

NAVAL POSTGRADUATE SCHOOL
Department of National Security Affairs

NS3021
MILITARY TRANSFORMATION

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Course Description: This course examines Joint and Service innovative concepts and experimentation programs for transforming the military to meet the operational challenges of the future security environment. The course will analyze emerging operational concepts, organizational configurations, technological capabilities, and doctrinal and training adjustments for shifting the character and conduct of warfare from both an historical and desired future capabilities perspective. The course will introduce revolutionary methods to improve command and control, fires, maneuver and logistics through concept development, field experiments, technology demonstrations and wargames. The course will conclude with a glimpse of transformation related initiatives to improve multinational and interagency coordination in operational planning and execution.

Approach: This course consists of twenty sessions in a graduate seminar format. Instructor lectures will frame complex topics for examination based upon perspectives gained from the readings. The questions for consideration will guide class discussions. Guest lecturers will be invited to present the most current material available on military transformation.

Student Requirements: Class preparation and active participation are expected of everyone. Students will prepare two papers of 8 pages in length on a subject mutually agreed upon by the student and course director. Papers will be double-spaced, in 12-point fonts, with standard margins and numbered pages. Students will conduct a fifteen to twenty minute presentation on one paper topic. Course grading will adhere to the following criteria: the papers will account for 30% each, the aural presentation for 20% and active and informed class participation for the final 20%.

Schedule:

- 1. Organizational Meeting**
- 2. Future Security Environment and Required Capabilities**

Required Readings:

1. Central Intelligence Agency, "The United States and the Third World Century: How Much Will Demographics Stress Geopolitics?" February 2002, pp. 1-27.
2. Central Intelligence Agency, "Conflict After Next: Warfare in 2005-15," 24 August 2001, pp. 1-12.

3. U.S. Joint Forces Command J9, Predicting Intentions Seminar Final Report: Volume II Future Threats and Security Environment, 6-8 March 2001, pp. 1, 4, 21-40.

4. U.S. Joint Staff J7, Joint Expeditionary Warfare Philosophy, Briefing Extract, 29 Jan 02, pp. 1-10.

5. Hans Binnendijk and Richard L. Kugler, "Adapting Forces to a New Era: Ten Transforming Concepts," Defense Horizons, November 2001, pp. 1-8.

6. General (Ret) Jim McCarthy, Transformation Study Report: Transforming Military Operational Capabilities, Executive Summary, 27 April 2001, pp. 1-23.

Class Briefing:

1. Future Warfare (Part 1) - SIGS - May 02

Questions:

1. How will Demographics, Economics, Political Developments, Resources, Science and Technology affect the future Strategic Landscape? What resulting trends will exist in the future Strategic Environment?

2. What will be the nature of future military operations? What trends do we expect in future adversaries and what potential asymmetric approaches and capabilities will they employ?

3. Why is Transformation of the Military required? Is there a mismatch between Cold War forces/ capabilities and the range of military operations and threats expected in the twenty-first century?

4. What should be the prime focus of transformation, both in force structure and level of command? What type of generic concepts for future warfighting and combat capabilities are required to defeat future adversary asymmetric approaches?

5. What types of transformational capabilities are required to set the conditions, establish control and achieve mission accomplishment in a hostile, permissive or humanitarian environment?

3. Military Transformation Objectives

Required Readings:

1. Henry C. Bartlett, G. Paul Holman, Jr. and Timothy E. Somes, "Force Planners Confront the Military Revolution: The Tyranny of Technology", Naval War College, February 1996, pp. 1-13.

2. Richard O. Hundley. Chapter Two: "Characteristics of Revolutions in Military Affairs," Past Revolutions, Future Transformations. Santa Monica: Rand, 1999. pp. 7-20.

3. Williamson Murray, "May 1940: Contingency and fragility of the German RMA," The Dynamics of Military Revolution 1300-2050, (Cambridge: University Press 2001) pp 154-174.

4. Quadrennial Defense Review Report, 30 September 2001, Chapter I, II and V, pp. 1-16 and 29-48.

5. Secretary of Defense Donald Rumsfeld, "21st Century Transformation of the U.S. Armed Forces," Remarks delivered at National Defense University, 31 January 2002, pp. 1-9.

