Lessons-Learned in Company-Team Engagement-Area Development

by 1LT Mara S. Tazartus

Defensive operations are an essential part of large-scale combat operations, enabled by the efficient and deliberate execution of engagement-area (EA) development at the platoon and company levels. With that in mind, Company B, 1st Battalion, 64th Armor Regiment ("Black Knights"), conducted defensive operations during Operation Combined-Arms Resolve XVII (CBR XVII), identifying best practices and lessons-learned that will benefit maneuver leaders in the planning and execution of EA development. Maneuver leaders must create a unit-specific defense battle drill, formalize it in their tactical standing operating procedures (TSOP) and use it in time-constrained environments.

The Black Knights conducted tactical missions throughout CBR XVII at the Joint Multinational Readiness Center, Hohenfels Training Area, Germany. The Black Knights fielded two organic tank platoons, one attached mechanized-infantry platoon, one organic headquarters element and an attached field-maintenance team. The Black Knights' defense of EA Knight stands out as a mission with valuable lessons-learned throughout the planning process.

The defense creates conditions for the offense that allows friendly forces to regain the initiative. Also, the defense can retain decisive or key terrain, deny vital areas to the enemy, attrit or fix an enemy as a prelude to the offense, counter enemy action and increase an enemy's vulnerability.[1] Every defensive operation includes EAs at echelon. An EA is an area where the commander intends to contain and destroy an enemy force with the massed effects of all available weapons and supporting systems.[2]

EA development is a complex action demanding parallel planning and preparation if the platoon is to accomplish the myriad of tasks for which it is responsible.[3] Platoon and individual preparations must produce a cohesive and integrated defense that nests with the company scheme of maneuver. The lessons-learned by the Black Knights will empower maneuver leaders with the knowledge to enhance their ability to conduct EA development.

EA development

Step 1: Identify all likely enemy avenues of approach (AoAs). The Black Knight company commander identified enemy AoAs using map reconnaissance and the enemy situational template (SITTEMP). The commander briefed platoon leadership about two AoAs to EA Knight along main supply routes (MSRs) AoA A and AoA B. As platoons identified battle positions (BPs), leaders recognized more AoAs. Once local and far security was established by the Black Knights and battalion scouts, the Black Knight commander allowed platoon leaders time to conduct thorough leaders' reconnaissance and report back. The leader reconnaissance at the platoon level provided true bottom-up refinement for the likely enemy AoAs.[4]

Within EA Knight, Platoon G observed a network of trails leading into the company area of operation (AO) from restricted and severely restricted terrain to the south. The network of trails produced several routes through AoA C. Left unaddressed, AoA C would allow the enemy to bypass EA Knight and flank Black Knight BPs. To counter the problem, Platoon G reported the severity of the trail network in the southern sector, allowing the commander to design a plan for the defense with AoA C as a focus for direct-fire and obstacles. This is an example of why leaders at the lowest level must take initiative, identify

