THE FUTURE ROLE OF ENGINEER RECONNAISSANCE IN LARGE-SCALE COMBAT OPERATIONS

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From General George Washington's iconic crossing of the Delaware River to Colonel Joshua L. Chamberlain's heroic stand on Little Round Top and Major General James E. Rudder's fearless climb up Pointe du Hoc, history has favored the side that can see, understand, and use terrain to its advantage. Engineer reconnaissance is paramount to dominating the terrain of tomorrow's battlefield. Technical analysis of routes, rivers, bridges, and obstacles will feed the decisions that win our Nation's wars. As the character of war undergoes fundamental changes, dedicated engineer reconnaissance assets are needed at the division level to maintain a decisive advantage in future fights against near-peer threats.

Former Chairman of the Joint Chiefs of Staff, General Mark A. Milley, describes the changing character of war, writing, "The attributes of organizations will—by necessity—be small, widely dispersed, nearly autonomous and self-sustaining, capable of constant motion and able to periodically mass effects for decisive action."[1] Because forces will be required to remain mobile, the need for engineer reconnaissance will be enduring. As commanders constantly move to avoid detection, they will be looking for answers to questions like: Can my vehicles ford this river? Is my convoy too heavy for this bridge? What types of countermobility efforts are the enemy implementing, and what is the enemy hoping to achieve? This change in the character of war coincides with a shifting geopolitical landscape, pushing us closer and closer to a great power conflict.

Over the past 2 decades, the United States has dominated the air and space domains against technologically inferior opponents, allowing easy access to aerial and satellite reconnaissance assets. However, this advantage is not guaranteed to continue through our Nation's next war—and that will result in an increase in demand for ground reconnaissance forces. The current conflict in Ukraine serves as a shocking reminder of the destruction caused by war between two conventional forces. According to a 2023 study, although the Ukrainian government was unable to collect data on more than 6,000 of the estimated 28,000 bridges in the country, nearly 10 percent of the remaining bridges in Ukraine require repairs prior to reuse.[2] The study provides a glimpse into the damage, destruction, and uncertainty that could be expected to encompass most infrastructure in a great power conflict. To address the uncertainty related to bridges, engineers would need to perform technical inspections to verify structural integrity or conduct further reconnaissance to locate other feasible crossing points. Without an engineer reconnaissance asset within each division, we run the risk of losing valuable assets due to catastrophic infrastructure failure.

Under the current Army division task organization, the brigade engineer battalion has two engineer companies. Each of these engineer companies is tasked with conducting engineer reconnaissance as a part of its mission-essential task list—however, engineer reconnaissance is often neglected as commanders balance their precious time across other mission-essential tasks, such as providing engineer support for mobility, countermobility, and survivability operations. As a result, brigade combat teams often lack the level of expertise required to perform accurate engineer reconnaissance at the tempo desired by the maneuver commander. As the Army begins the process of restructuring divisions for large-scale combat operations, there is an opportunity to create a new reconnaissance force that blends the skills of engineers with cavalry scouts.

Like the brigade engineer battalion, the cavalry squadron is in a period of transition amid Army force modification. Often tasked with conducting reconnaissance missions similar to those of engineers, cavalry scouts lack the engineer expertise required to conduct technical reconnaissance and identify explosive hazard threats along routes. This is particularly evident in Ukraine, where Russia frequently uses antipersonnel and antitank mines to close off axes of advance during countermobility operations. Furthermore, cavalry squadrons lack the mine-clearing assets needed to remove these threats. This slows the tempo of reconnaissance operations as cavalry scouts wait for engineer support. Merging engineer and cavalry assets at the division level would allow for their synergization into a more effective reconnaissance force.

The merging of engineer and cavalry assets could be implemented through a "hybrid reconnaissance troop," which would fall under the division cavalry squadron and consist of three reconnaissance platoons—one engineer platoon and two cavalry platoons—and one mortar section. This proposed task organization would allow the division commander to gain an early and accurate technical understanding of key terrain and infrastructure prior to the arrival of the division main effort. Additionally, the organic mortar section and heavy weapons platforms within the hybrid reconnaissance troop would provide the lethality required to win in a contested environment.

The assortment of personnel and capabilities, combined with advancements in technology, would provide the hybrid reconnaissance troop commander with flexibility in his or her approach to accomplishing the mission. While maintaining proficiency in traditional reconnaissance methods would remain necessary, leveraging developments in robotics, drones, artificial intelligence, and other technologies will be vital to the success of the proposed force. For example, robots and drones equipped with precision sensors can be used to gather critical information for route, river, and bridge reconnaissance missions. And artificial intelligence can be used to detect patterns in enemy countermobility efforts, allowing an understanding of the greater scheme of maneuver. The unique blend of troop personnel would enable leaders to conduct both "rapid and forceful" and "deliberate and stealthy" styles of reconnaissance, while the two cavalry platoons would continue to make "rapid and stealthy" a viable reconnaissance method (see Figure 1).[3]

The threat posed by our Nation's adversaries, combined with the changing character of war, has increased the need for engineer reconnaissance in Army divisions. Due to competing requirements within brigade engineer battalions, our divisions are lacking in this regard. As the Army modifies its force structure to prepare for the future fight, divisions need a dedicated engineer reconnaissance asset to ensure mission success. The creation of a hybrid reconnaissance troop would satisfy this need by pairing the capabilities of engineers with those of cavalry scouts. If such a troop were implemented, the Army of 2030 would be better equipped to fight and win our Nation's next war in a large-scale environment.