Class Briefing:

1. Future Warfare (Part 2) - SIGS - May 02

Questions:

1. Are historic examples of RMA exploitation any more than just technical innovation used in an evolutionary manner? How can historical RMA characteristics contribute to the pursuit of Military Transformation in the 21st Century?
2. What is the purpose of Transformation? How does Transformation differ from RMA? What Transformation objectives are required to achieve the QDR 2001 mandated six critical transformation operational goals?
3. Have the experiences of September 11th and the Afghanistan Campaign reinforced the importance of moving the U.S. defense posture in the direction of the six transformation goals?
4. How does the move away from the so-called threat-based strategy to a capability-based strategy support the need to obtain these goals? Will development of the capabilities implied in the goals dissuade adversaries from trying to compete militarily with the United States? Will the capabilities-based strategy produce a force structure that can adequately respond to Major Theater War scenarios?

4. Changing Characteristics and Conduct of Warfare

Required Readings:

1. Eliot A. Cohen. "A Revolution in Warfare," Foreign Affairs March/ April 1996). pp. 37-54.
2. Center for Strategic and Budgetary Assessments. "Historical Examples of RMAs" Washington, DC: CSBA, 16 February 2000
3. "Principles of War, Principles of MOOTW, and Fundamentals of Joint Warfare," Joint Publication 1, 14 November 2000, Chapter III, Appendices B and C, pp. 40-47 and 99-102.
4. Joint Staff J7, US Joint Warfare and Crisis Resolution in the 21st Century, 8 August 2002, pp. 1-55.

Class Briefings:

1. JW&CR Brief to JROC (Final and Backup) - JS J7 - 21 JUN 02

Questions:

1. How have historic examples in Revolution in Military Affairs rendered obsolete or subordinate previous characteristics and conduct of war?
2. How can identification of key elements and desired shifts in the characteristics and conduct of US joint warfare and crisis resolution, as well as the evolving joint fundamentals, drive achievement of the goals of military transformation?
3. Do the nature and purpose of war and of crisis resolution adequately define the range of military operations that face future US forces? Identify which proposed shifts in the characteristics and conduct provide significant and measurable transformational changes in DOTMLPF?
4. How have Attrition and Maneuver warfare taken on new meaning within the 21st Century Joint Force? Describe how features of the two styles of warfare could be blended into a single approach? How is the concept of controlling the tempo of operations key to achieving synergistic effects?
5. Validate how the new proposed "Evolving Fundamentals of Joint Warfare" (Objective, Initiative, Distribution of Combat Power, Tempo, etc.), derived from the existing Principles of War, Principles of Military Operations Other Than War (MOOTW), and Fundamentals of Joint

Warfare, illustrate and clarify how the characteristics and conduct of US joint military and interagency operations appear to be changing?

5. Joint Vision 2020

Required Readings:

1. Chairman, Joint Chiefs of Staff, Joint Vision 2020. pp. 1-36.
2. Chairman, Joint Chiefs of Staff, CJCSI 3010.02A, Joint Vision Implementation Plan (JIMP), 15 April 2001, pp. A-1-A-15.
3. Chairman, Joint Chiefs of Staff, "CJCS Strategic Plan," Briefing to DM C2 Workshop, 20 February 2002, pp. 1-20.
4. Deputy Secretary of Defense Paul Wolfowitz; Vice Chairman of the Joint Chiefs of Staff, General Peter Pace; Commander in Chief, U.S. Joint Forces Command, General William Kernan; and Director, Office of Force Transformation, Vice Admiral Arthur Cebrowski, USN Ret, Testimony delivered on "Military Transformation" before the Senate Armed Services Committee Hearing. Washington, D.C, 9 April 2002. pp. 1-37.

Class Briefings:

1. JV2020 - JS J7 - 29 APR 02
2. Joint Vision Revision - JS J7 - 15 AUG 02

Questions:

1. What is Full Spectrum Dominance and what does it imply? How does information superiority and innovation support transformation of the joint force to reach Full Spectrum Dominance?
2. What is Interoperability and across what domains does it span? What aspects of Interoperability are essential to achieving effective Multinational and Interagency operations.
3. How will the Joint Vision Implementation Process achieve capabilities essential for Full Spectrum Dominance? What is the difference between Near, Mid, and Far-Term Concept Development? What is the role of Joint Experimentation/Assessment and what venues exist? What is the role of JFCOM in Joint Concept Development and Joint Experimentation?
4. Are the Chairman's Priorities and Intent consistent with the JV2020 and the 2001 QDR? What is the CJCS definition of Transformation and relationship to RMA and Modernization? What does CJCS believe is key to setting the conditions for Transformation and why?

