: Improve the overall training for intelligence information systems at home station.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): This is a training, personnel, and materiel issue. Training on DCGS-A is often limited to professional military education, rather than training that is conducted routinely at home station. Brigades are limited in the number of personnel qualified to integrate DCGS-A into the overall Mission Command Information Systems (MCIS) architecture, and may not be filled to 100 percent on DCGS-A users. Finally, DCGS-A subsystems, such as the multifunction workstations and intelligence fusion servers, did not seamlessly integrate into existing command, control, communications, computers, and intelligence (C4I) architectures.

3.1.2: Mission Command Systems Integration at the Brigade Level

Observation: Combat aviation brigades (CABs) struggled to maximize MCIS capabilities to provide shared understanding.

Discussion: Minimal training on MCIS and a lack of network continuity resulted in CAB overuse of analog products. Analog warfighting function (WfF) products throughout the command post were not always aggregated into a centralized battleboard and map in the CAB current operations (CUOPS) section. Many products contained relevant information, such as an enemy situation template, various sustainment slants, and operational graphics within the CAB area of responsibility; however, they were not duplicated digitally on an organic MCIS. Some individual staff sections utilized digital running estimates on Command Post of the Future (CPOF), but often lacked common operational graphics and further details, that were not aggregated into a single digital common operational picture (COP). Lack of a digitally distributed COP resulted in a lack of timely situational awareness at the subordinate level.

Recommendation: Schedule personnel for MCIS training and assign select personnel for digital master gunner and knowledge management qualification courses. Codify processes, procedures, and lessons learned in standard operating procedures (SOPs).

DOTMLPF-P: Training is the solution to this issue. Utilizing analog and digital battle-tracking methods during training events will improve staffs' ability to synchronize operations and build situational awareness with a COP.

References: Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; Army Techniques Publication (ATP) 6-0.5, *Command Post Organization and Operations*, 1 March 2017; Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*, 5 May 2014; FM 6-02, *Signal Support to Operations*, 13 September 2019.

3.2: MILITARY POLICE BRIGADES

3.2 1: Detention Operations Planning in Military Police Brigades

Observation: Military police (MP) staffs failed to appreciate the full scope of detention operations.

Discussion: MP brigades tended to underestimate the full extent of staff integration required to conduct detention operations. Units typically placed emphasis on the detention facility itself, and delegated tasks to the detention battalions. This neglected critical considerations for detention operations, including transfer and transport of detainees; medical responsibilities at point of capture; logistic requirements for the detainees such as food, water, and clothing; Class IV requirements; interaction between MPs and intelligence units postured at detainee holding areas; and responses to negative media or reports of abuse. MPs understood each of these functions conceptually, but struggled to emplace systems and processes to account adequately for these considerations in real-time execution.

Recommendation: Inclusion of all WfFs into the planning of detention operations ensures a comprehensive analysis for effective considerations of potential issues in the planning and operations of a detention facility. Additionally, stakeholders from across the corps, such as human intelligence teams, the corps provost marshal, and public affairs officer should be included in the planning process.

DOTMLPF-P: This difficulty arises primarily from doctrine and training issues. Current doctrine is not explicit enough on the roles of individual staff sections to help nonmilitary police staff members understand the on-the-ground requirements of detention operations. Details tend to focus on the detention facility itself and vaguely describe planning considerations for Class IV and transport. Training for detention operations at the brigade level suffers from a lack of opportunities to establish detention facilities from scratch and fully man and operate them in a short time frame.

3.2.2: Creating Shared Understanding in the Military Police Brigade

Observation: MP brigades struggled to develop COPs to facilitate battle tracking and shared understanding.

Discussion: MP CUOPS sections displayed analog and digital COPs; however, they often contained only basic components such as a map with brigade efforts and current missions. MPs were often utilized in squad-sized formations, greatly increasing the difficulty of tracking combat power and asset availability at the brigade level. MPs also struggled to track adjacent units in the support and consolidation area, and maintain awareness of command and support relationships and the related brigade responsibilities. If SOPs existed, they were not utilized. Also, standard tracking and briefing systems were often neglected, contributing to an intermittent flow of dispersed data, instead of shared understanding.

Recommendation: Develop analog and digital COP checklists that present specific mission requirements of MPs and codify them in SOPs. Train on the SOPs so that all members of the command post know their roles and responsibilities and how to provide the necessary understanding to the commander.

DOTMLPF-P: This is a training issue. Doctrine provides extensive suggestions on building a COP. Units need to practice and refine COPs during home-station training.

References: ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; ATP 6-0.5, *Command Post Organization and Operations*, 1 March 2017; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

3.3: MANEUVER ENHANCEMENT BRIGADE

3.3.1: Confusion in the Consolidation and Support Areas

Observation: Ill-defined roles and responsibilities continued to cause problems in the corps and division consolidation and support areas.

Discussion: Planning efforts for the consolidation and support areas continued to appear as an afterthought to corps and divisions. Collection management, terrain and battlespace management, fires procedures, sustainment support, and security were inadequately addressed. Recent conflicts around the world have demonstrated the effectiveness of attacking U.S. forces in the support area, and foreign militaries have adjusted their doctrine and weapon systems to exploit this factor. However, units in the support area did not adequately plan against these threats. As a result, requests for fire sometimes took hours instead of minutes, targeting was nonexistent, intelligence collection was limited, and sustainment was insufficient for units in the support area.

Recommendation: Conduct deliberate planning and rehearsals for units in consolidation and support areas.

DOTMLPF-P: This is a doctrine and training issue. Doctrine for sustainment area command posts and consolidation areas in general are still woefully inadequate to address current and future challenges. Training and priorities can mitigate some of these shortfalls.

