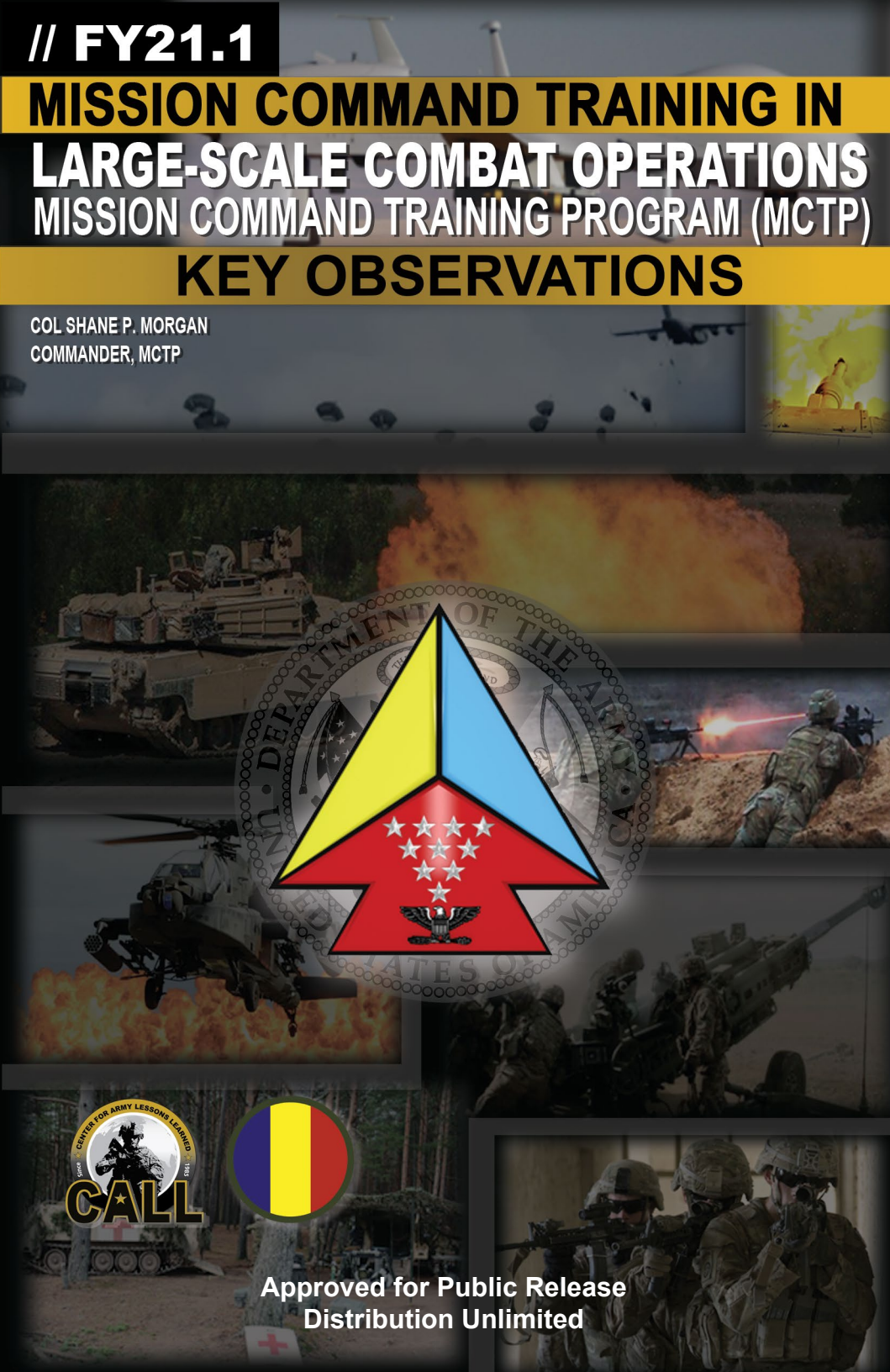
// FY21.1

MISSION COMMAND TRAINING IN LARGE-SCALE COMBAT OPERATIONS

MISSION COMMAND TRAINING PROGRAM (MCTP)

KEY OBSERVATIONS

COL SHANE P. MORGAN
COMMANDER, MCTP



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Foreword

Since 1986, 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 six years, MCTP has focused on preparing Army forces to fight and win during large-scale combat operations (LSCO) against a freethinking and peer-threat opposing force.

Fiscal year 2021 (FY21) has challenged our Army and MCTP as we adapt our training methods to overcome COVID-19 challenges. The postponement of three warfighter exercises (WFXs) in FY20 resulted in WFX 21-1, the largest WFX in our 35-year history. At the time of this publication, MCTP executed two multi-echelon corps and division WFXs, one brigade WFX, and partnered with the National Training Center (NTC) in executing NTC rotation 20-10, where we blended live and constructive training. FY21 will see the execution of three more WFXs, including WFX 21-4, the largest multinational interoperability (MNI) exercise, which includes a U.S. Army corps, Army divisions, and North Atlantic Treaty Organization (NATO) partners from the 3rd United Kingdom and 3rd French Army Divisions.

The information in this handbook is a snapshot of MCTP's recent observations of Army training in a LSCO environment. These observations were written by a collaborative group of experienced officers, noncommissioned officers (NCOs), and chief warrant officers working in conjunction with our highly qualified expert-senior mentors (HQE-SMs). We would like to express an Army-wide appreciation for the following HQE-SMs who continue to drive change and develop leaders by sharing their experience and insights: LTG(R) Jeffrey Buchanan, LTG(R) Claude Christianson, LTG(R) David Fridovich, LTG(R) David Hogg, LTG(R) Michael Lundy, LTG(R) Michael Tucker, LTG(R) David Valcourt, MG(R) Jeffery Colt, MG(R) Edward Dorman, MG(R) John Gronski, MG(R) Richard Longo, MG(R) Tom Richardson, MG(R) Robert Walters, MG(R) Bryan Watson, BG(R) Paul Laughlin, BG(R) Burdett Thompson, BG(R) William Turner, BG(R) Louis Weber, and COL(R) Mario Diaz.

In an effort to increase the frequency of sharing observations, best practices, and trends, MCTP will continue publishing this handbook on a semi-annual basis and include cargo pocket-sized books for easier reference. This is the first of the two FY21 publications. This handbook is intended to better prepare Army formations with enhanced training proficiency to fight and decisively win during LSCO. Winning matters!

Warfighters!

Shane P. Morgan
COL, FA
Commanding

The FY21.1 key observations were recorded, analyzed, and refined by a collaborative group of field-grade observer controller/trainers among five MCTP operations groups and the 505th Command and Control Wing Detachment 1. The primary authors of this handbook led this collection and analysis effort, co-authored their individual sections by warfighting function or area of emphasis, and organized the chapters of this handbook. The primary authors are—

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Recurring Trends

1.1: Cyberspace Activities in Multi-Domain Operations

Observation: Cyberspace electromagnetic activities (CEMA) sections did not continually conduct target refinement procedures.

Discussion: CEMA sections routinely submit joint tactical air strike requests (JTARs), electronic attack request forms (EARFs), and cyber concepts of operations (CONOPS) to receive support to accomplish their missions. However, as warfighter exercises (WFXs) progress, requests for support usually use the same target sets for every air tasking order (ATO) day without assessment or refinement. It was unclear whether the challenge of refined target nominations was due to inefficiencies in the targeting working group (TWG) or insufficient understanding of the enemy situation.

Recommendation: Integrate an assessment working group (AWG) into the battle rhythm as a separate or joint meeting to drive targeting refinement. Leaders must ensure critical battle rhythm events have meaningful inputs and outputs that allow the unit to gain, maintain, and sustain momentum.

References: Army Doctrine Publication (ADP) 3-19, *Fires*, 31 July 2019; Army Techniques Publication (ATP) 3-60, *Targeting*, 7 May 2015; ATP 3-12.3, *Electronic Warfare Techniques*, 16 July 2019.

1.2: Friendly Forces Operating beyond the Fire Support Coordination Line

Observation: Friendly forces beyond the fire support coordination line (FSCL) were at significant risk of fratricide.

Discussion: There were instances of friendly troops operating beyond the FSCL. The FSCL is a fire support coordination measure (FSCM) that requires coordination with the establishing commander before engagement. Permissive FSCMs facilitate attacks and restrictive FSCMs safeguard friendly forces. Typically, there is no requirement to coordinate for air component assets conducting air interdiction (AI) sorties on targets beyond the FSCL as long as the interdiction sorties are operating within mission orders. The zone between the forward line of own troops (FLOT) and the FSCL is typically the area over which friendly ground forces intend to maneuver in the near future, and is also the area where joint AI operations are normally executed through the air support operations squadron (ASOS). If the FLOT crosses the FSCL, there is no fires protection for friendly forces outside of coordination

measures with the establishing unit. At times, planners compared the friendly forces long of the FSCL to special operations forces (SOF); however, SOF operating long of the FSCL are tracked by the SOF liaison officer (LNO) in the command post (CP) and generally have a restricted fire area or no fire area associated with their position.

Recommendation: Commanders should prevent forces from crossing the FSCL without first implementing restricted fire areas or some other graphic control measure to prevent fratricide. Ground and air command and control elements must be aware of the forces operating long of the FSCL. It is critical that adequate warning of FSCL changes occur in the joint force. Given the range of future systems, munitions may already be in the air as friendly forces cross the FSCL.

References: Joint Publication (JP) 3-09, *Joint Fire Support*, 10 April 2019; JP 3-03, *Joint Interdiction*, 9 September 2016.

1.3: Division Reconnaissance and Security Operations (1)

Observation: Division cavalry (DIVCAV) lacked critical planning capabilities.

