

17.462

INNOVATION IN MILITARY ORGANIZATIONS

Mondays, 3-5pm  
Meeting in E51-063

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and  
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Fall 2005

Topic List

September 12	Introduction: Organization Theory
September 26	Military Innovation Theories
October 3	Strategic Airpower
October 17	Armored Warfare
October 24	Tactical Airpower
October 31	Submarine Warfare
November 7	Cruise and Ballistic Missiles
November 14	Failed Innovation: Counterinsurgency
November 21	Post-Vietnam Innovation: The “Transformation” of the U.S. Army
November 28	Transformation: The Revolution in Military Affairs and Beyond
December 5	Student Papers
December 12	Student Papers

## Overview/Requirements

### INNOVATION IN MILITARY ORGANIZATIONS 17.462

Professors Harvey Sapolsky and Barry Posen

Innovations have frequently determined the course of wars. This seminar has three purposes. One, it inquires into the causes of military innovation by examining a number of the most outstanding historical cases. Two, it views military innovations through the lens of organization theory to develop generalizations about the innovation process within militaries. Three, it uses the empirical study of military innovations as a way to examine the strength and credibility of hypotheses that organization theorists have generated about innovation in non-military organizations.

Both the theoretical literature on innovation and the case literature on military innovation are of an uneven quality. We have selected theoretical literature largely on the basis of its accessibility to the general reader and the clarity and explicitness of the arguments. This course is not a substitute for a survey course in organization theory although it can profitably be taken by people without such a background. We have taken a broad approach to the selection of cases. Some of the innovations we will study concern the development and adoption of particular technologies; others involve changes in doctrine, tactics, command and control, and force structure. Some of the innovations have occurred in peacetime; others have only been achieved after the outbreak of combat. Some innovations seem to conform to hypotheses in the organization theory literature; others are more mysterious. Security studies specialists will find the study of these innovations a useful way to improve their general understanding of modern warfare.

Students will be required to write one paper, and to present that paper to the seminar at the end of the semester. Depending on class size, auditors may be required to make presentations as well, though not to write papers. Students should meet with Professor Sapolsky or Professor Posen to develop suitable paper topics. Students should be encouraged by the fact that the literature on military innovation is underdeveloped. It tends to be discursive, atheoretical, and unsystematic. But, there is a wealth of case material available for exploitation in student essays and doctoral dissertations. For purposes of this seminar, single case studies or comparative case studies will likely prove the best format. We expect to see a substantial theoretical component in every paper.

### Possible Paper Topics:

The seminar syllabus is a good starting point for paper topics. Students should feel free to explore any of those topics in greater depth. A sample of other possible topics is offered below, but the list is only suggestive.

- The adoption of the helicopter and the development of airmobile tactics.
- The adoption of the helicopter to naval warfare.
- The creation and use of SOSUS
- The adoption of the Machine gun in later 19th and early 20th century armies.
- A comparative study of the development of the aircraft carrier in Britain, the US, and Japan in the interwar period.
- The development of air defense suppression tactics and capabilities during and after the Vietnam War.
- The development of "precision guided" air and ground conventional munitions.
- The evolution of mine warfare at sea (19th century) and on land (the 20th century.)
- The development of dissimilar air combat training in the US Navy and US Air Force.
- The development of US armor and anti-armor forces in the Second World War.
- The development of the National Training Center.
- The creation of light infantry divisions in U.S. Army.
- The development of the cruise missile.
- The creation of airborne forces in U.S. and other armies.
- The development of Marine Pre-positioning Ships or air refueling
- The military use of space.
- The likely role of unmanned aerial vehicles in military operations.

## Reading List

Please purchase the following books:

Wilson, James Q., Bureaucracy: What Government Agencies Do and Why They Do It, Basic Books, 1991.

Christensen, Clayton M., The Innovator's Dilemma, Boston: Harvard University Press, 1997.

Krepinevich, Andrew, The Army and Vietnam (Baltimore: Johns Hopkins, 1988)

### **Week 1, September 12      Introduction**

Wilson, James Q., Bureaucracy, chapters 1, 2, 6, 7, 9, and 12

Wilson, James Q. and Peter Clark, "Incentive Systems: A Theory of Organization" *Administrative Science Quarterly*, 1961, Vol 6 pp. 129-166

Guillen, Mauro F., "The Age of Eclecticism: Current Organizational Trends and the Evolution of Managerial Models," *Sloan Management Review* (Fall 1994) pp. 75-86.

