LESSONS FROM THE **KRIEGSAKADEMIE**

A REFLECTION OF THE PRESENT? A ROAD MAP FOR THE FUTURE?

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PRECISELY DEFINING and responding to change can determine life or death for any organization. In the case of the armed forces, it can determine the continued existence of nations. Thus, when speaking of revolutions in military affairs (RMA), we must be especially careful about defining and responding to change. The rapidity and global nature of today's change, coupled with new military technologies, give the impression that we—like the characters in *Star Trek*—are "boldly going where no one has gone before." With the exception of the technological level, however, we believe that our age is not exactly uncharted territory and that a historical road map can help us navigate the future. Toward this end, we briefly cover some historic events we think are analogous to today's events—specifically, some Prussian reforms and their generally agreed upon effects.[1] We then point out some of the challenges we face today. By juxtaposing the Prussian experience with that of the present age, we present both a framework for discussing the RMA and our recommendations for best approaching the future. We are firmly convinced that lessons from the Prussian experience can lead

to continuous operational improvement in today's armed forces.

Precisely defining and responding to change can determine life or death for any organization. In the case of the armed forces, it can determine the continued existence of nations.

The advent of Napoleonic warfare, generally thought to be an RMA, led Prussia to institute a method of continuous operational improvement. However, the events that made it a revolution go beyond Napoléon's achievements on the battlefield; several events led to changes in warfare. Foremost was the French Revolution, which unleashed a dramatic change in warfare. Instead of subjects, the people of France became citizens with an interest in the nation—a change that spurred nationalistic fervor. With all citizens thus empowered, mobilizing the nation became easy—witness the *levee en masse*, whereby the French army swelled to over 800,000 soldiers, dwarfing the monarchical armies of the day that numbered only 80,000. This empowerment also led to individual enterprises, which created a stronger economy, which in turn enabled the nation to support larger forces.

Other events further complemented the revolution, among them the beginnings of the industrial revolution, which accelerated the manufacture of interchangeable machined parts, permitting cheaper production of cannons, muskets, and supplies to equip the large armies.[2] Such changes in production capability also affected the officer corps because technical proficiency took precedence over noble birth.[3] The importance of technical proficiency is best exemplified by Napoléon, whose ability to concentrate artillery on the battlefield initiated his rise to power.[4]

The development of new tactics and organization further changed the character of war. The use of skirmishers "who moved through woods and in open order over broken ground, fired from concealed positions, and took cover without command" proved lethal to the old linear formations used so effectively by Frederick the Great.[5] Further, changes in the organization of armies (into armies, division corps, etc.) made employment more efficient.[6]

A revolution did indeed occur during the early nineteenth century, although it was not technologically driven. There were new applications of existing technology but no new technology. This RMA resulted from events associated with the French Revolution, which was societal in nature. Thus, these elements worked together to create turbulent and uncertain times in the late eighteenth and early nineteenth centuries. Of most significance to us, however, is the Prussian response to this revolution.

Gerhard von Scharnhorst recognized the scope and implications of the new form of warfare arising from the French Revolution.[7] He responded

Scharnhorst

to this event by creating a military society for investigating and discussing military history, strategy, tactics, and current developments. That is, he perceived a need to plan for the future and provide a base for looking ahead.[8] He realized that soldiers must study war in the context of the social, political, economic, technological, and moral factors that influence military institutions and operations.[9]

He also advocated creation of an institutionalized genius within the army by establishing a general staff system in which staff officers worked with the commander and provided inputs. Scharnhorst recognized that an army would not always have a genius like Frederick the Great or Napoléon but that educated and capable officers serving in staff positions and advising a field commander could assure such genius on a continuing basis. He envisioned staff officers rotating between staff and field positions, providing a free and steady flow of ideas throughout the general staff and the army itself. After its defeat by Napoléon in 1806, Prussia began Scharnhorst's reforms in earnest.[10]

In his discussion of Scharnhorst, Clausewitz noted that in changing times people are comfortable building systems or boxes into which they fit the world: "It was to Scharnhorst's great credit that he was not in the least influenced by these pretentious theories [systems], which at the time were overwhelming everyone who did not unthinkingly cling to the past. He recognized both the unchanging elements in the present age and the inadequacy of old methods, but he wanted the new to emerge from the old, and he wanted to arrive quickly with as little fanfare as possible at a new, appropriate method."[11] Basically, Scharnhorst avoided rushing to determine the boundaries of the times, choosing to study events and allow the change to define itself.

