

EYES IN THE SKY:

How IMLC Is Transforming and Integrating sUAS

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As the U.S. Army transitions toward large-scale combat operations and multidomain integration, the Infantry Mortar Leader Course (IMLC) is evolving to meet those demands of our force. Among the most significant advancements is the integration of small unmanned aerial systems (sUAS) into mortar operations — a capability that is reshaping how future leaders plan, direct, and deliver high-angle fires.

For decades, IMLC has served as the cornerstone of mortar leadership training, preparing both commissioned and noncommissioned officers to supervise and employ mortar elements effectively across the spectrum of conflict. Yet as the Army confronts new challenges in preparation for contested and technologically advanced environments, the course continues to adapt. The inclusion of sUAS represents a deliberate and data-driven effort to enhance accuracy, reduce the time required to deliver lethal effects, and ensure that mortar leaders remain at the forefront of battlefield innovation.

The expression, “Rising to the occasion”... is just another way of saying, “You got lucky.”

**WE DO NOT RISE TO THE OCCASION.
WE FALL BACK ON OUR TRAINING.**

Building Upon a Legacy of Fire

IMLC trains officers and NCOs (O1-O3 and E5-E7) in the full spectrum of high-angle fires. Students develop expertise in tactical employment, fire planning, mechanical training, and Fire Direction Center (FDC) procedures. Upon completion, enlisted Soldiers earn the B1 additional skill identifier, while officers receive the 3Z designation, marking them as leaders capable of directing and supervising high-angle fire in any operational environment.

Yet even the most time-tested systems must evolve. The Army’s ongoing Transformation in Contact (TiC) initiative calls for synchronization of modernization across every echelon of force. For IMLC, this means integrating new technology without compromising the mortar community’s bedrock fundamentals. As the course’s leadership recognized, sUAS could offer a decisive advantage — if implemented effectively and responsibly.

The Research Effort: Measuring Precision and Performance

IMLC’s integration of sUAS began as a structured research effort designed to compare drone-assisted fire missions with traditional forward observer (FO) procedures.

Utilizing a mixed-methods approach, instructors and students conducted live-fire exercises (LFXs) employing both conventional and drone-derived firing data. The goal was straightforward: determine whether sUAS integration improved the accuracy and efficiency of indirect fires and identify how best to teach this capability within IMLC’s program of instruction (POI).

The results were unambiguous. When sUAS were used to collect firing data for dismounted 120mm mortar systems, eight out of nine initial rounds impacted directly on target. Fire for effect (FFE) was achieved with only a single adjustment. By contrast, under traditional FO methods, all nine rounds landed between 100 and 300 meters from the target, requiring an average of two adjustments to achieve FFE.

A Soldier launches a small unmanned aerial system on 16 July 2025 at Fort Benning, GA. (Photo by CPT Stephanie Snyder)



These findings represented a 50-percent reduction in the time and ammunition required to achieve lethal effects — an improvement that directly translates to greater survivability and operational tempo on the battlefield.

Instructor Insights: The Human Element Behind the Data

While the numbers confirmed the value of sUAS integration, qualitative feedback from IMLC instructors offered equally important perspective. After each LFX, instructors conducted after action reviews (AARs) to capture lessons learned, identify friction points, and gather recommendations for refinement.

Their consensus was clear: The introduction of drone-derived data enhanced both accuracy and situational awareness, but to maximize its potential, students needed more hands-on engagement. Instructors recommended that future iterations of IMLC incorporate scenarios where section leaders and FDC chiefs actively collaborate with drone operators to acquire targets and process firing data in real time.

They also stressed the importance of assigning dedicated end user devices (EUDs) and drones directly to the Mortar Training Company. Reliance on external support created a single point of failure and limited opportunities for experimentation. By establishing organic control of sUAS assets, instructors could better refine training, conduct rehearsals, and integrate drone calibration into pre-live-fire risk reduction exercises.

Importantly, every instructor agreed that while sUAS provided measurable advantages, the integration must not overshadow the core purpose of IMLC: producing mortar leaders who can operate confidently in any environment, including degraded or denied conditions. As one instructor summarized, “Technology is a multiplier, not a crutch. When the screen goes dark, we rely on the fundamentals.”

Lessons from the Field: Advantages and Cautions

The integration of sUAS within mortar platoons offers several tangible advantages. Drones can rapidly acquire targets, provide precise grid data, and enable mortar sections to deliver accurate fires with fewer adjustments. This accelerates the fires kill chain — allowing company and battalion commanders to deliver effects faster, more precisely, and with improved sustainment by reducing the number of rounds required per target.

However, this capability is not without its challenges. The same immediacy that empowers subordinate commanders can also risk desynchronization with higher headquarters’ targeting priorities. Additionally, increased digital activity introduces signature management concerns; adversaries with advanced electronic warfare capabilities can detect, jam, or exploit drone signals. Finally, instructors cautioned that overreliance on technology could erode proficiency in analog fire direction — a foundational skill that remains vital when communications or digital systems fail.

By combining disciplined fundamentals with emerging technologies, IMLC is cultivating leaders who are technically competent, tactically adaptable, and ready to deliver lethal, accurate, and timely fires in the most complex battlespaces.

Back to Basics: Fundamentals Remain the Foundation

Despite the promise of emerging technologies, IMLC’s leadership maintains that true lethality begins with mastery of the fundamentals. Currently, the course maintains an average 83 percent pass rate, with ALL failures occurring during FDC testing. This underscores the importance of arriving at IMLC already proficient in basic and advanced FDC procedures.

Commanders sending Soldiers to IMLC are encouraged to conduct a deliberate, two-week train-up to reinforce FDC fundamentals. These skills form the foundation upon which technological proficiency is built. Technology should enhance, not replace, that competence.

Charting the Path Forward

In the near future, IMLC aims to push and revise its POI to incorporate structured sUAS integration. This proposed modernization will include the use of virtual battle simulation systems such as VBS-technology in the classroom, allowing students to plan and execute fire missions with digital overlays before transitioning to live-fire environments. These changes would provide students the opportunity to operate and analyze drone data during both mechanical training and culminating LFX events, reinforcing hands-on learning and cross-functional coordination between FDC cells, section leaders, and drone operators.

The Way Ahead

As the Army’s modernization priorities continue to evolve, the integration of sUAS within the mortar community exemplifies how innovation and tradition can coexist. The Infantry Mortar Leader Course is not seeking to reinvent the wheel — it is refining it. By combining disciplined fundamentals with emerging technologies, IMLC is cultivating leaders who are technically competent, tactically adaptable, and ready to deliver lethal, accurate, and timely fires in the most complex battlespaces. As IMLC continues to embody the Army’s commitment to readiness and transformation, it ensures that tomorrow’s mortar leaders will not aim to rise to the occasion — they will fall back on their training, ready to fight and win in any domain.

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