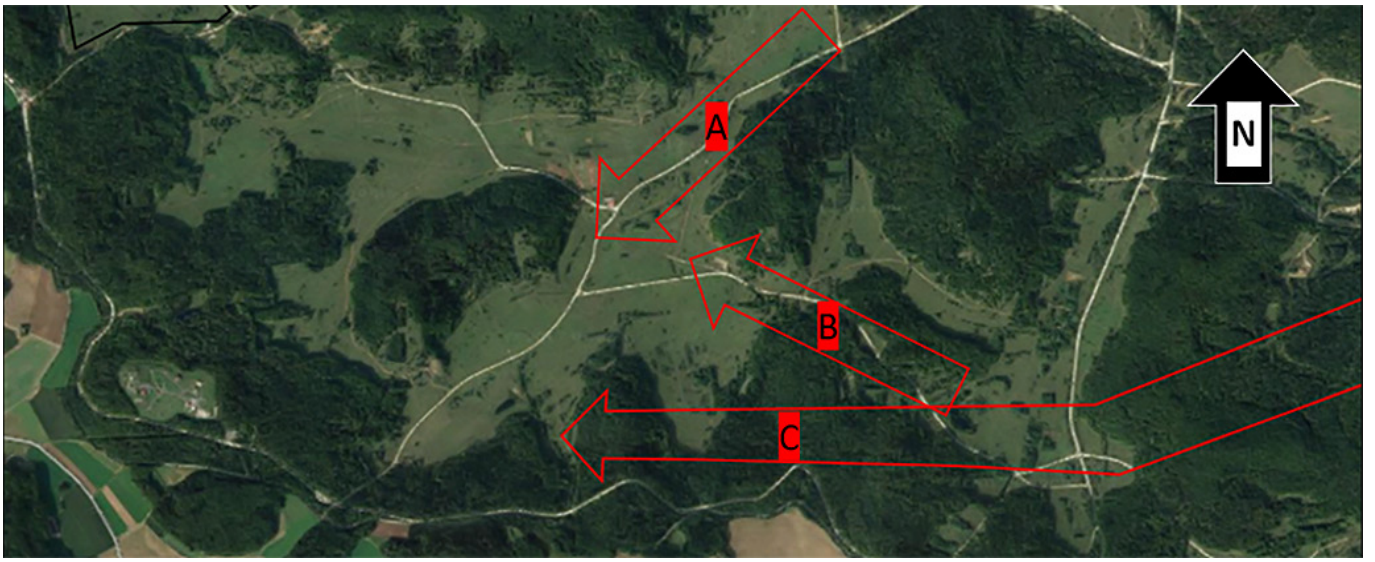

Figure 1. AoAs A, B and C, entering AO Black Knight. *(U.S. Army graphic by 1LT Mara S. Tazartus)*

discrepancies on the ground and rapidly report the information to enhance the commander's understanding of conditions on the battlefield.

Covered and concealed routes for friendly resupply operations and friendly counterattack or subsequent offensive operation AoAs were not addressed during this initial step of EA development. Although this step focuses on the enemy, an implied and crucial part of this step is also the analysis of friendly AoAs. Failure to develop friendly AoAs resulted in confusion regarding which trails in AoA C could be blocked with obstacles. Therefore, it is important for maneuver leaders to incorporate time for leader reconnaissance to initiate crucial bottom-up refinement and establish friendly AoAs for resupply, counterattack and offensive operations.

Step 2: Determine likely enemy schemes of maneuver. The enemy scheme of maneuver predicted the enemy approaching from AoA C. Along AoA C, the enemy would use mechanized infantry and scouts to clear the ground, make contact with the smallest force possible, and ultimately set conditions for *boyeva mashina pekhoty* (Russian fighting vehicles) and T-72 tanks to navigate the trails to bypass the friendly EA. During the rush to accomplish the steps of EA development, Black Knight focused heavily on preparation for the main body attack. Black Knight did not conduct rehearsals or disseminate specific information related to contact with the advance guard's spoiling attack until within an hour of the attack.

For commanders and the S-2 shop, the preferred method of communicating the enemy's scheme of maneuver is an event template (EVENTTEMP). EVENTTEMPs explain the enemy in motion: time, rates of march, all forms of contact and enemy decision points. EVENTTEMPs break down the enemy into its various elements, including reconnaissance, advance guard, main body (to include fixing, penetration and exploitation forces) and the enemy reserve.

An EVENTTEMP is superior to a SITTEMP, which is a static snapshot of how the enemy is arrayed at a given time. If the enemy scheme of maneuver had been briefed as an EVENTTEMP, then platoons would have been better prepared for the advance guard. EVENTTEMPs also allow leaders to develop intelligence, surveillance and reconnaissance plans to confirm the enemy's scheme of maneuver and to apply fires in target areas of interest to attrit the enemy during their movement.

Step 3: Determine where to kill the enemy. The Black Knights maintained EA Knight and its boundaries as it was originally briefed, but half of Platoon G and three Bradley Fighting Vehicles were oriented on AoA C rather than the EA itself based on the templated enemy scheme of maneuver. The focus within the EA was the MSR and the open area to the far south. The enemy would make contact with Platoon G's element oriented on AoA C, which would turn the enemy north toward the open areas in EA Knight. The turning movement would remove the enemy's ability to maneuver undetected around or behind Black Knight BPs.

Every weapon, squad or track does not need to be oriented on target-reference points (TRPs) within the EA. Areas and routes surrounding EA Knight required security and observation, requiring EA Knight to break into smaller EAs at platoon level. With this in mind, leaders must be empowered to make necessary recommendations and changes to EA BP locations and security posture to successfully defend against a complex enemy.

