# Dealing With the Challenge of Change

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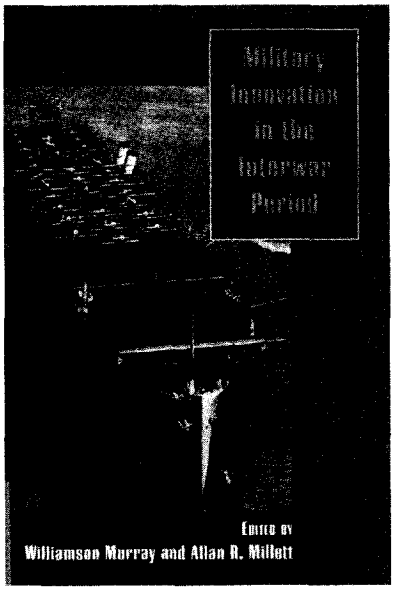
**MILITARY INNOVATION IN THE INTERWAR PERIOD. Edited by Williamson Murray and Allan R. Millett. Cambridge Press, Cambridge, 1996, 415 pp., $65.00 (Member $58.50)**




Today's professional military literature is literally awash with discussions about revolutionary change and technological innovation. Leading strategic thinkers comment continually about sweeping changes in the nature of warfare. Calls for radically new force structure designs and new forms of fighting, which include something called Information Warfare, are commonplace. Few of these intellectual endeavors, however, deal systematically with an historically based understanding of how dynamic change has occurred in the past or with the factors that reinforce or retard the introduction of innovative operational concepts or weapon systems. A comprehensive understanding of the broad forces of history on innovation is needed. Fortunately, *Military Innovation in the Interwar Period* now provides military professionals with a comprehensive analysis of past examples of successful and unsuccessful attempts to extend the military art. It offers guidance on how to think about approaching dramatic change and military innovation in the future.

*Military Innovation in the Interwar Period* presents detailed historical analyses about the innovations of the 1920s and 1930s based on seven major case studies. The period is extremely relevant to today's challenges. Both eras are characterized by strategic uncertainty, ambiguous threats, and limited resources. Several defense analysts point to the interwar period as one containing several revolutionary innovations in warfare. The crucial hypothesis explored in this penetrating effort is that we are presently in the initial stages of a similar period of discontinuous change in military capability.

For this reason, *Military Innovation in the Interwar Period* is a timely effort, and one that should make a major contribution to our understanding of the process and limits of military innovation. It offers a probing and comprehensive understanding to a key question—What factors or patterns support successful innovation? Without understanding what the factors were that gave rise to fundamental changes in how military forces fought in earlier revolutions in military affairs (RMAs), it is doubtful that the U.S. military will be successful at adapting to the present purported RMA. This is today's most pressing intellectual challenge, and it is an innovation addressed only partially in the Quadrennial Defense Review. Furthermore, the ongoing National Defense Panel is also seeking to stimulate fundamental change in the U.S. military. Thus, there is a great demand for military innovation, but few offer concrete advice on how to encourage it.

*Military Innovation in the Interwar Period* offers answers to the issue. It has been superbly crafted and edited by a team of historians familiar to Marines, Drs. Allan Millett and Williamson Murray. Dr. Murray is the professor emeritus in European History from Ohio State University. He has just completed 2 years as the Horner Chair of Military Strategy at the Marine Corps University. His previous publications include the *The Change in the European Balance of Power 1938-39*, the three volume *Military Effectiveness* also coedited with Millett, and a recent book on the Gulf air war. In *The Making of Strategy: Rulers, States, and War* (see *MCG*, Jul95) he helped develop a systemic overview of the process by which nations have developed and executed national strategies. In this latest effort, he and his coeditor do the same for innovation. Dr. Millett, another well-recognized authority on the American military, is a retired Marine Reserve colonel, whose work at Ohio State University and in the profession is internationally acclaimed. Dr. Millett is the author of numerous books including the definitive institutional history of the Marine Corps and a superb biography of Marine Gen Gerald C. Thomas, *In Many A Strife*. (See *MCG*, May93.)