References: ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; ATP 6-0.5, *Command Post Organization and Operations*, 1 March 2017; FM 6-0, *Commander and Staff Organization and Operations*, 22 April 2016.

3.3.2: Route Status Definition

Observation: Units used different metrics to describe route statuses and did not define responsibilities for assigning route status, resulting in unclear shared understanding of routes.

Discussion: Units at all echelons did not utilize standardized route status metrics. Instead, sustainment units focused on trafficability and maneuver units focused on security status. Additionally, lack of crosstalk and coordination among units resulted in route classification and statuses that were inconsistent throughout the area of operations. Finally, lack of adjacent unit involvement in the movement control board resulted in lack of shared understanding of route status.

Recommendation: Utilize the Table F-1, route status table in ATP 4-16, *Movement Control*, to develop the metrics that impact route status across all units in the area of operations. Identify the staff section or WfF responsible for participating in the division or corps movement control board.

DOTMLPF-P: This is a training and leadership issue. Units are unfamiliar with the doctrine on movement control and route status. Professional development sessions at echelon can improve this issue.

Reference: ATP 4-16, *Movement Control*, page F-1, 05 April 2013.

3.4: ARTILLERY BRIGADES

3.4.1: Surface Fires Lethality

Observation: Surface-to-surface fires did not achieve the desired effects because of mission routing procedures and fire control difficulties.

Discussion: Mission routing procedures and fire control difficulties resulted in surface fires that suppressed rather than neutralized enemy targets. Fire control elements processed 300 to 400 fires missions per WFX with an average processing time of 9 to 11 minutes from receipt of mission to the first round or rocket fired. The result was approximately 10 to 35 percent of missions achieved the desired effects. Fire control elements were asked to control surface fires across divisions and corps with limitations. These limitations included limited long-range munitions and capabilities, combat power losses, and an aggressive enemy capable of displacing quickly and sending fires from beyond imposed fire support coordination lines. In order to improve the probability of delivering intended effects of friendly fires, units must understand the influence that accuracy, volume, and timeliness have on fires missions:

- **Accuracy:** Target location error was typically minimal; however, technical fire direction processes significantly reduced fires lethality. The default Advanced Field Artillery Tactical Data System (AFATDS) setting was for point target, which resulted in a 100- by 100-meter sheaf. This error in technical fire direction was compounded by the volume of fire.
- **Volume:** Increasing volume of fire reduced surface fires lethality, because it significantly decreased fires timeliness. For example, as fire control elements increased the standard fire order and massed multiple firing elements, they did not account for the loss of combat power by the subordinate battalions.

- **Timeliness:** Timeliness was the most significant contributing factor in the division artillery's (DIVARTY's) decreased lethality. The factors that contributed most to mission time were airspace clearance, congested fire mission cue, and tubes executing survivability moves.

Recommendation: The fire control element needs to codify the crew drills for counterfire and strike missions. The fire control officer and/or fire control noncommissioned officer (NCO) should use a stop watch to track mission pace. AFATDS could be projected on one of the larger screens in lieu of the Tactical Airspace Integration System (TAIS) COP to allow the fires coordination officer to track the amount of targets in the buffer. The fire control NCO should supervise the AFATDS operator to ensure the correct sheaf is sent to the subordinate battalions. Lastly, the fire control officer should reassess the fire order volume daily to assist in the timeliness of fires processing. Finally, friendly force information requirements concerning combat power loss could also drive the decision to adjust the fire order.

DOTMLPF-P: This is a training issue. Train fire control elements as part of a multi-echelon team and incorporate digital systems of record to facilitate lethal fires.

References: ATP 3-09.90, *Division Artillery Operations and Fire Support for the Division*, Chapter 1, paragraph 1-15, 12 October 2017; FM 3-09, *Fire Support and Field Artillery Operations*, Chapter 1, paragraph 1-40, 30 April 2020.

3.4.2: Fires Mission Processing

Observation: Units conducted tactical fire direction by automated and analog means, but the absence of connectivity between AFATDS and TAIS significantly hindered clearance procedures.

Discussion: Automated and analog fire mission procedures were well understood by fire control elements. However, there was a consistent pattern of not integrating TAIS with AFATDS. This resulted in inconsistent and inefficient airspace clearance procedures. Units utilized workarounds such as sending firing locations, maximum ordinate munitions, and target location via chat or phone call. The workarounds used were not feasible when executing simultaneous fire missions, and they resulted in target decay and fire-mission times in excess of 10 minutes.

FABs and division artilleries did not conduct full fires technical rehearsals with all elements of the fires support system prior to the exercise. A rehearsal is the last opportunity to resolve connectivity issues. The latest TAIS version required two internet protocols and the configuration difference resulted in connectivity problems that were exacerbated by unit system integrators who were not trained on the new version or unavailable to assess and fix connectivity problems. This caused interoperability challenges, resulting in an inability to exchange mission information automatically.

Another issue observed was an AFATDS limitation, where maximum ordinate munitions with ballistic trajectories were not provided. This limitation required the fire mission be routed through the firing units where the launchers process the mission to get the maximum ordinate munition, and then send that solution back to higher elements to clear the airspace for fire mission execution.

Recommendation: Conduct digital refresher training at home station. A thorough fires technical rehearsal that validates the fire mission processing battle drill and verifies fires support information systems compatibility should be codified in unit SOPs. Establish digital linkages between AFATDS and TAIS that automatically sends the munition flight path data to TAIS and requests a goal post from the platoon-area and target-area hazards.

