

Using UASs to Bridge the Military Police ISR GAP

By Captain Ryan P. Clemente

The war in Ukraine has demonstrated a revolution in the tactical employment of unmanned aircraft systems (UASs) in modern military operations. Commercially available quadcopters are at the forefront of this revolution. Inexpensive commercial UASs applied at a tactical level have become the most critical battlefield enabler for Ukraine, allowing precise targeting at tactical echelons. The fires and movement and maneuver warfighting functions most clearly benefit from the *en masse* integration of commercial quadcopters for tactical purposes. However, the protection warfighting function—particularly as it relates to military police—also greatly benefits from employing UASs. The requirement for large numbers of tactical UASs in future large-scale combat operations (LSCO) will likely extend far behind the forward edge of the battle area and well into the corps rear area.

Security tasks to protect sustainment in the corps rear area will largely be the responsibility of a U.S. military police brigade and its subordinate units. Military police combat support platoons and companies will have direct responsibility for security in different sectors of the rear area. They will execute myriad tasks including area security, route security, movement support to mobility operations, and detention operations and potentially provide support to the populace and resource control. Military police combat support companies will likely be overstretched in their areas of operation, and military police patrols alone are unlikely to detect all threats to the rear area. Commercial quadcopters offer military police a highly mobile, perceptive, and stealthy force multiplier.

Military police combat support companies often control the intelligence, surveillance, and reconnaissance (ISR) assets directly supporting their mission while the battalion and brigade security offices coordinate and synchronize the overall information collection picture. Unfortunately, most military police combat support companies do not yet possess the ISR assets necessary to continuously detect threats to the rear area at average modern standoff ranges using a 5.5-kilometer estimate based on the upper-middle range of modern antitank-guided missiles. Military police companies do have a limited number of RQ-11 Raven® UASs (made by AeroVironment®) with low readiness levels (due to wear and tear and cumbersome system training requirements). Even in conditions of high readiness, the respectable RQ-11 flight time of 90 minutes is not high enough for a detached platoon to continuously screen its area of responsibility.



A Vesper® UAS in flight

The potential for threat use of commercial UASs for surveillance against U.S. military assets during times of crisis below the threshold of armed conflict is increasing. The proliferation of diverse models of commercial UASs in the current environment presents a peacetime vulnerability to military installations. Tracking down UASs and identifying the operator for questioning, detainment, or arrest is currently a military police duty on Army installations. However, small commercial UASs can move by nap-of-the-earth (low-altitude, terrain-contouring flight) and, when identified from the ground, can easily maneuver away from roads to evade law enforcement—and, like other U.S. law enforcement personnel, military police are geared toward ground-based law enforcement actions and do not yet commonly possess commercial UASs. Military police require new tools to address this challenge, and the most effective could be commercial quadcopters, which could be incorporated into a counter-surveillance role. Much like the airplane was adopted for military use, military police ownership of the quadcopter will likely become the best means for counteracting threat quadcopters.

In a hypothetical application of a UAS in a counter-UAS role, a military police desk sergeant could receive a report of the sighting of a potential threat UAS and inform the on-duty military police team equipped with a UAS kit. That team would then employ its UAS to conduct counter-surveillance against the potential threat UAS. The military police team UAS would follow the potential threat UAS at distances necessary to avoid detection. Upon observing the potential threat UAS return to its operator, the UAS team would notify relevant military or civilian law enforcement personnel of the location of the threat UAS operator and continue to provide surveillance until ground law

enforcement could apprehend the threat. Employed counter-UAS systems are currently capable of destroying or neutralizing individual UASs, but doing so would only neutralize the symptom—not adequately affect the source of the potential threat. Identification of the operator will be the key to winning the impending fight.

The RQ-11 Raven (first employed in 2001 and currently used by military police) exceeds the cost of a commercial UAS by a ratio of roughly 7:1 (\$35,000 for an RQ-11 versus about \$5,000 for an average commercial UAS). RQ-11 Ravens are unwieldy, noisy, easily visible when in flight, and widely regarded by Soldiers as unreliable. They lack thermal cameras, and the color video images are known for their poor quality. Furthermore, it is difficult to acquire replacement parts for the RQ-11—and, using the war in Ukraine as a benchmark, there are too few RQ-11s for the levels of UAS battlefield attrition in LSCO. In short, the RQ-11 has become obsolete due to its cost and lack of capabilities and supplementation or replacement by newer tactical UAS systems is required.