Discussion: A division developed a DIVCAV squadron composed of a brigade combat team (BCT) armored reconnaissance squadron (ARS) with attack aviation and combat engineer companies under tactical control, an artillery battalion and Avenger platoon in direct support (DS), and other enablers. An ARS is organically robust with enablers that allow it to maneuver forward of the main body. The division provided some planning capability to assist the cavalry squadron commander with the DIVCAV mission, but did not resource a senior aviation planner or additional aviation field-grade officers. The tasks given to the DIVCAV were not consistent with the capability provided to the formation. For example, one task given to the DIVCAV was "reconnaissance to clear the objective." The tempo desired (stealthy and deliberate) was not consistent with the given reconnaissance focus. The formation was also, at times, decisively engaged with enemy forces because it struggled to integrate attack aviation and DS fires. Ultimately, the DIVCAV squadron had difficulty gaining and maintaining enemy contact and effectively destroying enemy reconnaissance forces.

Recommendation: The DIVCAV formation is formidable, and with the proper command and control structure, it will be effective. The DIVCAV's purpose is to provide freedom of maneuver for the division and create advantageous conditions for BCT operations. Air-ground operations require detailed planning, coordination, and synchronization of assets. Providing additional planning capacity to the DIVCAV increases its lethality and effectiveness.

References: Field Manual (FM) 3-0, *Operations*, 6 October 2017; ATP 6-0.5, *Command Post Organization and Operations*, 1 March 2017; FM 3-98, *Reconnaissance and Security Operations*, 1 July 2015.

CHAPTER 2

Corps- and Division-Level Observations

MISSION COMMAND AT THE CORPS AND DIVISION LEVELS

2.1: Integration in the Current Operations Integration Cell

Observation: Warfighting function (WfF) planners struggled with knowledge management, reducing shared understanding.

Discussion: The current operations integration cell (COIC) utilizes current running estimates from each WfF to produce the current operations (CUOPS) assessment for the corps or division. Integration at these levels requires COIC staff members to determine how changes in estimates affect the commander's decisions, other WfFs, and subordinate units. Observers at warfighter exercises (WFXs) find that WfF officers in charge (OICs) typically communicate openly with each other by voice or over headsets. However, planners in WfF cells usually only communicate within their cell through chat windows or pasteboards. Observers often notice that information communicated between WfF OICs is not disseminated to staff planners.

Recommendation: Each WfF cell should execute the seven-minute drill with all staff members from the cell. Units that conduct seven-minute drills at the WfF section routinely have better shared understanding across the COIC. See figure 2-1 for a COIC seven-minute drill example.

References: Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*, Change 2, 22 April 2016; Army Techniques Publication (ATP) 6-0.5, *Command Post Organization and Operations*, 1 March 2017.

2.2: Plans and Operations Synchronization

Observation: Sustainment area command post (SACP) planning and operations were not integrated across WfFs.

Discussion: One observed command post (CP) battle rhythm included a division consolidation area (DCA) and division sustainment area (DSA) synchronization meeting. The purpose of the meeting was to provide staff analysis of CUOPS, make recommendations for planning priorities, and synchronize the plans and operations cells. Operations updates were made in the synchronization meeting; however, sustainment updates were reviewed in a separate desk-side meeting with the deputy commanding general–sustainment (DCG–S). This made for a disjointed approach that contributed to desynchronized operations. Additionally, although planning priorities were reviewed in the synchronization meeting, there was no mechanism in place to translate the priorities into plans and orders, which further hindered clarity.

Recommendation: Develop and execute a seven-minute drill to synchronize DCA/DSA operations across all WfFs with deliberate inputs and outputs. Implement a process to organize and publish synchronization meeting outputs in the division fragmentary order (FRAGORD) in accordance with the commander's priorities. Separately, create a division-level sustainment analysis that provides the commander with combat power projections (and potential decision points) over the next 24–72 hrs. See figure 2-1 for a COIC seven-minute drill example.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): *Training.* These drills and processes should be codified in the division tactical standard operating procedure (TACSOP) and exercised and updated regularly.

References: Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019.

Current Operations Integration Cell Seven-Minute Drill

Purpose

Provide shared understanding across the cell and identify variances in actions planned versus actions occurred (friendly and enemy), and ongoing or potential operational friction points.

Frequency	Primary Venue/ Communication Method	PACE Plan	CP Participation	Distributed Participation Allowed?
As needed	DMAIN CP	Primary: DMAIN analog COP/in-person on COIC floor Alternate: DMAIN CPOF COP/Ventrilo	DMAIN	No

Proponent: G-3—CHOPS

Chair: CHOPS

Facilitator: CHOPS/BTL CPT (analog) w/ BTL NCO

Attendees: No staff primaries, KMO (primary), G-33 CHOPS, G-3 fires representative, G-2 CM&D representative, G-2 operations representative, G-9 representative, chaplain representative, ALO CEMA representative, engagements representative, FSCOORD, G-2 representative, G-2 SWO, G-34 protection representative, G-35 FUOPS representative, G-3 aviation representative, G-3 AMD representative, G-3 CBRN representative, G-3 engineer, G-3 EWO, G-4 representative, G-5 representative, G-6 representative, G-7 representative, G-8 representative, KMO (alternate), PAO, SJA representative, surgeon, G-1 plans and operations representative

Subordinate Organizations Required: LNO

Inputs
- Updated running estimates
- Updated enemy SITREP
- Updated operational graphics, friendly unit locations, and disposition
- SIGACTs in the last 24 hours
- Execution matrix
- Decision support matrix
- Commander's guidance

Agenda
- SIGACTs (CHOPS)
- Enemy updates (G-2 operations)
- Civil considerations (G-2/G-9)
- CM (platforms, by NAI and enemy formation) (G-2)
- Friendly situation, upcoming action, slants, adjacent units (CHOPS)
- Fires/nonlethal target, prosecuted by ATO cycle and dynamic developments, status of supporting platforms, fires assets (JAGIC chief)
- Protection—current threat status and status of enablers (protection)
- Mission command—status and duties of each CP (G-6/CHOPS)
- Sustainment—next 24 hours identified variances/friction points, recommended actions, adjustments to execution (CHOPS)
- Alibis/guidance
- Upcoming decisions

Outputs
- Updated execution matrix
- Recommended changes to the decision support matrix
- Recommended guidance to G-35 for FRAGORD/planning/building/changes
- Summary of seven-minute drill to units/other CPs (BTL CPT)

Figure 2-1. Example of a seven-minute drill

2.3: Warfighting Function Integration (1)

Observation: WfF leaders in the plans integrating cell were not adequately incorporated into the planning process.

Discussion: The unit battle rhythm did not include an event in which all WfF and staff sections could collaborate for planning. The G-5 and G-35 executed a daily plans synchronization brief to members of the command group and subordinate unit planners, but not all staff sections monitored that meeting. This led to an ad hoc staff integration process driven primarily by key-leader circulation and point-to-point communication between staff planners. It is more likely planners will miss critical details and fail to synchronize actions across all WfFs without a routine integrated planning working group.

Recommendation: Execute a plans working group or operational planning team (OPT) that includes all WfFs as a battle rhythm event. The plans working group increases shared understanding across the integration cell and better informs and synchronizes plans across all WfFs. See figure 2-2 for a sample division battle rhythm.

References: ADP 5-0, *The Operations Process*, 31 July 2019; FM 3-0, *Operations*, 6 October 2017; and FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

2.4: Warfighting Function Integration (2)

Observation: The COIC effectively integrated the maneuver, intelligence, and fires WfFs. However, the sustainment and protection functions were not well integrated into planning.

Discussion: The maneuver, intelligence, and fires WfFs collaborated thoroughly to solve problems and synchronize operations. For example, the joint air-ground integration center (JAGIC), G-2 operations, and the chief of operations (CHOPS) routinely worked together to solve target observation issues during adverse operational conditions. However, the sustainment and protection WfFs were not as well integrated as they were set up in another area of the COIC floor. Sustainment and protection only briefed during the seven-minute drills and were not included in collaborative sessions and discussions around the COIC map. Additionally, there was not a COIC shift change brief in which all cell members could gain situational awareness on each WfF. The result was a lack of shared understanding among all WfFs, which lead to operational issues.

Recommendation: Include each WfF in all collaborative problem-solving sessions and discussions. Add a shift change brief to the battle rhythm at the end of each shift that includes all WfFs briefing their current estimates. See figure 2-2 for a sample division battle rhythm.