Endnotes:

[1]Mark A. Milley, "Strategic Inflection Point: The Most Historically Significant and Fundamental Change in the Character of War is Happening Now—While the Future is Clouded in Mist and Uncertainty," *Joint Force Quarterly*, July 2023, pp. 6–15.

[2]Oleksandr Kubrakov, "10% of Bridge Structures in Ukraine Are in Disrepair," *Ukrainian Government Portal: Official Website,* Ministry for Communities, 23 July 2023, <www.kmu.gov.ua/en/news/oleksandr-kubrakov-10-mostovykh-sporud-v-ukraini-znakhodiatsia-v-avariinomu-stani>, accessed on 28 November 2023.

[3]Army Techniques Publication (ATP) 3-20.98, *Scout Platoon*, 4 December 2019.

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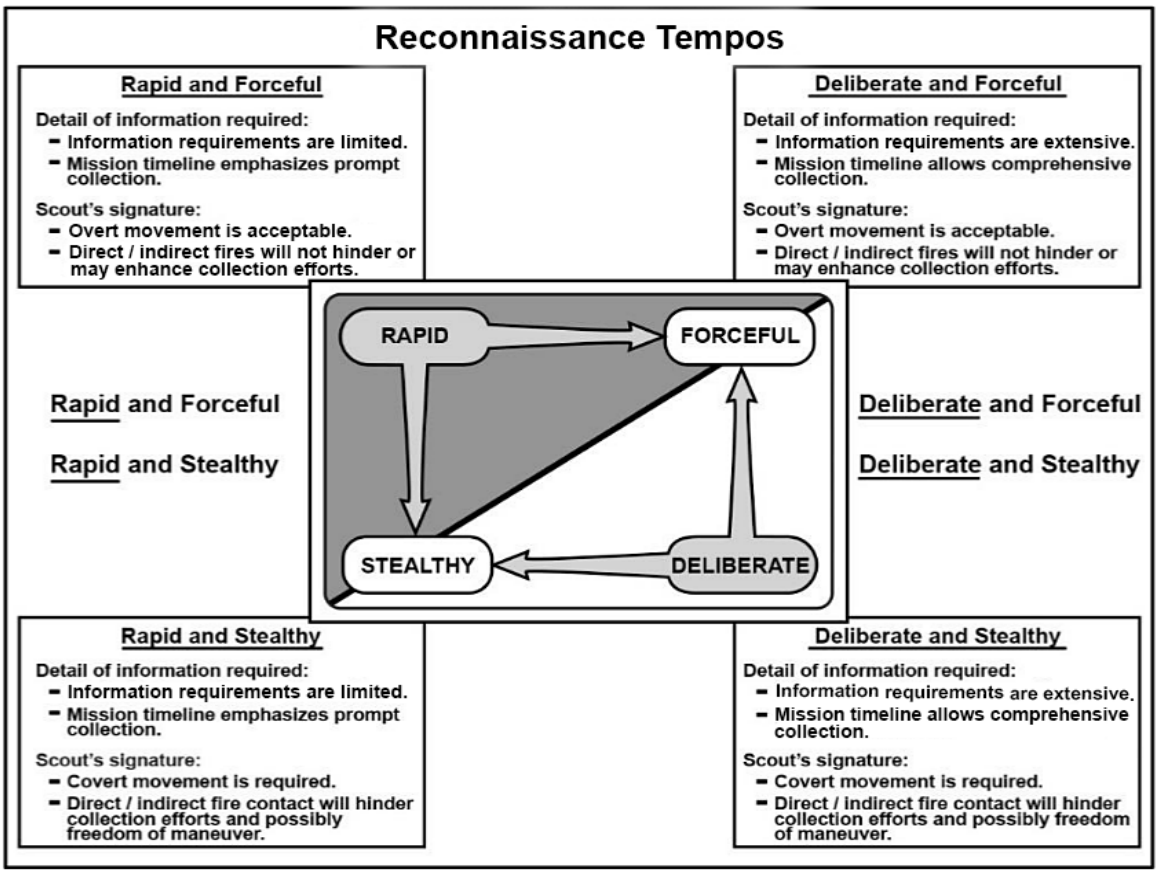


Figure 1. Reconnaissance tempos[3]