Modern Warfare is a Thinking Officer’s Game: Why the U.S. Military Needs More Leaders with Technical Educations

By Jonathan A. Bodenhamer
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As a student in Command and General Staff Officers’ School (formerly called ILE), I have experienced that much discussion revolves around the future of wars and the need for officers who can think critically. I strongly support this notion, but with a different perspective than a lot of the mainstream thinkers. As an officer who has both a bachelor’s and master’s degree in Mechanical Engineering, I see the value my personal education has on my ability to perform daily. While there is an added emphasis on continuing education for officers in recent years, I think we institutionally miss the mark in that many of the degrees the Army encourages officers to focus on are in “soft science” and humanities topics like leadership, international relations, social science, and management. While these degrees are fine, I think that all branches of the Army would benefit greatly from more officers with technical education in engineering and mathematics, or “hard science.” The basic reason for this, which I will explain in greater detail below, is that hard science is about problem solving, and solving challenging problems is what the Army is often tasked to do in modern wars.

Though there are still vocal opponents of the need to provide Army officers with added academic education throughout their careers, the challenge of the last decade of war has mostly silenced such critics. The notion that war is a thinking soldier’s game is absolutely true, and from the Chairman of the Joint Chiefs of Staff on down, support for smart combat leaders is quite clear. However, I think we put too much emphasis on soft science and humanities type degrees.

Certainly a solid officer corps needs leaders with diverse educational backgrounds, but the fact is that international relations experts are not necessarily good at solving military problems. Having just completed an assignment teaching Mechanical Engineering at West Point, I heard regularly the propaganda that Social Science and Leadership officers vigorously promoted, centered on the notion that on today’s battlefield, these are the skills an ambitious officer should focus on. I could not disagree more with this. My personal field is dedicated to the study of solving complex problems. Yes, many of them are math based, but not all of them. I argue that if an officer can break down and solve a complicated engineering problem, there is nothing preventing them from using the same analysis methodology to dissect and understand a complicated tribal/political problem in Iraq or Afghanistan just as successfully.

On a very personal level, I saw the value of my technical education from the very start of my career. As a new tank platoon leader, I valued the fact that I truly understood how my tanks functioned. I had studied the engine and transmission in detail in the classroom, and had an entire semester long course on ballistic design related to how the main gun and machine guns work. When there were mechanical problems with my tanks, I often helped the mechanics solve them, helping keep the readiness rate as high as possible.
My Soldiers noticed these skills as well, and it really made them see me as a stronger leader and subject matter expert much more quickly than I expected. The same was true when I was a Bradley scout platoon leader. These skills are also the reason I spend more than a year as a cavalry troop XO, including staying in place for deployment to OIF 1 at the request of my troop commander.

The value of technical education is not solely in mundane maintenance tasks either. In Iraq, the fact that as an engineer I have a very solid grasp of how power grids and piping networks function as well as proper construction methods for infrastructure paid huge dividends. I was assigned as the Squadron Civil Military Affairs officer because of the technical knowledge I brought to urban utility analysis and reconstruction efforts. In my second tour as a cavalry troop commander, I experienced similar benefits from my ability to work with and manage construction contractors. Also, in planning troop combat missions, I often approached the process using the basics of the standard engineering problem solving process, which was very successful.

As we study Mission Command in the classroom now, I often see and comment on the fact that many of the basic premises of this “new” concept of leadership, from a problem solving perspective, are nearly identical to what I studied in Mechanical Engineering Design and later taught as an instructor. The fact that six years of rigorous classroom engineering study has made me very comfortable with analyzing and solving complex problems I do not initially understand well makes taking on similar challenges in military operations somewhat familiar terrain from a mental perspective. I absolutely benefit from a technical education nearly every day in the Army.

The well used quote by Greek philosopher Thucydides, “the nation that makes a great distinction between its scholars and its warriors will have its thinking done by cowards and its fighting done by fools” perhaps applies now more than ever. As we progress into a more and more technology driven Army, officers with strong technical educations are extremely valuable. Just as engineers and scientists are actively recruited to lead the American business world, the Army should actively encourage its future officer leaders to pursue similarly rigorous courses of technical study.

About the Author

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MAJ Jonathan Bodenhamer was commissioned a 2nd LT in Armor after graduation from West Point in 2000. First assignment was 1-1 CAV, 1st Armored Division, in Budgein, Germany. Was a Tank PL, Scout PL, and Troop XO. Deployed to OIF 1 with 1-1 CAV. Following the Armor advanced course, was assigned to 1-10 CAV, 4th Infantry Division (M) at Fort Hood, TX. Took command of A Troop in May 2005, and deployed to south Baghdad, Iraq for OIF 05-07. On return, went to the University of Texas at Austin for graduate school followed by 3 years teaching Mechanical Engineering back at West Point. Transferred to Acquisitions Corps and presently assigned as an Assistant Product Manager for Joint Program Office Joint Light Tactical Vehicle in Warren, MI.

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