Thus, Scharnhorst laid the foundation of the general staff and provided the vision for its future growth. The key ingredient in his approach was belief in the potential of people with talent and ability. To him, the most crucial element in analyzing and dealing with change was people and the way they respond.

The significance of these reforms easily could go unnoticed. The proof of their efficacy lies in the results of the Battle of Waterloo; Charles White credits Scharnhorst's reforms with Napoléon's defeat in that battle.[12] Specifically, August Wilhelm Gneisenau, Field Marshal Gebhard von Blücher's chief of staff, recommended that von Blücher return to the battlefield—an action that caught Napoléon off guard before he could defeat Wellington. These reforms marked the beginning of the Prussian/German general staff system, which, according to Trevor Dupuy, institutionalized excellence within the military.[13]

Using airpower to prepare the battlefield [in the Persian Gulf War] kept casualties to a minimum.

Scharnhorst and his students saw that human affairs are dynamic and that technology changes. Thus, weapons, equipment, and armies must change with the times. This called for an environment to foster continuous improvement.[14] In events of the early nineteenth century, then, we find the key to German military effectiveness.

In their article "Revolutions in Military Affairs," Comdrs James R. Fitzsimonds and Jan M. Van Tol recognize the German army for its development of blitzkrieg between the world wars, noting how the army was open to new technologies in warfare.[15] However, the authors seem to have missed the reason for the Germans' ability to recognize the forces at work at that time and to use those forces to their advantage. It was Scharnhorst who created an environment in which soldiers were encouraged to be innovative and "think outside the lines." Moreover, his reforms were especially significant because they were not a formalized doctrine but constantly evolved, based on changes in technology, doctrine, geopolitics, and anything else that might affect the employment of military power.

Danger lies in being comfortable with our own creation. Once we've decided we have the answer, events may suddenly change and no longer fit into the box we have created.

How does this lesson in history apply to us today? We believe that these reforms point the way for us as we enter a period of ever increasing, rapid change. Although we wonder about where we are headed and how we can exploit emerging technologies, Scharnhorst's method remains a credible means for instituting continuous improvement in the midst of change.

The magnitude of change in our world and the recent changes in employment of military power raise the question of whether we are witnessing an RMA. Although we have an abundance of literature on the subject, no clear answer to this question is forthcoming, partly because of a lack of agreement on the definition of an RMA. As mentioned above, an RMA is the result of many interacting events. Today, we focus most of our attention on technological changes, but the culture of the United States and the world at large, as well as the geopolitical landscape, has just as much impact.

For example, some people hailed Operations Desert Shield and Desert Storm as the shape of things to come. However, the systems we relied on for those operations are not suited to actions in Somalia, Rwanda, or Bosnia. The fact of the matter is that most current, ongoing conflicts are on what we refer to as the lower scale. As Martin van Creveld notes in *The Transformation of War*, the weapon systems we rely on are not designed for the kinds of conflicts we are most likely to fight in the future.[16] For this reason, when we talk of an RMA, we must consider its many facets, or we will find ourselves in a situation much like Vietnam. From a technological and military standpoint, we should have defeated the North Vietnamese, but due to the asymmetrical aspect of the conflict, we lost. Obviously, to emphasize one element over another court's disaster.

Jeffrey Cooper warns against overemphasizing technology, pointing out that strategy, doctrine, operational innovation, and organizational adaptation are all elements necessary for an RMA.[17] According to him, if we are to fully understand an RMA, we must answer several questions. Is the RMA internal—within one country—or external, driven by forces outside a single country? Is it event- or process-driven? What are the potential nonmilitary uses? What types of wars will a new technology be useful for? Cooper concludes with an exhortation to look beyond the present RMA, if indeed we are in one, and consider the impact and possibilities of future RMAs.[18]

Similarly, Col Gary Griffin defines an RMA as the result of dramatic developments in technology and doctrine, especially evident in Operations Just Cause and Desert Storm—transition wars that exhibit characteristics of both past and future conflicts. Key to his definition is the predominance of information and precision,[19] although characteristics of past and future conflicts are also significant. Thus, future military operations could be low tech at low intensity or high tech at a higher intensity. Regardless of the direction of future operations, we must be prepared to respond appropriately.