### **Week 2, September 26      Military Innovation Theories**

Huntington, Samuel P., The Soldier and the State, Harvard University Press, 1967.  
Chapter 1: "Officership as a Profession," pp. 7-18  
Chapter 3: "The Military Mind: Conservative Realism of the Professional Military Ethic," pp. 59-79

Janowitz, Morris, The Professional Soldier Part II, New York: The Free Press, 1964  
Chapter 2: "Technology and Decision-Making," pp. 21-37  
Chapter 3: "Discipline and Combat Goals," pp. 38-53  
Chapter 4: "The Military Hierarchy," pp. 54-75

Moore, Lt. Gen. Harold, and Joseph L. Galloway, We Were Soldiers Once...and Young, New York: Random House, 1993  
Chapter 5: "Into the Valley," pp. 55-64  
Chapter 8: "The Storm of Battle," pp. 92-105

Wilson, James Q., "Innovation in Organization: Notes towards a Theory," in J. O. Thompson (ed) Approaches to Organizational Design, University of Pittsburgh Press, 1971, pp. 195-218

Posen, Barry R., The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars, Ithaca: Cornell University Press, 1984.  
Chapter 1: "The Importance of Military Doctrine," pp. 13-33  
Chapter 2: "Explaining Military Doctrine," pp. 34-80

Posen, Barry R. "Organizations and Innovation," draft, pp. 1-36.

Rosen, Stephen P., Winning the Next War, Ithaca, NY: Cornell University Press , 1991, Chapters 1 & 9, pp. 1-55, 251-262.

Christensen, Clayton M., The Innovator's Dilemma, pp. 1-96; 187-212.

Sapolsky, Harvey M., "On the Theory of Military Innovation", Breakthroughs, Vol. IX, No.1, Spring 2000, pp. 35-39.

### **Week 3, October 3 Strategic Airpower**

Frankland, Noble, "The Combined Bomber Offensive: Classical and Revolutionary, Combined and Divided, Planned and Fortuitous," in Command and Commanders in Modern Warfare: Proceedings of the Second Military History Symposium U.S. Air Force Academy, pp. 283-300

MacIsaac, David, "Voices from the Central Blue: The Air Power Theorists," in Makers of Modern Strategy: From Machiavelli to the Nuclear Age, Princeton University Press, 1986, pp. 624-647

Werrell, Kenneth P. "The Strategic Bombing of Germany in World War II: Costs and Accomplishments," Journal of American History (December, 1986), pp. 702-713

Quester, George H., "The Impact of Strategic Air Warfare," Armed Forces and Society (February, 1978) pp. 179-205

Cohen, Eliot A., "The Mystique of U.S. Air Power," *Foreign Affairs* (Jan/Feb 1994), pp. 109-124.

Meilinger, Phillip S., "Air Targeting Strategies: An Overview," In R. Hallion, ed., Air Power Confronts an Unstable World, (London: Brassey's, 1997) pp. 51-80.

Sapolsky, Harvey and Jeremy Shapiro, "Casualties, Technology and America's Future Wars," *Parameters*, (Summer, 1996)

Smith, Thomas, "The New Law of War: Legitimizing Hi-Tech and Infrastructural Violence," *International Studies Quarterly*, (2002) 46, 355-374.

Beier, J. Marshall , "Discriminating Tastes: 'Smart' Bombs, Non-Combatants, and Notions of Legitimacy in Warfare," *Security Dialogue*, Vol. 34 (4), pp. 411-425

### **Week 4, October 17 Armored Warfare**

House, Captain Jonathan M., Toward Combined Arms Warfare: A Survey of 20th-Century Tactics, Doctrine, and Organization

Chapter 3: "The Interwar Period," pp. 43-78

Bond, Brian, British Military Policy between the Two World Wars, Oxford: Clarendon Press, 1980.

Chapter 6: "Mechanization: the second phase, 1933-39" pp. 161-190

Larson, Robert H., The British Army and the Theory of Armored Warfare, 1918-1940, Newark: University of Delaware Press, 1984.

Chapter 5: "The Years of Experiment: 1927-34," pp. 132-170

Cooper, Mathew, The German Army: 1933-1945, New York: Stein and Day, 1984.

Part II: The Battle for Ideas," pp. 113-166

Johnson, David E., Fast Tanks and Heavy Bombers: Innovation in the U.S. Army 1917-1945, Cornell University Press, 1998. Chapter 10, "Alternatives for Armor," pp. 116-152.

Horowitz, Dan, "Flexible Responsiveness and Military Strategy: The Case of the Israeli Army," Policy Sciences 1 (1970) pp. 191-205

Griffith, Paddy, Battle Tactics of the Western Front, Yale University Press, 1994. Chapter 11: "Conclusion," pp. 192-200

### **Week 5, October 24 Tactical Airpower**

Boog, Horst, "Higher Command and Leadership in the German Luftwaffe, 1935-1945," in Air Power and Warfare: Proceedings of the Eighth Military History Symposium USAF Academy 1978 pp. 128-158

Hallion, Richard P., Strike from the Sky: The History of Battlefield Air Attack, 1911-1945, Washington DC: Smithsonian Institution Press, 1989.

