

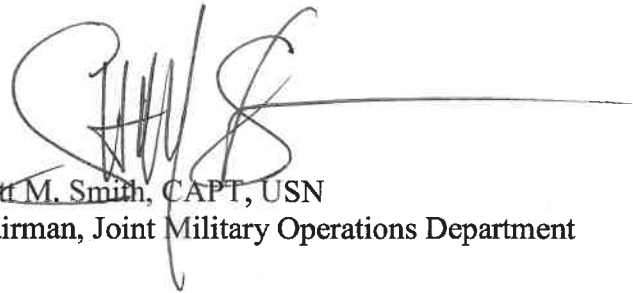
**UNITED STATES NAVAL WAR COLLEGE
COLLEGE OF NAVAL COMMAND AND STAFF
AND
NAVAL STAFF COLLEGE**

**THE JOINT MILITARY OPERATIONS DEPARTMENT
SYLLABUS AND STUDY GUIDE
FOR THE
JOINT MARITIME OPERATIONS
INTERMEDIATE LEVEL WARFIGHTER'S COURSE**

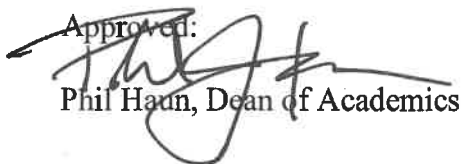
FEBRUARY 2020

FOREWORD:

This syllabus provides a comprehensive overview of the Naval War College Joint Military Operations Department course on Joint Maritime Operations. Prepared for the College of Naval Command and Staff and the Naval Staff College, this syllabus, along with the JMO Blackboard website and iPad, provides session-by-session material to assist the student in daily seminar preparation and development of a personal plan of study. Administrative information is also included.



Scott M. Smith, CAPT, USN
Chairman, Joint Military Operations Department

Approved:

Phil Haun, Dean of Academics

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COURSE STUDY GUIDES

INTRODUCTORY SESSIONS

- JMO-01 Chairman's Introductory Lecture (Lecture)
- JMO-02 The Navy Way of War (Lecture)
- JMO-03 Introductory Seminar (Seminar)
- JMO-04 The JMO Research Paper (Seminar)

NAVAL TACTICS

- JMO-05 The Maritime Domain (Seminar)
- JMO-06 Introduction to Naval Tactics (Seminar)
- JMO-07 Naval Capabilities: Platforms, Sensors, and Weapons (Seminar)
- JMO-08 Introduction to Naval Combined Arms
- JMO-09 Tabletop Exercise #1: Organizing Naval Forces in the Open Ocean (Seminar and Exercise)

- JMO-10 Problem Solving, Critical Thinking, and the Logic of the Commander's Estimate of the Situation (Seminar)

OPERATIONAL ART

- JMO-11 Introduction to Operational Art (Seminar)
- JMO-12 Military Objectives and the Levels of War (Seminar)
- JMO-13 Operational Factors (Seminar)
- JMO-14 Operational Functions (Seminar)
- JMO-15 The Theater: Its Structure and Geometry (Seminar)
- JMO-16 Major Operations/Campaigns and their Elements (Seminar)
- JMO-17 Enhanced Tabletop Exercise: Game Mechanics and Preparation (Seminar)
- JMO-18 The Commander's Estimate of the Situation and Operational Idea (Seminar)
- JMO-19 Tabletop Exercise #2: Operational Design (Exercise)
- JMO-20 Operational Leadership (Seminar)

OPERATIONAL WARFARE AT SEA

- JMO-21 The Objectives of Naval Warfare (Seminar)
- JMO-22 Obtaining and Maintaining Sea Control (Seminar)
- JMO-23 Disputing Sea Control (Seminar)
- JMO-24 Exercising Sea Control (Seminar)
- JMO-25 Tabletop Exercise #3: The Falklands/Malvinas Conflict of 1982 (Lecture and Practical Exercise)

- JMO-26 Examination #1 (Individual Effort)

JOINT WARFARE

- JMO-27 Joint Operations (Seminar)
- JMO-28 Introduction to Strategic Direction and Joint Planning (Seminar)
- JMO-29 The Joint Force: Service Capabilities (Seminar)
- JMO-30 Joint and Multi-national Command and Control (Seminar)
- JMO-31 The Joint Force Maritime Component Commander (Seminar)
- JMO-32 Joint Command and Control: Functional Component Commands (Seminar)
- JMO-33 Utilizing Joint Intelligence (Seminar)
- JMO-34 Operations in the Information Environment (Seminar)
- JMO-35 Operating in Cyberspace (Seminar)
- JMO-36 Sustaining the Force (Seminar)
- JMO-37 Deploying the Force (Seminar)
- JMO-38 Maritime Operational Law (Lecture)
- JMO-39 Maritime Operational Law — Naval Warfare (Seminar)
- JMO-40 Maritime Operational Law — Contemporary Application (Seminar)
- JMO-41 Peer Review (Seminar)
- JMO-42 Tabletop Exercise #4: Operational Design – Major Naval Operation (Exercise)

OPERATIONAL DECISION MAKING AND PLANNING

- JMO-43 Tabletop Exercise #5: An Analysis of a Naval Operations Order (Operation DETACHMENT) (Exercise)
- JMO-44 The Navy Planning Process: The Struggle for Sea Control (Exercise)
- JMO-45 Tabletop Exercise #6: Critiquing the Operations Order (Planning Exercise)

MARITIME OPERATIONS IN THE COMPETITION CONTINUUM

- JMO-46 Naval Operations in the Competition Continuum (Lecture)
- JMO-47 Irregular Warfare and Maritime Forces (Seminar)
- JMO-48 Sea Control in a Contested Environment (Lecture)
- JMO-49 Future Naval Warfare (Seminar)
- JMO-50 Maritime Trade Warfare (Seminar)
- JMO-51 Unconventional Statecraft (Seminar)

- JMO-52 Examination #2 (Individual Effort)

JOINT PLANNING: EXPLOITING CONTROL OF THE SEA

- JMO-53 The War at Sea (Planning Game)

THE JOINT MARITIME OPERATIONS COURSE

It cannot be too often repeated that in modern war, especially in modern naval war, the chief factor in achieving triumph is what has been done in way of thorough preparation and training before the beginning of war.

—President Theodore Roosevelt,
U.S. Naval Academy Address, 1902

1. Mission:

Officer Professional Military Education Policy (OPMEP) Mission

The Intermediate Level College Joint Professional Military Education (JPME-I) mission is to expand student understanding of Joint Matters from a Service component perspective at the operational and tactical levels of war.

Joint Maritime Operations Course Mission

During the Joint Maritime Operations course of the College of Naval Command and Staff/Naval Staff College (CNC&S/NSC), students will enrich their ability to think operationally, and develop skills for employing maritime power across the range of military operations in order to achieve tactical and operational objectives in support of a joint force.

2. Course Objectives

The objectives below are derived from the CJCS' and CNO's guidance, and from the Naval War College mission, functions and tasks. These objectives detail the expectations and learning outcomes for those who successfully complete the Joint Maritime Operations course. Each seminar or lecture has tailored objectives that support these course objectives:

- Expand critical and creative thinking, and refine problem-solving skills to support sound decision making in joint operations.
- Develop students grounded in Operational Art and Naval Warfare Theory and practice.
- Apply the Joint/Navy Planning Process to complex problems in an operating environment characterized by uncertainty, ambiguity, and rapid change. As an output of planning, assist in translating Commander's decisions into operational directives.
- Understand how to employ maritime power as part of a joint effort to achieve military objectives.

3. Course Overview

The Joint Maritime Operations course presented by the Joint Military Operations Department is an in-depth study of the tactical and operational levels of war throughout the full spectrum of military operations with an emphasis on mid to high-intensity combat at sea.

The Joint Maritime Operations course in the College of Naval Command and Staff/ Naval Staff College is first and foremost a warfighter's course that recognizes the inherent difficulties associated with planning and executing major combat operations at sea.

The emphasis in this course is on expanding students' warfighting, command, and staff skills through the lens of operational art and the theory of naval warfare to develop creative solutions to ill-structured problems prevalent in today's global environment. An underlying theme is on refining students' analytical skills and enhancing critical and creative thinking abilities essential to the profession of arms. Exercises emphasize decision making amidst uncertainty using naval capabilities as part of joint operations.

The trimester will flow from tactical fundamental concepts to joint operational warfare, culminating in a final planning exercise, *The War at Sea*, intended to allow students to apply their comprehension of the employment of joint power and to demonstrate critical and creative thinking skills. There are course themes that underlie the course design and objectives, which include critical thinking, operational art, naval warfighting, operational leadership, and joint operation decision making and planning. Through extensive study of multiple historical case studies, the JMO student is challenged with enduring questions from the perspective of maritime and Joint Force Commanders (JFC) and their staff planners:

- What are the current conditions of the operational environment?
- What are the military objectives that must be achieved, how are they related to the strategic objectives, and what objectives must be achieved to enable that strategic/national objective? (Ends)
- What sequence of military actions is most likely to achieve those objectives and attain the end state? How will I measure achievement of those objectives? (Ways)
- What military resources are required to accomplish that sequence of actions within given or requested resources? (Means)
- What is the chance of failure or unacceptable consequences in performing that sequence of military actions? How will I identify if one or more of them occur? What is an acceptable level of "failure?" (Risk)

The JMO course is designed to help students think operationally, and ultimately to be able to frame options that provide military responses to these questions.

