Kasserine Pass lessons for the reemergence of SHORAD

By Capt. Joshua Urness and Capt. Abigail Carter

The reemergence of Short-Range Air Defense (SHORAD) provides an important opportunity to examine lessons learned about developing highly technical capabilities and rapidly building force structure and training programs at other periods in Air Defense history. Anti-Aircraft Artillery (AAA) experience’s during the period leading up to World War II, and AAA’s first “trial by fire” at the Battle of Kasserine Pass is especially relevant for this reason. This paper identifies lessons learned from those AAA experiences and considers them in the context of challenges the Air Defense Artillery (ADA) branch may face with the reemergence of SHORAD enabled maneuver today. The purpose of this paper is to highlight lessons before an outbreak of conflict to mitigate as many potential challenges that the branch may face in its next “first battle.”

Prelude to war and the Battle of Kasserine Pass

The anti-aircraft artillery downsized almost entirely, separating from the rest of the army under the Coastal Artillery Corps after World War I. United States was at war. Through rapid training and mobilization, the anti-aircraft artillery field grew 1,750 percent by 1943. Rapid growth presented materiel challenges in equipment availability for training and deployment. Intense lobbying focused on modernizing obsolete World War I era AAA equipment. However, many AAA units did not receive new equipment, such as new mechanical predictors, until late 1942, just as they staged for the invasion of North Africa.

Anti-aircraft Soldiers deployed with maneuver forces to North Africa in November 1942. Then, from Feb. 19 to 25, 1943, new U.S. recruits faced an experienced German Army at Kasserine Pass. U.S. forces lost badly. The specific events of the battle fall outside the scope of this examination but The Hammer of Hell, by Col. (ret.) Paul Semmens provides an excellent AAA focused history. Semmens’ research highlights several key factors that led to challenges experienced by AAA forces at Kasserine Pass. These factors include 1) AAA junior officers not understanding combined arms tactics; 2) Anti-aircraft artillerymen lacking sufficient weapon system integration and mobility to perform their mission on a dynamic and shifting high-tempo operation; and 3) Anti-aircraft artillerymen losing situational awareness for

3 Hamilton, page 34.
4 Crabtree, page 44.
5 Hamilton, page 33.
6 Hamilton, page 34.
7 Hamilton, page 34.
8 Crabtree, page 44.
the sake of mobility which led to fratricide and ineffectiveness.\(^9\)

We generate the following lessons from those factors:

i. The air defender must understand the ground tactical plan.

ii. Integration and mobility are essential to supporting the maneuver fight.

iii. Situational awareness and early warning are the cornerstones of the SHORAD fight.

These lessons are relevant today because of similarities between the AAA experiences during the interwar period and the prelude to World War II, and our current “prelude” to war. Now, through additional information about each of those factors, the following sections apply Kasserine Pass lessons to important considerations for the reemergence of SHORAD enabled maneuver.

**The air defender must understand the ground tactical plan**

AAA Soldiers found themselves on the forward line of troops throughout the battle at Kasserine Pass. One of the opening stories shared by Semmens in the Hammer of Hell account of the battle highlights AAA units remaining emplaced at their fighting positions while multiple brigades passed them in retrograde. Soon, those AAA units were alone, and the next thing they saw were enemy troops.\(^{10}\) In hindsight, it probably seemed obvious that they should have followed the American units they were supporting. However, this story shows the poor level of integration these troops experienced with maneuver forces. Poor integration, combined with a limited understanding of maneuver tactics and combined arms warfare, resulted in failures by AAA units to anticipate locations and timing of decisive points on the battlefield. These experiences led to three primary lessons: 1) “Kasserine Pass demonstrated that Anti-Aircraft Artillery junior officers had to understand the situation on the battlefield;” 2) “To provide effective support, Anti-Aircraft Artillery Soldiers had to understand combined arms tactics...”\(^{11}\) and 3) “Anti-Aircraft Artillery Soldiers had to be just as tough as the infantry because they were operating along the line of contact and enduring the same German [sic] artillery fire, enemy probes and physical and mental hardships.”\(^{12}\)

AAA Soldiers at Kasserine Pass learned these lessons the hard way and eventually developed an understanding for maneuver and combined arms tactics through experience. Importantly, training programs back in the United States were allowed the unfortunate benefit of their predecessors “trial by fire.”