References: ADP 5-0, *The Operations Process*, 31 July 2019; FM 3-0, *Operations*, 6 October 2017; and FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

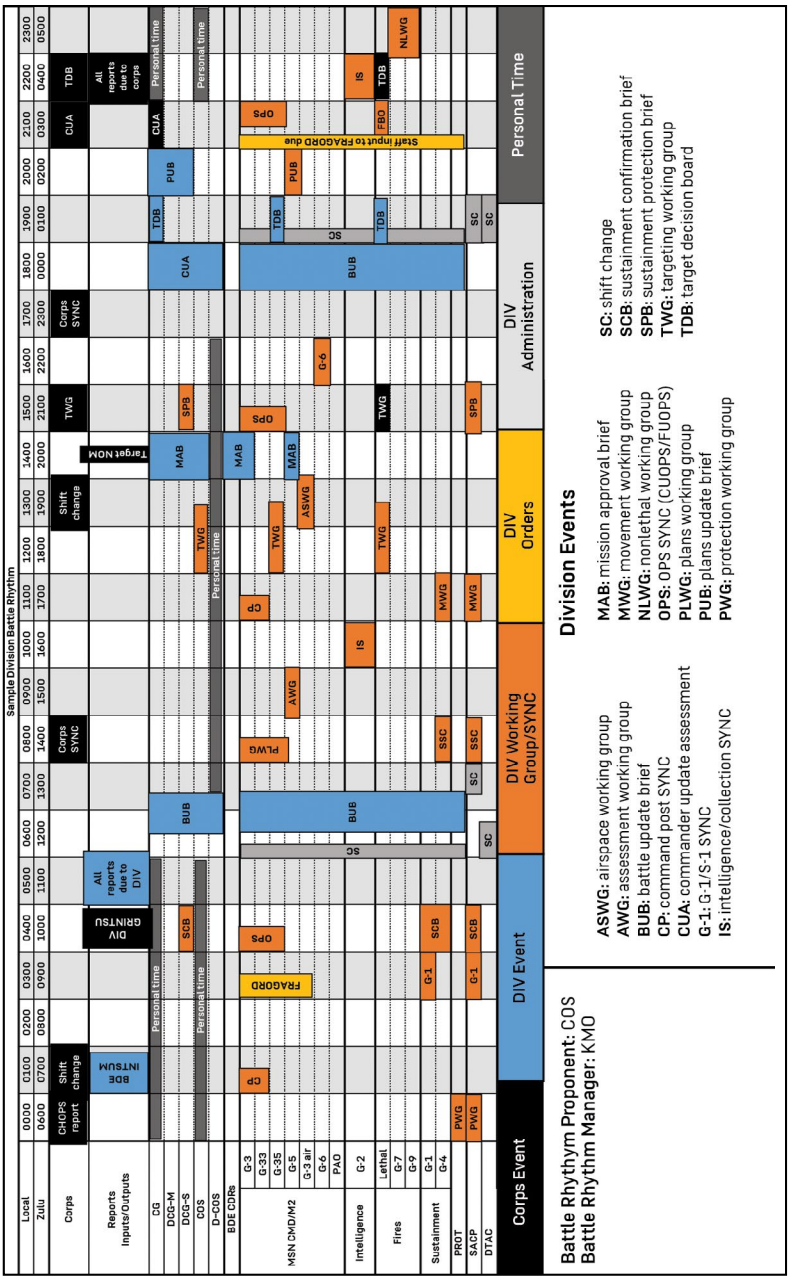

Figure 2-2. Sample division battle rhythm

MOVEMENT AND MANEUVER AT THE CORPS AND DIVISION LEVELS

2.5: Division Reconnaissance and Security Operations (2)

Observation: Divisions faced challenges in tasking and employing division cavalry (DIVCAV) for reconnaissance.

Discussion: Divisions are increasingly task-organizing DIVCAV squadrons tasked with deep-area operations. The information collection (IC) annex (Annex L) of the division operation order (OPORD) and associated appendices and tabs are often quality products. However, task organization and execution guidance pose problems for the DIVCAV squadrons. Typically, divisions use a brigade combat team (BCT) armored reconnaissance squadron (ARS) with direct support (DS) from aviation and field artillery. The reconnaissance objectives assigned to the DIVCAV quickly exceed the capacity of the DIVCAV. One contributing factor is broad priority intelligence requirements (PIRs) without specific information requirements. This leads to degraded reconnaissance asset management because lower-echelon units must attempt to answer broadly defined intelligence requirements. Further, nonspecific requirements can lead to reconnaissance and security fundamental violations.

Recommendation: Reconnaissance tasks for the DIVCAV should include specific information requirements and reconnaissance guidance that are nested with aerial reconnaissance efforts throughout the operation. Reconnaissance asset management at all collection levels should logically flow throughout the execution phases, guided by specific PIRs that are directly tied to decision points. Likewise, security operations must perform continuous reconnaissance and maintain enemy contact to ensure adequate time and space for the main body to react to unanticipated threats. These concepts nest well within an operational framework that employs decisive, shaping, and sustaining lines of effort by phase.

References: FM 3-55 *Information Collection*, 3 May 2013, FM 3-98, *Reconnaissance and Security Operations*, 1 July 2015.

2.6: Corps Combat Aviation Brigade Integration into the Corps Maneuver Plan

Observation: The corps combat aviation brigade (CAB) effects were not maximized.

Discussion: The CAB attached to the corps could not exploit opportunities on the battlefield because it was not synchronized with other battlefield enablers or the ground maneuver plan. The corps G-32 (air) was broadly tasked to handle "all things aviation," including logistics, airspace, and

indirect fires deconfliction, attack guidance, and other mission planning requirements. The CAB conducted multiple deliberate and hasty attacks without enabler coordination, which reduced the effectiveness of the attacks because the G-32 received minimal input from outside its planning cell.

Recommendation: Integrate deliberate aviation planning into the future operations (FUOPS) cell and the COIC OPT. Ensure all planning teams understand the nature of the command and support relationship of all attachments. Integrating the CAB into planning cells assists integration, synchronization, and resourcing to maximize CAB battlefield effects.

References: ADP 3-0, *Operations*, 31 July 2019; FM 3-04, *Army Aviation*, 6 April 2020.

2.7: Movement Program

Observation: The division movement program was not validated.

Discussion: The division movement table was rarely published in the division FRAGORD. The movement tables or matrixes that were published were usually incomplete products that did not provide the asset visibility necessary to create shared understanding at echelon. They displayed only some movements 24 hours in advance with little to no visibility on planned movements over the next 48–72 hours. Further, they usually did not have an accurate air mission request (AMR) matrix. There was also no integrated route patrol allocation of maneuver enhancement brigade (MEB) protection assets assigned to the planned movements. A validated movement program ensures movement requirements are matched appropriately with available capability and assets. Movement control provides commanders with a way to synchronize movement for deployment, redeployment, and distribution operations. Movement boards are the mechanism to review and manage transportation policies, priorities, route statuses, convoy protection and synchronization, and transportation asset allocation to support distribution operations. The outcome of a movement board is a validated movement program.

Recommendation: Review the SACP division movement program. The distribution management working group must provide input to the division movement board that enables decision making. Revise the unit standard operating procedure (SOP) to show inputs that project sustainment brigade movements, pending AMRs, MEB protection schemes, route patrol schedules, and main supply route (MSR)/alternate supply route (ASR) status reports.

The DCG–S is the chair and approval authority for the division movement board. Outputs of the division movement board should include the updated movement table, priorities of movement, supply and support, an accurate AMR schedule, and any scheduled fixed-wing joint-movement request. These outputs should be distributed in division FRAGORDs approved by the G-3.

References: ATP 4-16, *Movement Control*, 5 April 2013.

INTELLIGENCE AT THE CORPS AND DIVISION LEVELS

2.8: Staff Understanding of the Distributed Common Ground System–Army

Observation: Division and corps G-2 intelligence staffs lacked sufficient understanding of the Distributed Common Ground System–Army (DCGS–A) to effectively employ the system.

Discussion: Part of mission command is the "network" component within the command and control system. The intelligence WfF Mission Command Information Systems (MCIS) are the DCGS–A. G-2 staffs lack sufficient training and experience to develop a complete logical topology that encompasses the corps or division G-2 enterprise (including the CAB, division artillery [DIVARTY]/field artillery brigade, and DIVCAV or armored cavalry regiment). This leads to a fragmented common intelligence picture and intelligence sections relying on internet relay chat, Microsoft PowerPoint, email, and other non-MCIS systems that cannot keep pace during execution of large-scale combat operations (LSCO).

Recommendation: Incorporate additional training on DCGS–A within the exercise life cycle and ensure interoperability with other MCIS during collective training events. Key leaders within the G-2 and G-6 staffs should participate in a gunner entry program while select individuals complete the Digital Intelligence System Foundation Course (DISFC) online. Additionally, a primary and alternate digital intelligence systems master gunner should be designated to further enable the G-2 staff to collectively design, implement, and manage a tactical intelligence architecture capable of supporting unit operations across the spectrum of unified land operations (ULO).

References: ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019. Additional information can be found in Training Circular (TC) 2-19.400, *Military Intelligence Training Strategy*, 1 August 2019; and TC 2-19.403, *Military Intelligence Training Strategy for the Brigade Combat Team Tier 3*, 25 February 2020. Common access card (CAC) login is required for access.

2.9: Continuous Intelligence Preparation of the Battlefield

Observation: G-2 staffs did not conduct sufficient continuous integrated multi-domain intelligence preparation of the battlefield (IPB) throughout the operations process.

Discussion: During planning, staffs do not sufficiently integrate during initial IPB to enable further detailed planning at each echelon. During execution, G-2 staffs often do not integrate requisite subject matter experts into the continuing IPB process. The lack of PIRs, target value analysis (TVA), high-value targets (HVTs) and named area of interest (NAI) refinement—in a timely, relevant, accurate, predictive and tailored approach—led to units fighting the original plan instead of fighting enemy forces and changing circumstances. Additionally, staffs demonstrated a poor understanding and management of PIRs in LSCO. Commanders refined PIRs routinely in their head and during key-staff touchpoints, but staffs lacked the rapid reporting mechanisms to enable commander's critical information requirements (CCIRs) to remain relevant to the changing circumstances.

Recommendation: Establish staff integration efforts for IPB throughout the operations process, which includes execution. Ensure the G-2 and G-3 staff have a timely and effective process for briefing the commander and providing the staff updated CCIRs throughout the operations process.

References: ADP 5-0, *The Operations Process*, 31 July 2019; ATP 2-01.3, *Intelligence Preparation of the Battlefield*, 1 March 2019; ATP 2-01, *Plan Requirements and Assess Collection*, 19 August 2014. Additional information can be found in ATP 3-60, *Targeting*, 7 May 2015. CAC login is required for access.

2.10: Understanding Enemy Forms of Contact

Observation: G-2 staffs lacked a full appreciation of the enemy forms of contact against a peer or near-peer adversary.