4. CJCS Officer Professional Military Education Policy

Title 10 of U.S. Code, §668 identifies joint matters as "relating to the development or achievement of strategic objectives through the synchronization, coordination, and organization of integrated forces in operations conducted across domains, such as land, sea, or air, in space, or in the information environment, including matters related to national military strategy, strategic planning and contingency planning, command and control, intelligence, fires, movement and maneuver, protection or sustainment of operations under unified command, national security planning with other departments and agencies of the United States, and may include combined operations with military forces of allied nations."

The Chairman of the Joint Chiefs of Staff (CJCS) Instruction CJCSI 1800.01E sets the policies, procedures, objectives, and responsibilities for both officer Professional Military Education (PME) and Joint Professional Military Education (JPME). It directs the services and service colleges to comply with the Officer Professional Military Education Policy (OPMEP) by meeting Joint Learning Area objectives defined in the OPMEP. The Course Study Guides list the CNC&S and NSC objectives to be addressed in each session, and are designed to fulfill or partially fulfill JPME-I OPMEP requirements.

The Intermediate-Level College (ILC) Joint Learning Area objectives below are presented to highlight the linkage between the syllabus and joint learning areas prescribed by the CJCS. The Professional Military Education (PME) outcomes for the College of Naval Command and Staff and the Naval Staff College are designed to produce officers fully capable of serving as leaders or staff officers at the upper tactical and operational level of war. The following Intermediate-Level College (ILC) Joint Learning Area (JLA) objectives are presented to highlight the linkage between the syllabus and the Joint Learning Areas prescribed by the CJCS.

Learning Area 1 - National Military Capabilities Strategy

- a. Comprehend the capabilities and limitations of U.S. military forces to conduct the full range of military operations in pursuit of national interests.
- b. Comprehend the purpose, roles, functions, and relationships of the President and the Secretary of Defense, National Security Council, Homeland Security Council, Chairman of the Joint Chiefs of Staff, Joint Chiefs of Staff, combatant commanders, Joint Force Commanders (JFCs), Service component commanders, and combat support organizations or agencies.
- c. Comprehend how the U.S. military is organized to plan, execute, sustain, and train for joint, interagency, intergovernmental, and multinational operations.
- d. Comprehend strategic guidance contained in documents such as the National Security Strategy, the Quadrennial Defense Review, National Military Strategy, Global Force Management Implementation Guidance (GFMIG), and the Guidance for the Employment of the Force (GEF).

Learning Area 2 - Joint Doctrine and Concepts

- a. Comprehend current joint doctrine.
- b. Comprehend the interrelationship between Service doctrine and joint doctrine.
- c. Apply solutions to operational problems in a volatile, uncertain, complex, or ambiguous environment using critical thinking, operational art, and joint doctrine.

Learning Area 3 - Joint and Multinational Forces at the Operational Level of War

- a. Comprehend the security environment within which Joint Forces are created, employed, and sustained in support of JFCs and component commanders.
- b. Comprehend joint force command relationships.

- c. Comprehend the interrelationships among the strategic, operational, and tactical levels of war.
- d. Comprehend how theory and principles of joint operations pertain to the operational level of war across the range of military operations to include traditional and irregular warfare that impact the strategic environment.
- e. Comprehend the relationships between all elements of national power and the importance of comprehensive approaches, the whole of government response, multinational cooperation, and building partnership capacity in support of security interests.
- f. Analyze a plan critically for employment of joint and multinational forces at the operational level of war
- g. Comprehend the relationship between national security objectives, military objectives, conflict termination, and post conflict transition to enabling civil authorities.

Learning Area 4 - Joint Planning and Execution Processes

- a. Comprehend the relationship among national objectives and means available through the framework provided by the national level systems.
- b. Comprehend the fundamentals of joint operation planning across all phases of a joint operation.
- c. Comprehend the integration of joint functions (command and control, intelligence, fires, movement and maneuver, protection, and sustainment) to operational planning problems across the range of military operations.
- d. Comprehend how planning for OCS (Operational Contracting Support) across the joint functions supports managing the effects contracting and contracted support have on the operational environment.
- e. Comprehend the integration of IO and cyberspace operations with other lines of operation at the operational level.
- f. Comprehend the roles that factors such as geopolitics, geo-strategy, society, region, culture / diversity, and religion play in shaping planning and execution of joint force operations across the range of military operations, to include traditional and irregular warfare.
- g. Comprehend the role and perspective of the combatant commander and staff in developing various theater policies, strategies, and plans.
- h. Comprehend the requirements across the joint force, Services, inter-organizational partners and the host nation in planning and execution of joint operations across the range of military operations.

Learning Area 5 Joint Command and Control

- a. Comprehend the organizational options, structures and requirements available to joint force commanders.

- b. Comprehend the factors of intent through trust, empowerment, and understanding (Mission Command), mission objectives, forces, and capabilities that support the selection of a specific C2 option.
- c. Comprehend the effects of networks and cyberspace on the ability to conduct Joint Operational Command and Control.

Learning Area 6 Joint Operational Leadership and the Profession of Arms

- a. Comprehend the role of the profession of arms in the contemporary environment.
- b. Comprehend critical thinking and decision-making skills needed to anticipate and recognize change, lead transitions, and anticipate/adapt to surprise and uncertainty.
- c. Comprehend the ethical dimension of operational leadership and the challenges that it may present when considering the Profession of Arms.
- d. Analyze the application of mission command (intent through trust, empowerment, and understanding) in a Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment.
- e. Communicate with clarity and precision.
- f. Analyze the importance of adaptation and innovation on military planning and operations.

Additional Qualification Designation (AQD) Code Qualification. The United States Navy awards Additional Qualification Designation (AQD) codes of JPN (Joint Operational Planner), and JPME Phase 1 (JS7) for U.S. Navy students who complete JMO and graduate from the resident College of Naval Command and Staff course.

5. Course Organization. In JMO, our educational approach emphasizes the seminar method and active learning. Each academic block involves assigned readings, case studies, practical exercises, and tabletop exercises to reinforce the theory and practice of joint maritime operations. The concepts, theory, and doctrinal material presented in the course provides fundamental knowledge and skills expected of future commanders, and for officers serving on high-level staffs who support senior leader decision-making. It is about understanding the nature of problems, developing options, making decisions, and then executing military operations in support of operational or campaign objectives. Discussion within the JMO seminar is intended to create an environment where students stretch their intellectual muscles and expand their warfighting acumen through a rigorous program of study, practical exercise, and reflection.

Introductory Sessions. The introductory sessions focus on the opportunities and challenges ahead and introduce students to the themes, outcomes, and general requirements of the JMO trimester. After the introductory lecture and seminar discussion, the syllabus begins building the intellectual foundation necessary for success at the upper tactical and the operational level of war.

Block I: Naval Tactics. Following the introductory sessions, the course begins with the *means*, the basic building blocks of sea power; surface, subsurface, and naval aviation in the *Introduction to Naval Tactics*. We will broadly investigate the capabilities and limitations of the primary naval arms and their employment as a combined arms team towards achieving tactical objectives. These sessions are intended to help create a common basis for appreciating the differences in war at sea from land warfare.

Block II: Operational Art, and Block III: Operational Warfare at Sea. The next academic blocks are *Operational Art*, and *Operational Warfare at Sea*. These sessions provide a theoretical background for understanding the nuances of applying organized force in the attainment of strategic and operational objectives. We will frame our approach through understanding the situation, asking questions that help us understand the military ends, then estimate the ways, means, and risk to achieve the ends, or operational objectives. We will discover that operational art and naval warfare theory have far broader utility than the simple organization of military force in a coherent fashion. The theory provides the intellectual foundation of doctrine, allowing consumers of doctrine to evolve from basic users to professionals who understand and can logically critique the theoretical footing of the doctrine they read. Although these sessions contain a foundation in warfare theory, the goal of the Joint Maritime Operations Course create a cadre of mid-grade professionals who can *apply* theory in different situations across a broad spectrum of warfare, prepared for operational level leadership challenges, and who can effectively plan for, and achieve objectives across the range of military operations.

Both the *Operational Art* and *Operational Warfare at Sea* academic blocks include a tabletop exercise and a two-sided decision game, in which students will analyze the employment of naval combined arms in historical case studies. *Operational Art* includes Tabletop Exercise Two, involving the naval operation to seize Leyte Gulf at the beginning of the Philippines Campaign. The second tabletop exercise should help students deconstruct and critique the elements of a major maritime operation, and analyze the outcomes against each sides' objectives. The second part of the exercise involves the students gaming potential alternative outcomes, testing their own ability to conduct a commander's estimate of the situation and develop their own operational ideas for achieving military objectives.