As the ADA branch pivots toward missions supporting maneuver forces with SHORAD in large-scale combat operations (LSCO), ADA must develop air defender maneuver competencies and understanding. The goal should be to develop the intuition of the Air Defender to comprehend the shifting elements of a dynamic LSCO battlefield quickly. Then, equipped with understanding and intuition, be able to make decisions, anticipate decisive points and take action that reflects the fullest expression of their capacity to achieve their “support” mission. Additionally, Air Defenders must develop a healthy relationship with their supported maneuv-
ver commander. A healthy relationship is based on mutual trust and shared understanding. To achieve mutual trust, maneuver commanders must value the air defense contribution to their operations and find their supporting capabilities credible. James McDonough’s 1980s maneuver classic The Defense of Hill 781 describes the ideal maneuver commander to air defense relationship using the verb “husband.” To husband the ADA capability means to safeguard it, conserve it or value it very intentionally. To attain this value and credibility, we must achieve a shared understanding by telling the “Air Defense Story.” The air defense story should be told by accurately describing ADA system capabilities and limitations to support a maneuver commander’s ground tactical plan, cased in doctrinally correct and maneuver tactics informed language, resulting in the communication of a meaningful ADA effect on the battlefield. The best way to tell the air defense story and build healthy relationships is in person. The branch can achieve both of these objectives through increased ADA attendance of maneuver-oriented professional military education courses and dogged integration into maneuver exercises. In turn, these efforts will address the “just as tough” observation from Kasserine Pass.

Integration and mobility are essential to supporting the maneuver fight

Equipment was a key limitation for AAA mobility at Kasserine Pass. The AAA “system” was composed of weapons/guns (without on-board fire control), mechanical directors (like our modern fire control and radar), displaced observers and binoculars. Together, elements of the system enabled the optimal use of the AAA capability. The capability was doctrinally planned to defend static points. However, Kasserine Pass showed that static points, in a high-tempo maneuver fight, frequently moved due to shifts in lines. Frequent movement of “static points” generated a significant unanticipated mobility requirement during the battle. The solution to this requirement for many AAA fire units was to leave mobility-limiting equipment and elements of their systems behind. Many fire units “abandoned their directors because they slowed them down so much.” Mechanical directors were the only means of efficiently and accurately targeting an aerial threat because their AAA weapons did not have fixed-to-the-barrel sights. Thus, loss of mechanical directors dramatically diminished AAA system effectiveness.

Mobility is the kind of discussion topic that often generates “if-only-we-had” materiel solutions. Decisions to leave mechanical directors behind were attempts to gain time, which enhanced mobility. However, if we consider that the desperation leading to discarding critical equipment was a symptom of constantly chasing the momentum of the battle without direction or guidance, the root cause of the “mobility problem” is integration. Therefore, the mobility problem could have been solved with realistic expectations of mobility requirements, contextualized through an understanding of combined arms maneuver, and nested in the support commander’s ground tactical plan. The anticipation of mobility requirements should lead to pre-planned and pre-coordinated primary, alternate, supplementary and subsequent battle positions for the base plan (as well as branches and sequels).

Furthermore, ADA leaders and Soldiers must understand the supported commander’s decision support template and matrix. Better yet, they should assist in producing these products while telling the ADA story during participation in the supported unit’s military decision-making process. The decision support template illustrates the flow of the battle and movement of forces executing a friendly course of action. The decision support matrix is developed from wargaming the template and course of action decision points, decision point locations, actions taken when reaching those points, and units with responsibilities to take action at those points. In combination, these products provide road maps and intent for ADA capabilities to enable maneuver. Astute, combined arms maneuver informed Air Defenders could use them to achieve necessary effects, regardless of the state of communications with the higher unit.

Material solutions contributed to enhancing AAA support to maneuver commanders following Kasserine. To solve the mobility problem, AAA leaders rapidly equipped each AAA weapon system with “on-board” weapon sites and targeting equipment. On-board weapon sights allowed AAA fire units to perform their mission, in a less than optimal way, without needing time to emplace the mechanical predictor. This concept of flexible methods for targeting is informative for today. Not because of targeting specifically, but more because the AAA experience at Kasserine Pass demonstrates that realities of LSCO often lead to operating in less than optimal situations. ADA leaders and Soldiers must consider that reality. Consideration means taking a hard look at the balance between optimal system use in the context of risk acceptance. Conventional wisdom holds that individuals operating in SHORAD units frequently deride tightly controlled high-to-medium air defense (HIMAD) kill chains and

14 Semmens, page 61.
15 Semmens, page 61.
17 Semmens, page 36.
the cautious, top-heavy elements of “HIMAD culture.” Conversely, individuals in HIMAD units frequently deride what they view as the dangerous, unknowledgeable, cowboy-esque elements of “SHORAD autonomy.” However, in rebuilding SHORAD formations, choosing between these two extreme modes of operating is a false dilemma.