6. Joint Force Organization/Doctrine/Training

Required Readings:

1. Vice Chairman, Joint Chiefs of Staff, "Interim Range of Military Operations (ROMO)," Memorandum with Information Paper, 22 May 02, pp. 1-7.
2. Joint Staff, "Fundamentals of Joint Operations," Joint Publication 3-0, 10 September 2001, Chapter II, pp. II-1 to II-23.
3. Joint Staff, "Joint Task Force Organization and Staffing," Joint Publication 5-00.2, 13 January 1999, Chapter II, pp. II-1 to II-5.
4. U.S. Pacific Command, "Warfighting: The JTF's Planning and Fighting Philosophy," JTF HQ SOP, 1 October 2001, Foreword, pp. 1-24.
5. Joint Staff, "Service Capabilities and Organization," Joint Publication 3-33, 13 October 1999, Chapter II, pp. II-1 to II-15.
6. Douglas A. Macgregor, "Resurrecting Transformation for the Post-Industrial Era," Defense Horizons, September 2001, pp. 1-8.

Class Briefings:

1. ROMO - JS J7 - 6 JUN 02
2. CAP - USPACOM - 11 OCT 01
3. JTF JMETL - JWFC - Oct 01

Questions:

1. For what range of military operations would a Joint Task Force be constituted and what are considerations for designation? How is the JTF HQ activated and at what level of war does it operate? How is a JTF HQ staff organized and formed? What are the phases of Crisis Action Planning and the critical products? How does the JTF HQ execute the planning continuum in a Battle Rhythm?
2. What form of Command Authority does the JTF HQ exercise? What set of Command Relationships (Service or Functional) are required to adequate conduct C2 of the Joint Task Force?
3. What units typically comprise the service conventional ready forces? What type of training, readiness and deployment issues would exist if forces under service control were treated as a standing pool of capability packages and placed into a joint rotational readiness structure?
4. What is the difference between Mission Essential and Supporting Tasks? How can Conditions and Standards define performance expectations in both training and experimentation?

7. Technology Programs and Initiatives

Required Readings:

1. Michael O'Hanlon, "Toward a Verdict on the RMA Hypothesis," Technological Change and the Future of Warfare, (Washington, D.C.: Brookings Institution Press 2000), pp. 106-142.
2. Grant T. Hammond, "Globalization, Technology and the Transformation of the Security Environment: The Real Revolution in Military Affairs," Paper presented to American Political Science Association, San Francisco, August 2001, pp. 1-42.
3. Bill Owens, "The Technological Base," Lifting the Fog of War, (Baltimore: John Hopkins University Press 2001), pp. 97-118.
4. Admiral Dennis C. Blair, Commander in Chief, U.S. Pacific Command, "Force Transformation in the Pacific," Presentation at US Naval Institute/Armed Forces Communications and Electronics Association conference, San Diego CA, 15 January 2002, pp. 1-9.

Class Briefings:

1. JTF WARNET - PACOM - 26 Mar 02
2. DRS - BMAC ACTD - 20 Mar 02
3. JEMPRSNT - 2 AUG MC02
4. JFI_TST MCO2 Briefing v1 - 16 JUL 02
5. SYS - TAPS VSS(1) - 5 Dec 01

Questions:

1. What major problems will a high technology force endure in infantry and armored combat in 2020? Can a technologically superior airpower really defeat anything of consequence by 2025? What adversary technologies will prevent Naval approach toward enemy shores in the future?
2. Do future cumulative technology based changes in space, time, energy, matter and information, combined with their global diffusion,

make for a more complex, rapidly interactive and dangerous security environment? What are the potential impacts on the character of war?

3. How could different technological applications in "The System of Systems" improve commander's capabilities in the future security environment? How did advanced technology change the conduct of war in Operation Desert Storm compared to Operation Overlord?

4. What value exists in practicing acquisition by adaptation, raising forces joint and combined, and experimenting as we exercise and operate? Were lack of these concepts part of the reason not to deploy regular maneuver forces in Bosnia, Kosovo and Afghanistan?