Discussion: Forms of contact are one of the many basic tactical concepts highlighted in ADP 3-90. The eight forms of enemy contact are visual; direct; indirect; non-hostile; obstacles; aircraft; chemical, biological, radiological, and nuclear (CBRN); and electronic (sometimes referenced as "DINOCAVE" within the intelligence community). Corps and division staffs often focus predominantly on direct and indirect contact. G-2 staffs do not adequately understand or anticipate enemy unmanned aircraft system (UAS) capabilities (integration with the protection WfF). They do not effectively and deliberately hand off enemy obstacle information (integration with the engineer cell). Lastly, they do not effectively visualize the enemy electronic footprint for the

commander and staff (integration with electronic warfare, signals intelligence, cyber, and space functions). Maintaining contact with enemy forces applies to all eight forms, and more particularly, the nonprojectile-based, against a peer competitor. The lack of collective understanding leads to an inability to deliberately hand off information when gaining contact.

Recommendation: Review and collectively understand the eight forms of enemy contact to prevent an unbalanced focus on direct and indirect enemy contact. Further education regarding use of intelligence handover lines ensures units are able to gain and maintain contact with the enemy across all eight forms of contact.

References: ADP 3-90, *Offense and Defense*, 31 July 2019; FM 3-55, *Information Collection*, 3 May 2013; ATP 3-20.96, *Cavalry Squadron*, 12 May 2016.

2.11: Intelligence Product Management

Observation: Knowledge management of intelligence products and the intelligence running estimates did not sufficiently keep pace during LSCO execution.

Discussion: As ADP 2-0 highlights, commanders and staffs need timely, accurate, relevant, and predictive intelligence to understand threat characteristics, goals and objectives, and courses of action to successfully execute offensive and defensive tasks in LSCO. The analysis and control elements (ACE) frequently lacks a comprehensive understanding of the corps or division critical path that links the headquarters battle rhythm events. Without this understanding, the G-2 is unable to effectively and efficiently synchronize the intelligence process to enable decision making and drive action.

Recommendation: The ACE needs to generate products that achieve understanding (as articulated in figure 2-1 of ADP 6-0), and determine when and where to input these products into the battle rhythm to effectively support targeting and situational understanding.

References: ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019. Additional information can be found in FM 2-0, *Intelligence*, 6 July 2018. CAC login is required for access.

2.12: Intelligence, Surveillance, and Reconnaissance Asset Synchronization

Observation: Divisions did not effectively integrate and synchronize intelligence, surveillance, and reconnaissance.

Discussion: Division G-2 collection management (CM) elements did not effectively leverage IC planning requirement tools such as the information collection matrix (ICM), information collection synchronization matrix (ICSM), and information collection overlay (ICO) throughout the operations process. IC plans, predominantly centered on employing UASs, did not integrate and synchronize all organic assets (i.e., radar systems, DIVCAV, etc.). Additionally, IC plans did not adequately integrate to support decisions (PIRs) and targeting (high-payoff targets [HPTs]).

Recommendation: Utilize the IC planning requirement tools throughout the operations process (particularly during execution). Effective IC plans incorporate all organic collection capabilities, including secondary or ancillary collection platforms. The CM element must ensure (through the planning process) the IC plan is sufficiently integrated to support commander decision making and targeting priorities.

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

2.13: Enemy Battle Damage Assessments

Observation: Combat assessments did not effectively visualize enemy composition, disposition, and strength during execution of the operations process.

Discussion: G-2 targeting section products did not enable the commander and staff to visualize the enemy physical and functional damage. The process of consolidating and formatting battle damage assessment (BDA) reports, collaborating with the G-2 fusion element, and disseminating a visual depiction of enemy capability and strength was not sufficient to enable commander decisions or planning for deliberate targets.

Recommendation: Codify the combat assessment process in the corps or division SOP. Ensure subordinate units have this SOP if they are expected to be part of the BDA reporting process. Develop a BDA running estimate that visualizes the strength and capability of enemy forces in time and space. If using Microsoft PowerPoint, ensure routine timeliness and dissemination location of the product.

References: ATP 3-60, *Targeting*, 7 May 2015. Additional information can be found in ATP 2-19.3, *Corps and Division Intelligence Techniques*, 26 March 2015; FM 2-0, *Intelligence*, 6 July 2018. CAC login is required for access.

FIRES AT THE CORPS AND DIVISION LEVELS

2.14: Operations Fire Support Battle Drills

Observation: Divisions experienced significant losses from long-range cross-boundary fires and struggled to coordinate counterfire through corps channels and adjacent units. The average processing time for fire missions, from receipt to shot, was approximately 8 to 11 minutes. Delays occurred primarily because of unfamiliarity with executing cross-boundary fires and other complicated fire support missions.

Discussion: FM 3-09 addresses executing complicated fire support missions as independent battle drills. The manual recommends integrating the following contingencies into combined arms and fire support rehearsals: air and ground fires clearance, cross-boundary fires, unplanned strike coordination and reconnaissance procedures and coordinated attacks, counterfire, fire support coordination measures (FSCMs) movement triggers, and reconstitution procedures. The interdependent battle drills must include the JAGIC, DIVARTY CP, subordinate battalions, and, if available, an adjacent unit. The DIVARTY is the integrating headquarters for fires, but the battle drills require input from the division fire support element, air support operations squadron (ASOS), and the combat aviation and sustainment brigades. The best practice is for stakeholders from these headquarters to codify the listed battle drills in SOPs to streamline authorities and reduce unnecessary steps. Every battle drill must also utilize MCISs at every step. Units routinely use chat and voice calls to process missions and clear airspace. To prepare for a WFX, units can execute fire control exercises that incorporate these battle drills. The more repetitions units execute, the better prepared they will be for a warfighter. Do not underestimate the friction of transitioning from individual to collective training. Without dedicated time to train, operator-level problems significantly hinder fires delivery.

Recommendation: Establish and rehearse cross-boundary fires. Complicated fire missions require clear authorities and procedures that are negotiated between adjacent units. Coordination starts with staff analysis that identifies coordination areas. Liaison officers (LNOs) can facilitate cross-boundary fires delivery. Units that are most successful "pre-clear" adjacent areas and establish FSCMs such as purple kill boxes that facilitate surface and joint fires delivery.

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

2.15: Digital Fires Support Systems and Technical Rehearsals

Observation: Digital connectivity gaps created lags in fire mission processing, airspace clearance, and common operational picture (COP) maintenance.

Discussion: The Advanced Field Artillery Tactical Data System (AFATDS) had trouble connecting to the Data Distribution System (DDS). DDSs link digital systems to the Command Post Computing Environment (CPCE) and provide updated unit data, FSCMs, and target locations. In one instance, the fires battle captain spent significant time manually adding FSCMs and air space coordination measures into the CPCE at the expense of focusing on executing targets because the systems were not properly linked together. Additionally, the AFATDS database used during the operation did not have class V munitions guidance that would automatically enter appropriate weapon solutions for each target; further slowing fire mission processing.

Recommendation: Commit more effort and subject matter expertise to ensure digital systems are connected and properly configured to speed up fire mission processing and maintain shared understanding across the CP. The force field artillery headquarters should confirm all fire support systems have the same configuration and settings. A fires technical rehearsal before the operation would also help identify problems with data systems before operations commence.

References: ATP 3-09.24, *Techniques for the Fire Brigade*, 21 November 2012.

2.16: Shared Understanding of Targeting Efforts

Observation: The corps had minimal bottom-up refinement during targeting planning, which negatively impacted synchronization.

Discussion: The corps joint targeting cell had minimal interaction or involvement with subordinate units during the targeting working groups (TWGs) and targeting boards. Shared understanding, integration, and synchronization among the fires WfF at each echelon throughout the corps were challenged, resulting in missed opportunities to deliver synchronized effects on enemy units. Consequently, the corps was occasionally unable to set conditions for division success on the battlefield.

Recommendation: The corps joint fires cell should identify and publish key inputs required from division targeting cells in Annex D (fires) of the corps OPORD. The corps requirements will set expectations for TWGs and targeting board outputs at echelon. The corps fires cell and staff sections should also employ the CPCE COP display tools to update and present overlays with graphic control measures and FSCMs. Incorporating screen captures and map overlays during each air tasking order (ATO) day also aids visualization during TWG and targeting board discussions.

References: FM 3-09, F*ire Support and Field Artillery Operations*, 30 April 2020, ATP 3-60, *Targeting*, 7 May 2015.

2.17: Deliberate Targeting Improvement

Observation: One unit showed significant improvement in the deliberate targeting process by following a disciplined, logical format that synchronized intelligence collection, lethal fires, and nonlethal effects.

Discussion: Initial staff and WfF assessment and input into targeting did not allow the targeting cell or the commander to understand if targeting efforts were progressing according to plan. Through refining its efforts, the unit significantly improved its assessments and targeting operations. The improvement came from a convergence of staff assessments and inputs. The operations research and systems analyst (ORSA) officer began briefing assessments, which improved other staff sections' ability to evaluate situations. The intelligence WfF provided doctrinal courses of action and enemy decision points based on improved running estimates provided from IC efforts. The result was a friendly scheme of maneuver that provided a shared understanding and assisted targeting through focusing all available capabilities to shape the deep fight. Finally, staff efforts allowed the targeting cell to synchronize efforts through the target synchronization matrix (TSM) and better understand how it would apply the deliberate targeting cycle (decide, detect, deliver, and assess [D3A]).

Recommendation: Units should conduct an internal evaluation and explore ways to improve operations and training outcomes. Continue to leverage each WfF's ability to assess and provide recommendations. Always refine SOPs based on lessons learned and best practices.

References: FM 3-0, *Operations*, 6 October 2017; FM 3-09, *Fire Support and Field Artillery Operations*, 30 April 2020; ATP 3-60, *Targeting*, 7 May 2015.

2.18: Field Artillery Intelligence Officer

Observation: One unit's use of the field artillery intelligence officer (FAIO) proved invaluable to the targeting and fires process.

