The Future of the Fire Supporter

CPT JOHN E. RUSNOCK

During combat operations, forward observers — military occupational specialty 13F — play a critical role for platoon leaders as well as company and battalion commanders. They serve as the experts in the execution and coordination of joint fires by air and ground integration, which enable these formations to maneuver and complete their objectives. The last two decades have been a different story. Due to the lack of use of indirect fire at scale, tactical-level 13Fs played a less integral role, thus diminishing their importance in the formation. As the Army continues to refocus from counterinsurgency to large-scale combat operations, we must ensure that 13Fs reestablish their significance at the tactical level. The resurgence of fire supporters will be crucial to success at the tactical level since they will be making first contact with the enemy beyond line of sight.

Here in the Army Capability Manager Fires Cell Targeting (ACM FC-T), part of the Fires Capabilities Development and Integration Directorate, it is our job to be the user representative in the acquisition process. As the Army focuses on modernizing the force with an emphasis on readiness for a near-peer fight, we are working to provide fire supporters what they need to be successful on the battlefield. These transformation efforts are one of our main priorities. The analyzed Human Machine Interface (HMI) technology will give 13Fs at the lowest tactical level the ability to observe, coordinate, and manage fires at scale. Along with managing fires, we envision fire supporters managing lethal launched effects and teaming with lethal drones. By implementing HMI technologies, fire supporters can create an any sensor-best shooter kill chain at machine speed. This increased capability will significantly increase the lethality of the formations to which fire supporters are attached.

Part of what informs our transformation efforts is seeing what is happening in conflicts worldwide. That leads us to observations from the current war in Ukraine and how fire observers are doing on the battlefield. The heavy use of drones in calls for fire is true for both the Ukrainian and Russian forces.

A 13F joint fire support specialist in training at the Fires Center of Excellence at Fort Sill, OK, keenly observes his target on 1 February 2024. (Photo by Bryan Araujo)

Russian forces use the Orlan family of unmanned aerial vehicles (UAVs), which comprises the Orlan-10 (comparable to the Raven) and the Orlan-30 (comparable to the RQ-7 Shadow). The Orlan-10 is smaller and has a reduced range and endurance time, which causes Russian forces to use it primarily in close fights. Orlan-10s are typically seen operating in groups of two or three called complexes. The standard operating procedure has two UAVs conducting operations while the third acts as a retransmitting node back to the ground station. This would be consistent with published Russian doctrine and technological capabilities. Reporting suggests that two complexes work together in the same brigade plus-sized area of operations (AO). Russian commanders use the Orlan-10 complexes to feed real-time data on fighting, as an electronic warfare (EW) sensor to feed information into their "Strelets system" (digital fire control system like our Army Field Artillery Tactical Data System [AFATDS]), and to observe and adjust fire from assigned batteries on targets of opportunity. The time for artillery engagements using visual sensors on the Orlan-10 is 3-5 minutes. Utilizing the EW sensors for artillery engagements takes 20-30 minutes.

The Orlan-30 has a greater range and operating capacity than its Orlan-10 predecessor. This increased capability has given Russian ground commanders greater ability to shape the deep fight. Reports show the Orlan-30 being utilized as far as 120 kilometers behind the Ukrainian forward line of own troops (FLOT). The exact organic composition within the Russian order of battle is unknown due to the relatively recent fielding of this equipment starting sometime in 2023. Observed operations in the deep fight include cueing ZALA Lancets (loitering munitions), observing fires for Tornado-S multiple launch rocket system (MLRS) 40 kilometers behind Ukrainian armed forces (UAF) lines, and laser-guiding Krasnopol-guided 152mm artillery onto UAF targets. Reports from 8 January 2024 show that a Russian UAV, likely the Orlan-30, had direct observation and helped to target a Ukrainian MLRS while firing and in hide sites. Whether the platform was destroyed or damaged is still in dispute. This is the second instance of Ukrainian High Mobility Artillery Rocket System (HIMARS) being spotted and targeted by Russian drones in the span of three months. These munitions, combined with the Orlan-30, had deadly effects on the battlefield and caused massive disruptions in the Ukrainian support zone during offensive operations in the spring and summer of 2023.

The Ukrainians are also utilizing drones in their fight against the Russian invasion. While the Russian acquisition and fielding of drones is characterized by a traditional military-industrial system, the Ukrainians, especially at the tactical level, rely on commercial off-the-shelf options. Popular drones in use by frontline commanders include the DJI3 and Autel Search & Rescue drones. Both of these options are considered cheap and attritable, but it is worth noting the Autel is about double the cost. The Autel may be the preferred option for calls for fire as it can be equipped with a camera that can pull eight-digit grids for the kill chain. The DJI3 cannot produce a grid, but this can be worked around by creating a fire sector map with target reference points that can be used to call for fire. Both drone options can pull their video feeds into a larger network that any command post in the AO can access. The Ukrainians are also making use of a teaming concept for drones. One drone, like an Autel, will observe for high-payoff targets. When those targets are spotted, a first-person view (FPV) drone with a munition will fly to/into the target to achieve effects.

In the immediate and near term, the ACM is working on multiple lines of effort to meet the Army's priorities on fire supporter transformation. The first line of effort is persistent experimentation of HMI technology hosted by the ACM and in events across the Army. Another line of effort is updating documentation and DOTMLPF-P (doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy).

Demonstrations and experimentation are essential lines of effort. Recently ACM FC-T hosted Operation Smokehouse, a fire support HMI demonstration showcasing technologies for mounted and dismounted fire observers. We took away many valuable lessons from the demonstration to inform our future efforts. We demonstrated the ability to integrate various unmanned aerial system (UAS) platforms with the current fire support enterprise to increase lethality. These UAS platforms can provide immense value to armored and infantry brigade combat teams by extending beyond line-of-sight targeting ranges, extending

A Soldier uses a handheld controller to get an unmanned aerial system's camera feed to call for fire during Operation Smokehouse at Fort Sill, OK, in April 2024. (Photo by Monica Wood)

line-of-sight communication, and providing a clear visual picture of targets and effects. They also retain the software framework to enable fire support teams to make near-immediate corrections when adjusting fire. This UAS integration also increases fire supporter survivability since they would not need a direct line of sight to operate. While this demonstration was relatively large due to the number of scenarios run and outside entities included, we plan to host much smaller demonstrations regularly and not limit ourselves to a yearly event. We will also continuously sponsor relevant HMI technologies in demonstrations and experiments happening around the Army.

We are also updating requirements documents and annexes for the various UAS systems that the Army seeks to become programs of record. Updating this documentation will ensure that fire supporters can utilize these platforms. One of our main short-term efforts is integrating current end user devices, such as Precision Fires-Dismounted and Precision Fires-Mounted, into these future UAS systems. The DOTMLPF-P process is another function we are continuously working on to reflect the user's needs and keep them in line with our modernization plans.

CPT John E. Rusnock is a Military Intelligence (MI) officer serving with Army Capabilities Manager Fires Cell Targeting, Fires Capabilities Development and Integration Directorate, Army Futures Command, at Fort Sill, OK. Prior to attending the MI Captain's Career Course, he served as an Infantry officer with the 1st Brigade Combat Team, 10th Mountain Division (Light) — assistant operations officer and battalion liaison officer with 1st Battalion, 87th Infantry Regiment. CPT Rusnock also served as a platoon leader in D Company, 1-87 IN and deployed to Afghanistan in 2020. He earned a Bachelor of Science in civil and environmental engineering from the Virginia Military Institute.