DOTMLPF-P: This is a training and materiel issue. Reinvigorate the importance of digital sustainment training. TAIS and AFATDS project managers need to increase collaboration to enhance the compatibility and ease of use of the systems.

References: FM 3-09, *Fire Support and Field Artillery Operations*, Chapter 2, paragraphs 2-56 and 2-58, 30 April 2020; Training Circular (TC) 3-09.81, *Field Artillery Manual Cannon Gunnery*, Chapter 5, 13 April 2016.

3.4.3: Sustainment Synchronization

Observation: DIVARTY and field artillery brigades (FABs) routinely struggled when synchronizing Class V requirements during operations.

Discussion: Operations began with staff estimates, trackers, and charts that provided accurate status of rockets and missiles on hand. Units struggled to effectively capture Class V requirements during the operation, which often led to a decrease in the volume of fires. Synchronization of Class V is improved when staffs incorporate battle damage assessment, predict enemy artillery strength, and analyze enemy fires volume by target areas in an effort to adjust fire-control element orders to allow for the prioritization of ammunition supplies and forecast running estimates for Class V resupply.

Recommendation: Forecast, coordinate, and synchronize ammunition as a part of targeting working groups or synchronization meetings. The targeting process is the mechanism used to match a delivery asset to a target. During these meetings, ammunition should be forecasted at 72 hours, movement coordinated at 48 hours, and resupply synchronized within 24 hours. During the meeting, a fire order for each high-payoff target is confirmed or adjusted, which allows identification of the ammunition requirement for each target. This also allows the staff to understand a need to cross-level between firing elements as necessary.

DOTMLPF-P: This is a training issue.

Reference: FM 3-09, *Fire Support and Field Artillery Operations*, 30 April 2020.

3.4.4: Battle Tracking and the Common Operational Picture

Observation: Battle tracking and the COP in the DIVARTY and FAB command posts tended to focus only on the deep area, from the coordinated fire line to the fire support coordination line. There were generally few products, analog or digital, that tracked the location or disposition of adjacent friendly units in the close area. Most COPs observed did not track brigade combat team headquarters or their subordinate battalions.

Discussion: Although the planning focus for a DIVARTY or FAB is the deep fight, firing elements are often positioned as close as possible to the forward line of own troops in the area of operations. This means that security must be a high priority to avoid exposing the launchers and nearby friendly units to enemy ground or indirect fire attack. DIVARTY and FAB current operations integration cells (COICs) have the responsibility to maintain situational awareness of activities occurring in the close fight, especially for those maneuver units in whose area of operations DIVARTY and FAB firing elements are functioning.

Recommendation: The COIC floor must have battle-tracking systems in place to “aggressively seek information about the current tactical situation (friendly unit locations, obstacles, cleared lanes, and bypassed units), while disseminating this information to all subordinate and supporting units.” (FM 3-09, *Fire Support and Field Artillery Operations*, paragraph 2-33). The digital and analog COP must provide the commander situational understanding of the whole fight, not just the deep fight.

DOTMLPF-P: Doctrine already lists battle-tracking requirements for this type of command post. The solution to this problem is DIVARTY and FAB leadership demanding a full picture of the battlefield and continued staff training.

Reference: FM 3-09, *Fire Support and Field Artillery Operations*, paragraph 2-33, 30 April 2020.

3.4.5: Protection Operations in Field Artillery Brigades

Observation: Protection cells in a DIVARTY or FAB command post generally consist of one or two personnel, often augmented from subordinate or outside organizations that are not integrated into the DIVARTY or FAB operations.

Discussion: Protection requirements were often only addressed after there was a problem, such as the loss of 50 percent or more combat power. There was no staff process or mechanism in which the protection officer can provide input to planning efforts or update the commander. Protection officers often did not have their own basic command and control (C2) systems, such as CPOF. Therefore, they struggled to provide input to the COP, provide guidance to task-organized protection assets, or coordinate protection efforts with adjacent units.

Recommendation: Designate a protection coordinator and assign duties and responsibilities prior to the training event. Use the chemical, biological, radiation, and nuclear (CBRN) NCO to develop and manage the protection products to include the protection running estimate, decontamination plan, and associated protection overlays. Develop a prioritized protection list, briefing products, and COP inputs and codify them in an SOP. Integrate chemical threat and protection tasks into future training.

DOTMLPF-P: This is a personnel issue. As protection is not a specified staff position, it generally falls as an additional duty to a CBRN or air defense artillery NCO or officer. A manning issue arises as these positions might not be high-priority fills for a FAB or DIVARTY. Identifying an individual for this position early in the training cycle, training them on their duties and responsibilities, and fully integrating them into the staff will alleviate this shortcoming.

References: ADP 3-37, *Protection*, 31 July 2019; ADP 5-0, *The Operations Process*, Chapter 2, Sections 2-127 through 2-134, 31 July 2019; FM 6-0, *Commander and Staff Organization and Operations*, Chapter 12, Section 12-1, 5 May 2014.

3.4.6: Division Artillery and Field Artillery Brigade Training Readiness

Observation: DIVARTY and FABs are required to build training readiness in a short time period between summer personnel transitions and warfighter training schedules.

Discussion: The Mission Command Training Program (MCTP) averages five rotations each year. Half of these rotations occur in less than six months from the summer personnel transition. Field- and company-grade officers routinely change positions every 12 months. DIVARTY and FABs require division or corps participation to train mission-essential tasks, while also experiencing the same personnel turnover. The result is that DIVARTY and FABs must execute collective training within 30 days of building a new staff in conjunction with an untrained higher headquarters. Units then must compress 18 months of training into a window of four to six months to complete three command post exercises and WFXs.