Discussion: The FAIO integrated effectively with the ACE to support the JAGIC with employing joint fires. The FAIO proved to be the crucial link between the G-2 targeting section and JAGIC. The integration worked because of the quality of information on vetted and validated targets and the FAIO's position on the floor, which was near the JAGIC tables. The division digital architecture also contributed to the success because of the link between the operations coordination system, DCGS–A, and AFATDS. The intelligence collection manager facilitated effective enemy engagement using the multifunction workstation as part of the DCGS–A, which provided targeting intelligence data to the FAIO. The FAIO then used the operations coordination system to pass targets to the JAGIC.

Recommendation: Continue using the operations coordination system and targeting intelligence data to produce effective proactive targeting decisions. Recent trends show an overreliance on chat systems, which limits the JAGIC's ability to process targets effectively, leading to fires execution delays. Cross-train intelligence and fires WfF staff members on the operations coordination system. Ensure the FAIO understands their role in the fires process.

References: FM 3-09, *Fire Support and Field Artillery Operations*, 30 April 2020; ATP 3-60, *Targeting*, 7 May 2015.

2.19: Joint Air-Ground Integration Center Analog Common Operational Picture

Observation: One JAGIC used an analog COP.

Discussion: The initial JAGIC analog COP consisted of a map board and paper copy of the high-payoff target list (HPTL), target selection standards (TSSs), and attack guidance matrix (AGM). The AFATDS operator used a dry erase board to annotate fire mission log data and erased the board at the conclusion of each shift. The commanding general (CG) directed the JAGIC to build an analog COP to display the number and type of missions the JAGIC was conducting each day. On day three of the operation, the JAGIC

implemented a dry erase easel board in the workspace area that included three columns, consisting of dynamic missions, counterfire, and the HPTL. During operations, the AFATDS operators marked each mission as it was conducted. The data was available to everyone in the COIC, but did not provide the CG a better visualization and understanding of lethal fires and nonlethal effects.

Recommendation: Several division units have exceptional analog map board designs that assist the commander and staff with visualization and understanding lethal fires and nonlethal effects. A division tactical command post (DTAC) analog tracker is an accurate example of an analog COP used during an exercise that displayed valuable information, rather than simple data. The DTAC tracker could be refined to JAGIC COP requirements. See the call out box for a fires COP example.

References: FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014; ATP 6-0.5, *Command Post Organization and Operations*, 1 March 2017; ATP 3-91.1, *The Joint Air Ground Integration Center*, 17 April 2019.

Fires COP (Fires/DIVARTY) Example

- Location of all active PAAs within the battlespace
- Location and clearance status of PAAs to be occupied within the next 24 hours
- The active range rings of artillery pieces
- Active range fans of counterfire acquisition radars to portray coverage against enemy indirect fires
- Graphic depiction of planned targets by ATO cycle
- Smart layer is built with a source from G-2's SITEMP. The filter is by unit name with a focus on the organizations containing HPTL or priority targets.
- Graphic depiction of DIVARTY counterfire conducted to provide a visual representation of areas instigating the requirement for counterfire
- Graphic depiction of DIVARTY heat map

2.20: Joint Air-Ground Integration Center Battle Drills and Processes

Observation: The JAGIC had difficulty clearing airspace because clear procedures were not in place.

Discussion: The JAGIC chief assumed the responsibilities of the senior air director because there were too few ASOS personnel. As the JAGIC chief worked through the challenges of filling both roles, at one point, multiple targets were pushed from the ACE. The targets were best executed with joint fires and the JAGIC chief was unfamiliar with the air asset request process. The JAGIC chief worked through the issue and was able to finally get assets on station, but the process took longer than expected, delaying effects on targets. Additionally, the JAGIC chief was unable to effectively shape the deep fight because of inability to develop the situational awareness required to understand the available assets and enemy disposition. Most of the JAGIC chief's time was used trying to figure out the processes required to clear airspace and request assets.

Recommendation: Develop clear procedures and battle drills required to perform basic processes such as airspace clearing procedures and air asset requests. JAGIC personnel should all be cross-trained to perform these duties and be familiar with the battle drills. These battle drills should be codified in the SOP and available to the JAGIC in case a key individual is taken out of the fight.

References: FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014; ATP 3-09.12, *Field Artillery Target Acquisition*, 24 July 2015.

PROTECTION AT THE CORPS AND DIVISION LEVELS

2.21: Protection Working Group Attendance

Observation: The division staff did not incorporate all the necessary attendees into the protection working group (PWG).

Discussion: The division protection cell participated in division working groups and boards, but critical staff members from other WfFs did not consistently participate in the PWG. The PWG improved significantly throughout the operation and served as an effective forum for synchronizing efforts with subordinate units. However, the PWG did not achieve full effectiveness because of missing input from other WfFs, resulting in the division struggling to effectively synchronize protection tasks and capabilities throughout the operations process.

Recommendation: Determine protection requirements and incorporate them into required command decisions and staff supporting efforts. Representatives from all staff sections and WfFs should participate in threat and hazard analysis. This will assist in forming a thorough and in-depth report that addresses potential threats and hazards throughout the AO. The division should maintain updated staff estimates and provide necessary inputs at the PWG to inform the protection COP and provide continuous inputs into the protection prioritization list (PPL).

References: ADP 3-37, *Protection*, 31 July 2019.

2.22: Corps Engineer Section Graphics

Observation: The corps protection section struggled to build digital graphics in the CPCE.

Discussion: The protection WfF is responsible for maintaining graphics of enemy obstacles throughout the area of operations. The obstacle graphic is essential to communicate obstacle information across the corps and facilitate movement and maneuver (M2) for follow-on units. The corps protection section attempted to gather bottom-up obstacle refinement from subordinate divisions, but was unable to import the data through the Command Post of the Future (CPOF) system. The protection section resorted to building the digital graphics manually in the CPCE.

Recommendation: Import obstacle graphics into overlays and share the products with subordinate units through assistance from their knowledge manager.

References: ADP 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; ATP 6-01.1, *Techniques for Effective Knowledge Management*, 6 March 2015.

2.23: Protection Prioritization List

Observation: The division staff missed an opportunity to mitigate risk because it did not publish a PPL.

Discussion: The PPL is the key fighting document produced by the protection cell. The PPL requires input from subordinate brigade staffs. The PPL should identify critical assets necessary to accomplish the mission and directs mitigation measures to counter threats to those assets. Division-critical assets include equipment to enable wet-gap crossings or air assaults, counterfire equipment, and locations for forward arming and refueling points. Understanding the threats to these assets results in publishing tasks to subordinate units and task-organization changes, and reinforces unit active and passive defense measures. Not having a PPL hinders the division's process to dynamically reallocate assets in cases of attrition or changes to the

commander's priorities. Additionally, the PPL provides the PWG framework by establishing a common starting point, facilitating understanding among staff members and subordinates, and recommending tasks to subordinate units. This also serves to ensure the PWG's relevancy as the battle rhythm event for adding assets or requesting changes to the PPL.

Recommendation: The PPL is initially generated during mission analysis and must have a well-established critical path for approval once transitions occur or the commander's intent changes. The PPL must have a prominent role in the PWG and should be briefed during battle rhythm events to provide an opportunity for shared understanding to staff members and subordinate units.

References: ADP 3-37, *Protection*, 31 July 2019.

2.24: Protection Military Decision-Making Process Outputs

Observation: The division did not publish a unified scheme of protection, PPL, scheme of air defense, or the survivability appendix to Annex G of the division OPORD.

Discussion: The protection products in a division OPORD are useful documents, and the planning that goes into producing the products pays dividends during an operation. The protection cell products anticipate changing protection requirements and shortfalls by phase of an operation. The products also reduce the time needed to make dynamic changes or implement further mitigation measures. Developing protection products informs the commander of inherent risks in the operation and drives risk decisions and resource allocation.

Recommendation: The OPORD protection annexes and appendices should be generated because of the military decision-making process (MDMP). Protection products ensure shared understanding across the staff and subordinate units, and reduce friction once operations begin. Protection tasks should be codified in the OPORD as tasks to subordinate units and coordinating instructions.

References: FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014; ADP 3-37, *Protection*, 31 July 2019.

2.25: Annex G (Engineer) to the Division Operation Order

Observation: The division engineer did not produce and publish a detailed Annex G.

Discussion: The absence of a developed Annex G in the division OPORD resulted in several days of effort to develop reporting and battle-tracking systems, CPCE overlays, and detailed engineer synchronization working-group slides. The division engineer is responsible for publishing Annex G and assisting in building other key appendices in the OPORD. In offensive operations, the division engineer battle tracks, consolidates, and analyzes obstacle reports and route status reports through distributed systems. Initially, the staff did not record enemy obstacle graphics and enemy engagement areas. Throughout the operation, subordinate units encountered obstacles and created breach lanes without marking or reporting them, which led to avoidable losses of equipment and personnel. Shared understanding requires report consolidation into shareable products that support leader decisions and subordinate-unit actions.

Recommendation: The division staff must create detailed planning products and collection systems to provide subordinate units and leaders with the knowledge and understanding to conduct parallel and detailed planning.

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

2.26: Assessing and Updating the Protection Prioritization List

Observation: The protection cell did not effectively assess or update the PPL during the operation.

Discussion: The protection section published a PPL in the base OPORD before the start of the exercise that was different based on each phase of the operation. However, the protection section did not publish an updated PPL until the release of FRAGORD 6. Additionally, the protection section only published an updated PPL during the exercise when operations entered follow-on phases. Finally, daily changes to the PPL only occurred based on guidance from leaders when the protection section briefed during the battle update assessment meetings.