Should the direction take an upward turn, we are likely to witness increasingly different forms of warfare. For example, Gen Gordon Sullivan and Col James Dubik point out that due to the impact of the information age, workers are empowered, simultaneous operations are more pervasive, and modern armies are smaller and more versatile. These features, combined with speed, will give armies greater success on the battlefield.[20] Thus, our present situation resembles the one in Scharnhorst's time insofar as tremendous changes in military operations are concerned.

In his description of an RMA, Gen William Odom comments that "we are in the midst of a dramatic change in the relationship between technology and the nature of warfare," while the Center for Strategic and International Studies (CSIS) reports that an RMA is "a fundamental advance

in technology, doctrine or organization that renders existing methods of conducting warfare obsolete."[21] Although we are in the midst of dramatic changes, it is not clear that existing methods of conducting warfare are obsolete. Moreover, we have not yet reached the point where we must tear apart the old system and start a new one—as we believe was the case in Scharnhorst's era.[22]

Not only do we have considerable discussion of RMAs in the United States, evidently the Russian military wholeheartedly believes that a significant RMA is in progress. According to Mary Fitzgerald, in the early 1980s the Russians believed that war was entering a new era or military technical revolution (MTR); they now point to Desert Storm as the vindication of their beliefs and the prototype of future wars. Fitzgerald goes on to note that the Russians believe warfare has evolved through five generations and is now ready to enter the sixth generation, characterized by superior data processing and use of precision or "smart weapons." They maintain that there will be no need to occupy enemy territory and that collateral damage will be significantly reduced.[23]

The Russian view is that the character of war is radically changing, primarily because the use of precision weapons will eliminate the front in future wars. Furthermore, as one might expect, the Russians are also thinking about how to counter precision guided munitions (PGM).[24] With these changes, they believe the role of ground forces will recede to support of air and space-based forces.[25]

The emphasis that the US and Russia place on new technology, however, does not necessarily create an RMA. Oberst Kurt-Wolfgang Fredemann of the German *Fuehrungsakademie* approached the idea of an RMA by first defining *revolution* as tearing apart the old system and starting a new one. Today, he said, we are not in a revolution but a "dramatic evolution" or perhaps, more specifically, a "rapid evolution." We need to ask how the changes affect our lives. Oberst Fredemann added that we can draw certain lessons from the Gulf War: (1) the significant role of airpower and its ability to prepare the battlefield; (2) the neglected area of casualty tolerance (using airpower to prepare the battlefield kept casualties to a minimum—a significant contribution of airpower); (3) the change in military strategy (i.e., fighting just enough to win, as opposed to annihilation warfare); (4) the "Cable News Network (CNN) factor," which constrains a military force to go in with massive superiority and accomplish the mission rapidly with few or no casualties; (5) the importance of space, especially to information systems; and (6) the advantages of increased information (although it presents a lucrative target to the enemy).[26]

Oberst Roland Foerster of the German Military Historical Archives in Berlin believes that even the rapid growth of communications and computer technology will never replace the human mind. In his view, we don't appear to be in an RMA because basic military thinking has not changed. Despite the increase in technological capability in the Gulf War, military thinking remained basically the same.[27] Among some German officers, at least, we find agreement that although technology has created significant advantages in warfare, there is no need to start completely anew.

Further, our research reveals a significant effort to come to grips with our current situation. Although we certainly need to understand the times, there is distinct danger in seeking a cookbook answer to the question of how we will fight wars in the future. As noted above, Clausewitz said of his own age that people are comfortable building systems for understanding the changing times. Evidently, we are witnessing such attempts today. System building essentially comes down to building a paradigm (or a certain set of guidelines) for viewing events. Danger arises, however, when events fail to match our guidelines. Rather than guessing about the direction events might take, perhaps it is better to continue observing and allow the events themselves to teach us.

Professional officers must have intellectual ability and a willingness to continue their education—traits that enable them to combine theory and practice in the correct proportion.

One of the more perceptive observations comes from Andrew Marshall, director of net assessment, who says, "Probably we are just at the beginning [of an RMA], in which case the full nature of the changes in the character of warfare have [*sic*] not yet fully emerged."[28] He also recognizes how the geopolitical revolution, which began with the fall of the Soviet Union and our subsequent focus on regional threats, will affect future warfare. Although many officers and scholars apparently want to present a comprehensive and definitive definition of the RMA and modern warfare, Marshall's approach is more wait and see.

