

Lessons from a Friend: How the 173rd has integrated Drone Usage for Instant User Feedback

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In early September 2016, a mid-range drone was observed over a Ukrainian position in Mariupol. Within 15 minutes of the overflight, a GRAD BM-21 artillery piece destroyed the position and most of the unit, which was then followed by a quad-copter overflight to conduct a battlefield damage assessment.¹ This anecdotal attack on a Ukrainian position using tactical drones has been repeated numerous times over the course of the conflict, with artillery strikes occurring regularly within 15 minutes of a position being discovered and always with a battlefield assessment follow-up by another drone.² The lessons learned during the battle for Eastern Ukraine have become a focal point of tactical innovation at every echelon of the USAEUR Area of Operation. The primary lesson of all the literature, however, has been that the modern battlefield is a rapidly developing one, and likewise the US military must adapt in order to keep up. Tactical drones are a vital component of this rapid innovation, and the 173rd Airborne Brigade has taken a lead role in developing tactical adaptations in order to more adeptly utilize the technology available.

The use of tactical drones in the Donbas region has been one of constant innovation, with neither side having a decisive advantage over the other for any significant length of time. Not to be confused with strategic level drones which provide

¹ Philip Karber, *HCDC Lessons Learned*, (n.p.: Potomac Institute, 2016), 13.

² Robert Fetters, *The Hawk or the Bear: A Comparative Analysis of American and Russian Drone Usage*, (n.p.: King's College of London, 2016), 38.

hunter-killer and long range surveillance capabilities and are often kept at the theater level as assets, tactical drones offer viewing capabilities and command and control at the battalion and below levels. With the initial appearance of drones in Eastern Ukraine as early as May of 2014, a rapid proliferation of the technology has been witnessed in the region. In the course of just a few short months, over 14 different types of drone had been seen in the skies of the region, with overflights on Ukrainian units reaching a peak of over 8 per day.³ The use of this technology quickly distinguished itself from other conflicts due to the combination of massed-fires with real-time target acquisition using a drone.⁴

Different drones also served a variety of other functions as well. During the first two years of the conflict in Ukraine, long range surveillance drones were used for intelligence gathering while medium ranged fixed wing were used for direct target acquisition for the 'Urgan' or 'Smersh' Multiple Launch Rocket System (MLRS).⁵ Short Range fixed wing and quad-copters were used either in conjunction with the BM-21 MLRS or for scouting and battle damage assessments.⁶ Different types of drones were layered on top of each other in order to provide different functions on a single target as well as provide different capabilities in a timely fashion.⁷ This layering of drones became a distinguishing feature of drone usage in Ukraine, and a feared capability not previously seen in similar conflicts.

³ Karber, 14.

⁴ Ibid, 15.

⁵ Ibid.

⁶ Ibid, 16.

⁷ Ibid.

The use of drones in Eastern Ukraine has primed the Ukrainian army to pioneer a series of lessons that shed light into the future of warfare; lessons that the 173rd Airborne has begun to take to heart. The most important lesson being that tactical drones are rapidly becoming more than an intelligence gathering asset: drones are a targeting asset for the fires warfighting function. By combining the intelligence and fires warfighting functions in one asset, drones can become an essential tool for commanders on the ground who need effects, and need them quickly. All a commander needs is to centralize drone operators on a communication platform, having a fires representative work hand in hand with the intelligence node to report quickly and effectively what they see on the ground. The fires representative can prepare the target while the intelligence analyst reports to headquarters as well as provide insight into what it is that the drone operator is seeing.

The 173rd has advanced this technique this year during operation Saber Junction 2018. The RQ-11B Unmanned Aerial Vehicle, or Raven, under the specific direction of 1st Battalion, 503rd Infantry Regiment were used effectively as target acquisition tools, flying almost continuously throughout the exercise. The process for targeting would occur like this: when the Raven pilot acquires a target, he would simultaneously relay that information to the intelligence and mission command warfighting functions. The Battalion mission command element decides if the target should be a Battalion or Brigade fires target. They then pass that decision along to the fires node, who ideally prepares the target information as the decision was being made. The Raven loiters until the fires cell processes the mission, then returns to conduct a battlefield damage assessment. This whole process occurs in just minutes, and demonstrates the utility of

the Raven as a fires as well as intelligence asset. However, the Raven's utility did not end there during Saber Junction 2018. The Raven served as a vital scout in advance of troops. The Ravens operated both at the Battalion and Company level, freeing up Shadows for Brigade level intelligence gathering missions. The Ravens, flown by crews organic to the headquarters elements of each company in 1-503 IN could clear routes and movements in advance of troops moving, undeniably adding a level of security to every mission.

The Brigade as a whole also reinforced several lessons on how enemy drones affect soldiers on the battlefield. Constant overhead reconnaissance by drones meant that headquarters had to be constantly moving. This drew repeated attention to the need for refined camouflaging techniques as well as the capability to displace rapidly, something that larger headquarters struggle with. At lower levels, Paratroopers required continual reminders that in future conflicts, the United States Army might not own the sky, but instead might be subject to enemy drones and aircraft, especially if Paratroopers are called to jump in and seize contested environments behind enemy lines.