Recommendation: The protection section should publish an updated PPL daily. The PPL is a dynamic document that requires adjustments based on attrition of protected and protection assets or changes in operations. The PPL also communicates shared understanding of protection priorities and the protection section cannot achieve shared understanding if it does not publish the PPL daily for subordinate units and other staff members. The PPL requires bottom-up refinement from subordinate units to properly assess and make changes. Subordinate units cannot provide bottom-up refinement if the protection section does not publish the list daily.

References: ADP 3-37, *Protection*, 31 July 2019.

2.27: Division Chemical, Biological, Radiological, and Nuclear Defense Plan

Observation: The division had an exceptionally developed and executed CBRN defense plan.

Discussion: The protection cell developed a comprehensive CBRN defense plan. The CBRN staff plotted and refined suitable numbers of decontamination points and clean/dirty routes, and disseminated the information to the subordinate BCTs. The enemy attacked an MSR in the division area of operations to reduce tempo and divide the force. The CBRN officer took charge, worked with the battle major to stop traffic on the MSR, dispatched CBRN reconnaissance personnel to determine a bypass route, and coordinated decontamination operations. As a result, the division returned to a standard operating tempo within a few hours of the CBRN attack.

Recommendation: Continue to train CBRN response. Coordinate with other WfFs to develop bypass routes.

References: ADP 3-37, *Protection*, 31 July 2019.

SUSTAINMENT AT THE CORPS AND DIVISION LEVELS

2.28: Corps Maintenance Statuses

Observation: The corps could not adjust priorities or make informed decisions because the G-4 did not understand the division maintenance status.

Discussion: Initial combat power reporting did not provide the requisite detail to enable the corps G-4 to make informed class VII replacement decisions. The divisions submitted logistics status reports and combat power slants to the corps. Corps did not clearly delineate which platforms were battle losses versus nonmission capable for maintenance, which led the corps G-4 to issue replacement class VII while many combat platforms were being repaired and returned to combat operations.

Recommendation: Establish a corps maintenance working group in the sustainment battle rhythm to validate combat power status reports and create shared understanding of maintenance capabilities across the area of operations. Define mutually supporting roles and responsibilities between the corps G-4 and expeditionary sustainment command (ESC) materiel readiness branch to have a shared understanding of all maintenance actions.

References: FM 4-0, *Sustainment Operations*, 31 July 2019; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014; ATP 4-33, *Maintenance Operations*, 9 July 2019.

2.29: Sustainment Common Operational Picture (1)

Observation: The division sustainment cell established a sustainment COP that enabled the commander, staff, and subordinate units to quickly ascertain critical combat power. However, the COP did not evolve to reflect task-organization changes and high-interest items such as mortuary affairs.

Discussion: A sustainment COP builds and maintains shared understanding, assists in controlling and assessing sustainment operations, and facilitates coordination with internal and external organizations. A sustainment COP enables commanders to understand, visualize, describe, direct, lead, and assess sustainment operations across the formation. Although the division G-4 maintained a sustainment COP, it did not responsively adjust to reflect task-organization changes to understand combat power. Further, the COP did not reflect high-interest items such as mortuary affairs to leverage opportunities and resources from the corps and ESC. The commander benefited from a single-integrated sustainment picture; however, displaying projected combat power and critical commodity levels would have allowed the commander to make decisions that were more informed and adjust the plan.

Recommendation: Develop the sustainment COP and develop a COP of relevant information to the commander and adjust based on changing staff estimates.

DOTMLPF-P: *Training.* The sustainment COP should be codified in the division TACSOP. The TACSOP should list what the sustainment running estimates should look like to provide relevant knowledge and shared understanding.

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

2.30: The Sustainment Common Operational Picture (2)

Observation: The sustainment COP did not create shared understanding across echelons.

Discussion: The G-4 and sustainment brigade each maintained different running estimates and each briefed the CG a different COP at the battle update brief (BUB) and commander update brief (CUB) each day. Additionally, each element of the sustainment WfF used different visual graphics and levels of detail, which led to incomplete sustainment analysis and a lack of shared understanding across the sustainment WfF. Consequently, the CG requested additional graphics and aids to gain understanding of the sustainment posture to make decisions while also understanding the subsequent effects in time and space.

Recommendation: Clearly delineate the sustainment COP roles and responsibilities between the G-4, G-1, division surgeon, G-8, and the sustainment brigade. In the unit SOP, codify the process to update and share the sustainment COP across the staff and subordinate units. Enforce the use of common graphics on the sustainment COP and the sustainment running estimates.

DOTMLPF-P: *Training.* Expand learning objectives during mission command training for building a COP and gaining shared understanding throughout the staff. *Leadership.* Identify CCIRs during mission analysis and incorporate them into the COP.

References: FM 4-0, *Sustainment Operations*, 31 July 2019; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014; Army Regulation (AR) 700-8, *Logistics Planning Factors and Data Management*, 15 March 2011; FM 1-0, *Human Resources Support*, 1 April 2014.

2.31: Combat Power Reporting

Observation: Combat reporting inaccuracies affected future planning.

Discussion: Units struggled to distinguish between battle loss and battle damage. The breakdown in understanding caused significant delays in reporting accurate combat strength, which impacted the G-4's ability to project maintenance returns and recommend class VII replacement allocations. The breakdown led to discrepancies between G-3 and G-4 combat power reports and inaccurate projections of brigade combat power in the next 24–96 hours.

Recommendation: Familiarize subordinate logistics staff members throughout the division with reporting requirements early and often. Conduct rehearsals before conducting operations to identify any potential reporting problems and to enhance quality assurance. Emphasize how accurate reporting of combat power and battle-loss information aids planners in visualizing the operational environment. This visualization facilitates predictive planning and coordinated redistribution throughout the division's operational area.

DOTMLPF-P: *Training*. Rehearse maintenance reporting procedures such as battle loss, battle damage, and projected returns with subordinate units.

References: ATP 3-91, *Division Operations*, 17 October 2014; ATP 4-93, *Sustainment Brigade*, 11 April 2016.

2.32: Predictive Analysis for Medical Logistics Distribution

Observation: The division surgeon section provided quality analysis of the medical logistics requirements of the operation.

Discussion: The division surgeon section in the SACP broke down the casualty estimates by phase and day to determine the medical logistics requirements. The staff then used time-based casualty estimates to program transportation movement requests (TMRs) for air and ground assets, as well as class VIII requests, all in advance. The TMRs allowed for daily casualty evacuation (CASEVAC) of patients to relieve pressure from the role 2 medical facilities. Including a medical brigade as a response cell significantly increased the stimulation provided to the division surgeon. The medical brigade assisted with casualty tracking and management, class VIII distribution, and command and control of medical assets.

Recommendation: Ensure this process includes codified specific roles and responsibilities and is included in the division surgeon section of the TACSOP. Ensure integration of medical processes with other sustainment elements to be further coordinated by the G-4 (in its role as chief of sustainment) and communicated to decision makers during sustainment updates.

DOTMLPF-P: *Training*. Rehearse CASEVAC processes including roles and responsibilities between command nodes and sustainment elements.

References: ADP 5-0, *The Operations Process*, 31 July 2019; FM 3-0, *Operations*, 6 October 2017; FM 6-0, *Commander and Staff Organization and Operations*, Change 2, 22 April 2016; FM 4-02, *Army Health System*, 17 November 2020; ATP 4-02.2, *Medical Evacuation*, 21 July 2019.

2.33: The Sustainment Critical Path

Observation: The critical path for the SACP battle rhythm events did not facilitate impactful decision making for the DCG–S.

Discussion: Before starting the exercise, the SACP battle rhythm only conducted two division-level sustainment-focused meetings—the logistics synchronization (LOGSYNC) and the movement working group. The two meetings did not produce decision points for the DCG–S. The division also struggled to integrate all elements of the sustainment WfF and other integrating cells into the sustainment critical path to enhance decision making and support area operations synchronization.

Recommendation: Refine the seven-minute drills for each meeting in the division TACSOP to ensure the appropriate staff members and decision makers are present, and that the inputs and outputs of the meetings align to build shared understanding at the staff level and inform timely decision making. Ensure operational updates and staff members are synchronized through integrating cells and working groups to ensure sustainment operations remain properly coordinated.

DOTMLPF-P: *Training*. Rehearse all battle rhythm events to ensure the logical alignment of working groups and boards, and validate the required inputs and outputs of each meeting. *Leadership*. Ensure all staff members understand the importance of the critical path and how battle rhythm events should build toward shared understanding.

References: FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014; FM 4-0, *Sustainment Operations*, 31 July 2019; ADP 5-0, *The Operations Process*, 31 July 2019.

2.34: Sustainment Warfighting Function in Integrating Cell

Observation: The sustainment WfF was not involved in integrating cell planning across the various planning horizons.

Discussion: Each functional cell operated within itself and generally within the short-term planning horizon (CUOPS). The G-4 effectively communicated and synchronized in support of CUOPS outside of battle rhythm events. However, the staff was less successful in synthesizing current information, gaining a better understanding of the impacts on FUOPS, and collaborating and synchronizing that information across the other WfFs in support of future planning. The actions resulted in planners being solely focused on the close fight and short-range planning horizon, which provided little support to the mid- and long- range planning horizons and multiple other planning efforts.

Recommendation: G-5 and FUOPS planners should conduct routine working groups for planning during execution. Identify sustainers from each element of the sustainment WfF and across each CP node to participate in all integrating cell activities. Relay current COP updates to ensure the most accurate information, projections, and critical sustainment activities are consistent across all CPs along with critical input from the other WfF to support division sustainment planning efforts.

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; FM 1-0, *Human Resources Support*, 1 April 2014.

2.35: Division Logistics Synchronization Meeting

Observation: The division sustainment elements (G-1, G-4, and surgeon) struggled to provide significant inputs and analysis in the division LOGSYNC meeting.