The editors have assembled a distinguished field of defense experts to provide insights into today's volatile era. Their work is organized into seven comparative studies, with each case focusing on a triad of major World War II powers (see chart 1). Dr. Murray himself authored assessments of armor and strategic bombing developments. These chapters stress the importance of professional military education (PME) and the absolute necessity for learning from the past to assess future developments. Dr. Millett

| | U.S. | Germany | Britain | Japan | France |
|---|---|---|---|---|---|
| Armored Warfare | | X | X | | X |
| Amphibious Warfare | X | | X | X | |
| Strategic Bombing | X | X | X | | |
| Close Air Support | X | X | X | | |
| Carrier Warfare | X | | X | X | |
| Submarine Warfare | X | X | X | | |
| Radio/Repair | X | X | X | | |

***Chart 1. Case Studies***

contributes an outstanding overview of the development of amphibious warfare by Britain, Japan, and the United States. Marine readers will be fascinated by Dr. Millett's insights on Japanese technological developments in amphibious crafts and shipping, which presaged U.S. naval developments by several years. Students of amphibious warfare will also be surprised at Japanese and British doctrinal publications that predate the famous *Tentative Manual for Landing Operations* of 1934.

Adaptation in close air support is ably reviewed by Richard Muller of the Air University faculty at Maxwell AFB. This assessment reinforces Dr. Murray's conclusions on the value of candid official histories and operations analysis. Once again the Germans got the most out of the previous wartime experience with a major study program. British historian Geoffrey Till gives his interpretation on British, American, and Japanese initiatives in carrier warfare. This study shows the devastating results of centralization on British naval airpower, the result of the 1917 decision to shift all aviation developments to the new Royal Air Force. This undercut plane designs, retarded the establishment of a cadre of aviation professionals within the Royal Navy, and resulted in a lack of exercises and experiments with naval air applications. In his essay "Innovation Ignored," German, British, and American submarine programs are critiqued by Professor Holger Herwig of Calgary University. This study points to the potential for lost opportunities when asymmetric capabilities do not fit prevailing organizational orthodoxies. The use of the submarine for commerce warfare had obvious applications against the United States and Japan, and was only pursued seriously by Germany. What asymmetric applications are we overlooking today?

The final case study on radio and radar focuses on the use of the electromagnetic spectrum in warfare. The author, Dr. Alan Beyerchen, is currently a professor at Ohio State University. Since this chapter deals with what can be referred to as the first Information War, it may be the most relevant to today's advocates of Third Wave warfare or information operations.

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Chart 1 summarizes the case studies and their associated components. By omission, the chart also reveals key studies the authors elected not to address. The most notable of these is U.S. armor developments. This case history might have added interesting elements peculiar to this country and its ability to adapt new innovative concepts to emerging technology. Additionally, reflecting a bias toward European examples, *Military Innovation in the Interwar Period* fails to explore the development of Japanese submarines or electronic warfare. At one point, during the Russo-Japanese War, the Japanese led the world in the use of information operations.

In addition to the seven case studies, *Military Innovation* includes three summating essays, one each by Millett and Murray, and a concluding chapter coauthored by Murray and Barry Watts, a retired Air Force officer. Although one has to carefully review all three of these final chapters to generate a synthesis of the record during this period of history, the final chapters by Millett and Murray provide an interesting contrast of the internal and external conditions for successful adaptation in a period of uncertainty, ambiguity, and dynamic change.

Dr. Millett's conclusions focus largely on the external side. The patterns of military innovation in this period indicate a very complex sets of interactions in his final assessment. The pattern is based on four elements: strategic context and calculation, research and development of state-of-the-art technologies, organizational politics, and civil-military interaction. The determinants of relative success indicate the need for accuracy in calculations about future requirements and anticipated threats, as well the creation of management and logistical organizations to make the application of state-of-the-art technology possible. Today, with no threat ranging over the horizon it would be difficult to excel at the art of net assessment. However, one can argue that the Marine Corps Warfighting Laboratory (MCWL), with its interaction with the Marine Corps Systems Command, is consistent with the management model Millett suggests is necessary. This model also indicates that technologies with dual use or strong commercial applications tend to advance much more rapidly. One can certainly see that today with the explosion of information processing, storage, and distribution systems and visual products.

Dr. Millett's conclusions also deal candidly with the perils of inter- and intra-Service strife. Calls for change can generate extraordinary resistance to tradition-bound bureaucracies. Conservative staffs and rivalries between or

inside the Services can either advance or retard innovation. The author notes that there are no examples of perfect innovation, but that the record does point to the importance of a commitment by an institution to critical wartime tasks. Moreover, the new functions or missions must have both staff representation and proponency as well as an operational expression (force structure) that can turn ideas into tests and exercises. As part of the experimentation, support from technologists and external civilian leaders must be brought to bear. His final point is that new ideas and visionaries need institutional support and protection, since "prophets by their nature tend to end up on the cross of professional prudence." Once again, the current Marine Corps design for the MCWL, with top-level sponsorship, appears consistent with these lessons.