8. Joint Force Challenges

Required Readings:

1. Barry R. McCaffrey, "Lessons of Desert Storm," Joint Forces Quarterly, Winter 2000-01, pp. 12-17.

2. Benjamin S. Lambeth, "Lessons from the War in Kosovo," Joint Forces Quarterly, Spring 2002, pp. 12-19.

3. Joint Staff J3, Phase I Final Report: Joint Task Force Command and Control Operational Concept Study, Washington, March 2002, pp. i-x, 11-28, 49-55, and 98-103.

4. Secretary of Defense, Annual Report to the President and the Congress, 2002, Chapter 6, pp. 67-82.

5. Commander in Chief, U.S. Pacific Command, Theater Plan for Transformation, 15 March 2002, pp. 1-12.

Class Briefings:

1. PACOM - Issue Rankings - 25 May 00

2. PACOM - JMF Game 3 Findings - 26 Feb 01

3. JS - IS JWCA - 1 April 02

Questions:

1. Are the battlefield lessons that contributed to the success of Desert Storm still relevant to Joint Force challenges today? What lessons can be applied today from the nature of Allied Force and how the operation was commenced and conducted?

2. Describe and rank the current top JTF C2 Challenges (JTF HQ Activation/Augmentation/SOPs, Deployable C2/COP/CTP/SA, complex issue training, IO/ROE, Logistics, Fires, Info Superiority, Joint/Coalition Interoperability) in terms of critical shortfalls in DOTMLPF?

3. Which of these shortfalls prevent achieving critical operational capabilities in the characteristics (preparation, shared awareness, integration, agility, etc.) of JTF C2 that are essential to succeeding in the conduct of future warfare?

4. Evaluate the impact of potential future operational environmental trends (decreased pre-existing arrangements, uncertain international support, vast data quantities, expanded geographic boundaries and others) on JTF C2?

5. What changes or developments are required in current JTF command or force structures, leader development, processes, information flows, system capabilities and technology to effectively achieve the QDR six transformation goals? What Transformation Goals and Objectives should be mapped to drive these improvements?

9. Combatant CINC Programs and Exercises

Required Readings:

1. Paul David Miller, "A New Mission for Atlantic Command," Joint Forces Quarterly, Summer 1993, pp. 80-87.
2. Williamson Murray and Thomas O'Leary, "Military Transformation and Legacy Forces," Joint Forces Quarterly, Spring 2002, pp. 20-27.
3. BGEN Huba Wass de Czege and MAJ Jacob D. Biever, "Future Battle Command: Where Information Technology, Doctrine and Organization Meet," Army Magazine, August 2001, pp. 1-4.
4. Commander in Chief, U.S. Pacific Command, Joint Mission Force and Transformation: White Paper Version 2.0, 1 May 2002, pp. 1-25.

Class Briefings:

1. JE - USPACOM - 5 APR 02
2. CG02 - USPACOM
3. USCINCPAC - JTF HQ SOP - 1 OCT 01
4. USCINCPAC - JMETL 4.0(2) - 18 Jan 02

Questions:

1. Do strategic conditions exist in the Pacific Theater that justify the creation of a Joint Mission Force capable of responding, by assembly, movement and action, in days not weeks to crises? Are the characteristics of speed of action, precision and mission effectiveness the best objectives to improve the Joint Task Force?
2. Do you agree that joint interoperability improvements come at the staff level and therefore alignment of Standing Joint Forces, at the Brigade or Wing level, is not required? Should force packages be adapted to meet specific theater requirements?
3. Explain and defend the PACOM logic concerning habitual relationships and manpower in not establishing a Standing JTF Headquarters? Would the tailored on-call augmentation for key billets provided by the DJTFAC, BSR and MPAT provide anyway the performance of a Standing JTF Headquarters?
4. Evaluate whether the PACOM JTF HQ SOP, WEB PAGE, JMETL and C2X program are the correct venues to achieve the Joint Mission Force Objectives? Do JMF initiatives suggest that innovative concepts and the theoretical and doctrinal underpinnings of military organizations are more important than new technology? Or is advanced information technology the key enabler for realizing the potential of future organizations?
5. How does the Joint Mission Force Concept contribute to Joint Forces Command objectives for MC02 and RDO?