Exam #1. The first exam follows the block on *Operational Warfare at Sea*, where students demonstrate comprehension of concepts and theories through analysis of an historic case study.

Block IV: Joint Warfare. In the *Joint Warfare* sessions, we will examine how U.S. forces organize for joint operational warfare. We will leverage the backgrounds and experience of students from each service, including the U.S. Coast Guard and Special Operations forces' knowledge of their service capabilities, and focus our study on how joint task forces and joint functional components can organize to accomplish military missions. The second half of these sessions will delve into a practical examination of the operational functions (what some services call warfighting functions) that we studied from a theoretical perspective in the *Operational Art* seminars. In this block, we move from theory to practical

application recognizing that as future operational commanders, students will spend a great deal of time protecting friendly functions and degrading the enemy's functions. Another unique opportunity presented to students in the Joint Military Operations Department is a brief, yet a fairly in-depth study of *Maritime Operational Law*. Again, the point is not to educate a student body of lawyers but rather to expose future commanders and principal staff members of the role and impact of international law on the planning and execution of modern combat operations.

The *Joint Warfare* block culminates with Tabletop Exercise number Four. This final session is a two-day open-ended tabletop exercise involving a fictional clash between the United States and an East Asian near-peer competitor through the lens of the Joint Force Maritime Component Commander. The exercise is an opportunity for students to demonstrate an understanding of course material so far, by developing a creative solution to crisis-action involving a near-peer competitor. This exercise involves practice in operational design, developing a conceptual approach to a complex problem. It serves as a vehicle to reinforce our understanding of theory and its application in the practical world.

Block V: Operational Decision Making and Planning. Next, we move into the creative portion of the Joint Maritime Operations Course, *Operational Decision Making and Planning*. Students will become familiar with the Navy Planning Process (NPP) and the history of naval planning embodied in the Commanders Estimate of the Situation. We will introduce the formal language of problem-solving in a joint doctrinal context. We will provide the students' education on directives, namely, the Operations Order; its format, techniques for drafting it, and the role of the Planning Team in the planning process. Students will discover how we, as a military, convert the critical and creative thinking of a planning group into tangible products for others to execute. Our final session in the planning block is a major exercise whose objective is to plan and direct forces to achieve sea control in order to advance and employ the joint force. As we have come to recognize, without sea control we can neither project substantial power nor sustain forces ashore. We use a fictional scenario, set several years into the future to evaluate course concepts to date. This exercise pits the United States Navy against a modern, sophisticated, yet fictional foe. The final product of our planning efforts is a JFMCC Operations Order intended to set the conditions for establishing local sea control in order to permit our joint force to arrive. In this exercise, we will combine with a sister seminar to act as a JFMCC battle staff. During the final day of our planning exercise, we will cross-walk, reconcile, and "issue" an order that we will execute in the final war at sea exercise.

Block VI: Maritime Operations in the Competition Continuum. Following our work in operational decision making and planning, we discuss topics in the contemporary environment, with an eye to the character of future conflict. *Maritime Operations in the Competition Continuum* present students with things the Navy does when it is not engaged in mid-to high-intensity combat operations, and examine the role of naval forces in irregular warfare. These discussions build from the future warfare sessions held at the beginning of the

academic year and help carry our thinking beyond graduation.

Exam #2. The second exam follows *Maritime Operations in the Competition Continuum*, and like the first exam, allows students to apply critical thinking and demonstrate comprehension of course themes and objectives to date. The second exam is normally focused on questions pertaining to the character of war in the contemporary or future environments.

Block VII: The War at Sea Exercise. Following the second exam, we enter the final planning exercise; the fight for control of a portion of the sea. The final portion of the Joint Maritime Operations Course, *The War at Sea Exercise*, will pit us against a thinking enemy. The two seminars will again combine again as a JFMCC Battle Staff, we move to the War Gaming Department facilities. The operations order that we developed as a group will have been exported to the U.S. Naval War College War Gaming Department for analysis and adjudication. We will have the collective opportunity to visualize the results of the students' plan, in losses to the adversary's forces as well as in losses to friendly platforms and people. Here is the opportunity for future Fleet, MEF, Corps, and Air Force Commanders to make critical decisions under time constraints. In this regard, the U.S. Naval War College is a laboratory, and military professionals owe it to themselves to take every advantage and to use it in pursuit of excellence in the profession of arms.

6. Syllabus Organization

The syllabus establishes the basis for required course work and serves as an intellectual roadmap for the trimester. In each session, the *Focus* specifies the general context of the topic. Next, the *Objectives* section cites the specific session goals and provides an intellectual line of departure for the readings. The *Background* section provides assistance in framing the individual session and how it fits into the course flow. The *Questions* section is designed to generate critical thinking and is the foundation for seminar discussion. The questions serve to focus the student as he or she engages with assigned readings. The *Focus*, *Objectives*, *Background*, and *Discussion Topics* also serve as a review at the completion of the reading to ensure the student comprehends the essence of the session. Prior understanding of the questions is critical for effective reading. The *Products* section identifies those items that may be produced in fulfillment of the session objectives. The assigned *Reading* section provides a foundation for student preparation and enhances understanding of the topic.

7. Methods of Instruction

The Socratic Method. The seminar is the fundamental learning forum for this course with student expertise being a significant part of the learning process. For a seminar to succeed there must be open and candid sharing of ideas and experiences, tempered with necessary military decorum. Students will find that even the most unconventional idea may have some merit. Successful seminars—that is, seminars whose members leave with the greatest knowledge and personal satisfaction—are those made up of students who come to each session equipped with questions based on thorough preparation. These questions build upon

the assigned questions and are generated through a combination of reading, experience, and thinking through the material. Most students leave the seminar with new insights or even more thought-provoking questions. Student preparation, free and open discussion, and the open-minded consideration of other students' ideas, all contribute to a valuable seminar experience. The "one-third" rule is the keystone of the seminar approach. The first third is a well-constructed, relevant curriculum. The second third is a quality JMO faculty to present the material and guide the discussion; and the most important third is the participation of the individual students. At the College of Naval Command and Staff and Naval Staff College, successful students take the initiative in their own education. Only by thoroughly preparing for seminar sessions can students become active catalysts who generate positive and proactive seminar interaction and refine critical and creative thinking skills.

The Case Study Method. This method of instruction is used to provide intellectual stimulation for students and is designed to develop student abilities to analyze and solve problems using the knowledge, concepts, and skills honed during the trimester. A concomitant benefit of the case study is to deepen the experiential pool in students through analysis of past great captains of war or to expand the knowledge of a specific geographic area. Some of the cases and problems stress individual effort and planning, while others require a team or staff approach. Cases may consist of historical events, analyzed for high tactical or operational purposes, or fictional crisis situations that demonstrate the application of concepts such as presence, deterrence, international law, rules of engagement, and self-defense. Case studies sometimes will be narrowly focused to illustrate a specific point and potential force capabilities and limitations or to highlight explicit concepts involving an aspect of tactical or operational warfare. Seminars are often split into smaller groups or teams to prepare solutions and responses. The Case study method is active learning, meaning that it allows students to achieve a higher level of learning while providing students with many more data points relevant to problem solving in the volatile, uncertain, complex, and ambiguous environment in which they will operate. Students are tasked with analyzing the case study material, synthesizing information, and evaluating recommended courses of action that they create.

The Lecture-Seminar Method. To share equally the vast experience of some of our faculty members and guest speakers, lectures are often followed by seminar discussion. Students are encouraged to analyze critically the information presented by speakers and engage actively in post-speaker seminar discussions. JMO lectures are intended to generate questions that the students may discuss in seminar and are not intended as merely the transmission of knowledge.

The Practical Exercise Method. The opportunity for students to apply information presented in the various sessions is important. Practical exercises allow students time to analyze information critically in order to develop viable solutions to ill-structured problems. Students may be assigned to practical exercise as individuals, small groups, seminar, or even multiple seminars. Within the course, we will also employ two-sided educational games to enhance active learning, to apply the theoretical concepts, and provide students with

experience in operational decision-making. This active learning method reinforces multiple concepts and should be fully embraced.

8. Readings

All JMO course sessions are supported by various readings. The purpose of these readings is to assist in understanding the many aspects of the topics being presented, and often to provide divergent points of view on the same topic. For the most part, the readings are intended to convey to the student basic information, the mastery of which will facilitate in-class discussions. Many of the readings provide point-counterpoint and are intended to foster critical thinking. The readings serve as a line of departure for seminar discussion and are not intended solely as drivers of discussion. They are the raw material from which we will build our understanding of various topics. Students are reminded, however, that as critical thinkers, all readings should be questioned concerning their relationship to the topic, to other readings, and to the personal experience of the student. While the vast majority of assigned readings have been digitally linked to the session study guides, some readings, due to their value as reference material, are issued. A thorough understanding of the following information will significantly assist the student in using the course readings to best advantage:

(a) Categories of Reading. Each syllabus session lists categories of reading assignments.

