The end of static defense
Air Defense Artillery in large-scale combat operations today
By Maj. Joshua J. Withington

‘A defender aggressively seeks ways of attriting and weakening attacking enemy forces before close combat begins. A defender maneuvers to place an enemy in a position of disadvantage and attacks that enemy at every opportunity.’

–Field Manual (FM) 3-0, Operations

“Air Defense doesn’t speak maneuver.” I’ve heard statements like these many times over the past couple of years. For me, they are parallel to saying, “Air Defense doesn’t speak Army.” Maneuver is the Army, and the Fires function exists to enable said maneuver. Further, we discuss speaking maneuver in the context of the reintegration of Maneuver - Short Range Air Defense Systems (M-SHORAD), adding an M for emphasis to isolate the system specifically from the greater air and missile defense (AMD) force. Statements like these serve only to bifurcate AMD culture and Soldiers. Reintroduction of an archaic partition preserves an element of the air defense officer corps dissociated from maneuver. This simply cannot happen again. Air defense support to large-scale combat operations today requires comprehensive coverage of mobile air defense systems in direct support to maneuver at all echelons. M-SHORAD cannot solve the maneuver support problem alone.

This article intends to answer the question, “If we had to fight near-peer large-scale combat operations (LSCO) tomorrow, how do we fight as an air defense force in support of maneuver with what we have in the Army right now?” Most presented solutions to our problem as an air defense branch supporting LSCO include material acquisition and force growth. However, new billet authorizations and weapons systems can take years to arrive on battery command rosters and property books. Beyond the approved M-SHORAD battalion force growth, air defense has historically struggled to field new combat systems. Administrations change, funding priorities shift, and the enemy always gets a vote. Thus, to answer the primary question, this article seeks to analyze similar periods of architype shift in the past. It will present some conclusions and lessons learned using the Meuse-Argonne campaign and the Yom Kippur War as LSCO case-studies for analysis. To assist in framing the following material for quick synthesis, I offer the following lessons learned from the Meuse-Argonne and Yom Kippur for ADA in near-peer LSCO upfront:

1. Maneuver must advance at a rate dictated by air defense coverage or be forced to underwrite considerable risk. Air Defense Artillery’s range and speed preserve maneuver operational reach and tempo, granting unfettered access to the land domain when the air domain is in contest.

2. Air defense units directly supporting maneuver must develop an intricate understanding of phasing and associated decision support matrices (DSMs) for the ground tactical plan. This preserves the maneuver commander’s freedom to expeditiously transition between branches and sequels due to enemy action or overwhelming success.

3. High mobility is required of all air and missile defense systems to directly support maneuver units in near-peer LSCO, not just SHORAD systems.

4. Enabling air defense Fires authority through existing joint-

ly-manned, Army Fires networks to the lowest echelon possible facilitates simultaneity across all domains for the maneuver commander.

The following case studies represent different epochs, varied in technology and politics. At first glance, it is easy to assume that the operational doctrine which led to an American victory in 1918 or the Egyptian defeat in 1973 do not intersect. Both instances represent a historical period of warfare theory in transition. Additionally, both case studies include an attacker operating without air superiority. The experiences of WWI catalyzed American doctrine reform prior to WWII (trench warfare to combined arms). The observations of Yom Kippur did the same for an Army reorienting from Vietnam to Desert Storm (counter-guerilla to Air-Land Battle). The Army is faced with a similar situation today. In the Meuse-Argonne during WWI and again in the Yom Kippur War, a combined arms breach of a “stabilized front” preceded rapid exploitation with differing degrees of success. Anti-Access Area Denial (A2AD) presents a comparable problem-set to the one first encountered on the western front of WWI. Attacks are likely to be overwhelmingly contested across all domains, stifling maneuver akin to the fields of Belgium and France. Massing at the right time and place to achieve penetration of A2AD systems without sophisticated combined arms may prove prohibitively costly, as it did during WWI in 1918 and on the Sinai in 1973.
Meuse-Argonne Campaign

The evolution of theory and doctrine in the interwar years from 1919-1940 was founded on an understanding of a battlefield framework derived from the experiences of the American Expeditionary Force (AEF). Most important was determining how to break-through the stalemate created in the trenches of France and Belgium from 1914-1918. The failure of the Schlieffen Plan and the resulting deadlock following the “Race to the Sea” dethroned the infantry as the primary military arm. Artillery fire produced upwards of 75 percent of casualties in major campaigns with aircraft supplying a third battlefield dimension. Adding to the complexity, Army formations had become so large that managing the necessary firepower and maneuvering forces necessitated professionalized multi-tiered staffs. Acutely shaping for the officer corps at the time was the experience of the Meuse-Argonne Campaign and the stemming astronomic casualty rate. Warfare theory generated from this campaign would support the Army in creating several manuals for large-scale combat up until the mobilization for World War II. Each of them centered on the re-establishment of battlefield mobility by breaking through the enemy “stabilized front” using concentrated combined-arms firepower. The genesis of these theories derived from an Army ill-equipped to execute during World War I and from an officer corps dedicated to not repeating large-scale operational mistakes.