10. Joint Staff JWCA Concepts

Required Readings:

1. Mark McNeilly, "Speed and Preparation," Sun Tzu and the Art of Modern Warfare, (Oxford: University Press 2001), pp. 96-124.
2. Autulio J. Echevarria II, "Interdependent Maneuver for the 21st Century," Joint Forces Quarterly, Autumn 2000, pp. 11-19.
3. Joint Staff J8, Dominant Maneuver Operational Concept, Prepared for the JROC, 19 July 2002, pp. 1-29.
4. Joint Staff J8, 2020 Precision Engagement Operational Concept, 13 February 2002, pp. 1-18.

Class Briefings:

1. DM - JS J8 - 8 AUG 02
2. PE STRAT TOPIC - JS J8 - SPRING 02

Questions:

1. Explain how speed can be a substitute for principles of resources, shock and surprise the enemy, exploit opportunities and build momentum in warfare? How can speed and tempo be achieved, both strategically and tactically, and friction reduced, through preparation, training, and wargaming?
2. Do definitional and historic tensions exist between Dominant Maneuver and Precision Engagement, or do they share common themes? Evaluate similar DM and PE characteristics of speed and tempo?
3. Do Dominant Maneuver and Precision Engagement concepts apply at the tactical, operational and/or strategic level? At what level and how can Integrated Maneuver and Fires produce synergistic effects? How are DM and PE concepts relevant across the range of military operations?
4. How can the DM and PE overarching operational concepts and architectures guide the requirements generation process? How do near term joint experimentation results change DM and PE paradigms for 2020? What revolutionary future capabilities are assumed or implied in the DM operational characteristics and the PE Joint Targeting Cycle?

11. Joint Forces Command Concepts

Required Readings:

1. U.S. Joint Forces Command. "Toward a Joint Warfighting Concept: Rapid Decisive Operations," RDO Whitepaper Version 2.0, 18 July 2002, pp. 1-22, A-1 to A-29.
2. Gen. Charles E. Wilhelm, USMC (Ret), "A Path Toward Transformation: Transformation, Joint Vision 2020, and the Development of RDO as a Strategic Concept," Interview at Center for Defense Information, 10 January 2002, pp. 1-5.
3. Antulio J. Echevarria II. Rapid Decisive Operations: An Assumptions-Based Critique. Strategic Studies Institute, US Army War College, November 2001, pp. 1-18.

Class Briefings:

1. RDO - JFCOM J9 - 12 AUG 02
2. ONA - JFCOM J9 - 12 AUG 02
3. EBO - JFCOM J9 - 22 JUL 02
4. J9 Concept Brief - JFC2 - 27 Aug 02

Questions:

1. Does Rapid Decisive Operations (RDO) portray an appropriate idealization of how we might fight in the future? How is the preparation and execution of RDO different from warfare today? Is RDO based on faulty assumptions?
2. Does Rapid Decisive Operations (RDO) apply across the range of military operations or only in high-end smaller-scale contingencies (SSC) that require swift intervention of military forces in combat operations? Does the future environment and potential adversaries portray a need for a concept like RDO?
3. How is Operational Net Assessment (ONA) different than

traditional Intelligence Preparation of the Battlefield? Can the ONA predict 2nd and 3rd order effects and change the campaign plan? Should the ONA be developed at the JTF, CINC or National level?

4. Does Effects Based Planning (EBP) provide a viable alternative to traditional attrition and maneuver warfare? What is the difference between Task-based and Effects-based operations? Are the non-military aspects of DIME in EBO above the JTF level?

5. Does the RDO concept (specifically ONA and EBO aspects) justify creating a Standing Joint Force Headquarters Element (SJFHQ E)? How does the SJFHQ design provide key advantages in increased C2 effectiveness over today's ad hoc defined JTF HQ? Do the employment options for the SJFHQ provide appropriate command relationships?

12. Joint Experiments

Required Readings:

1. Mark A. Johnstone, Stephen A. Ferrando, and Robert W. Critchlow, "Joint Experimentation: A Necessity for Future War," Joint Forces Quarterly, Autumn/Winter 1998-99, pp. 15-24.