(1) *Required readings* are those that must be read prior to the session. Readings in this syllabus are listed in the sequence recommended by the faculty lead for each session. Often seminar moderators will offer additional guidance on the priority of the readings, based on the special needs of the individual seminar or recommend scanning a particular reading for broad content or as a refresher. The required readings sometimes include some video/media presentations of selected lectures that students are expected to critically consume and come prepared to discuss in the following day's seminar.

Required readings are provided electronically or annotated as (*Issued*). Issued means that the readings may be found in the JMO reading material issued in hard copy

(2) *Supplemental readings* are those relevant to a session topic that may be useful to a student seeking more information in order to gain insight beyond that provided by the required reading; this includes additional background material on case studies and exercises. Supplementary Readings also provide additional sources for student research in support of the JMO Research paper requirement.

Supplementary readings and Library Reserve readings, are not issued. These readings are frequently available in the Henry E. Eccles Library and may assist students in further research on a topic that interests them and often forms an embryonic bibliography of the research paper.

(3) *References*. Some study guide sessions may have policy, procedural, or doctrinal references associated with them, intended to provide additional information, particularly in sessions more focused on practice rather than theory. These are not required readings, but

identify key sources of current DoD or other service guidance related to the session material, and may inform command or staff-action outside of the academic environment. Some sessions may have both references and supplemental readings.

(b) Reading Identifiers. Each reading that is not a complete book or publication is identified through a four-digit reading identifier (e.g., **NWC 1002**). This number is often used instead of the title, but in either event, the readings are located on the JMO Blackboard website under the specific course session.

IMPORTANT NOTE: Students are cautioned that classified readings and documents must be read on the premises of the Naval War College. Ensure such materials are properly safeguarded at all times. Do not leave the materials unattended. Students are not provided with classified material storage containers (safes); it is therefore necessary to check out and return classified material on a daily basis. Faculty moderators will provide additional information as required during the JMO trimester. Ensure that for any classified sessions or lectures you do not bring your iPads, cell phones, or other wireless devices to class.

(c) Management of Reading Load. The amount of preparatory reading required for each session depends on a variety of factors, including topic complexity, session objectives, and the course schedule. The typical weekly reading requirements are on the order of 200 to 250 pages. This syllabus is a powerful tool in that it allows students to develop a personal plan of study that leads to better time management and a deeper understanding of the syllabus material.

Students should review session reading requirements at least a week ahead of time in order to regressively plan preparation time and accurately and ensure that all necessary readings are on hand.

9. JMO Research Paper

The JMO Research Paper presents the opportunity to examine a problem relevant to joint/maritime operational warfare, and to demonstrate critical thinking and writing skills essential for leaders and staff officers in the profession of arms. Amplifying information and guidance will be discussed in an introductory seminar session, *The JMO Research Paper* (JMO-04), with details and guidance provided in **NWC 2063A**.

This assignment requires independent thought and graduate-level writing; the final product is a 3,000 – 3,500 word paper suitable for publication in a professional journal. Students select their topic, focused at the upper tactical, operational, or in some cases, a theater-strategic level issue, conduct research and analysis, and prepare a paper that advances the literature and expands the body of knowledge. The paper also serves as practice in providing clear and concisely written recommendations about employing military force.

All final papers will be submitted via Blackboard, to a dropbox established for each seminar. Some moderators may also request that paper copies be submitted in addition to the

submission in Blackboard. Students should take advantage of Turnitin, a software tool made available to check written documents for appropriate citation before final submission.

10. Plagiarism, Misrepresentation, and Cheating

Student attention is directed to the *Naval War College 2019 Faculty Handbook* which discusses the academic honor code and specifically prohibits plagiarism, cheating, and misrepresentation. The Naval War College diligently enforces a strict academic code requiring authors to credit properly the source of materials directly cited to any written work submitted in fulfillment of diploma/degree requirements. Simply put: plagiarism is prohibited. Likewise, this academic code prohibits cheating, and the misrepresentation of a paper as an author's original thought. Plagiarism, cheating, and misrepresentation are inconsistent with the professional standards required of all military personnel and government employees. Furthermore, in the case of U.S. military officers, such conduct clearly violates the "Exemplary Conduct Standards" delineated in Title 10, U.S. Code, Sections 3583 (U.S. Army), 5947 (U.S. Naval Service), and 8583 (U.S. Air Force).

(a) *Plagiarism* is the use of someone else's work without giving proper credit to the author or creator of the work. It is passing off as one's own another's words, ideas, analysis, or other products. Whether intentional or unintentional, plagiarism is a serious violation of academic integrity and will be treated as such by the command. Plagiarism includes but is not limited to the following actions.

- (1) The verbatim use of others' words without both quotation marks (and block quotation) and citation.
- (2) The paraphrasing of others' words or ideas without citation.
- (3) Any use of others' work (other than facts that are widely accepted as common knowledge) found in books, journals, newspapers, websites, interviews, government documents, course materials, lecture notes, films, and so forth without giving credit.

Authors are expected to give full credit in their written submissions when using another's words or ideas. Such use, with proper attribution, is not prohibited by this code. However, a substantially borrowed but attributed paper may lack the originality expected of graduate-level work; submission of such a paper may merit a low or failing grade, but is not plagiarism.

(b) *Cheating* is defined as the giving, receiving, or using of unauthorized aid in support of one's own efforts, or the efforts of another student. (Note: NWC Reference Librarians are an authorized source of aid in the preparation of class assignments but not on exams). Cheating includes the following:

- (1) Gaining unauthorized access to exams.
- (2) Assisting or receiving assistance from other students or other individuals in the preparation of written assignments or during tests (unless specifically permitted).

(3) Using unauthorized materials (notes, texts, crib sheets, and the like, in paper or electronic form) during tests.

(c) *Misrepresentation* is defined as reusing a single paper for more than one purpose without permission or acknowledgement. Misrepresentation includes the following:

(1) Submitting a single paper or substantially the same paper for more than one course at the NWC without permission of the instructors.

(2) Submitting a paper or substantially the same paper previously prepared for some other purpose outside the NWC without acknowledging that it is an earlier work.

11. Requirements

Students are expected to prepare fully for each seminar and to participate in classroom discussions and exercises.

Your principal duty during this academic year is to read, to study, to reflect, and to sharpen your critical and creative thinking skills.

A tough-minded, questioning attitude and a willingness to enter into rigorous but disciplined discourse are central to the success of the course. An officer's ability to engage positively and productively in deliberations and formulate advice is integral to sound operational decision making. Moderators evaluate seminar contributions with regard to one's skills in persuading peers and seniors because persuasive leadership is critical to an officer's continued success. Moderators evaluate written products because they represent one's ability to synthesize and organize information in a coherent manner, applying analytical frameworks and critical thinking. Seminar work and written products are also used to demonstrate the level of subject mastery achieved by individual students and indirectly the effectiveness of the faculty and course material. Students are expected to improve both their written and verbal skills throughout their NWC experience.

(a) Workload. Some peaks in the workload will occur. Advance planning and careful allocation of time will help mitigate these peaks. This is particularly true of the JMO Research Paper. Time management is a critical aspect of a student's success in mastering the multiple requirements of the Joint Maritime Operations course. This syllabus is a powerful tool in that it allows students to develop a personal plan of study that leads to better time management and a deeper understanding of the course material.

This is a Master's Degree awarding course of study that confers that degree after ten months of exceptionally rigorous study. Expect, therefore, to commit significant time to reading and as importantly, to reflection. Student experience indicates that the total course requirements will involve a weekly average workload of about 12-18 hours of in-class and 24-36 hours of out-of-class work. Additionally, students should expect to dedicate 80-100 hours in researching, drafting, and producing an acceptable graduate level research paper.

(b) Oral and Written Requirements. The JMO Department has small group presentations, practical exercises, and written requirements that provide the opportunity for the student to demonstrate synthesis and progress. In addition, these requirements serve as a means for feedback and interaction between the faculty and members of the seminar. Not all requirements are graded, but each provides the student with some measure of how the student is doing at that point in the course. To accomplish the JMO curriculum successfully, students must complete the below requirements. The following is a composite listing of these course requirements, type of activity, relative weights, and the key dates of graded events:

Requirement	Type Effort	Weight	Date
Examination #1	Written/Individual	15%	8 - 10 Apr
JMO Research Paper	Written/Individual	35%	11 May
Examination #2	Written/Individual	15%	1 – 2 June
Seminar Contribution	Daily Assessment	35%	2 Mar – 12 June

12. JMO Department Grading Criteria

A course average grade of B- or higher is required for successful completion of Master's degree requirements. A minimum grade of C- is required for successful completion of the JMO course and JPME Phase I requirements. Any assigned grade may be appealed in writing within seven calendar days after receiving the grade. Grades will be appealed first to the student's seminar senior moderator and then to the Department Chairman. If deemed necessary, the Chairman may assign an additional grader who will review the assignment and provide an independent grade. Grade appeals may ultimately be taken to the Dean of Academics, whose decision will be final. Note that the review may sustain, lower, or raise the grade. The Academic Coordinator (Room C-417) can assist in preparing an appeal.