The start of the Meuse-Argonne called for successive attacks with three corps abreast across three German defensive lines. The German army had occupied the territory since 1914 and spent the four years preparing their defense in depth. The Hindenburg Line, as it became known, was a hardened network of trenches, bunkers, wire obstacles, machine gun nests, and forward observation positions. Field artillery, anti-aircraft artillery and reconnaissance aircraft supported the hardened trench-lines. Preparation of the battlefield began on Sept. 26, 1918, when, the combined 3,980 guns of the French and American forces fired over 250,000 rounds on the sophisticated German defense. Nine divisions of the First, Third, and Fifth Corps attacked northwest under a rolling artillery bombardment. Most important among the divisions of the first phase was the 79th Division of Fifth Corps, tasked with seizing the high terrain of Montfaucon. By seizing Montfaucon, the AEF plan would achieve a positional advantage, allowing maneuver to maintain the initiative and sever the German-held rail supply lines.

As the three corps of First Army advanced, thick fog in the region lead to the separation of ground
forces and difficulty in spotting German positions to direct the artillery. Superior German anti-aircraft artillery and aviation interdicted the limited American aircraft and destroyed observation balloons. AEF artillery continued firing blindly into the well-prepared depth of defenses. American infantryman continued to press north until they outran the range of the supporting 75 mm guns. Without the support of artillery or the capacity to contest the skies, Americans were mowed-down by German machine gun and artillery fire directed by reconnaissance aircraft relaying the AEF positions.

As American commanders continued to feed the line forward, the inexperienced 35th Division of First Corps’ east flank was nearly destroyed. It had to be withdrawn and replaced by the 1st Division. On the First Corps’ west flank, the 77th became so disorganized an entire battalion advanced too quickly and was cut-off, becoming the storied “lost battalion” of the Meuse-Argonne. In the center of the First Army line, the 79th Division of Fifth Corps disrupted the tempo of the AEF attack by overextending its lines and failing to seize Montfaucon. The failure delayed the operation in its entirety. Only after allowing AEF Fires assets to catch-up with the attacking force was the 79th able to seize Montfaucon. By outrunning the coverage of Fires assets, and without the ability to neutralize German aircraft, the division incurred 6,000 casualties. The 3rd Division replaced the 79th for the remainder of the Meuse-Argonne, adapting its tactics to ensure the preservation of tempo and reach through preplanned sequencing of Fires.

**Yom Kippur**

Years later in the Sanai, the Egyptians were confronted with a similar problem. The Israeli Bar-Lev line constructed along the eastern shore of the Suez Canal following its capture during the Six Day War of 1967 was formidable. Egyptian armor was handily defeated by modern Israeli air power and tanks during the previous conflict, resulting in the Israeli occupation of the Sinai. Much as the Hindenburg line of WWI or the A2AD structures of today, multiple lines of defense in depth creatively used terrain, artillery and aviation to amplify its effect. Internal evaluations determined the Egyptian Air Force to be a minimum of 10 years from establishing parity with the Israeli Air Force. During the planning phase, the Egyptians aimed to exploit weaknesses in Israel’s three-pillar doctrine that emphasized the role of intelligence, armor and an overdependence on air power. To accomplish this, Egyptian modernization efforts since 1967 included purchasing countless anti-tank guided missiles and 150 SA-6 air defense batteries from the Soviet Union.

The Egyptian general command planned a three-phase operation to seize key crossing points on the canal, breach the Bar-Lev line, and establish a defensible beachhead on its eastern shore. Operation Badr called for a simultaneous attack of two armies with five infantry divisions across the Suez Canal to establish bridgeheads 12 to 15 kilometers in depth; this included overcoming the Israeli defenses in the Bar-Lev line. The second phase called for a hasty transition to defense to repel expected Israeli counterattacks. Egyptian president Anwar Sadat anticipated competing global super powers would intervene and mediate a cease-fire once the beachhead was secured. The base plan included a third phase to mitigate the risk of an Egyptian army pinned against the canal to their rear after completing the breach. Known as “Granite 2,” the third phase was a continuation of the attack to secure the Gidi and Mitla Passes 40 kilometers east. The drawback to Granite 2 was it required Egyptian armored forces to attack beyond the planned coverage areas of SA-6 batteries guarding the crossing sites. Due to a low assessed probability of execution as well as officer disagreement, the branch was incomplete.

On Oct. 6, 1973, the 2nd and 3rd Egyptian Armies attacked east into the Sinai Peninsula. The network of 62 SA-6 air defense batteries directly supporting ma-
neuer elements on the attack neutralized the Israeli air force attempting to halt the advance. Using a creative solution to the Israeli obstacle belt, the Egyptians used water-cannons to blast holes in the sand berms blocking the way for armor and infantry soldiers. In just 24 hours, they were able to surge almost 100,000 soldiers and 1,000 tanks to the eastern side while inflicting tremendous casualties on the Israeli armored division securing the Bar-Lev line. The Israelis mobilized their reserves and scrambled sorties but were ineffective, losing at least 40 aircraft to air defense fire. The Egyptians took advantage of the weak Israeli front. From Oct. 8-14, they were able to consolidate gains and defeat enemy counterattacks under the coverage of SA-6 surface-to-air fire.