In contrast, Dr. Murray focuses almost entirely on internal Service factors. He places the relative impact of new technology to innovation in its proper place.

> Innovation is more than incorporation of equipment and technical change into doctrine, practices, and tactics. . . . Innovation in tactics and operational concepts can prove as important on the battlefield as changes in equipment.

Leadership and education are fundamental elements of successful innovation according to Murray. Top-down leadership is essential, and it must be as well informed about technology as it is about the conceptual aspects of potential innovations. Rather than revolutionary developments, Professor Murray underscores the long and complex process of evolutionary change that is nurtured by strategic requirements, organizational cultures open to new ideas and the value of PME, and that contain the institutional capacity to learn realistic and honest lessons from past and current operational experience. The Germans excelled at this, but the British and French did not. Attempts to use experiments and wargaming as a means of justifying "revealed wisdom" instead of suggesting and illuminating potential choices proved fatal, while examples, such as Newport's famous wargaming series, are lauded for using such devices as a vehicle for asking the right questions and for promoting creativity. This has critical applicability for the Marine Corps, for it suggests that a climate of openness, one conducive to introspection and imagination, is indispensable. As the British examples show, military cultures that do not place a high value on intellectual activity, such as education, wargaming, and experimentation, are highly correlated with consistent failure. Institutional rigidity and the misuse of history and experiments to shut off alternatives, the author suggests, are the most common culprits when it comes to unsuccessful innovation.

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The author concludes with a series of recommendations on how to encourage and promote innovation. Each of these recommendations have direct analogues to how the Marine Corps is attempting to foster change. The need for a strategic framework is vital, as well as realistic scenarios for wargames where opponents can stress friendly capabilities and new designs rather than overly scripted demonstrations. (Hence, the emphasis placed in the Sea Dragon process to use a Red Team approach and to permit free play). A strong lessons learned process that is read and acted on is needed instead of "writing reports that no one reads." An increased investment in education and a strong relationship between military schools and the world of operations are also called for. Finally, Dr. Murray points to the need for new and clear measures of effectiveness (MOEs). One cannot accurately rethink new missions or new capabilities with outdated MOEs or outdated analytical tools for that matter. In this regard he argues for encouraging familiarity with nonlinear modes of analysis, something the Marine Corps Combat Development Command is actively pursuing with various projects under its New Sciences Program.

One can argue about the effectiveness of the various programs in place, but one cannot doubt the Corps' senior leadership commitment to institutionalizing a capacity to innovate.

**Summary**

All in all, *Military Innovation in the Interwar Period* is a major contribution to today's key institutional challenge. It highlights invaluable lessons about how the Marine Corps can adapt in a fluid age of murky threats and revolutionary technological change. Ultimately, the military's success in the 21st century is tied to the development of long-range visions and the sincere exploration into the nuances of new technologies that can actualize these visions. These visions should emanate from an analysis of future strategic requirements and be allowed to evolve and experiment over time. They cannot be pursued myopically as "revealed wisdom" from a narrow band of visionaries in a closed-loop process without exposure to the insights from the operating forces who will have to fight with the resulting concepts and systems. Future success is found in the nitty-gritty process of trying a lot of different things that offer promising solutions to tomorrow's problems and finding the gold at the bottom of the pan.

*Military Innovation in the Interwar Period* offers relevant advice on how to proceed with today's RMA and the call to embrace adaptation. It offers numerous lessons relevant to the senior leadership of the Corps, as well as clearly validating the overall design and intent of the Sea Dragon process and the MCWL. Its recent addition to the professional military education reading list is fully warranted, despite its hefty price. "War is a test of institutions" Liddell Hart once remarked, but periods of great change in interwar eras are no less trying. This book is a great place to start preparing for that test.

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*>LtCol Hoffman, recently recognized as a Distinguished* Marine Corps Gazette *author (*MCG, *Jul97, p. 78), reviewed* Strategic Assessment 1997 *by the Institute for National Strategic Studies, National Defense Universities in the June* Gazette.