# Multi-Functional Reconnaissance Operations

### CPT CHARLES J. O'HAGAN MAJ SAMUEL H. DEJARNETT

arfare is changing and the U.S. Army needs to adjust rapidly. Partnering the Multi-Functional Reconnaissance Company (MFRC) with the field artillery (FA) battalion represents one of the key adjustments the 2nd Mobile Brigade Combat Team (MBCT), 101st Airborne Division (Air Assault) has made during its transformation in contact. The MFRC is tasked with being painfully light and disproportionately lethal to sense, kill, and protect on behalf of the brigade. It executes these tasks by leveraging traditional reconnaissance doctrine, emerging technology, and self-developed electronic warfare (EW) capabilities. The MFRC-FA collaboration increased the lethality and survivability of the brigade by identifying the FA battalion's electromagnetic (EM) signature, creating decoys to emulate that signature, and maximizing emerging technology to hunt and destroy high-payoff targets.

the brigade based on its EM signature, specifically Wi-Fi and Bluetooth-enabled devices. Geronimo demonstrated the capability of identifying service set identifier (SSID) and Bluetooth device names, which led to the identification of 2/101 MBCT's critical assets like artillery units and main command posts. The brigade followed a generic naming convention for devices that facilitated accountability, but this highlighted key assets to adversaries. To combat this capability, the MFRC created a similar system called the "Signal Harvest" that would help the brigade understand its own Wi-Fi and Bluetooth signature. The MFRC first conducted a digital survey mission and gained an understanding of what the brigade looked like at echelon (see Figure 1). The next step was to confuse the enemy to protect the brigade's most casualty-producing weapon, the FA battalion.

## Battalion EM Signature

The MFRC enables 2/101 MBCT to understand its electromagnetic signature across multiple spectrums that can offer unique survivability capabilities. After a Joint Readiness Training Center (JRTC) rotation in January 2024, 2/101 identified that Geronimo — the opposing force (OPFOR) — hunted

### Wi-Fi/Bluetooth Decoys

The MFRC's EW Soldiers created digital decoys that mirrored the brigade's FA battalion. These decoys emitted an electronic signature to reduce confidence in adversary sensors and force them to commit additional assets to confirm composition and disposition of friendly forces. An early example of the decoy consisted of relatively cheap



Figure 1 — 1st Battalion, 320th Field Artillery Battalion Signal Harvest Survey

material solutions to emulate Wi-Fi access points: a Raspberry Pi zero, a secure digital (SD) card, a universal serial bus (USB) cable, and a low-cost power source. At division exercises like Operation Lethal Eagle, 2/101 MBCT tested these decoys and experienced initial success in slowing the efforts of OPFOR. In the lead up to the JRTC 24-10 rotation in August 2024, 2/101 committed to purchasing and employing hundreds of digital and visual modification decoys to deceive the enemy. Leaders within the brigade then integrated the decoys and deception plan into the ground tactical plan through the military deci-



Figure 2 — Signal Harvest and Decoy Emitters

sion-making and targeting processes. During the long-range, large-scale air-assault (L2A2) joint forcible entry into JRTC 24-10, the MFRC deployed decoys that replicated critical assets such as the M777s and M119 howitzers.

As expected, Geronimo immediately conducted targeted reconnaissance on command posts, radars, and howitzers. However, their signal intelligence (SIGINT) failed them. One report stated that Geronimo began troubleshooting their collection equipment because their ground observers could not confirm decoy positions reported by SIGINT. When the observers could identify assets such as FA batteries, the batteries moved, disrupting the targeting cycle. The movements by the batteries and emitters meant Geronimo's process to find and fix critical assets had to start over. The combination of movement and signal decoys created limited windows of opportunity for Geronimo to deliver effects against the artillery. Ultimately during both Geronimo's attack and defense, they exposed their entire integrated fires command with massed fire missions on dirt, missing all critical assets except for the Q53 radar. During the rotation, the OPFOR was unable to consistently deliver effects against the FA battalion; therefore, the FA battalion massed effects at critical points with limited threats from counterfire or ground attack.1