Step 4: Plan and integrate obstacles. Black Knight used organic Class IV for all obstacles in and around EA Knight. Leaders placed obstacles in-depth to fix and turn enemy forces along AoA C. Tank platoons cross-loaded organic Class IV in support of the Platoon G obstacle belt emplaced in the south. Taking the initiative to cross-load organic Class IV proved critical to the overall success of the obstacle plan. If Black Knight had waited for the battalion-task-force engineer assets to supply materials, advise on location and emplace obstacles, obstacles would not have been in place for the arrival of the enemy's advance guard. The initiative taken by platoon leadership to communicate, cross-load equipment and emplace obstacles based on the commander's intent produced a successful obstacle belt fast enough to impact the operation.

Due to the severely restricted terrain to the south, Platoon G fighting positions and BPs were within 100 meters of the trails and obstacles. The proximity of friendly positions to the obstacles they observed prevented obstacles from integrating indirect fires. This reliance on a direct fire, without the indirect-fire component, decreased the effectiveness of the obstacles. For best results, all maneuver leaders should strive to achieve both direct- and indirect-fire integration with obstacles emplaced during EA development.

The indirect-fire integration with obstacles often serves as a forcing function for the dissemination of obstacle-location grid coordinates. The exact obstacle locations and compositions in EA Knight were never disseminated throughout the company. Therefore, most of Black Knight had limited knowledge of the location and composition of obstacles to the south.

The failure to disseminate obstacle information resulted in a degraded ability to reverse breach and quickly counterattack following a successful defense. The information gap would have proved detrimental if the company had immediately gone on offense because most leaders would not have known which trails were accessible or blocked by obstacles. Defensive operations are complex and involve numerous individuals working interdependently at multiple echelons.[5] Creating shared understanding in the small details like obstacle locations allows work at all echelons to produce a cohesive plan.

Step 5: emplace weapon systems. Emplacing weapon systems is crucial to a successful defense. Emplacement refers to verification of all BPs: primary, alternate, supplementary and subsequent BPs, as well as hide sites. Any position where a vehicle will fight from or maintain a prolonged presence needs to be scrutinized. Each Black Knight platoon emplaced weapons systems (M1A2 and M2A3) oriented on EA Knight and relevant AoAs. All

platoons emplaced weapon systems to allow observation and concentration of direct fires using company TRPs.

The company TRPs were linked to terrain, but the terrain was not as distinct and differentiable on the ground as it appeared on the map. Each platoon thought it understood the TRP locations based on its maps and graphic overlays, but discrepancies existed among all platoons. The lack of commonly understood TRPs failed to achieve mutually supporting and overlapping fields of fire. Unfortunately, Black Knight failed to create a shared understanding early in the EA development process by not marking TRPs according to the company TSOP.

The Black Knight TSOP called for placing Velocity System 17 (VS17) marker panel triangles on each TRP for daytime visibility. The VS17 triangles could be tied to a terrain feature or attached to a picket and pounded into the ground. Black Knight lacked a defined night-marking SOP or the resources to create night markings while conducting EA development. The Black Knight SOP has since been updated to include the following night-marking SOP: Use a picket with two nine-volt batteries connected on the inside, facing the friendly BP or fighting position. (The batteries facing toward friendly positions create a thermal signature gunners will identify.)

Day and night TRP markers should be immediately emplaced after the receipt of company graphics. Having marked TRPs is crucial to achieving mutually supporting and overlapping fields of fire. Black Knight emplaced weapon systems and finalized BPs based on each platoon's terrain-association-informed concept of the TRPs. When the company began marking TRPs, Black Knight was unknowingly H-2 hours away from an incoming enemy spoiling attack.

As Platoon G began emplacing TRP markings, the other platoons realized they could not see Platoon G's selections for TRPs 8 and 9. Neither of the tank platoons identified the markers, which revealed a 400-meter stretch of deadspace in EA Knight. This was bad because you should not leave your unit's mutually supporting and overlapping fields of fire to chance. To prevent this problem, leaders must conduct pre-combat inspections and be forward-thinking in supply requests for upcoming missions. Get the marking material and mark TRPs early in the EA development process. Identify deadspace early enough in the planning process to place registered targets in the locations that direct fires cannot cover.