2. Thomas M. Cooke, "Reassessing Joint Experimentation," Joint Forces Quarterly, Spring/Summer 2001, pp. 102-105.

3. J9 CPLAN 03 - to be released in OCT 02

4. United States General Accounting Office, Military Transformation: Actions Needed to Better Manage DOD's Joint Experimentation Program, August 2002, pp. 1-28.

5. Richard O. Hundley. Chapter Three: "The Breakthrough Process Leading to RMAs," Past Revolutions, Future Transformations. Santa Monica: Rand, 1999. pp. 21-34.

6. Linda D. Kozaryn, "Demystifying Transformation," American Forces Press Service, 14 August 2002, pp. 1-4.

CLASS Briefings:

1. MC02 - VIP

2. MC02 Brief (LL) - JFCOM - 27 Aug

3. CPLAN Overview - JFCOM J9 - 9 JUL 02

Questions:

1. Is JFCOM the right choice to be the Executive Agent for Joint Experimentation? Should JFCOM assume responsibility for all service interoperability testing, concept development and technology demonstrations?

2. Does the JFCOM program strike a balance between incremental/evolutional development of current service competencies and revolutionary change in future warfare? How can JFCOM hope to overcome Service bureaucracies and prerogatives that could be resistant to experimentation results, which might counter service traditions?

3. Does the JFCOM CPLAN 03 provide specific and clear goals, objectives, and an associated action plan with performance measures? Should JFCOM subsequently prepare a performance report? Does CPLAN 03 adequately address accomplishing the QDR six transformation goals?

4. Will the JFCOM program avoid historic RMA examples of failures caused by obstacles in the chain of new technology, devices, system concepts, doctrine, force structure and military reality?

13. Joint Staff Command and Control Concepts

Required Readings:

1. Carl Builder, Steven Bankes and Richard Nordin, "The Technician: Guderian's Breakthrough at Sedan," Command Concepts (Santa Monica: RAND 1999), pp. 43-54.
2. Department of Defense. "Executive Summary" from Network Centric Warfare. Report to Congress, September 2001, pp. I-viii, 1-10.
3. Office of the Secretary of Defense (OSD C4I), Draft Operational Requirements Document for the Deployable Joint Command and Control (DJC2), 3 May 2002, pp. 1-19.
4. Joint Staff J6, Joint Force Command and Control Operational Concept for 2005 & Beyond, Washington, 6 July 2002, pp. 1-38.

Class Briefings:

1. JF C2 Brf - JFCOM - 8-27
2. DJC2 - DASN - 14 AUG 02
2. JF C2 - PACOM visit - 10 JUL 02
3. C2 Interoperability Brief OIPT v2 - JS J6 - 7 AUG 02

Questions:

1. How did General Guderian conduct C2 during the XIX Panzer Corps breakthrough at Sedan? What role did war games and training play in understanding and employing the Blitzkrieg operational concept?
2. What are the tenets of Network Centric Warfare? How do Network Centric Warfare capabilities support the conduct of Dominant Maneuver and Precision Engagement?
3. Are the target DJC2 Core Capabilities appropriate and is standardization achievable at all levels of command? Are the DJC2 Operations and Support Concepts feasible for concurrent routine day-to-day operations, contingency operations and training exercises? Explain the utility of the DJC2 Blocking Strategy?
4. Is the new definition of top-level Joint C2 Activities (Lead the Force, Monitoring the Battlespace, Understanding the Battle Space, Battle Space Management) achievable in FY05?
5. What common characteristics/capabilities do the Regional Combatant Commands want in a SJFHQ? Did MC02 start to address JF C2 shortfalls?
6. How are the various JF C2 improvement programs (SJFHQ, COMMON JTF SOP, GCCS, DJC2, etc) related and coordinated towards an achievable end state? Is a National JF C2 training focus overlooked; should a Common Joint Mission Essential Task List be developed for the SJFHQ?

14. Air Force vision and programs

Required Readings:

1. Timothy Garden, "Air Power: Theory and Practice," An Introduction to Strategic Studies, (New York: Oxford University Press: 2002), pp. 137-156.
2. The Chief of Staff, United States Air Force, America's Air Force Vision 2020, pp. 1-8.
3. Maj Gen David A. Deptula, USAF, "Air Force Transformation," Aerospace Power Journal, Fall 2001, pp. 1-8.
4. Gen John P. Jumper, USAF, "Global Strike Task Force: A Transforming Concept, Forged by Experience." Aerospace Power Journal, Spring 2001, pp. 1-8.