Late or Incomplete Work. Per the *Naval War College 2019 Faculty Handbook*, student work that is not completed will receive a numeric grade of zero (0). Unexcused tardy student work, that is work turned in past the deadline without previous permission by the moderator, will receive a grade not greater than C+ (78).

Student work determined to be in violation of the honor code will receive a grade of F. The College's Academic Integrity Review Committee will assign an accompanying numeric grade to the F of between 0 and 59. Three sets of general grading criteria help in the determination of the grades that will be assigned during the JMO trimester. The criteria below offer the student the standards and requirements by which faculty assess performance. Using current Naval War College guidance, the procedures below amplify the criteria as established within the Joint Military Operations Department.

(a) Grading criteria for the JMO Research Paper:

The JMO Research Paper must have a valid thesis, provide sufficient background research to analyze the thesis, present a strong evidence to support the thesis, reflect consideration of conflicting points of view which present logical conclusions drawn from the material presented, and provide recommendations or lessons learned based on the conclusions. Certain research papers, because of the nature of the assigned research question, may follow a slightly different flow. In JMO, your faculty moderators serve as the research paper advisors and different methodologies will be approved by the moderator team. In addition to the examples of substantive criteria specified below, the paper must be mechanically correct (spelling, punctuation, grammar, syntax, format, and so forth). The content in the research paper represents the physical manifestation of your thinking. As such, all research papers are evaluated on how well the student presents his or her ideas.

A+ (97-100): Offers a genuinely new understanding of the subject. Especially deserving of distribution to appropriate authorities and submission for prize competition. Thesis is definitive, research is extensive, subject is treated completely, and the conclusions and recommendations are logical and justified.

A (94-<97): Work of superior quality that demonstrates a high degree of original thought. Suitable for distribution and submission for prize competition. Should be retained in the Defense Technical Information Center (DTIC). Thesis is clearly articulated and focused, research is significant and arguments are comprehensive, and conclusions and recommendations are supported.

A- (90-<94): Above the average expected of graduate work. Contains original thought. Thesis is clearly defined, research is purposeful, arguments are presented, conclusions and recommendations are valid.

B+ (87-<90): A solid paper. Above the average of graduate work. Thesis is articulated, research has strong points, subject is well-presented and constructed, and conclusions and recommendations are substantiated by the material.

B (84-<87): Average graduate-level performance. Thesis is presented, research is appropriate for the majority of the subject, analysis of the subject is valid with minor omissions and conclusions and recommendations are presented with few inconsistencies.

B- (80-<84): Below the average graduate-level performance. Thesis is presented, but the research does not fully support it; the analysis, conclusions, and recommendations are not fully developed. The paper may not be balanced and the logic may be flawed.

C+ (77-<80): Below the standards required of graduate work. Portions of the criteria are lacking or missing, the thesis may be unclear, research may be inadequate, analysis may be incomplete, and the conclusions and recommendations may be lacking or not supported by the material.

C (74-<77): Fails to meet the standards of graduate work. Thesis is present, but support, analysis, conclusions, and recommendations are either missing or illogically presented. Paper has significant flaws in construction and development.

C- (70-<74): Well below standards. Thesis poorly stated with minimal evidence of research and/or several missing requirements. Subject is presented in an incoherent manner that does not warrant serious consideration.

D (60-<70): Considerably below graduate-level performance and lacking in any evidence of effort or understanding of the subject matter. In some measures, fails to address the thesis, research question, present valid arguments, address alternatives to the thesis claim, or draw logical conclusions.

F (0-<60): Fails to meet graduate-level standards. Unsatisfactory work. Paper has no thesis. Paper has significant flaws in respect to structure, grammar, and logic. Paper displays an apparent lack of effort to achieve the course requirements. Gross errors in construction and development detract from readability of the paper. Paper displays evidence of plagiarism or misrepresentation.

(b) Grading criteria for the Written Examinations:

Joint Maritime Operations course examinations generally focus on an historic case study(ies) in the first exam, and a contemporary concept in the second exam. Moderators will provide read ahead material in advance of the exam date. Expect the examination questions to be sourced from *any* of the course material presented to date in seminar. Response to the examination will be in essay format. Grading will be assessed using the following criteria:

A+ (97-100): Organized, coherent and well-written response. Completely addresses the question. Covers all applicable major and key minor points. Demonstrates total grasp and comprehension of the topic.

A (94-<97): Demonstrates an excellent grasp of the topic, addressing all major issues and key minor points. Organized, coherent, and well-written.

A- (90-<94): Above the average expected of graduate work. Demonstrates a very good grasp of the topic. Addresses all major and at least some minor points in a clear, coherent manner.

B+ (87-<90): Well-crafted answer that discusses all relevant important concepts with supporting rationale for analysis.

B (84-<87): Average graduate performance. A successful consideration of the topic overall, but either lacking depth or containing statements for which the supporting rationale is not sufficiently argued.

B- (80-<84): Addresses the question and demonstrates a fair understanding of the topic, but does not address all key concepts and is weak in rationale and clarity.

C+ (77-<80): Demonstrates some grasp of topic, but provides insufficient rationale for response and misses major elements or concepts. Does not merit graduate credit.

C (74-<77): Demonstrates poor understanding of the topic. Provides marginal support for response. Misses major elements or concepts.

C- (70-<72): Addresses the question, but does not provide sufficient discussion to demonstrate adequate understanding of the topic.

D (60-<70): Considerably below graduate-level performance and lacking in any evidence of effort or understanding of the subject matter. In some measures, fails to address the entire question.

F (0-<60): Unsatisfactory work. Fails to address the questions or paper displays evidence of plagiarism or misrepresentation.

(c) Grading Criteria for Seminar Contribution:

The seminar contribution grade is determined by the moderators' evaluation of the quality of a student's contributions to seminar discussions, projects, and exercises and the demonstration of critical and creative thought. Throughout the course many students will participate in areas for which they have no prior expertise. Additionally, some positions may have greater visibility. Consequently, each student will be evaluated on preparation and contribution in each given role. All students are expected to contribute to each seminar session and to listen and respond respectfully when seminar-mates or moderators offer their ideas. This overall expectation underlies all criteria described in this section. While rare, interruptive, discourteous, disrespectful, or unprofessional conduct or attitude detracts from the overall learning experience and will negatively affect the contribution grade.

A (90-100) Level Contribution

A-level contribution demonstrates real achievement by a student in grasping what critical thinking is, along with the clear development of a range of specific critical thinking skills or abilities. The contributions during the course were, on the whole, clear, precise, and well-reasoned. Critical thinking terms and distinctions are used effectively. The work demonstrates a mind in charge of its own ideas, assumptions, biases, inferences, and intellectual processes. Often analyzed issues clearly and precisely, often formulated information clearly, usually distinguished the relevant from the irrelevant, often recognized key questionable assumptions, usually clarified key concepts effectively, typically used language in keeping with educated usage, frequently identified relevant competing points of view, and shows a general tendency to reason carefully from clearly stated premises, as well

as noticeable sensitivity to important implications and consequences. Generally displayed excellent reasoning and problem-solving skills. The A student's work is consistently at a high level of intellectual excellence.

A+ (97-100): Peerless demonstration of wholly thorough preparation for individual seminar sessions. Consistently contributes original and highly insightful thought. Exceptional team player and leader.

A (94-<97): Superior demonstration of complete preparation for individual sessions. Frequently offers original and well thought-out insights. Routinely takes the lead to accomplish team projects.

A- (90-<94): Excellent demonstration of preparation for individual sessions. Contributes original, well-developed insights in the majority of seminar sessions. Often takes the lead to accomplish team projects.

B (80-89) Level Contribution

B-level work represents demonstrable achievement in grasping what critical thinking is, along with the clear demonstration of a range of specific critical thinking skills or abilities. Demonstrates, on the whole, clear, precise, and well-reasoned thought. Critical thinking terms and distinctions are used frequently. The contributions demonstrate a mind beginning to take charge of its own ideas, assumptions, inferences, biases, and intellectual processes. Generally, analyzed issues clearly and precisely, often formulated information clearly, usually distinguished the relevant from the irrelevant, often recognized key questionable assumptions, usually clarified key concepts effectively, typically used language in keeping with educated usage, frequently identified relevant competing points of view, and showed a general tendency to reason carefully from clearly stated premises, as well as noticeable sensitivity to important implications and consequences. B-level work displays good reasoning and problem-solving skills.

B+ (87-<90): Above-average graduate level preparation for seminar sessions. Occasionally contributes original and well-developed insights. Obvious team player who sometimes takes the lead for team projects.

B (84-<87): Average graduate level preparation for individual sessions. Occasionally contributes original and insightful thought. Acceptable team player; takes effective lead on team projects when assigned.

B- (80-<84): Minimally acceptable graduate level preparation for individual sessions. Infrequently contributes well-developed insights; may sometimes speak out without having thought through an issue. Requires prodding to take lead on team projects.