Discussion: The G-4 has coordinating staff responsibility for the G-1, G-8, transportation officer, and surgeon. The division LOGSYNC meeting was chaired by the sustainment brigade and was the major division sustainment touch point. A forum was not available to integrate planning for all sustainment requirements at the division level before or during the LOGSYNC meeting, causing certain requirements to receive less attention (i.e., mortuary affairs, casualty tracking and evacuation, priority of personnel replacements, and medical logistics). As a result, the sustainment brigade was unable to capture and include these requirements in the sustainment COP.

Recommendation: Ensure the division leads the sustainment integration efforts in maintaining the sustainment COP with input and further coordination occurring in conjunction with the sustainment brigade. Ensure all elements of the sustainment WfF nest their planning efforts with the commander's priorities. Working groups should ensure subordinate elements are synchronized with the division to enhance efficiency. That should allow the division sustainment leaders to make timely adjustments to quantities, unit priorities, and requirements in real time and enhance shared understanding with the sustainment brigade to facilitate synchronized execution.

References: FM 4-0, *Sustainment Operations*, 31 July 2019; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014; AR 700-8, *Logistics Planning Factors and Data Management*, 15 March 2011.

CHAPTER 3

Special Operations Functions Observations

3.1: Special Operations Forces Participation in Battle Rhythm Events

Observation: Special operations forces (SOF) personnel assigned to support the unit did not have speaking parts in unit battle rhythm events.

Discussion: SOF liaison officers (LNOs) listened to the battle update briefs (BUBs) and commander update briefs (CUBs), targeting working groups (TWGs), and collection working group. However, they did not have an assigned speaking role in any of these meetings. Further, although it was evident the commander was still receiving and understanding SOF reporting based on comments the commander made to the staff and SOF coordinator, it was not clear the staff had the same level of understanding or awareness.

Recommendation: Units should provide SOF LNOs with a daily forum to engage and inform the commander and key staff leaders of SOF activities in the area of operations. This improves interoperability and support, reduces risk of fratricide, and fosters shared understanding.

References: Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

3.2: Special Operations Forces Liaison Officer Integration

Observation: The special operations task force LNO team members integrated themselves into the division current operations integration cell (COIC) quickly and made an immediate positive impact.

Discussion: The division integrated the SOF LNO element immediately upon arrival to facilitate conventional forces and SOF integration, interoperability, and interdependence. The interoperability led directly to improved division situational awareness and an enhanced understanding of its area of operations. Integration of the SOF LNO element facilitated more synchronized operations and a clearer common operational picture (COP), which further enhanced the division's ability to leverage SOF capabilities in its AO. Improved operational understanding achieved through conventional forces and SOF integration, interoperability, and interdependence reduced the friction often inherent in operations involving conventional forces and SOF and host-nation and unified-action partners, which directly contributed to the division's achievements during the operation.

Recommendation: The division should capture lessons learned and further refine standard operating procedures (SOPs) for SOF LNO integration into all operations and exercises. Additionally, the division should integrate SOF LNOs into the planning process for future operations (FUOPS). Finally, the division should make every effort to ensure the appropriate command, control, communications, computers, and intelligence (C4I) infrastructure is immediately available when an LNO arrives to facilitate rapid integration, interoperability, and interdependence.

References: FM 3-0, *Operations*, 6 October 2017; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

3.3: Special Operations Forces Integration into Conventional Forces

Observation: SOF integration into conventional forces depends on SOF LNO team access to conventional C4I equipment, and workspace in the conventional forces headquarters.

Discussion: SOF LNOs significantly contribute to the achievement of enhanced integration into conventional forces. SOF training audiences typically embed an LNO team in conventional staffs to mitigate risk, enhance complementary effects, and improve responsiveness. However, SOF LNO teams require a place to perform their duties, access to key staff personnel, and access to conventional C4I systems. LNO teams must be located in a manner that allows them to interact with the COIC and joint air-ground integration center (JAGIC) so they can quickly conduct coordination and deconflict operations. LNO teams must integrate with all staff sections to properly share information, participate in key battle rhythm events, and inform leadership of adjacent SOF operations. Training audiences must provide the SOF LNO teams with organic C4I systems such as a secure telephone, COP platform, and SECRET Internet Protocol Router Network (SIPRNET) computer to communicate with conventional C4I systems.

Recommendation: SOF leaders should continue to select the best and brightest personnel to represent the SOF enterprise within the conventional forces training audience headquarters and consider making sustainment, communications, and intelligence augmentation personnel part of the SOF LNO package.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): *Training.* This is a training gap observed throughout the year. The Mission Command Training Program (MCTP) will be able to increase integration by coaching training audiences to encourage and practice integration on a more regular basis, incorporating SOF into multiple training venues, and conducting joint planning.

References: FM 3-0, *Operations*, 6 October 2017; FM 6-0, *Commander and Staff Organization and Operations*, 5 May 2014.

CHAPTER 4

Air Component Observations

4.1: Fire Support Coordination Line Movement Causing Issues for Close Air Support

Observation: Friendly forces were frequently operating beyond the fire support coordination line (FSCL) and coordinated fire line (CFL) because of battlefield geometry challenges.

Discussion: The division conducted several air assault operations into objective areas near or beyond the FSCL. During the planning phase of these operations, minimal airspace planning was conducted to ensure airspace control measures were in place to allow close air support (CAS) operations in support of the ground units conducting the air assault. The lack of airspace planning and coordination with the corps caused issues with assets working short and long of the FSCL. The division repeatedly requested to shift the FSCL to a deeper location that would facilitate command and control functions, but the corps denied the requests. Not having ground clearance when friendly forces are forward of the current FSCL could lead to fratricide when conducting CAS or air interdiction (AI).

Recommendation: Once it is determined ground troops could be operating near or beyond the FSCL, detailed airspace control measures that will allow the joint air-ground integration center (JAGIC) to control assets and pass them down to the joint terminal attack controller (JTAC) must be planned for and implemented.

References: Joint Publication (JP) 3-09, *Joint Fire Support*, 10 April 2019; Field Manual (FM) 3-09, *Fire Support and Field Artillery Operations*, 30 April 2020.

4.2: Air Interdiction Short of the Fire Support Coordination Line

Observation: AI was conducted short of the FSCL and with inconsistent execution.

Discussion: There were a number of instances in which approved AI targets nominated by the corps fell behind the FSCL. In these cases, the corps fires cell requested these targets still be serviced by AI; however, there was not a standing battle drill to pass those targets to the appropriate division JAGIC cells for coordination. There are two primary ways a JAGIC can service an AI target within division-assigned airspace. The first, and easiest way, is to open a kill box short of the FSCL and allow the AI platform to service the target without further coordination. The second way is to assign a JTAC or forward air controller as a final clearance authority to clear the airspace and ensure there are no friendly forces in the area. In some cases, the second option results in planned CAS or fires missions being cancelled or delayed while the AI aircraft are on station. If terminal attack control is required to conduct the mission, it is no longer considered AI.

Recommendation: Corps and subordinate divisions should form battle drills for AI conducted short of the FSCL.

References: JP 3-03, *Joint Interdiction*, 9 September 2016.

CHAPTER 5

Special Staff and Noncommissioned Officer Utilization

5.1: The Chaplain and the Command Post Computing Environment

Observation: The chaplain section used the Command Post Computing Environment (CPCE) to facilitate battle tracking and resource allocation.

Discussion: The division chaplain section (DCS) incorporated the CPCE systems to maximize visibility of religious support (RS) assets and unit ministry teams (UMTs) during the operation. This provided understanding for the commander when reallocating UMTs to support hospital locations during mass-casualty events associated with large-scale combat operations (LSCO). The use of the technology significantly enhanced their ability to adapt to changing situations and provide RS at critical locations and times during the battle. Using these systems provided the capability to plan for and execute "be prepared to" missions down to the battalion UMT level.

Recommendation: Ensure corps and DCSs acquire sufficient CPCE systems to support at least one station in the main command post (CP) and the sustainment area or rear CP. Provide training for every member of the team and ensure the section has at least one person sufficiently trained to teach other members of its section and subordinate UMTs.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): *Organization and Training.* The chaplain section needs modified table of organization and equipment (MTOE) authorization for CPCE systems. It needs training to use the system and understand how it facilitates battle tracking and resource management.

References: Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces*, 31 July 2019; Army Techniques Publication (ATP) 1-05.01, *Religious Support and the Operations Process*, 31 July 2018; Field Manual (FM) 1-05, *Religious Support*, 21 January 2019.

5.2: Noncommissioned Officer Utilization

Observation: Noncommissioned officer (NCO) distribution was evident throughout the CP.

Discussion: The division manned the division tactical command post (DTAC) with three senior NCOs with one as the operations NCO, one as the fires NCO, and one as the division engineering NCO. At one point during the battle, the DTAC assumed command and control of the division fight. The operations NCO immediately moved throughout the DTAC, which contained multiple expandable vans (also known as expando vans), the deputy commanding general's (DCG's) office, and the sleeping area to personally alert the staff of the chemical, biological, radiological, and nuclear (CBRN) attack, get accountability, and ensure everyone was in the correct uniform. While the operations NCO was making rounds, sections were reporting accountability to the operations section, which was distracting the battle captain and officer in charge (OIC) from maintaining situational awareness and taking over the division fight.

Recommendation: One NCO should be assigned for every expando van or tent working area as warfighting function (WfF) or cell noncommissioned officer in charge (NCOIC). Each WfF or cell NCOIC is responsible for accountability of each expando van or tent working area. This method allows the operations NCO to remain in a central location and receive accountability reports from each cell without interrupting the current operations (CUOPS) team from its duties, and allows the operations NCO to assist the battle captain, OIC, or DCG in managing emerging crises.

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

CHAPTER 6

Brigade Observations

6.1: Shared Understanding in the Command Post

Observation: Current operations (CUOPS) cell processes and procedures did not facilitate situational awareness throughout the main command post (CP).