So what does the RMA mean to us, and how do we proceed? Our research leads us to believe that we are not yet in an RMA. Rather, we concur with the above-mentioned German officers, who think we are in a dramatic evolution that could eventually become a revolution. We also favor the insights of David Jablonsky, who points out the need to compare the past with the present and look for breaks in continuity that will allow us to better handle—and perhaps to some extent control—change. He also comments on the need to be flexible in dealing with political and social change as much as technology. Interestingly, he observes that similar complexities occurred during the Napoleonic era, noting that Prussian reformers were able to adjust "to [create] one of the greatest war machines in history."[29] In this regard, his observations sound very much like Clausewitz's description of Scharnhorst, who sought to use the old to reach the new and arrive at the correct method.

As we analyze the change we are experiencing and seek to understand it, we must be wary of system building. Essentially, our grappling with the concept of an RMA is our own attempt at building a system into which we can neatly place things and make them understandable. Danger lies in being comfortable with our own creation. Once we've decided we have the answer, events may suddenly change and no longer fit into the box we have created. We need only look back on the Air Corps Tactical School's belief that the bomber would always get through or, more recently, Saddam Hussein's statement that airpower has never been decisive in a conflict. Examples abound, but we need to realize that our safety lies in living outside a comfortable set of lines and being able to evolve with change.

Prussian reforms of the early nineteenth century addressed the ability to evolve with change. Every war theorist of the eighteenth century attempted to divorce war from its fog and friction by pressing it into solid rules and interdependencies. Actions and decisions of military leaders were standardized with an almost mathematical precision. Scharnhorst recognized the futility of attempting to eliminate fog and friction by setting artificial patterns of behavior (i.e., the cookbook approach).[30] He maintained that "one has to give the `fog' its room to move, because one is unable to eliminate it totally and the mere attempt to reduce it to a minimum normally leads into the contrary effect of maximizing it."[31]

The general staff was notable for its ability to deal with fog and friction by encouraging broad education and by rotating officers between staff and field assignments.[32] Here, Scharnhorst did not create a system or methodology for dealing with change; instead, he created an environment for critically examining and discussing military affairs and current events. Professional officers must have intellectual ability and a willingness to continue their education—traits that enable them to combine theory and practice in the correct proportion.[33] In other words, "History contains the material which molds the living human mind, and it does not teach us *what* to think, but *how* to think."[34] Similarly, according to Clausewitz, "History will not furnish handy recipes to solve the problems of the future."[35]

Marshall points out the need to look actively for insights in longer-term changes in doctrine, concepts of operation, and organizational change—perhaps through changes in professional military education (PME) programs and acquisition. Although he advocates sending some of the "very best people" to war colleges to study war gaming and research dealing with new doctrines, concepts of operation, and organizational adaptations, he does not go far enough. Like Scharnhorst, we need to look outside the military for changes that will affect military operations. We need to develop appropriate techniques and doctrine that allow us to study information warfare as an intellectual discipline.[36] Besides emphasizing PME, we should rotate the brightest officers in and out of high-level staff positions (e.g., between the Air Staff/Department of Defense and operational units) in order to stimulate fresh ideas.

Thus, we agree that the answer to the question of where we are headed lies in greater study and a willingness to let go of the past (i.e., established operational paradigms). At this point, technology—manifested in information and precision—provides a significant advantage in battle, yet it will assuredly not be the last word in warfare. Throughout history, RMAs have been driven by different factors. In some cases, technology was a primary factor—in others it was not. For this reason, defining an RMA may be dangerous business unless one does so with the advantage of hindsight. We may expect technology to take us in one direction, but cultural or societal developments could move us down an entirely different path. By following the Prussian example (i.e., building continuous operational improvement), we can remain on the cutting edge of changes in warfare. By ignoring this example, however, we place ourselves at risk. □

Notes

1. We do not propose to present a full account of Napoléon's rise or of subsequent Prussian reforms. Our purpose is to offer an accurate overview of some of the events we feel are significant and draw some conclusions and parallels that are relevant to the present.

2. Col Owen E. Jensen, "Information Warfare: Principles of Third-Wave War," ***Airpower Journal*** 8, no. 4 (Winter 1994): 36.