C (70-79) Level Contribution

C-level work illustrates some but inconsistent achievement in grasping what critical thinking is, along with the development of modest critical thinking skills or abilities. C-level contributions show some emerging critical thinking skills, but also pronounced weaknesses as well. Though some contributions are reasonably well considered, others are poorly done, or at best are mediocre. There are more than occasional lapses in reasoning. Though critical thinking terms and distinctions are sometimes used effectively, sometimes they are used quite ineffectively. Only on occasion does C-level work display a mind taking charge of its own ideas, assumptions, inferences, and intellectual processes. Only occasionally does C-level work display intellectual discipline and clarity. The C-level student only occasionally analyzes issues clearly and precisely, formulates information clearly, distinguishes the relevant from the irrelevant, recognizes key questionable assumptions, clarifies key concepts effectively, uses language in keeping with educated usage, identifies relevant competing points of view, and reasons carefully from clearly stated premises, or recognizes important implications and consequences. Sometimes the C-level student seems to be simply going through the motions of the assignment, carrying out the form without getting into the spirit of it. On the whole, C-level work shows only modest and inconsistent reasoning and problem-solving skills and sometimes displays weak reasoning and problem-solving skills.

C+ (77-<80): Generally prepared, but not to minimum acceptable graduate level. Requires encouragement to contribute to discussions; contributions do not include original thinking or insights. Routinely allows others to take the lead in team projects.

C (74-<77): Preparation for individual sessions is only displayed when student is called upon to contribute. Elicited contributions reflect at best a basic understanding of session material. Consistently requires encouragement or prodding to take on fair share of team project workload. Only occasionally engages in seminar dialogue with peers and moderators.

C- (70-<74): Barely acceptable preparation. Contributions are extremely limited, rarely voluntary, and reflect minimal grasp of session material. Displays little interest in contributing to team projects.

D (60-69) Level Contribution

D-level work shows only a minimal level of understanding of what critical thinking is, along with the development of some, but very little, critical thinking skills or abilities. D level contribution at the end of the trimester, on the whole, shows only occasional critical thinking skills, but frequent uncritical thinking. Most contributions are poorly presented and not supported logically. There is little evidence that the student is "reasoning" through the discussion. Often the student seems to be merely going through the motions of the assignment, carrying out the form without getting into the spirit of it. D-level work rarely shows any effort to take charge of ideas, assumptions, inferences, and intellectual processes. In D-level work, the student rarely analyzes issues clearly and precisely, almost never

formulates information clearly, rarely distinguishes the relevant from the irrelevant, rarely recognizes key questionable assumptions, almost never clarifies key concepts effectively, frequently fails to use language in keeping with educated usage, only rarely identifies relevant competing points of view, and almost never reasons carefully from clearly stated premises, or recognizes important implications and consequences. D-level work does not show good reasoning and problem-solving skills and frequently displays poor reasoning and problem-solving skills. In general, D-level thinking lacks discipline and clarity.

D (60-<70): Rarely prepared or engaged. Contributions are uncommon and reflect below-minimum acceptable understanding of lesson material. Engages in frequent fact-free conversation. (Uses unsubstantiated claims and fallacious reasoning).

F (Below 59) Level Contribution

While exceptionally rare at the College of Naval Command and Staff, for that student who receives an F, the student does not understand the basic nature of critical thinking, and in any case does not display the critical thinking skills and abilities which are at the heart of this course. The contributions made during the course are vague, imprecise, and unreasoned. There is little evidence that the student is genuinely engaged in the task of taking charge of his or her thinking. Many contributions appear to have been done pro forma, with the student simply going through the motions without really putting any significant effort into thinking his or her way through them. Consequently, the student is not analyzing issues clearly, not formulating information clearly, not accurately distinguishing the relevant from the irrelevant, not identifying key questionable assumptions, not clarifying key concepts, not identifying relevant competing points of view, not reasoning carefully from clearly stated premises, or tracing implications and consequences. The student's work does not display discernable reasoning and problem-solving skills and did not take corrective actions as recommended by his or her moderator.

F (0–60): Unacceptable preparation. Displays no interest in contributing to team projects; cannot be relied on to accomplish assigned project work. At times may be seen by peers as disruptive.

13. Key Personnel

If you require additional information on the course, or if problems develop that cannot be resolved with your moderators, you may contact the Departmental Chairman via his executive assistant. The key departmental personnel are:

Chairman.....	CAPT Scott Smith, USN
.....	Room C-421, 841-3556
Executive Assistant.....	PROF F. B. Horne, (USN (Ret))
.....	Room C-420A, 841-6458
Academic Coordinator.....	Ms. Susan Soderlund
.....	Room C-417, 841-4120
Joint Maritime Operations Course Coordinator.....	PROF Jamie Gannon, (USMC
.....	(Ret)) Room C-424, 841-6480
Naval Tactics	PROF Fred Turner, (USN (Ret))
.....	Room C-430, 841-6466
Operational Art.....	PROF Doug Hime, (USAF (Ret))
.....	Room C-423, 841-6463
Naval Warfare Theory.....	PROF Erik Wright, (USN (Ret))
.....	Room C-424, 841-4644
Joint Warfare	PROF Chris Kidd, (USA (Ret))
.....	Room C-405, 841-6457
Maritime Operational Law	CDR Melissa Harvison, (USN)
.....	Room C-406, 841-1385
Operational Decision Making and Planning	CDR Tom Pham, (USN)
.....	Room C-426, 841-3209
Maritime Operations in the Competition Continuum.....	PROF Joseph McGraw, (USA,
.....	(Ret)) Room C-431, 841-6462
War at Sea - Final Exercise.....	PROF Joseph McGraw, (USA,
.....	(Ret)) Room, C-431, 841-6462

14. Seminar Assignments

The principal criteria for assigning students to a seminar is a balanced distribution among services and agencies, as well as student and moderator specialties and operational expertise. Typically, two faculty members are assigned to each seminar. Student seminar, classroom, and faculty assignments are published separately.

15. Schedule

Seminars usually meet in the morning; there are, however, several afternoon seminars scheduled. Depending on the work assigned, you may meet for scheduled periods in seminar as a group, in smaller teams depending on tasking, or individually to conduct study and research. Please pay close attention to the start times for each event since they vary throughout the trimester. Classes normally are scheduled for 0830–1145. If class is scheduled in the afternoon, the normal timeframe is 1330–1645. Moderators may adjust these times to facilitate the learning objectives for each segment of instruction calendar containing meeting dates and times is provided on the JMO Blackboard Website and at the end of this syllabus. Changes from this schedule will be captured in the USNWC Outlook Office calendar published electronically.

16. Faculty Assistance

Faculty members are your mentors and are available to assist students with course material, to review a student's progress, and to provide counseling as required. Accordingly, students are expected to utilize this resource to the maximum extent that moderators can support. Students with individual concerns are encouraged to discuss them as early as possible so that moderators can render assistance in a timely manner. Students are strongly urged to make use of this non-classroom time with the faculty. During tutorials, scheduled in conjunction with JMO Research Paper proposal review, moderators may take the opportunity to discuss student progress as well as to solicit student input on the course to date. The bulk of the JMO faculty is located on the fourth deck of Conolly Hall and are available to assist as needed.

17. Student Critiques

The Joint Military Operations Department strives continually to improve this course. To assist in this goal, students are required to complete a confidential end-of-course questionnaire submitted electronically. Students are strongly encouraged to suggest improvements as the course occurs and not wait until the end-of-course questionnaire. The course questionnaire is designed to allow students to comment constructively on the course content, pacing, reading load, objectives. It seeks student input to improve the course for the following year's students. As such, students are strongly encouraged to maintain this questionnaire as if it were a diary. It is much easier capturing your thoughts when fresh rather than trying to recreate them at the end of the trimester. Your constructive comments will help

ensure that the course remains relevant and vital in the years to come. The release of student grades is contingent on completion of the critique.

18. Lectures by Senior Military Leaders

Enrichment lectures by senior military leaders occur periodically during the course. Most of these presentations feature the Service Chiefs or Combatant Commanders. These speakers are invited to discuss views and ideas from their perspective as operational commanders, service chiefs, or as senior staff officers. The weekly academic schedule (CNC&S or NSC, as applicable) will specify the final date and time of each enrichment lecture. Last minute changes will be disseminated by the Dean of Students and/or seminar moderators. In order to gain the most benefit from these sessions, it is critical that students be prepared to ask penetrating questions of the guest lecturer. They expect questions and your education is enhanced by their responses.

19. Non-attribution policy

The College's educational mission requires a climate conducive to the free and open exchange of ideas and opinions by students, faculty, and guest speakers. To this end and unless otherwise announced by the College or someone with authority to speak for the College, all lectures, seminars and similar academic or policy discussions (to include conferences, workshops, roundtables, and so forth) at the College are subject to the Chatham House Rule (CHR). The CHR states: "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed."

To support this policy, no student, faculty, staff member, or guest of the College may, without express permission of the College, use any electronic device or other method to record any lecture, seminar or similar event at the College, whether live, streamed, stored on any NWC network or any removable storage device, or in any other manner. The effect of the CHR is to separate statements from their source. Similarly, statements made by faculty or students in a seminar cannot be reported and attributed outside of the seminar. Specific quotations are also to be avoided if they are likely to be traceable to specific individuals.