The required haste to complete three command post exercises prior to a WFX revealed significant shortfalls in individual training readiness. Everything from tent setup, operator training for MCISs, and basic equipment maintenance was not trained to the level needed for the transition to collective training. Units that attempted to run before they could crawl or walk did not reach their full training potential because they were limited by untrained operators. Majors became battle captains and battle captains and NCOs became radio telephone operators.

The delivery of surface fires required integration among the higher headquarters and subordinate and adjacent units. Division and corps headquarters often did not have a shared understanding of integrated processes such as airspace management, adjacent unit coordination, and protection operations. The expertise resided only in small pockets of field-grade and warrant officers in the division or corps staff. Basic functional understanding of these processes did not reach the level of dissemination needed for effective systems. The effectiveness of a system such as airspace management is interdependent and required every echelon and staff section to work as a cohesive team.

Upon completion of a WFX, DIVARTY and FABs achieved a period of training readiness that was often not exploited. Units often did not produce professional articles, circulate ideas across the force, or send leaders to attend sister-unit training events. The hard lessons learned by force field artillery headquarters that are not shared become lessons lost.

Recommendation: Units must plan and resource training 18 months from execution of a WFX. A greater emphasis must be placed on the level 10 and 20 tasks needed for successful command post operations. Figure 3-1 depicts a sample 12-month training plan that includes individual and collective training. It also provides recommended leader professional development to educate and build relationships among a division or corps fires enterprise.

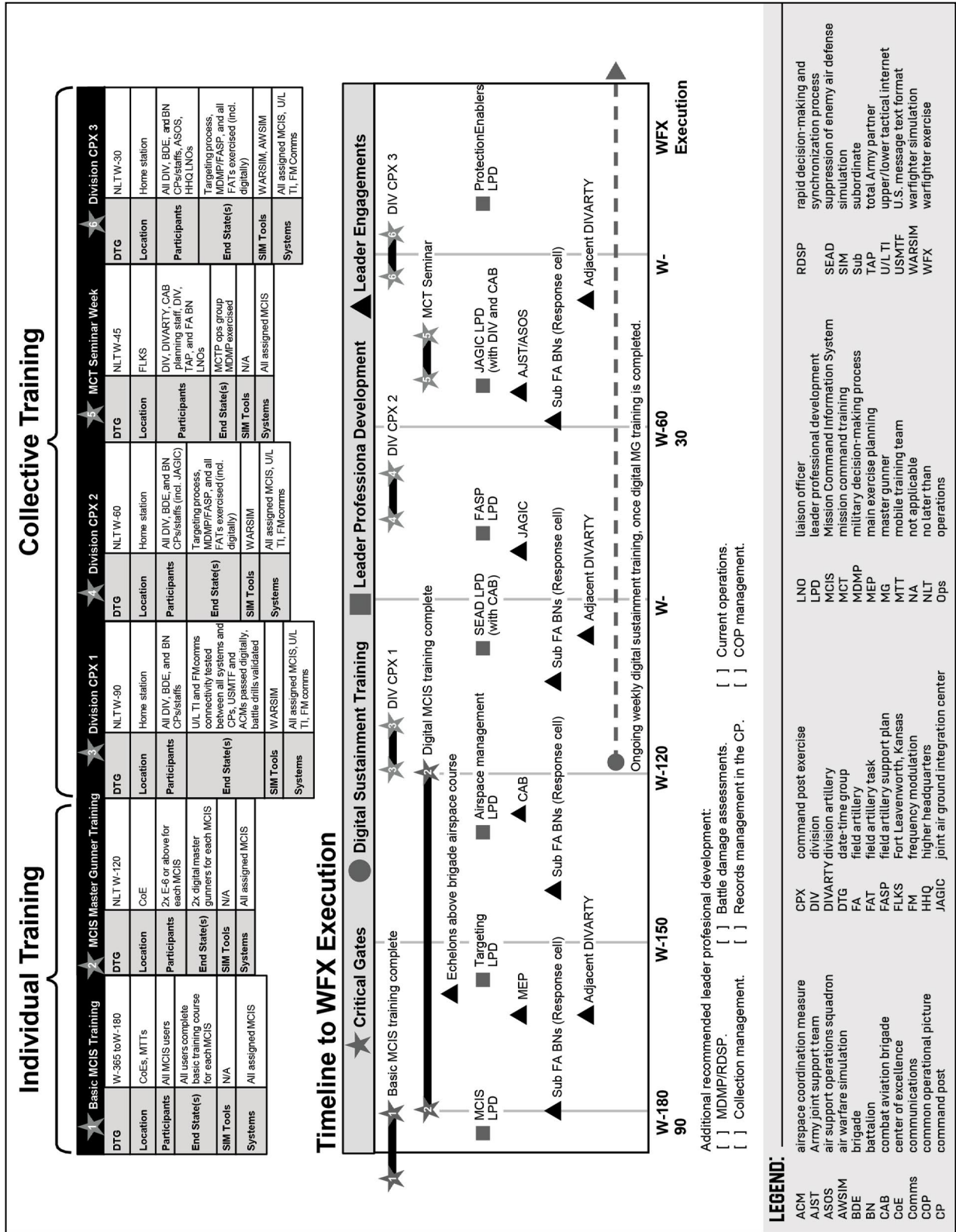


Figure 1-3. 12-Month Training Plan

Individual leader development is another critical and overlooked aspect of mitigating the shortened training cycle. Leaders should integrate the most current doctrine, professional articles, and Center for Army Lessons Learned (CALL) products into their training programs. Visit the Combined Arms Doctrine Directorate (CADD) at <https://usacac.army.mil/core-functions/doctrine> to subscribe to doctrine updates (common access card [CAC] login required). Additional training information is available by searching Operations Group Bravo-MCTP at <https://milsuite.mil/>. (CAC login required).