Just as HIMAD units operate less optimally when divorced from higher intelligence and early warning, SHORAD units cannot operate in a fully effective manner when not integrated with air defense early warning systems. Both voice and data early warning systems enable SHORAD teams to properly emplace to engage threats, to slew engagement systems to threat azimuths, and to scan appropriate sectors for threats. Given the short range of current SHORAD interceptors and the increasing effectiveness of enemy air threats, these capabilities are essential. The “Mark-I Eyeball” is not sufficient to effectively operate in today’s near-peer threat environment. Yet, elevating engagement authorities to higher echelons and removing the authority of the SHORAD team chief to engage hostile targets would render SHORAD capabilities ineffective. There must be a balance. Ideally, that balance is determined, thoroughly evaluated and proven in a realistic LSCO environment.

Situational awareness and early warning are the cornerstones of the SHORAD fight

On Feb. 21, following an enemy Stuka air raid, AAA Soldiers engaged two American flights-of-attack aircraft. Seven total aircraft were engaged, and five damaged beyond repair. The maneuver commander was so “furious,” he ordered AAA not to “engage any aircraft until after it had attacked.”18 This condition “relegated the anti-aircraft artillery to a revenge weapon.”19 Investigation after the fact attributed the fratricide to poor fire unit situational awareness and specifically, not using observers. The role of observers was, in addition to situational awareness and early warning, to perform identification of aerial targets as friend or foe. Fire units stopped deploying displaced observers to attain higher mobility through speed. Events such as this led to a key lesson learned from Kasserine Pass: “[AAA units] had to be in touch with higher AAA headquarters to integrate their operations with those of the Anti-Aircraft Artillery command.”20 The purpose of this key linkage, beyond integration with the ground tactical plan and situational awareness, was to provide advanced warning of both friendly and enemy air attacks. Advanced warning assisted in the coordination of AAA Fires, enhancement of fire unit identification of aerial targets (identification friend or foe), and direction to optimal locations to engage potential threats. These advantages reduced dependence on the speed and mobility thought necessary to accomplish the AAA mission.

Brigade Combat Team (BCT) Air Defense Airspace Management/Brigade Aviation Element (ADAM/BAE) cells perform the essential role of the “higher air defense command” today. However, ADAM/BAE cells are systemically undermanned and undertrained. As SHORAD capabilities left maneuver formations, ADAM/BAE personnel were often farmed out to perform additional duties for maneuver leaders who no longer viewed management of airspace or air defense as priorities. Although airspace and air defense are now broadly understood as priorities, rebuilding these competencies and capabilities will take time. As a community, we should take a hard look at whether or not the ADAM/BAE’s current composition, both regarding personnel and equipment, will enable success in a LSCO environment. Managing a complex, difficult air battles and accurately providing early warning to units is an arduous task. Therefore, ADAM/BAE cells must not get left behind in materiel and non-materiel solutions to overcome the SHORAD capability gap.

Conclusion

The Battle of Kasserine Pass was the first combat experience of many years of war for AAA Soldiers. Within two years, AAA Soldiers successfully defeated V-1 and V-2 rocket attacks targeting Antwerp, Belgium. They also valiantly defended the bridge to Germany at Remagen from countless Luftwaffe dive bomber and jet aircraft attacks. Lessons learned from each of these experiences can inform decisions during the critical years of rebuilding ADA capacity to support maneuver forces. While some of these lessons focus on understanding maneuver tactics, many require dedication to developing effective materiel solutions and efficient non-materiel solutions. The successful execution of these efforts will prepare ADA leaders and Soldiers for the next “first battle.”

Capt. Abbey Carter is currently a student conducting Intermediate Level Education. He has served as an Avenger platoon leader in a Short Range Air Defense Artillery battalion and a Patriot battery commander.

Capt. Joshua Urness is currently an instructor at the Air Defense Artillery Captain’s Career Course. She served most recently at the National Training Center as the division air defense officer and an observer coach/trainer at the brigade level. She also served as a Patriot and THAAD battery commander.

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