The CHR is relaxed in settings such as classroom discussions that are themselves subject to the Rule. Also, the use of quotations in academic papers, professional articles or other works is allowed when the author has secured the explicit permission of the source individual. These policies apply to all students, faculty, staff and visitors. They apply not only to events on the grounds of the College but also to the College of Distance Education, remote classrooms, seminar off-sites, and other meetings run by the College. The policies are designed to support the free exchange of ideas and opinion without fear of retaliation and to encourage visiting dignitaries to speak freely. They should encourage the discussion in both formal and informal settings of ideas and concepts central to an education in JPME at the Master's Degree level.

20. Faculty Biographies

Faculty Biographies are available on the course Blackboard link and on the U.S. Naval War College homepage.

Course Calendar

A course calendar provided in this syllabus reflects the planned academic schedule. This calendar is subject to change at the prerogative of the PNWC. Changes will be announced by the Dean of Students and your moderators. The most up-to-date calendar events are posted to the USNWC Outlook Office calendars online.

MARCH

MONDAY 2	TUESDAY 3	WEDNESDAY 4	THURSDAY 5	FRIDAY 6
0830-1145 JMO-01 Chairman's Introductory Lecture (Spruance Lecture)	0830-1145 JMO-04 The JMO Research Paper (Seminar)	0830-1145 JMO-06 Introduction to Naval Tactics (Seminar)	0830-1145 JMO-07 Naval Capabilities: Platforms, Sensors, and Weapons (Seminar)	STUDENT RESEARCH AND REFLECTION DAY
JMO-02 The Naval Way of War (L)	JMO-05 The Maritime Domain (Seminar)			
JMO-03 Introductory Seminar (Sem)				
MONDAY 9	TUESDAY 10	WEDNESDAY 11	THURSDAY 12	FRIDAY 13
0830-1145 JMO-08 Introduction to Naval Combined Arms (Seminar)	0830-1145 JMO-09 Tabletop Exercise #1: Organizing Naval Forces in the Open Ocean (Seminar and Exercise)	0830-1145 JMO-10 Problem Solving, Critical Thinking, and The Commander's Estimate of the Situation	0830-1145 JMO-11 Introduction to Operational Art (Seminar)	STUDENT RESEARCH AND REFLECTION DAY
			JMO-12 Military Objectives and the Levels of War (Seminar)	
FSP Travel (Gold) 7-11→			Paper Tutorial #1	
MONDAY 16	TUESDAY 17	WEDNESDAY 18	THURSDAY 19	FRIDAY 20
0830-1145 JMO-13 Operational Factors (Seminar)	0830-1145 JMO-15 The Theater: Its Structure and Geometry (Seminar)	0830-1145 JMO-16 Major Operations/Campaigns and Elements (Seminar)	0830-1145 JMO-18 The Commander's Estimate of the Situation and the Operational Idea: A Prospective Analysis (Practical Exercise)	0830-1500 JMO-19 Tabletop Exercise #2, Operational Design, The Battle for Leyte Gulf (Exercise) (PORT SEMINAR)
JMO-14 Operational Functions (Seminar)	JMO-16 Major Operations/Campaigns and Elements (Seminar)	1200-1330 JMO-17 Enhanced Tabletop Exercise Preparation (Practical Exercise)	Exam Read-Ahead Issued	STUDENT RESEARCH AND REFLECTION DAY (STARBOARD SEMINAR)
Paper Tutorial #1	Paper Tutorial #1	Paper Tutorial #1	Paper Tutorial #1	
MONDAY 23	TUESDAY 24	WEDNESDAY 25	THURSDAY 26	FRIDAY 27
0830-1500 JMO-19 Tabletop Exercise #2, Operational Design, The Battle for Leyte Gulf (Exercise) (STARBOARD SEMINAR)	0830-1145 JMO-20 Operational Leadership (Seminar)	0830-1145 JMO-21 The Objectives of Naval Warfare (Seminar)	0830- 1000 JMO-22 Obtaining and Maintaining Sea Control (Seminar)	STUDENT RESEARCH AND REFLECTION DAY
STUDENT RESEARCH AND REFLECTION DAY (PORT SEMINAR)		JMO-22 Obtaining and Maintaining Sea Control (Seminar)		
Paper Proposals Due		ELECTIVES	ELECTIVES	

MARCH

MONDAY 30	TUESDAY 31	WEDNESDAY 1	THURSDAY 2	FRIDAY 3
0830-1145 JMO-23 Disputing Sea Control (Seminar)	0830-1145 JMO-24 Exercising Sea Control (Seminar)			
		ELECTIVES	ELECTIVES	

APRIL

MONDAY 30	TUESDAY 31	WEDNESDAY 1	THURSDAY 2	FRIDAY 3
		0830-1145 JMO-25 The Falklands/Malvinas Conflict of 1982 (Spruance Lecture and Seminar)	0830-1145 JMO-25 The Falklands/Malvinas Conflict of 1982 (Seminar)	0830- 1145 JMO-25 The Commander's Estimate of the Situation and the Operational Idea: A Prospective Analysis (Practical Exercise)
		ELECTIVES	ELECTIVES	
MONDAY 6	TUESDAY 7	WEDNESDAY 8	THURSDAY 9	FRIDAY 10
0830-1500 JMO-25 Tabletop Exercise #3, Operational Design: The Falklands/Malvinas Conflict (Practical Exercise) (PORT SEMINAR) STUDENT RESEARCH AND REFLECTION DAY (STARBOARD SEMINAR)	0830-1500 JMO-25 Tabletop Exercise #3, Operational Design: The Falklands/Malvinas Conflict (Practical Exercise) (STARBOARD SEMINAR) STUDENT RESEARCH AND REFLECTION DAY (PORT SEMINAR)	0830-1145 JMO-26 Issue Exam One	STUDENT RESEARCH AND REFLECTION DAY	NLT 1600 JMO-26 Recover Examination One DUE NLT 1600
	Paper Tutorial #2	ELECTIVES/ Paper Tutorial #2	ELECTIVES / Paper Tutorial #2	Paper Tutorial #2
MONDAY 13	TUESDAY 14	WEDNESDAY 15	THURSDAY 16	FRIDAY 17
0830-1145 JMO-27 Joint Operations (Seminar) JMO-28 Introduction to Strategic Direction and Joint Planning (Seminar)	0830-1145 JMO-29 The Joint Force: Service Capabilities (Seminar)	0830-1145 JMO-30 Joint and Multi-national C2 (Seminar) JMO-31 The Joint Force Maritime Component Commander (Seminar)	0830-1145 JMO-32 Joint Command and Control: Functional Component Commands (Seminar) JMO-33 Utilizing Joint Intelligence (Seminar)	0830-1000 JMO-33 Utilizing Joint Intelligence (Seminar)
		ELECTIVES	ELECTIVES	
MONDAY 20	TUESDAY 21	WEDNESDAY 22	THURSDAY 23	FRIDAY 24
SPRING RECESS	SPRING RECESS	SPRING RECESS	SPRING RECESS	SPRING RECESS
FSP Travel (Blue +Gold) 18-23→				

APRIL

MONDAY 27	TUESDAY 28	WEDNESDAY 29	THURSDAY 30	FRIDAY 1
0830 – 1145 JMO-34 Operations in the Information Environment (Seminar)	0830–1145 JMO-35 Operating in Cyberspace (Seminar)	0830-1145 JMO-36 Sustaining the Force (Seminar) JMO-37 Deploying the Force (Seminar)	0830-1145 JMO-38 Maritime Operational Law (Lecture – Spruance Auditorium) JMO-39 Maritime Operational Law – Maritime Warfare (Seminar)	
		ELECTIVES	ELECTIVES	