DOTMLPF-P: This is a training and leader development issue. See Figure 1 for an example of a training plan.

References: FM 3-09, *Fire Support and Field Artillery Operations*, 30 April 2020; ADP 7-0, *Training*, 31 July 2019.

3.4.7: Planning and Transitions

Observation: DIVARTY and FABs improved at integrated planning with division and corps fire support elements, but the lack of an orders process prevented efficient dissemination to enable understanding.

Discussion: During each WFX, division and corps recognized changes in enemy and friendly conditions, which required a rapid decision-making and synchronization process. Fire support elements and force field artillery subsequently collaborated and created a more integrated updated plan. DIVARTY and FABs would either produce a field artillery support plan or send a verbal order over CPOF. The ad hoc approach consumed time and effort needed for preparation and bottom-up refinement. Additionally, the longer a planning effort took, the more the staff lost situational awareness and missed critical inputs to the division such as logistical synchronization meetings.

DIVARTY and FABs conducted a synchronization meeting for the next 24 to 72 hours to enable higher-headquarters targeting and synchronization of fires, but they did not include division, corps, or battalion input. In addition, the CUOPS section did not receive an effective handoff, which further degraded shared understanding.

Recommendation: Conduct integrated planning once or twice daily as a battle-rhythm event. Include representatives from fire support elements, adjacent units, and subordinate units to ensure a shared understanding and bottom-up refinement. By making the event routine, staff officers can prepare and make arrangements to cover conflicting events.

Establish appropriate planning horizons from the current 24-hour period and beyond. As plans are refined, develop a transition plan where the staff sections have time to learn and become intimate with the plan for understanding. The transition plan should designate a point in time or event for transition to officially occur, but should also incorporate a left-seat, right-seat period for the transition. Lastly, ensure the plan-to-plan timeline allows for rehearsals.

DOTMLPF-P: Divisions and corps require an integrated plans SOP. Most SOPs focus on internal procedures, but an integrated plans SOP must outline how to integrate inputs and outputs with subordinate and adjacent units.

References: ADP 5-0, *The Operations Process*, Chapter 2, Sections 2-127 through 2-134, 31 July 2019; FM 6-0, *Commander and Staff Organization and Operations*, Chapter 12, Section 12-1, 5 May 2014.

3.4.8: Force Field Artillery Headquarters

Observation: Units are challenged with executing all the functions and tasks as the force field artillery headquarters.

Discussion: DIVARTY and FABs designated as the force field artillery headquarters struggled with managing the responsibilities associated with its functions and tasks, particularly planning fires, positioning field artillery units, and managing all sensor assets. The force field artillery headquarters was active in recommending and/or establishing support relationships to enable the supported force and main efforts in decisive action. Additionally, units required situation reports detailing locations and status. However, they struggled with planning, directing, and coordinating fire plans and unit positioning, which caused a desynchronized scheme of fires.

Recommendation: Organizationally, when training for or conducting large-scale combat operations, address the accuracy of tactical SOPs and mission orders to ensure effective task organization, coordination measures, command and support relationships, and tracking and reporting procedures.

Determine and solidify the force field artillery headquarters' authorities as they relate to positioning and task allocating field artillery and air defense artillery units. Ensure assigned missions and tasks are given to and understood by all units controlled or affected by the force field artillery headquarters. Ensure scheme of fires is synchronized with the scheme of maneuver, particularly as it relates to firing units' ability to range targets to support maneuver and planned operations.

DOTMLPF-P: This is a training issue. Conduct doctrinal review and organizational training during the unit's mission command training, MDMP, and command post exercises focusing on planning, staff responsibilities, and executing the doctrinal force field artillery headquarters functions.

References: ATP 3-09.90, *Division Artillery Operations and Fire Support for the Division*, Chapter 1, paragraph 1-3, Chapter 4, paragraph 4-7, 12 October 2017; FM 3-09, *Fire Support and Field Artillery Operations*, Chapter 2, paragraph 2-37, 23 April 2020.

3.4.9: Knowledge Management

Observation: An absence of knowledge management programs hindered effective operations.

Discussion: Although units often had a designated knowledge management officer to ensure an efficient and effective knowledge management system, the alignment of knowledge management components (people, processes, tools, and the organization) were not always aligned or informed to make the knowledge management system for the unit. Field artillery unit command-post layouts did not enable the adequate flow of information. For example, the system that displays a moving target indicator was often located in a separate tent and not adjacent to the fire control element. This problem was exacerbated by duplicate product production efforts.

Units recreated products in different formats as required by each section, MCIS operator, and higher headquarters. As a result, there were missed opportunities to create shared understanding and reduce the labor used to recreate products, such as overlays, on each system. This was the result of personnel not knowing what other sections or WFFs could provide to do their job more efficiently. In addition, the formats in which the various mission command systems can accept, hindered sharing and the overall knowledge management effort.

Recommendation: Ensure a knowledge management officer is assigned in order to enhance shared understanding, learning, and decision making. A knowledge management officer ensures the required production and publishing of mission command products is complete. Create a template for Annex Q (knowledge management annex to the operation order) with topics that must be addressed in every operation. Codify all knowledge annotation, storage, and distribution requirements in a knowledge management SOP. Send knowledge management officers to the knowledge manager qualification course at Fort Leavenworth, KS. The course number is 9E/920-SI/ASIIIE (MC).