5. Gen John P. Jumper, USAF and Secretary James G. Roche, The USAF Transformation Flight Plan FY03-07, pp. 1-44.

6. Charles L. Barry and Elihu Zimet, "UCAVs - Technological, Policy, and Operational Challenges," Defense Horizons, October 2001, pp. 1-8.

Class Briefings:

1. AFTFP - XPXT - 14 AUG 02

Questions:

1. Why could air power alone not provide a quick victory in the World Wars? Did the Air Force alone have a revolutionary impact on the conduct of the Gulf war?

2. Does Air Force Vision 2020 lay the foundation to dominate the aerospace domain? How does the Expeditionary Aerospace Force construct facilitate the effectiveness of the Joint Team?

3. What technologies is the Air Force pursuing to provide near-order-of-magnitude increases in offensive capability? What new ways of conducting military operations and transformational organizations are envisioned to capitalize on those innovative technologies? How can the Global Strike Force Concept overcome enemy attempts to deny access and other factors inherent in the changing nature of warfare depicted in conflicts over the past decade?

4. How do Air Force Transformational programs support the six core competencies identified in Air Force Vision 2020 and contribute to the "QDR Critical Operational Goals of Transformation?"

5. Identify what potential advantages that UCAVs could provide over manned aircraft and long range ballistic or cruise missiles? What technical issues, policy questions, and operational challenges must be resolved before the United States can achieve its goal of fielding UCAVs within a decade?

15. Navy and Marine Corps vision and programs

Required Readings:

1. Stephen Peter Rosen, "New Blood for the Submarine Force," Winning the Next War, (Ithaca and London: Cornell University Press 1991), pp. 130-147.

2. Ronald O'Rourke, "Naval Transformation: Background and Issues for Congress," CRS Report for Congress, Order Code RS20851, 23 May 2002, pp. 1-6.

3. ADM Vern Clark, Chief of Naval Operations, "SEA POWER 21: Operational Concepts for a New Era," Remarks for the Current Strategy Forum, Newport, R.I., 12 June 2002. pp. 1-8.

4. ADM Vern Clark, Chief of Naval Operations, "Power and Access...From the Sea," Naval Transformation Roadmap, pp. 1-45.

5. Commandant of the Marine Corps, Expeditionary Maneuver Warfare, 10 November 2001, pp. 1-11.

6. E.R. Bedford, "Nonlethal Capabilities: Realizing the Opportunities," Defense Horizons, March 2002, pp. 1-6.

Class Briefings:

1. FBE J - NWDC - AUG 02
2. Naval Transformation Roadmap - NRB - 23 AUG 02
3. HSV - MCWDC
4. NLW Transformation - 18 Mar 02

Questions:

1. How was the American Submarine Force in the Pacific transformed during the course of World War II? Examine how changes in Doctrine and Personnel produced strategic results without new Technological or Organizational innovations?
2. Are DoN transformation efforts sufficient in scope and urgency? Will U.S. Naval forces under current DoN plans be able to counter projected anti-access/area-denial threats over the next 10 or 25 years?
3. Does SEA POWER 21 provide a "clear, concise and powerful vision" to prepare for the wide array of threats in the 21st Century? Are the required capabilities of Sea Strike, Sea Shield and Sea Basing truly transformational or do they just justify key elements of already planned near-term Navy force structure? How will FORCEnet achieve next generation capabilities of Network Centric Warfare?
4. How does "Expeditionary Maneuver Warfare" focus Marine Corps warfighting concepts toward realizing the Marine Corps Strategy 21 vision of future Marine forces with enhanced expeditionary power projection capabilities? What unique Marine Corps contributions to future Joint and Multinational operations are described in the "Expeditionary Maneuver Warfare" Capstone Concept?
5. How do Non-Lethal weapons offer ground commanders a more graduated response and in what situations? What capability sets could apply in major theater war? How do you achieve customer confidence and public acceptance of Non-Lethal weapons?