On Oct. 14, however, despite opposition from his senior officers, Sadat ordered the execution of Granite 2. Israel was imposing intense pressure on Egypt’s Syrian ally in the Golan Heights. Sadat hoped to distract the Israeli Army long enough to allow Syria to regain the initiative. Egypt attacked east without SA-6 coverage. Attempts to move some of the batteries to support the attack were frustrated due to a lack of mobility training and planning. As a result, Egyptian organic Man-Portable Air-Defense Systems (MANPADS) and anti-aircraft machine guns supported the armored attack alone. Israeli fighters immediately began to destroy the exposed tank formations as Israeli armor counterattacked the disintegrating organization. Following the defeat of the Egyptian Granite 2 advance, Israeli armor exploited the gap created in the line along the Suez Canal. Israeli tanks destroyed SA-6 batteries emplaced near the crossing sites, opening the skies to the air force. Fully enabled in all domains, the Israeli Defense Force enveloped the Egyptian Third Army claiming victory.

**Assessment**

In the Meuse-Argonne, the AEF’s hard success came only after Fires systems were positioned to enable maneuver. Simple in concept, field and anti-aircraft mobility proved difficult in execution. Subsequent battle positions

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**Figure 2. The Execution of Operation Badr Map, Oct. 6-15, 1973 (Courtesy illustration).**

[Diagram showing military movements and key events during the Suez Canal campaign, Oct. 6-15, 1973.]
had to be planned, and maneuvers timed to keep up the coverage of the maneuver force. Divisions that outran Fires coverage were destroyed during the early days of the Meuse-Argonne. Fires dictated reach and tempo, while detailed phasing preserved the force by mitigating lapses in support as far forward as feasible. In the Sanai, Egypt initially met with overwhelming success, backed by the defense of newly acquired air defense systems. Exploitation of successful penetration was not adequately planned. Air defense systems were not effectively integrated into the sequel plan. Egyptian maneuver forces outran their coverage and were routed by the Israeli Air Force.

Success in large-scale combat operations in a near-peer fight requires mobile, forward-area air defense enabling freedom of maneuver at the front. Static defense of anti-personnel obstacle breaching system and SPODs will remain a critical requirement. However, as it currently remains the only system with adequate range, Patriot forces, in addition to emergent M-SHORAD, will need to directly support maneuver to provide adequate operational reach. In doing so, due to electromagnetic risk, batteries and sections may be required to fight decentralized from battalion headquarters, clearing Fires through a jointly-manned, Army chain of command. This concept presents a shift in mentality and doctrine for the Air Defense Branch.

The application of cross-domain Fires within the construct of LSCO is complex, requiring unity of command to prosecute targets across multiple domains simultaneously. To do this effectively, the command must possess adequate engagement authority for each domain Fires are to be employed within or through to establish and maintain windows of dominance. This applies to all Fires be they surface-to-surface or air, physical-to-virtual, electromagnetic, or otherwise. The structure for the establishment of such a kill-chain already exists in our brigades, divisions, and corps in the form of the Fires cells, tactical air control parties, Area Denial Artillery Munition ADAM/Brigade Aviation Element (BAE), Joint Air Ground Integration Center (JAGIC), and Air Support Operations Centers (ASOC). By leveraging intelligent design of procedural fire control measures where available and processing further engagements through supported battlespace owner Fires networks, we can preserve tempo. Operational reach is extended forward by phasing air defense firing unit movements in advance, based on maneuver plan DSM conditions developing in the fight.

**Conclusion**

This article is in no way a statement that I have discovered the AMD “golden ratio” or that I have all the answers. Rather it is an attempt to relay the many discussions Air Defenders are having about the reintroduction of not only SHORAD but Air Defense Artillery to the Army. LSCO and MDO as doctrine and theory present the force with a solid foundation upon which to design and plan operations with shared understanding. When confronted with the near-peer A2AD problem and a finite set of resources to achieve simultaneous multi-domain dominance, solutions become more challenging. As Air Defenders in LSCO and future MDO, it is our job to fully understand the multi-domain environment and the ground tactical plan for both ourselves and the enemy. Air defense officers must provide the maneuver commander with a support plan that not only enables a position of advantage but maintains said position while preserving branch plan options. Windows of dominance will be achieved by a simultaneous contest of all domains to preserve maneuver combat power and initiative in an environment without comprehensive air superiority.

What I have found in discussing AMD support to LSCO is there are many like-minded Air Defenders out there who have never abandoned worship at the altar of the rifleman. A more accurate assessment of the air defense officer corps might be: there exists a cultural divide between those who have LSCO “buy-in” and those who are consciously opting-out of the LSCO educational mindset. For the latter, LSCO and MDO represent an uncomfortable change, disrupting an understanding of how and where air defense operates. The value in detailed planning of air defense support to corps, divisions and brigade combat teams is cast-off as “low probability” to resume routine certifications and rotations to the Central Command area of responsibility. Despite cultural resistance, the last 15 years of static defense are coming to a close, ready or not.

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