Chapter 12: "The Genesis of Anglo-American Air Support: The British Experience in the Western Desert," pp 149-162

Chapter 13: "The Necessary Interlude: Doctrine and the American Experience in the Pacific, Tunisian, and Italian Campaigns," pp. 163-187

Muller, Richard, "Close Air Support: The German, British, and American Experiences," in Williamson Murray, et. al., Military Innovation in the Interwar Period," Cambridge University Press, 1996, pp. 144-190

U.S. Government, Commission on the Organization of the Government for the Conduct of Foreign Policy

Chapter 8: "Smart Bombs," pp. 191-198

Watts, Barry D., "Unreported History and Unit Effectiveness," The Journal of Strategic Studies, Vol 12, No. 1 (1989), pp. 88-98

### **Week 6, October 31 Submarine Warfare**

Burns, Richard D., "Regulating Submarine Warfare, 1921-41: A case Study in Arms Control and Limited War," *Military Affairs*, April 1971, pp. 56-63

Cohen, Eliot A. and John Gooch, Military Misfortunes: The Anatomy of Failure in War, (New York: Free Press, 1990) "Failure to Learn: American Antisubmarine Warfare in 1942" pp. 59-94.

Beesly, Patrick Very Special Intelligence  
Forward: pp. ix-xvii  
Chapter 2: "The First Twelve Months: A Lean Time", pp. 24-41  
Chapter 10: "Triton to the Rescue," pp. 154-171  
Chapter 11: "January-May 1942: Climax of the Battle of the Atlantic," pp. 173-185

Sapolsky, Harvey M., Science and the Navy (Princeton: Princeton University Press, 1990) chapter 2, pp. 9-36

Cote, Owen R., Jr., The Third Battle: Innovation in the US Navy's Silent Cold War Struggle with Soviet Submarines, (Newport: Naval War College Press) Newport Paper Number Sixteen, 2003

### **Week 7, November 7                      Cruise and Ballistic Missiles**

Sapolsky, Harvey M., The Polaris System Development: Bureaucratic and Programmatic Success in Government (Harvard University press, 1972) Chapters 1, 2, 4 and 8

Sapolsky, Harvey M., Eugene Gholz, and Allen Kaufman, "Security Lessons from the Cold War," *Foreign Affairs* (July/August 1999) pp. 77-89.

Liebowitz, S.J., and Stephen E. Margolis, "The Fable of the Keys," *Journal of Law and Economics* (April 1990), pp. 1-25.

Friedman, Norman. Seapower and Space: From the Dawn of the Missile Age to Net-Centric Warfare (Annapolis: Naval Institute Press, 2000), chapters 8 and 9, pp. 173-229.

Levine, Henry D., "Some Things to All Men: The Politics of Cruise Missile Development," *Public Policy*, Vol. 25, No. 1 (Winter 1977), pp. 117-168.

Robert J. Art and Stephen E. Ockden, "The Domestic Politics of Cruise Missile Development 1970-1980," in Richard Betts, ed., Cruise Missiles: Technology, Strategy and Politics (Washington, D.C.: Brookings Institute, 1981), pp. 359-413.

### **Week 8, November 14                      Failed Innovation: Counterinsurgency**

Shafer, D. Michael, "The Unlearned Lessons of Counterinsurgency," *Political Science Quarterly*, Vol. 103, No. 1 (Spring 1998) pp. 57-80.

Marquis, Jefferson P., "The Other Warriors: American Social Science and Nation Building in Vietnam," *Diplomatic History*, Vol. 24, No. 1 (Winter 2000), pp. 79-105.

Krepinevich, Andrew, The Army and Vietnam (Baltimore: Johns Hopkins, 1988)

Hashim, Ahmed S., "Iraq's Chaos, Why the Insurgency will not go away," Boston Review, (October/November 2004).

**Week 9, November 21            Post-Vietnam Innovation – The “transformation” of the U.S. Army**

Posen, Barry R., "Introduction," "Land Power in Modern Times," "The New Model Army" (90 pages, typescript)

**Week 10 November 28            Transformation: the RMA and Beyond**

Thirtle, Michael, Robert Johnson, and John Birkler, "The Historical Context for the Predator ACTD," The Predator ACTD (RAND, 1997), Chapter 2, pp. 5-17.

Anderegg, C.R., Sierra Hotel: Flying Air Force Fighters in the Decade After Vietnam, (Washington, D.C.: Air Force History and Museums Program, 2001), Chapter 12, "Mud Beaters," pp. 119-142.

Office of Technology Assessment, New Technology for NATO, Implementing Follow on Forces Attack (FOFA), 1987, Chapter 2, "Summary" pp. 15-46.

Cohen, Eliot, "Change and Transformation in Military Affairs," *Journal of Strategic Studies*, Vol. 27, No. 3, September 2004, pp. 395-407.

Krepinevich, Jr., Andrew F., "Competing for the Future: Searching for Major Ellis," *Marine Corps Gazette*, November 1996, pp. 28-37.

Shapiro, Jeremy, "Information and War: Is it a Revolution?" in Z. M. Khalizad and J. P. White, eds., The Changing Role of Information In Warfare (Santa Monica CA: RAND, 1999) pp. 113-154.

**Week 11, December 5**

Student Papers

**Week 12, December 12**

Student Papers