Discussion: Although the CUOPS staff's ability to execute its processes and procedures improved throughout the exercise, there were several friction points that limited its ability to support mission command efforts. The lack of synchronization in the CUOPS cell resulted in desynchronization at critical times during operations, which further hampered the effort to ensure shared understanding and unity of effort. The shift change briefs and two-minute drills left information gaps that prevented adequate continuity. CUOPS staff members lacked the situational awareness of information they received and its impacts on the brigade's mission.

Recommendation: Reassess the CUOPS staff's focuses and processes before each phase change, key event, and operational handover. Refine the shift change brief to ensure each warfighting function (WfF) in the CUOPS cell has adequate time and guidance to pass along critical estimates and information requirements during the shift change. Continue to refine the organization's two-minute drills and other internal drills to ensure the CUOPS staff maintains situational understanding and has the opportunity to provide input to collaborative estimates.

Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P): *Leadership.* Leader involvement enhances the effectiveness of CUOPS processes by ensuring WfF integration and synchronization.

References: Field Manual (FM) 6-0, Commander and Staff Organization and Operations, Change 2, 22 April 2016.

6.2: Information Collection Plan Synchronization

Observation: The intelligence cell created an information collection (IC) plan, but did not synchronize it with higher or subordinate headquarters, or the maneuver and fires plans.

Discussion: The S-2 section created an IC plan, but did not produce all the products necessary to synchronize IC in time and space with the maneuver and fires plans. The S-2 section did not create an event template (EVENTEMP)—the key output of intelligence preparation of the battlefield (IPB) for the initial phases of the operation. The IC manager was frequently unaware of the current and predicted enemy situation, creating inaccurate products for the IC and targeting working groups (TWGs). The intelligence section did improve on using IC to support maneuver and fires during defensive operations.

Recommendation: Begin IC planning early in the military decision-making process (MDMP) with an emphasis on synchronizing the plan with the maneuver and fires WfFs. Establish IC integrated working groups and rehearsals with all WfFs at the brigade and battalion levels. Produce an EVENTEMP, which is the foundation of the IC plan during IPB. Maintain situational awareness with CUOPS products so IC plans reflect the most recent assessments. Capture processes and procedures in the S-2 standard operating procedure (SOP).

DOTMLPF-P: *Training and leadership.* Training and leader involvement enhances the staff's ability to plan, synchronize, and execute IC in support of maneuver operations.

References: Army Doctrine Publication (ADP) 2-0, *Intelligence*, 31 July 2019; FM 3-55, *Information Collection*, 3 May 2013; Army Techniques Publication (ATP) 2-01, *Plan Requirements and Assess Collection*, 19 August 2014.

6.3: Targeting Process

Observation: The fires cell struggled to plan and synchronize enablers, resulting in missed opportunities to mass multi-domain effects at decisive points.

Discussion: The TWG failed to integrate key staff members and leaders, which resulted in an ineffective targeting process. The TWG had only fires WfF representatives. It did not have representatives from the current operations integration cell (COIC), plans cell, or intelligence WfF. Without input from the intelligence WfF, there were no updated enemy situation template (SITEMP) or IC plans with which to plan high-payoff target (HPT) detection. Without input from the movement and maneuver (M2) WfF, there was no updated friendly forces situation to allow synchronization of the operation. Without leader involvement, the fires cell struggled to organize the working-group outputs and produce fires orders. The result was each planned target had firing assets available, but the assets were not synchronized from detection to delivery and battle damage assessment (BDA) collection.

Recommendation: Update all the products in the targeting process SOP, including working-group inputs and outputs. Conduct TWG meetings to develop critical products such as the high-payoff target list (HPTL), target selection standards (TSSs), target synchronization matrix (TSM), and the attack guidance matrix (AGM) within the commander's targeting guidance. Make use of lethal and nonlethal capabilities. Ensure the S-2 provides a refined enemy EVENTEMP and IC plan during the TWG meeting.

DOTMLPF-P: *Training and leadership.* Training and leader involvement enhances the brigade's ability to employ lethal and nonlethal fires in support of maneuver operations.

References: ATP 3-60, *Targeting*, 7 May 2015.

6.4: Protection Prioritization List

Observation: The protection cell developed the commander's protection prioritization list (PPL) in a vacuum, resulting in a desynchronized protection plan.

Discussion: After a mission analysis brief, the commander provided protection priorities as radars, artillery, lines of communication, and air defense. The protection cell took the commander's guidance and developed a plan without coordinating with other staff elements, resulting in an inability to identify critical assets and task subordinate units to protect the assets. The battlefield effects became clear during the offense and defense phases when enemy forces targeted and destroyed the air and missile defense (AMD) systems.

Recommendation: Develop the draft PPL during mission analysis and refine it throughout the MDMP. Utilize the PPL as the main point of discussion during the protection working groups (PWGs) to ensure synchronization across the staff. If constrained for time, incorporate PPL information into other working groups to coordinate assets across WfFs. Reference the PPL during briefs to reinforce the importance of critical-asset protection.

DOTMLPF-P: *Training and leadership.* Training and leader involvement ensures protection tasks are integrated into the overall plan and assets are properly tasked through operations channels.

References: ADP 3-37, *Protection*, 31 July 2019; FM 6-0, *Commander and Staff Organization and Operations*, Change 2, 22 April 2016.

GLOSSARY

ACRONYMS AND ABBREVIATIONS

ACE	analysis and control element
ADP	Army doctrine publication
AFATDS	Advanced Field Artillery Tactical Data System
AGM	attack guidance matrix
AI	air interdiction
ALO	air liaison officer
AMD	air and missile defense
AMR	air mission request
AR	Army regulation
ARS	armored reconnaissance squadron
ASOS	air support operations squadron
ASR	alternate supply route
ATO	air tasking order
ATP	Army techniques publication
AWG	assessment working group
BCT	brigade combat team
BDA	battle damage assessment
BDE	brigade
BTL	battle
BUB	battle update brief
C4I	command, control, communications, computers, and intelligence
CAB	combat aviation brigade
CAC	common access card
CAS	close air support
CASEVAC	casualty evacuation
CBRN	chemical, biological, radiological, and nuclear
CCIR	commander's critical information requirement
CEMA	cyberspace electromagnetic activities
CDR	commander
CFL	coordinated fire line
CG	commanding general
CHOPS	chief of operations
CM	collection management
CM&D	collection management and dissemination
COIC	current operations integration cell

CONOPS	concept of operations
COP	common operational picture
COS	chief of staff
CP	command post
CPCE	Command Post Computing Environment
CPOF	Command Post of the Future
CPT	captain
CUB	commander update brief
CUOPS	current operations
D3A	decide, detect, deliver, and assess
DCA	division consolidation area
DCG	deputy commanding general
DCG–M	deputy commanding general–maneuver
DCG–S	deputy commanding general–sustainment
DCGS–A	Distributed Common Ground System–Army
D–COS	deputy chief of staff
DCS	division chaplain section
DDS	Data Distribution System
DISFC	Digital Intelligence System Foundation Course
DIV	division
DIVARTY	division artillery
DIVCAV	division cavalry
DMAIN	division main command post
DOTMLPF-P	Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy
DS	direct support
DSA	division sustainment area
DTAC	division tactical command post
EARF	electronic attack request form
ESC	expeditionary sustainment command
EVENTEMP	event template
EWO	electronic warfare officer
FAIO	field artillery intelligence officer
FBO	fires battle handover
FLOT	forward line of own troops
FM	field manual
FRAGORD	fragmentary order
FSCL	fire support coordination line
FSCM	fire support coordination measure
FSCOORD	fire support coordinator
FUOPS	future operations

FY	fiscal year
GRINTSUM	graphic intelligence summary
HPT	high-payoff target
HPTL	high-payoff target list
HQE-SM	highly qualified expert-senior mentor
HVT	high-value target
IC	information collection
ICM	intelligence collection matrix
ICO	information collection overlay
ICSM	information collection synchronization matrix
INSTUM	intelligence summary
IPB	intelligence preparation of the battlefield
JAGIC	joint air-ground integration center
JP	joint publication
JTAC	joint terminal attack controller
JTAR	joint tactical air strike request
KMO	knowledge management officer
LNO	liaison officer
LOGSYNC	logistics synchronization
LSCO	large-scale combat operations
M2	movement and maneuver
MCIS	Mission Command Information Systems
MCTP	Mission Command Training Program
MDMP	military decision-making process
MEB	maneuver enhancement brigade
MNI	multinational interoperability
MSN CMD	mission command
MSR	main supply route
MTOE	modified table of organization and equipment
NAI	named area of interest
NATO	North Atlantic Treaty Organization
NCO	noncommissioned officer
NCOIC	noncommissioned officer in charge
NOM	nomination
NTC	National Training Center
OIC	officer in charge
OPORD	operation order
OPS	operations
OPT	operational planning team
ORSA	operations research and systems analyst
PAA	position area for artillery

PACE	primary, alternate, contingency, and emergency
PAO	public affairs officer
PIR	priority intelligence requirement
PPL	protection prioritization list
PROT	protection
PWG	protection working group
RS	religious support
SACP	sustainment area command post
SIGACT	significant activity
SIPRNET	SECRET Internet Protocol Router Network
SITEMP	situation template
SITREP	situation report
SJA	staff judge advocate
SOF	special operations forces
SOP	standard operating procedure
SSC	sustainment synchronization meeting
SWO	staff weather officer
SYNC	synchronization
TACSOP	tactical standard operating procedure
TC	training circular
TMR	transportation movement request
TSM	target synchronization matrix
TSS	target selection standard
TVA	target value analysis
TWG	targeting working group
UAS	unmanned aircraft system
ULO	unified land operations
UMT	unit ministry team
WfF	warfighting function
WFX	warfighter exercise

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