Creating and compiling sector sketches is another important step in emplacing weapons systems. The initial sector sketches each vehicle creates in the process of establishing initial security do not absolve Soldiers and leaders from continuing to update the accuracy of these sketches. Vehicles must produce more sketches for every fighting position and BP.

In Black Knight, the quality of sector sketches varied drastically between different platoons. Commanders and platoon leaders must ensure sector sketches are detailed enough to aid in planning to defend against complex attacks.[6]

Detailed sketches should cover:

- Key weapon locations;
- Weapon orientation;
- Obstacle locations;
- Areas of responsibility;
- Most likely enemy AoAs;
- Likely attack positions; and
- Accurate distances and locations of anything in the weapon's sector.

The preceding list incorporates locations and positions that are non-existent or unknown during the initial creation of the sector sketch. Much like BPs and fighting positions themselves, sector sketches should be continuously improved to paint the most accurate picture of the battlefield. Teach good habits when building sector sketches: use a laser rangefinder to get accurate distances and maintain one compass per vehicle to verify left and right limits, for example. If all sector sketches had met the preceding standard and produced a consolidated sketch, the TRP-placement issue Black Knight faced could have been identified and resolved sooner through an accurate comparison of left and right limits.

Step 6: Plan and integrate indirect fires. Fires planning and integration occurred at the company and battalion levels. Fires were connected to the enemy's scheme of maneuver and the battalion obstacle belt. Black Knight targets had redundant observers, and all vehicle commanders had grid coordinates and preplanned target (PPT) locations on graphic overlays. All vehicle commanders in Black Knight knew the triggers and engagement criteria for company fire missions, and this should be the goal for all units as they plan for fires.

The next step is to rehearse calling the fire missions. Include vignettes and scenarios during rehearsals that force leaders to analyze the intent behind the engagement criteria so they can make decisions about when to call the mission. Black Knight rehearsed the primary observers calling fire missions but did not include alternate observers or other leaders in the company. Commanders and leaders must understand the time it takes for mortars and artillery to impact after a call for fire. This must be rehearsed given the anticipated enemy rates of march to provide timely and accurate fires.

During actions on contact in the defense, two chances to call fire missions on targets of opportunity arose. However, both fire missions were unable to be processed due to an inability to properly clear air and ground. When given the opportunity, register all potential fire targets while in the defense. Having more registered targets will make it easier to capitalize on targets of opportunity because the process can be streamlined to adjust fire missions off a known PPT.

Step 7: Rehearse the execution of operations in the EA. Black Knight conducted rehearsals frequently throughout defensive operations. Company leaders conducted rehearsal-of-concept (RoC) drills and radio rehearsals. At platoon level, every vehicle rehearsed movement between all hide sites and BPs to ensure driver confidence. Platoon RoC drills and radio rehearsals addressed contingencies, vignettes of potential enemy movement and casualty evacuation.

The only rehearsal in the Black Knight TSOP not used during the EA-development process was a terrain-model

rehearsal. Terrain-model rehearsals are the preferred method of rehearsing for a company-team and could have resolved issues Black Knight encountered in the defense. For example, a terrain model could have created a shared understanding of all obstacle locations.

An important part of radio rehearsals was identifying communications deadspace and BPs that would require a relay to the Black Knight command post. Leaders should strive to identify communications shortfalls early, decide if the position is advantageous enough to warrant enacting a communications contingency plan and create a plan and set of priorities for a relay.

TSOP

Some of the issues Black Knight encountered during the EA development process could have been resolved simply by referencing and following through with the Black Knight TSOP. The TSOP instructs the marking of TRPs with VS17 panels and provides a call-for-fire resource to facilitate fire rehearsals at all levels. The Black Knight TSOP provides detailed instructions and an example of a correctly drawn sector sketch.

The existence of a Black Knight TSOP, regardless of how Soldiers and leaders referenced it, allowed the Black Knights to perform at a high level. Research identifies that units with developed TSOPs for defensive operations performed better on most critical tasks. When assessing EA development and characteristics of defense, units with a TSOP performed better on all 14 items measuring those aspects of defensive operations; 11 of those comparisons reached statistical significance.[7] High-achieving tactical organizations create, update and use TSOPs. With that in mind, you should empower your organization to create and refine a TSOP to improve tactical outcomes in EA development.