DOTMLPF-P: This is a training issue. Conduct doctrinal review and organizational training at the unit's mission command training and command post exercises. Focus the review on planning, staff responsibilities, and executing the doctrinal knowledge management functions. Additionally, the unit executive officer chairs a session with the mission command digital master gunners, knowledge management officer, section knowledge management representatives, and MCIS operators to develop an SOP. The SOP has guidance on sharing and displaying information between mission command information systems including the use of distributed data service; appropriate CPOF layers and/or efforts to display; point-to-point U.S. message text-following sharing; map services; and publication, subscription, ingestion, and dissemination methods.

Reference: FM 6-0, *Commander and Staff Organization and Operations*, Chapter 3, pages 3-1 through 3-6, 5 May 2014.

CHAPTER 4

Sustainment Command Observations

4.1: COMBAT POWER REPORTING AND STAFF SYNCHRONIZATION

Observation: Combat power reporting and staff synchronization was lacking.

Discussion: In many instances, the expeditionary sustainment command (ESC), distribution management center, and the corps G-4 (or sustainment brigade support operations (SPO) and division G-4) did not maintain an adequate Class VII tracker or common-user, land-transport assets across the corps or division. Many distribution management centers and SPO sections allowed the movement control battalion to manage common-user, land-transport assets for the ESC. However, sustainment echelons did not accurately report the same information. The delay in the reporting prevented sustainment units from properly tasking subordinate units. The distribution management center did not conduct a working group or distribution management board to identify and mitigate shortfalls in support of the units. This created a divergence in information among the ESC, theater sustainment command, corps, and divisions.

Recommendation: Staff synchronization is a key component to the success of Army staffs. All appropriate sections need inclusion during working groups to determine shortfalls and mitigate discrepancies. Adding the division and corps G-4 to the sustainment synchronization boards, bureaus, centers, cells, and working groups (B2C2WG), or distribution management board may prevent future discrepancies.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): This is a training issue.

References: FM 6-0, *Commander and Staff Organization and Operations*, Change 2, 5 May 2014.

4.2: SUSTAINMENT PLANNING SYNCHRONIZATION ACROSS ECHELONS

Observation: Sustainment planning synchronization across echelons was challenged.

Discussion: The ESC and sustainment brigade staffs experienced difficulties in determining requirements and synchronizing sustainment planning across echelons. This deficiency hindered units' ability to provide the commander with visualization beyond the 96-hour planning horizon. Many logistics synchronization meetings were ineffective and lacked shared understanding among the staff and subordinate elements of the inputs and outputs. The staff and subordinate units did not bring or utilize their running estimates to validate requirements.

Recommendation: The distribution management centers and SPO sections should add structure and discipline to the logistics synchronization meeting by ensuring the staff and subordinate units understand the purpose of the meeting. Each meeting or working group needs a seven-minute drill codified in the unit's tactical standard operating procedures (SOPs) that clearly lists expectations with inputs and outputs for each working group from the participants. Staffs should ensure commodity managers and other participants include their updated staff running estimates as inputs to the meeting. Running estimates ensure the unit's ability to validate requirements and extend its planning horizon beyond the next 96 hours.

DOTMLPF-P: This is a training issue.

References: ADP 4-0, *Sustainment*, 31 July 2019; ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; ATP 4-0.1, *Army Theater Distribution*, 29 October 2014.

4.3: THE CRITICAL PATH OF EFFECTIVE ORDERS PRODUCTION

Observation: Units lacked a critical path of B2C2WG to produce efficient and effective orders.

Discussion: The training audience did not conduct an adequate distribution management board or other critical B2C2WG, which compounded the inability to issue timely orders. The SPO commodity managers and subordinate sustainment brigades did not use the distribution management board to validate requirements across the joint operations area to forecast distribution requirements 96 hours in advance. The SPO simply led a version of an operations synchronization meeting, movement working group, and confirmation briefing of upcoming movements in the next 24 to 72 hours, instead of linking resupply requirements to distribution capabilities out to 96 hours and beyond.

Recommendation: Units must identify the functions of B2C2WG and schedule them to flow with inputs and outputs in a particular sequence to enable orders production. The SPO should use the distribution management board to connect the requirements of a draft distribution course of action with the SPO mobility branch's movement plan to facilitate timely orders production. The distribution management board must assess and adjust preplanned convoy and air movements that units have previously agreed to execute in the next 24 to 48 hours. Then, the distribution management board should validate new requests and convoy movements forecasted for 72 to 96 hours. Upon the board's conclusion, the distribution integration branch should produce a draft fragmentary order and pass it to current operations for orders publication. Finally, the SPO should submit the new movement requests (72 to 96 hours out) to the corps transportation officer as an input into the joint movement board.

DOTMLPF-P: This is a training issue.

References: ADP 4-0, *Sustainment*, 31 July 2019; ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; ATP 4-0.1, *Army Theater Distribution*, 29 October 2014.

CHAPTER 5

Special Operations Forces Observations

5.1: SPECIAL OPERATIONS LIAISON

Observation: The special operations forces (SOF) liaison officers (LNOs) were properly integrated into corps staff.

Discussion: SOF LNOs conducted linkup with the training audience prior to conducting the warfighter exercise (WFX). This paid huge dividends with the establishment of relationships, securing required space in the tactical operations center, and receiving the required equipment. The central location of the SOF LNO package in the tactical operations center facilitated crosstalk with multiple staff sections, allowing streamlined information sharing to the corps staff. Additionally, having the appropriate number of LNOs (six) in the package provided the flexibility to maintain communications with the special operations joint task force staff. Having these LNOs allowed simultaneous participation in corps operational planning teams, which ensured SOF integration into the planning, targeting, and intelligence processes. SOF LNO integration also ensured the inclusion of SOF units into the corps common operational picture to provide visibility to the corps commander of friendly forces operating in the area of operations and area of interest.