There is still much to be perfected in terms of drone usage on the modern battlefield though. In the fiscal year budget for 2017, \$4.61 billion was allocated for drone acquisition and research, with the vast majority of that money being allocated for strategic long distance armed or surveillance drones such as the Reaper and Predator.⁸ This total is down by \$1.2 billion from the 2016 budget and has suffered from project

⁸ Dan Gettinger, *Drone Spending in the Fiscal Year 2017 Defense Budget*, (n.p.: Bard Center for the Study of Drones, 2016), http://dronecenter.bard.edu/files/2016/03/DroneSpendingFy17_CSD_3-1.pdf.

cancellations and many research projects going over budget.⁹ While these drones are still regularly being used in the Global War on Terror in a strategic context, the focus of procurement continues to be at the strategic level and has prevented conventional tactical level drones from entering the fighting force in effective numbers. The *US Army UAS Roadmap 2010-2035* published by the US Army UAS Center of Excellence in Fort Rucker established the goal of pushing drones down to the squad level by the year 2015, something that has not happened yet nor seems to be on the near horizon.¹⁰

However, the squad level drones already exist. The *Instant Eye* quad-copter drone has been in regular testing since before 2014 and has all the same capabilities as a Raven but is arguably far easier to use and much smaller. An *Instant Eye* quad-copter could easily be jumped in by Paratroopers at every level and would require far less room than the large Raven operator stations. These small and less-cumbersome drones will shortly become essential as the Army moves towards an increasingly mobile force, as quickly moving companies and battalions will outrun their Raven operator stations as fast as the operators can set them up. Small squad level drones could travel with vehicles without having to establish operator stations.

At every level on the battlefield, Soldiers still struggle with the idea of an airspace not necessarily controlled by the United States. Enemy drones that can identify heat signatures of both vehicles and Soldiers are a reality whether we choose to accept this or not, and reinforcing training in age-old defensive measures is the only immediate solution to this dilemma. To-standard foxholes with overhead protection, combined with

⁹ Gettinger, 4.

¹⁰ *US Army UAS Roadmap 2010-2035*, (Fort Rucker, Alabama: US Army UAS Center of Excellence, 2010), 90.

signature dispersing netting can serve to mask positions so long as Soldiers keep their heads down, however “react to enemy air” battle drills should be practiced at every chance small unit leaders have to train with their Soldiers. Similarly, the idea of enemy controlled airspace reinforces the brigade’s need to incorporate both organic electronic warfare and anti-air capabilities to begin to beat back the threats these assets might cause.

To test this notion, organic electronic warfare assets were also assigned to 173rd Airborne’s maneuver battalions during Saber Junction ’18, acting as a screen from possible drone reconnaissance assets throughout the exercise to mixed effects. While the usage of Stingers at the company level continues to be tested, Stinger teams incorporated into airborne infantry platoons could add a whole new dimension of lethality to airborne infantry brigades as well, protecting companies from both high level drones and enemy aerial assets. Such teams were tested to great effect, continually shooting down OPFOR helicopters while maneuvering towards other objectives, allowing infantry increased freedom of maneuver and protection from threats above.

The use of drone technology also offers a valuable chance for the United States Army to connect with allies on the issues at hand. During several exercises throughout the year, British, German, and French drones added essential intelligence gathering requirements in joint contexts. However, the use of drones by more than one nation at a time means that NATO members must come to the table in order to understand each other’s capabilities as well as to prevent allied fratricide in a number of ways. The United States and other NATO Allies have acknowledged the risk of overloading frequency bandwidths by having numerous allied drones in the air at the same time,

something that makes coordination during these exercises so important as a testing ground for potential problem sets.¹¹

With current regulations regarding drone bandwidths, drone frequencies must be coordinated in advance and de-conflicted locally. Frequency coordination would have to be optimized in the event of a major conflict, and potentially in the course of just a few hours. NATO STANAG 4586 discusses the usage of different frequencies in the mandate, but overwhelming the bandwidth capabilities of a nation is still a risk that an alliance runs when working together. This becomes time consuming and complex, especially if no nation can control another nation's drone because of intelligence sharing agreements requiring country approval before any distribution can occur.

Continually stressing the allied nature of drone usage within NATO is absolutely essential, as it is an asset that all members can benefit from so long as the drones are used in a manner that does not conflict with other allies. This can be highlighted by the strides being made just this year with our Italian allies during Exercise Golden Eagle '18, where Ravens were flown for the first time in support of an Italian exercise, stressing the coordination necessary to allow this type of training in the future.

The continual refinement of these tactics is critical for USAEUR in the near future. As adversaries continue to refine their use of drones, we too must come to terms with the new technology and improve our tactics surrounding it. Combining the intelligence and fires warfighting functions while integrating the use of drones in a highly mobile force will be key during future conflicts. Practice using drones in conjunction with

¹¹ John Luddy and Adjunct Fellow, *THE CHALLENGE AND PROMISE OF NETWORK-CENTRIC WARFARE*, (n.p.: Lexington Institute, 2005), <http://lexingtoninstitute.org/wp-content/uploads/challenge-promise-network-centric-warfare.pdf>.

airborne forces is just as important as practice using drones in a multinational allied context, where many different nations will control the airspace. Every effort must be taken to push the boundaries on drone training, from the platoon all the way to the brigade, if we want to continue to be the most lethal and innovative fighting force in the world.