16. Army vision and programs

Required Readings:

1. Stephen Biddle, "Land Warfare: Theory and Practice," An Introduction to Strategic Studies, (New York: Oxford University Press: 2002), pp. 91-110.
2. Huba Wass de Czege and Richard Hart Sinnreich, "Conceptual Foundations of a Transformed U.S. Army," No. 40, Land Warfare Paper, Institute of Land Warfare, March 2002, pp. 1-36.
3. General Eric K. Shinseki and Secretary Thomas E. White, The Army Transformation Roadmap, pp. 1-36.
4. The Chief of Staff, United States Army, Concepts for the Objective Force: United States Army White, pp. 1-21.
5. Joseph N. Mait and Jon G. Grossman, "Relevancy and Risk: The U.S. Army and Future Combat Systems," Defense Horizons, May 2002, pp. 1-8.
6. Bing West, "Rediscovering the Infantry in a Time of Transformation," Defense Horizons, March 2002, pp. 1-4.

Class Briefings:

1. ARMY TRANS - DAMO ZT - 14 AUG 02

Questions:

1. Did the tank revolutionize warfare in the World Wars? Was superior ground force technology the cause of Coalition's one-sided victory in the Gulf War? Has changing technology changed the importance of combined arms, cover and concealment, integration of maneuver and fires, and defensive depth with large reserves?
2. What is the suitability of today's Army to meet future adversary threats and strategies? What key design characteristics will

allow the Army is to contribute effectively to multidimensional operations at any point on the spectrum of conflict?

3. How will Objective Force capabilities enable DOD to achieve the six critical operational goals for transformation? How will the Objective Force be capable of mastering the transitions in warfare and therefore enable domination at every point on the spectrum of military operations?

4. What is the Future Combat System and what are the requirements to support the Objective Force? What limitations in key technologies could prohibit timely development of the FCS? How survivable is the Objective Force with FCS against a near-peer competitor force with heavy, armored weaponry?

5. Should Army resources be shifted from C3 niceties for high-level staffs to C3 net-centric equipment at the battalion to squad level? Should the Infantry develop and adopt its composition and doctrine for smaller units to fight in a war in which ground maneuver supports standoff firepower, rather than firepower supporting maneuver?

17. SOF Vision and programs

Required Readings

1. Charles J. Dunlap, Jr, "Special Operations Forces after Kosovo," Joint Forces Quarterly, Spring/Summer 2001, pp. 7-12.
2. Harold Kennedy. "Will Special Ops Success 'Change the Face of War?'" National Defense Magazine, February 2002, pp. 1-5.
3. Robert Andrews, PDASD for SOLIC, "Special Briefing on Special Operations Forces Capabilities," Defense Link, 12 December 2002, pp. 1-14.
4. Michael R Janay, SOLIC White Paper, June 2001, pp. 1-44.

Questions:

1. What Special Operations Forces (SOF) missions fit into the 21st Century security architecture? Should any SOF missions, especially MOOTW type, be considered for elimination?
2. What was the role of U.S. Special Operations Forces in Afghanistan and could that role reshape the way that the United States uses its armed services in future conflicts? What unique aspects of SOF organization, equipment and training contributed to combat success?

18. Multinational and Interagency Experimentation

Required Readings:

1. Francois L.J. Heisbourg, "Europe's Military Revolution," Joint Forces Quarterly, Spring 2002, pp. 28-32.
2. Jiyul Kim and Michael J. Finnegan, "The Republic of Korea Approaches the Future," Joint Forces Quarterly, Spring 2002, pp. 33-40.
3. Michael Evans, "Australia and the Quest for the Knowledge Edge," Joint Forces Quarterly, Spring 2002, pp. 41-51.
4. Major General Craig B. Whelden, "Hawaii's Homeland Security," Military Review, May-June 2002, pp. 1-8.

Class Briefings:

1. PACOM - MPAT - 8 Mar 02
2. PACOM - APAN CNI - 4 Mar 02
3. PACOM - COWAN Brief - 28 Feb 02
4. JRAC - HI - CD ROM

Questions:

1. What strategic and budgetary factors drive the focus of our multinational partners' RMA initiatives? What observations from recent predominately US-led conflicts have multinational partners applied to their RMA programs?

2. Where is the gap and shortfalls between multinational partner and US capabilities? What lessons can the US learn from multinational partner RMA-related initiatives?

3. What type of planning, coordination and asset or information sharing issues exist in the military working with multi-agencies? How have JRAC-HI innovations addressed or solved interoperability challenges with local and state civil organizations and federal agencies?

19/20. Student Presentations