Recommendation: SOF LNOs should continue to integrate into the supported staff as early as possible in the WFX planning process and command post exercises. This integration will foster a better understanding of SOF capabilities and role in supporting the maneuver commander in large-scale combat operations (LSCO). SOF LNOs, as part of their integration into the corps staff for upcoming exercises, should also be incorporated into the military decision-making process (MDMP) of the supported unit to ensure proper utilization of SOF in LSCO.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): Developing unit standard operating procedures (SOPs) that articulate SOF liaison team participation in battle-rhythm events and designating an ideal location for the LNO team to effectively integrate with current operations, fires cells, and intelligence sections will enhance integration, interoperability, and interdependence.

5.2: CORPS UTILIZATION OF SPECIAL OPERATIONS FORCES

Observation: The corps did not fully utilize SOF capabilities, objectives, and integration.

Discussion: Although training units established procedures to request support from the combined joint special operations tasks force, oftentimes, the requests were not truly reliant on SOF actions. Frequently, the coalition forces land component commander maintained the ability and capability to support the maneuver of Task Force Courage. Moreover, multiple attempts to leverage SOF efforts did not afford SOF assets time to conduct effective actions. Operating in a heavily denied environment, working with partner-nation forces, and leveraging unconventional warfare networks typically is a deliberate and time-consuming process. Requesting support or effects without having SOF assets available or geographically close to a particular objective makes it severely difficult to achieve an immediate result. As the exercise progressed, SOF requests that were forwarded to the corps G-35 were determined not to meet

criteria for requesting support due to the corps having the capability organically to conduct the same mission. Although the G-35 did an outstanding job adjudicating the requests for support, the corps and divisions did not correctly appropriate their own organic assets, resulting in a duplication of effort through SOF liaison.

Recommendation: Having a capability crosswalk between SOF and conventional capabilities at the appropriate level would reduce the number of invalid SOF support requests. With the capabilities crosswalk available to the training audience, the SOF support request process would be streamlined to properly enable maneuver of the conventional commander, thereby reducing the amount of time the corps staff would spend on invalid requests.

DOTMLPF-P: Develop training plans to include SOF subject matter experts and joint capabilities to improve readiness in preparation of LSCO and limited contingency operations.

CHAPTER 6

Noncommissioned Officer Utilization

6.1: NONCOMMISSIONED OFFICER ROLES AND RESPONSIBILITIES

Observation: The division G-2s clearly defined noncommissioned officer (NCO) roles and responsibilities and effectively utilized personnel throughout warfighter exercises (WFXs).

Discussion: The G-2 had multiple locations to man across the division's distributed command posts and a limited number of officers to fill critical positions. The limited staffing included a large number of NCOs and junior Soldiers, which necessitated efficient integration and utilization of the NCOs' skills. The leaders gave NCOs responsibility commensurate with their rank and, in some cases, even above their rank. Officers within the section trusted them to provide analysis, expertise, leadership, and guidance to junior Soldiers. The unit was only able to field approximately two-thirds of its authorized manning strength. This made it necessary to establish specific responsibilities for NCO leaders and ensured efficient utilization of the NCOs' abilities.

Recommendation: Incorporate NCOs and Soldiers into the military decision-making process (MDMP) and intelligence preparation of the battlefield to benefit from the input and expertise they can offer.

References: Army Techniques Publication (ATP) 6-0.5, *Command Post Organization and Operations*, 1 Mar 2017; Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

6.2: NONCOMMISSIONED OFFICER UTILIZATION

Observation: Broad roles and responsibilities of NCOs led to limited involvement in the operations process.

Discussion: Units had NCO duty descriptions in their tactical standard operating procedure (SOP). However, duties and responsibilities were too broad, which limited NCOs' involvement in executing operations and running day-to-day activities. Integrating NCOs into operations planning necessitates a steep learning curve for the NCO who has not previously worked in a command post. Successful NCOs supervised Soldiers, enforced standards, executed current operations staff functions, served as staff deputies in the absence of the officer in charge, and briefed the commander during shift changes and commander's updates. Units maximized their use of trained digital master gunners who ensured mission command systems integration and interoperability, command and control systems crew training, and pre-executed rehearsals. Trained battle-staff NCOs operated the command post command and control systems. However, NCOs were not fully engaged in the operations process, with limited involvement in planning and assessing operations.

Recommendation: Utilize NCOs in current operations. The command sergeant major and operations sergeant major should ensure integration of NCOs into the operations process. Units should continue to integrate battle-staff NCOs into planning. Use digital master gunners to train command and control systems crews in the use of digital systems. Fully define roles and responsibilities of NCOs for the plan, prepare, and assess phases of the operations process.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): This is a leadership issue. Educate NCOs on the MDMP earlier in their professional military education to increase institutional knowledge of the operations process. Provide opportunities for junior NCOs to serve in staff assignments earlier in their career to increase operational experience in the operations process.

References: Training Circular (TC) 7-22.7, *The Noncommissioned Office Guide*, Chapter 2, paragraphs 2.4 to 2.7, Chapter 5, paragraphs 5.5 and 5.6, 1 January 2020.

CHAPTER 7

Air Component Observations

7.1: INTEGRATION OF THE INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE LIAISON OFFICER

Observation: The division intelligence, surveillance, and reconnaissance liaison officer (ISRLO) did not integrate with the G-2, current operations cell, or future operations cell early enough to effectively utilize air component intelligence capabilities.