### **Emerging Technology**

The 2/101 MBCT's operating concept shows the effectiveness of pairing the MFRC with the FA battalion as a lethal means of hunting high-payoff targets. The MFRC and 1st Battalion, 320th Field Artillery Regiment communicated directly and through the 2/101 MBCT main command post during JRTC 24-10 and achieved outsized effects on Geronimo. The MFRC acted as a highly mobile and hyper-enabled reconnaissance company that moved deep behind enemy lines, facilitating fires and answering priority intelligence reports (PIR) to assist the brigade commander. The key technologies that enabled the MFRC's effectiveness included the Infantry Squad Vehicle (ISV), Integrated Tactical Network (ITN) suite of communications, unmanned aerial systems (UAS) with signal and artificial intelligence (AI) payloads, and connections to the FA battalion through observers' digital kill chain. The Army's AI Integration Center (AI2C) outfitted UAS platform — a Anafi Parrot Mil — in the hunter killer platoons (HKPs) to leverage Shrike AI. Shrike AI runs three algorithms: aided threat recognition, call for fire, and adjust for fire. The first example of Shrike AI employment occurred within the first 24 hours of JRTC 24-10 when HKP 2, operating in enemy territory, utilized Shrike AI via the Anafi Parrot Mil to identify three enemy D-30 artillery pieces. The Shrike AI program generated a call for fire, and HKP 2's forward observers relayed the information back to the brigade command post. The brigade main command post ingested this call for fire and prosecuted the target with direct support artillery, resulting in the destruction of the three D-30s. This was one of many examples to highlight the lethality of reconnaissance enabled by technology and tied to the FA battalion.

The MFRC's ability to identify and relay targeting data on the high-payoff target list enabled the field artillery to mass fire against the enemy numerous times. These missions, enabled by UAS and AI, led to lethal effects against Geronimo for 2/101 MBCT in the offense and defense. The MFRC's HKPs employed these capabilities with attached forward observers to achieve the brigade's targeting objectives and were key factors in getting and keeping the artillery batteries in the fight. The attached forward observers are critical to the company because the MFRC will need



Figure 3 — Artificial Intelligence Integration Center Shrike AI

an all-weather proficient observer in the formation if/when the technology fails.

## Conclusion

The Army will face multiple challenges during large-scale combat. Technology is evolving and operating concepts are changing similar to what occurred during World War I with the employment of aircraft, tanks, and predictive artillery fire. Success will come with the right force structure that is enabled by technology and paired with combat fundamentals and principles. The MFRC — tied to the artillery through the brigade command post and enabled by technology represents a great opportunity for success. During JRTC 24-10, the MFRC served as a flexible, reliable, and deadly reconnaissance element that worked directly for the brigade commander. Key capabilities of EW assets and UAS allowed the smaller force to both detect the enemy and remain hidden. The union of the MFRC and the FA battalion through a dynamic targeting process proved to increase lethality of 2/101 MBCT.



CPT Charles O'Hagan, commander of the Multi-Functional Reconnaissance Company, briefs visitors during Joint Readiness Training Center Rotation 24-10 on the implementation of medium-range reconnaissance drones. (Photo by SSG Joshua Joyner)

#### Notes

<sup>1</sup> Reports on effects of the decoys were recorded during both JRTC 24-10's mid-rotation and final after action reports from both the commander of Geronimo and the commander of JRTC's Operations Group.

**CPT Charles J. O'Hagan** currently serves as the commander of the Army's first Multi-Functional Reconnaissance Company (MFRC) in the 2nd Mobile Brigade Combat Team (MBCT), 101st Airborne Division (Air Assault), Fort Campbell, KY. He commissioned from the United States Military Academy in 2017 as an Infantry officer with assignments to the 82nd Airborne Division and the 1st Battalion, 75th Ranger Regiment prior to arriving at Fort Campbell.

**MAJ Samuel H. DeJarnett Sr.** currently serves as the fire support officer for 2/101 MBCT. He commissioned from North Georgia College and State University in 2011 as a Field Artillery officer and has completed assignments with the 12th Combat Aviation Brigade, 173rd Airborne Brigade, 3rd Cavalry Regiment, and 7th Special Forces Group prior to arriving at Fort Campbell.