The extraordinary number of commercially available UASs has rendered the field highly competitive. According to the Atlantic Council, the People's Republic of China is the top producer of commercial UASs, currently controlling 80 percent of the global market.¹ The Chinese company DJI[®] produces the Mavic series, which is the most popular UAS series for both Russian and Ukrainian forces. The cost and performance of Mavic UAS models are highly competitive; the price is less than \$4,000 and, according to DJI, the maximum speed is between 35 and 45 miles per hour, and the flight time is approximately 20–45 minutes. While DJI produces the most globally popular UAS and U.S. forces will likely encounter those UASs in the future, the Department of Defense has prohibited their use for military purposes due to security concerns.

Fortunately, several American companies sell highly capable UASs that can be used for tactical purposes. The Vesper[®] UAS, manufactured by Vantage Robotics[®], is an American-made modern quadcopter that was designed for the U.S. Air Force Special Operations Command and the Air Force Security Forces Center, Lackland, Texas, in 2020. The platform could greatly enhance the ISR capabilities of military police battalions. Vespers are invisible to the human eye at a distance of 100 meters, while their sound is undetectable to the human ear at a distance of just 50 meters. The system is equipped with two low-light infrared cameras and a thermal imaging camera with a stabilized 48x zoom capability. Using optical flow, Vespers can fly in a Global Positioning System-denied environment and their methods of communication are National Defense Authorization Act²-compliant. They are approved for unit purchase by the Department of Defense Blue UAS Program.³ Weighing in at just 1.5 pounds, Vespers are easily portable—and they have a maximum speed of 45 miles per hour, a flight time of 50 minutes, and a maximum flight range of 28 miles. While neither Vespers nor most other quadcopters have the endurance of an RQ-11 Raven, they can be purchased through

General Services Administration Advantage for \$6,721; therefore, five Vespers can be obtained for the cost of a single RQ-11 Raven. The affordability and added capabilities of currently available U.S.-manufactured quadcopters, such as the Vesper, would provide military police battalions with the modern ISR redundancy that is required to protect sustainment in corps rear areas (ground lines of communication) during a LSCO fight.

The biggest obstacles to the military police procurement of commercial quadcopters have been a lack of existing UAS training programs (especially programs addressing airspace coordination) and procurement costs not covered by the unit military table of organization and equipment. However, the Department of Defense is taking steps to facilitate individual unit UAS procurement with the Blue UAS Program. This program provides a web-based list of all commercial UAS systems and parts vetted by the Department of Defense and approved for purchase at the unit level. Individual unit procurement of modern commercial quadcopters using the Blue UAS Program is the best interim solution for addressing the military police ISR gap. As the revolution in UAS-related technologies continues, bridging the gap at the Army level will require a holistic approach across doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy.

UASs are at the forefront of all future tactical engagements from squad to corps level. The outcomes of future armed conflicts will be defined by the quality and quantity of UASs involved and the tactics, techniques, and procedures employed by them. Future tactical UASs will need to have effective capabilities and be efficiently produced in order to surpass the military and military-industrial capacities of our peer adversaries. The U.S. Army Military Police Corps Regiment will require modern UAS platforms for continuous ISR coverage and protection of their critical areas of responsibility in periods of competition, crisis, counterinsurgency, or LSCO.



Endnotes:

¹Matthew Kroenig and Imran Bayoumi, “A Global Strategy to Secure UAS Supply Chains,” Atlantic Council Issue Brief, 25 June 2024, <<https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/a-global-strategy-to-secure-uas-supply-chains/>>, accessed on 26 September 2024.

²National Defense Authorization Act for Fiscal Year 2024, 118th U.S. Congress, 22 December 2023, <<https://www.congress.gov/118/plaws/publ31/PLAW-118publ31.pdf>>, accessed on 30 September 2024.

³“Blue UAS,” Defense Innovation Unit web site, <<https://blueuas.diu.mil/drones>>, accessed on 30 September 2024.

Captain Clemente is the operations officer for Headquarters and Headquarters Company, V Corps, Fort Knox, Kentucky. He holds bachelor's degrees in history and French from Union College, Schenectady, New York.