Discussion: Elements of the G-2 and G-3 did not use the embedded tactical air control party ISRLO effectively. Although ISRLOs did assist and advise the G-2, their efforts were typically limited to collections and analysis cells. ISRLO participation in future operations planning and intelligence surveillance, and reconnaissance (ISR) planning was minimal. ISRLOs attended the target working groups and decision boards, but their inputs were not routinely incorporated into intelligence collection planning or ISR platform mission planning. The result was an overreliance on organic collection platforms and limited use of theater intelligence assets.

Recommendation: ISRLOs must integrate with the G-2, G-3, and G-35 to establish contact, responsibilities, and levels of support with the division air liaison officer and G-2. The success of the ISRLOs depends on their ability to self-advocate and assert themselves into key G-2 and G-3 processes. Assertive integration for the use of U.S. Air Force ISR assets maximizes collection opportunities.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): This is a training issue. The division tactical air control party must fully integrate into the G-3 and G-2 sections to provide required assistance to the division, particularly to access nonorganic assets.

References: Joint Publication (JP) 2-0, *Joint Intelligence*, 22 October 2013; JP 3-0, *Joint Operations*, 22 October, 2018.

7.2: PERSONNEL AND CARGO TRANSPORTATION BY AIR

Observation: Multi-modal transportation was not successfully incorporated into the corps or division transportation plan.

Discussion: Fixed-wing mobility support (Air Force assets) provided as little as 10 percent of the total transportation moves during one particular warfighting exercise. Utilization of available fixed-wing assets was ineffective, leaving many aircraft available for daily tasking. Alternatively, roads and rails were routinely overutilized. Training audiences failed to alleviate the overtasked ground transport means with fixed-wing air.

Recommendation: The staff must develop a fixed-wing sustainment plan that enables cargo and personnel delivery by air drop and air land.

DOTMLPF-P: This is a training issue. The sustainment area command post staff requires more exposure to the mobility process in large-scale combat operations. The air mobility liaison officer is best used in the sustainment area command post, but requires the assistance of the expeditionary sustainment command and G-4 to ensure that movement requests are passed among echelons of command to joint planners.

References: Field Manual (FM) 4-0, *Sustainment Operations*, 31 July 2019; JP 3-17, *Air Mobility Operations*, 5 February 2019.

Glossary

ACRONYMS AND ABBREVIATIONS

ABCS	Army Battle Command System
DCG-S	deputy commanding general in charge of sustainment
ACM	airspace coordination measure
ADP	Army doctrine publication
AFATADS	Advanced Field Artillery Tactical Data System
AJST	Army joint support team
ARNORTH	U.S. Army North
ASOS	air support operations squadron
ATO	air-tasking order
ATP	Army techniques publication
AWSIM	air warfare simulation
BCT	brigade combat team
B2C2WG	boards, bureaus, centers, cells, and working groups
BDA	battle damage assessment
BDE	brigade
BG	brigadier general
C2	command and control
CAB	combat aviation brigade
CAC	common access card
CADD	Combined Arms Doctrine Directorate
CALL	Center for Army Lessons Learned
CBRN	chemical, biological, radiation, and nuclear
CEMA	cyberspace electromagnetic activities
C4I	command, control, communications, computers, and intelligence
COA	course of action
CoE	center of excellence
COIC	current operations integration cell
Comms	communications
COP	common operational picture
CORPS	corps
CPCE	Command Post Computing Environment
CPOF	Command Post of the Future
CPX	command post exercise
CUOPS	current operations
DCGS-A	Distributed Common Ground System-Army

DIV	division
DIVARTY	division artillery
DOTMLPF-P	doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy
DTG	date-time group
EN	engineer
ESC	expeditionary sustainment command
FA	field artillery
FAB	field artillery brigade
FASP	field artillery support plan
FAT	field artillery task
FLKS	Fort Leavenworth, Kansas
FM	field manual, frequency modulation
FORSCOM	U.S. Army Forces Command
FSCL	fire support coordination line
FUOPS	future operations
FY	fiscal year
GEN	general
HQE-SM	highly qualified expert senior mentor
HHQ	higher headquarters
HPT	high-payoff target
ISR	intelligence, surveillance, and reconnaissance
ISRLO	intelligence, surveillance, and reconnaissance liaison officer
JAGIC	joint air-ground integration center
JATC	joint air-tasking cycle
JP	joint publication
JTF-CS	Joint Task Force Civil Support
LNO	liaison officer
LPD	leader professional development
LSCO	large-scale combat operations
LTG	lieutenant general
MCIS	Mission Command Information Systems
MCT	mission command training
MCTP	Mission Command Training Program
MDMP	military decision-making process
MEB	maneuver enhancement brigade
MEP	main exercise planning
MG	major general, master gunner

MP	military police
MTOE	modified table of organization and equipment
MTT	mobile training team
N/A	not applicable
NAI	named area of interest
NCO	noncommissioned officer
NLT	no later than
OC/T	observer controller/trainer
Ops	operations
PACE	primary, alternate, contingency, and emergency
RDSP	rapid decision-making and synchronization process
SB	sustainment brigade
SEAD	suppression of enemy air defense
SHORAD	short-range air defense
SIM	simulation
SOF	special operations forces
SOP	standard operating procedure
SPO	support operations
Sub	subordinate
TAB	theater aviation brigade
TAIS	Tactical Airspace Integration System
TAP	total Army partner
TOC	tactical operations center
TSC	theater sustainment command
U/L TI	upper/lower tactical internet
USMTF	U.S. message text format
WARSIM	warfighter simulation
WfF	warfighting function
WFX	warfighter exercise

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