Conclusion

EA development is a complex series of simultaneous events. Maneuver leaders must achieve the doctrinal steps of EA development and recall, and to implement lessons-learned from personal experience and the experiences of others. They should also ensure the unit-specific TSOP is updated and widely used to achieve the best outcome. Leaders will find success in synthesizing the tasks above by creating unit-specific defense battle drills.

Create a defense battle drill and rehearse using that battle drill thoroughly and often, not only during a combat- training-center rotation. Due to the required time to conduct deliberate defense to standard (72-96 hours for an armored brigade combat team), units often default to training and executing a hasty defense in the field. Therefore units need to employ creative methods to train deliberate defense to standard to build proficiency. Conducting deliberate defense training is the only method of validating whether the unit defense battle drill is comprehensive and universally understood.

Units can perform deliberate defense over multiple days in the Close Combat Tactical Trainer or Virtual Battlespace 3. Units can work through deliberate defense over time, having vehicles populate in the last-used fighting position after a break in training. A full operations order, including an enemy EVENTTEMP, can be briefed and generated in different areas of the battlefield accordingly. Platoons will react to each element of the enemy attack and use the EVENTTEMP as the guideline for how to array vehicles and adjust security during different parts of the operation. Over time, as proficiency increases, leaders can adjust mission factors and variables to provide more challenging dynamic and complex operational environments. Tabletop exercises with key leaders afford a chance to gain familiarity with the defense battle drill before entering a fully tactical environment.

The defense battle drill, including TSOPs and best practices, learned over years of operations, must be disseminated and used to the point of becoming a commonly understood system. CPT Kyle Frazer describes this process in ***Infantry*** magazine: "Expounding on this concept of systems establishment, we can boil the defense down to a battle drill. This requires commanders to analyze reoccurring tasks, identify who is responsible for the execution and decide the standard to which one must execute. Battle drills are a fundamental way we fight and one we are familiar with, but the key to battle drills is that they are clearly defined and rehearsed. If you can break down the process of the defense, you can provide a framework and establish a sequential battle drill for the defense."[8]

A defending force contains enemy forces while seeking every opportunity to transition to the offense.[9] A clearly defined, rehearsed and understood defense battle drill will help units and leaders conduct EA development with increased proficiency, resulting in more effective defensive operations overall. Increased success and lethality in the defense will create conditions that allow leaders to seize the initiative and transition to a counterattack or offense.

Maneuver leaders need to create the defense battle drill that is right for their unit, incorporate the battle drill and its subcomponents into a TSOP and continuously refer to these resources. The preceding steps, paired with lessons-learned from Black Knight's execution of EA development, provide the foundation for greater success for all maneuver leaders in the most challenging aspects of the defense.

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Notes

[1] Field Manual (FM) 3-90, ***Offense and Defense***," July 2019.

[2] Ibid.

[3] Army Techniques Publication 3-20.15, ***Tank Platoon***, July 2019.

[4] CPT Kyle Frazer, "Engagement-Area Development in a Compressed Timeline," ***Infantry***, Spring 2018, https://www.benning.army.mil/infantry/magazine/issues/2018/APR-JUN/PDF/9)Frazer-EA%20Dev_txt.pdf.

[5] C. Vowels, W.A. Scroggins, Kyle T. Daniels, Paul M. Volino, "Defensive Operations in a Decisive-Action Training Environment," U.S. Army Research Institute for the Behavioral and Social Sciences, July 2017.

[6] "Company Defense Planning Needs Improvement," Center for Army Lessons Learned, https://call2.army.mil/docs/doc4688/Tip_132.pdf.

[7] Vowels, Scroggins, Daniels and Volino.

[8] Frazer.

[9] FM 3-90.

Acronym Quick-Scan

AO – area of operation
AoA – avenue of approach
BP – battle position
CBR XVII – (Operation) Combined-Arms Resolve XVII
EA – engagement area
EVENTTEMP – event template
FM – field manual
MSR – main supply route
PPT – preplanned target
RoC – rehearsal of concept
SITTEMP – situational template
SOP – standing operating procedures
TRP – target-reference point
TSOP – tactical standing operating procedures
VS17 – Velocity Systems 17 (marker panel)

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