3. Walter Gorlitz, ***History of the German General Staff, 1657–1945,*** trans. Brian Battershaw (Westport, Conn.: Greenwood Press, 1975), 8.

4. Emil Ludwig, ***Napoleon***, trans. Eden and Cedar Paul (New York: Boni and Liveright, 1926), 31–32.

5. Albert Sidney Britt III, ***The Wars Of Napoleon,*** West Point Military History Series, Thomas E. Griess, ed. (Wayne, N.J.: Avery Publishing Group, Inc., 1985), 4.

6. Oberst Wilhelm Meier-Doernberger, German army, ***Fuehrungsakademie,*** Hamburg, Germany, interview with authors, 17 February 1995.

7. Ernst Buchfink, "Scharnhorst, die Militarische Gesellschaft und Wir," ***Wissen und Wehr*** 9 (1935): 571–80.

8. Oberst Kurt-Wolfgang Fredemann, delegate of the chief of staff, Luftwaffe, ***Fuehrungsakademie,*** Hamburg, Germany, interview with authors, 22 February 1995.

9. Charles E. White, ***The Enlightened Soldier: Scharnhorst and the Militarische Gesellschaft in Berlin, 1801–1805*** (New York: Praeger Publishers, 1989), 57. Alfred G. Gardiner referred to Scharnhorst's work as having "struck the keynote of scientific warfare," by which he meant that Scharnhorst saw the need to study war as a science and in connection with other changes taking place. "German Generalship," *Atlantic Monthly*, May 1916, 677.

10. White, 57; and T. N. Dupuy, ***A Genius for War: The German Army and General Staff, 1807–1945*** (Fairfax, Va.: Hero Books, 1984), 18; and Omer Bartov, "The Nation in Arms: Germany and France, 1789–1939," *History Today*, September 1994, 29.

11. Carl von Clausewitz, ***Historical and Political Writings,*** ed. and trans. Peter Paret and Daniel Moran (Princeton, N.J.: Princeton University Press, 1992), 103.

12. White, 168.

13. Dupuy, 300–307.

14. Ibid., 24; and Meier-Doernberger interview.

15. Comdr James R. Fitzsimonds and Comdr Jan M. Van Tol, "Revolutions in Military Affairs," ***Joint Force Quarterly,*** Spring 1994, 24–25.

16. Martin van Creveld, ***The Transformation of War*** (New York: Free Press, 1991), 205.

17. Jeffrey R. Cooper, "Another View of the Revolution in Military Affairs" (Unpublished paper, SRS Technologies, 18 March 1994), 33.

18. Ibid.

19. Col Gary B. Griffin, "Future Foes, Future Fights," ***Military Review,*** November 1994, 56.

20. Gen Gordon R. Sullivan and Col James M. Dubik, "War in the Information Age," Military Review, April 1994, 46–62.

21. Quoted in David Jablonsky, "US Military Doctrine and the Revolution in Military Affairs," ***Parameters,*** Autumn 1994, 18–19.

22. Fredemann interview.

23. Mary C. Fitzgerald, "The Russian Image of Future War," ***Comparative Strategy*** 13 (April–June 1994): 167–68.

24. Lt Col Lester W. Grau, "In the Wake of Revolution," *Military Review*, December 1991, 12–23.

25. Ibid., 169.

26. Fredemann interview.

27. Oberst, Dr Roland G. Foerster, German Military Historical Archives, Potsdam, Germany, interview with authors, 20 February 1995.

28. A. W. Marshall, director of net assessment, Office of the Secretary of Defense, Washington, D.C., memorandum for record, subject: Some Thoughts on Military Revolutions—Second Version, 23 August 1993.

29. Jablonsky, 32.

30. Theodor v. d. Goltz, *Scharnhorsts Schriften* (Dresden: G.v. Marees, 1885), 316.

31. Ibid., 325.

32. Foerster interview.

33. Rudolf Stadelmann, *Scharnhorst: Schicksal und geistige Welt* (Wiesbaden: n.p., 1952), 145.

34. Meier-Doernberger interview.

35. Quoted in ibid.

36. Marshall, 5–6.

Let no Pleasure tempt thee, no Profit allure thee, no Ambition corrupt thee, no Example sway thee, no Persuasion move thee, to do anything which thou knowest to be Evil; So shalt thou always live jollily: for a good Conscience is a continual Christmas. Adieu.

—Poor Richard (aka Ben Franklin)

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