MAY

MONDAY 27	TUESDAY 28	WEDNESDAY 29	THURSDAY 30	FRIDAY 1
				0830-1145 JMO-40 Operational Law – Contemporary Application (Seminar) JMO-41 Paper Peer Critique (Out of class exercise)
		ELECTIVES	ELECTIVES	
MONDAY 4	TUESDAY 5	WEDNESDAY 6	THURSDAY 7	FRIDAY 8
0830-1300 JMO-42 Tabletop Exercise #4, Operational Design: Major Naval Operation – Borneo (Exercise) NIU JIPOE Brief (Seminar)*	0830-1145 JMO-42 Tabletop Exercise #4, Operational Design: Major Naval Operation – Borneo (Exercise)	0830-1145 JMO-43 Tabletop Exercise #5: Analysis of a Naval OPORD (OP DETACHMENT) (Exercise) JMO-44 TTX #5: The Navy Planning Process: The Struggle for Sea Control -Introduction and Mission Analysis (Planning Exercise)	0830-1145 JMO-44 The Navy Planning Process: The Struggle for Sea Control -Mission Analysis (Planning Exercise)	STUDENT RESEARCH AND REFLECTION DAY
		ELECTIVES	ELECTIVES	
MONDAY 11	TUESDAY 12	WEDNESDAY 13	THURSDAY 14	FRIDAY 15
0830-1400 JMO-44 The Navy Planning Process: The Struggle for Sea Control -Mission Analysis/COA Development (Planning Exercise) JMO Paper Due	0800-1145 JMO-44 The Navy Planning Process: The Struggle for Sea Control - COA Development (Planning Exercise) 1330-1500 Address: Halyburton	0830-1145 JMO-44 The Navy Planning Process: The Struggle for Sea Control - COA Development (Planning Exercise)	0830-1145 JMO-44 The Navy Planning Process: The Struggle for Sea Control - COA Wargame (Planning Exercise) FSP Travel (Gold) 14-19→	STUDENT RESEARCH AND REFLECTION DAY Writing Award Submissions Due
FSP Travel (Blue 8-14) →		ELECTIVES	ELECTIVES	
MONDAY 18	TUESDAY 19	WEDNESDAY 20	THURSDAY 21	FRIDAY 22
0830-1400 JMO-44 The Navy Planning Process: The Struggle for Sea Control - COA Wargame (Planning Exercise)	0830-1145 JMO-44 The Navy Planning Process: The Struggle for Sea Control - COA Selection (Planning Exercise)	0830-1145 JMO-44 The Navy Planning Process: The Struggle for Sea Control – Orders Development and Transition (Planning Exercise)	0830-1145 JMO-45 Tabletop Exercise #6: Critiquing the Operations Order and Orders Crosswalk (Planning Exercise)	STUDENT RESEARCH AND REFLECTION DAY MEMORIAL DAY (LIBERTY)
FSP Travel (Gold 14-19) →		ELECTIVES	ELECTIVES	

MAY

MONDAY 25	TUESDAY 26	WEDNESDAY 27	THURSDAY 28	FRIDAY 29
MEMORIAL DAY (LIBERTY)	0830-1145 JMO-46 Naval Operations Other than Combat (Lecture)	0830-1145 JMO-48 Sea Control in a Contested Environment (Classified Lecture, MLH)	0830-1145 JMO-50 Maritime Trade Warfare (Seminar)	STUDENT RESEARCH AND REFLECTION DAY
	JMO-47 Irregular Warfare in the Maritime Environment (Seminar)	JMO-49 Future Naval Warfare (Seminar)	JMO-51 Unconventional Statecraft (Seminar)	
		ELECTIVES	ELECTIVES	

JUNE

MONDAY 1	TUESDAY 2	WEDNESDAY 3	THURSDAY 4	FRIDAY 5
0830 JMO-52 Exam Two issued	NLT 1200 JMO-52 Exam Two Returned NLT 1200	0830-1145 JMO-53 Introduction to the Final Exercise: The War at Sea (Lecture, Spruance Auditorium)	0830-1145 JMO-53 Introduction to the Final Exercise: The War at Sea (Planning Wargame)	STUDENT RESEARCH AND REFLECTION DAY
		The War at Sea Exercise (Planning Wargame)		
		SITREP #1	FRAGO #1 Transmit	
		ELECTIVES	ELECTIVES	
MONDAY 8	TUESDAY 9	WEDNESDAY 10	THURSDAY 11	FRIDAY 12
0830-1430 JMO-53 The War at Sea (Planning Game, MLH)	0830-1430 JMO-53 The War at Sea (Planning Game, MLH)	STUDENT RESEARCH AND REFLECTION DAY	0830-1430 JMO-53 The War at Sea (Planning Game, MLH)	0830-1145 JMO-53 The War at Sea (Planning Game, MLH)
SITREP #2	FRAGO #2 Transmit	Adjudicate FRAGO #2	SITREP #3	Exercise Hot Wash

JMO-01**CHAIRMAN'S INTRODUCTORY LECTURE (SPRUANCE)**

We can't wait for more resources; we need to fight with what we have. We have to move forward with a sense of purpose; purpose comes from planning. We must move forward with a sense of urgency; urgency comes from a methodical application of those things learned in rehearsal and practice..

~ Admiral Scott H. Swift, USN(ret)
Lecture at the U.S. Naval War College, 2019

Session Objectives

- Understand the requirements and objectives of the upcoming trimester.
-

Q Focus

The Chairman of the Joint Military Operations Department, Captain Scott Smith, United States Navy, will provide an overview of the objectives and requirements of the Joint Maritime Operations Course.

≡ Background

The Chief of Naval Operations, Admiral Michael Gilday, in his FRAGO 01/2019 indicated, "Our fleet design and operating concepts demand that fleets be the operational center of warfare." The Joint Maritime Operations course is purposefully designed to expose U.S. and international military officers, and civilian professional counterparts to the upper tactical and operational levels of war: where the planning and execution for the fight begins. Today's global environment demands combat-credible U.S. forces that are ready to deter war and to prevail and win in combat against our nation's foes. Previous trimesters have exposed you to the security making apparatus and the enduring nature of war. During this trimester, you will study how to wield the military instrument of power effectively, primarily in the maritime domain, to achieve operational and theater-strategic objectives.

While many students arrive at the Naval War College with tactical knowledge and experience, intermediate level education expands the intellectual aperture. Command and Naval Staff College/Naval Staff College students are future commanders; before that, you will serve in key staff positions that support the commander's decision cycle.

The JMO course will expose you to questions and concepts that enhance your ability to excel in the profession of arms. You will find that success in the course requires a significant amount of time in preparation, research, study, and reflection outside of the formal classroom. Your services, agencies, and nations are relying on you to expend the mental energy to prepare for the significant security challenges that await us all.

👤 Point of Contact

The point of contact for this session is Captain Scott Smith, USN, C-421.

?? Questions

None.

📖 Required Readings (45 Pages)

U.S. Naval War College, Joint Military Operations Department. *Joint Maritime Operations (JMO) Syllabus and Study Guide, 2020*. Newport, RI: Naval War College, 2019. Read: pages ix—xxx i. (Issued).

———. *Resident Student Handbook 2019*. Newport, RI: Naval War College, 2019. Review. (Issued).

Supplemental Readings

None.

JMO-02

THE NAVY WAY OF WAR (LECTURE)

[T]he underlying purposes of naval warfare are... three in number, two absolutes and a conditional. The absolutes are to ensure first that friendly shipping can flow and second that hostile shipping cannot. Once the flow of friendly shipping is assured, then, if it is necessary or desirable, navies can risk landing an army on a hostile shore, supporting that army with fire and logistics.

-Frank Uhlig, "How Navies Fight and Why," 1995.

Session Objectives

- Understand the constants of naval warfare and the spectrum of conflict as it involves naval forces.
 - Understand the maritime environment.
 - Understand the organizational culture of the US Navy as it affects how it conceives and executes its tasks.
-

Focus

This lecture examines the constants of naval warfare, and how the unique maritime environment, peculiarities of naval technologies, theories of naval warfare, and historical experience have shaped the U.S. Navy's organizational culture and, consequently, how the Navy has chosen to understand and execute its tasks.

Background

History has demonstrated that there are certain constant characteristics and tasks of naval warfare, all executed in the marine environment, and typically with the most complex technologies extant at any given time. Different theorists and different navies have understood these tasks and their execution in different ways.

The U.S. Navy is, like individuals and other organizations, the sum of its experiences – including both its successes and its failures. These experiences are formally codified in its organizational structure, its forces, personnel practices, doctrine, and operating procedures as well as in those informal usages and patterns of assumptions and beliefs that together comprise its organizational culture. The U.S. Navy maintains deeply held beliefs about preferred command organizations, how decisions should be made, the appropriate relationship between plans and operations, the role of technology, and relations with the other military services. These formal and informal factors in turn shape its responses to present and emerging challenges.

Point of Contact

The point of contact for this session is Professor Donald Chisholm, C-422.

Questions

What are the tasks of naval warfare?

How do the ocean environment and technology shape these tasks and the ways in which they are executed?

How has the U.S. Navy's organizational culture affected its understanding of these tasks and the ways it has chosen to execute them?

Will the Navy have to change its organization and culture to fight effectively into the future?

Required Readings (38 Pages)

Hughes, Wayne P., Jr. "Naval Operations: A Close Look at the Operational Level of War at Sea." *Naval War College Review* 65 (Summer 2012): 22-46. (NWC 1191).

Uhlig, Frank Jr. "The Constants of Naval Warfare." *Naval War College Review* 50 (Spring 1997): 92-104. (NWC 1238).]

Supplemental Readings

Schein, Edgar H. *Organizational Culture and Leadership*. San Francisco: Jossey-Bass, 1992.

Hughes, Wayne P., Jr. "Naval Tactics and Their Influence on Strategy." *Naval War College Review* 39 (Winter 1986): 2-17.

Uhlig, Frank Jr. "How Navies Fight and Why." *Naval War College Review* 48 (Winter 1995): 35-49.

JMO-03 INTRODUCTORY SEMINAR

Always keep in mind the product which the country desperately needs is military leaders with the capability of solving complex problems and of executing their decisions.... You must keep your sights on problem solving as your objective.

~ VADM Stansfield Turner, USN
President, U.S. Naval War College, 1972-1974

Session Objectives

- Discover seminar member backgrounds and areas of expertise.
 - Summarize seminar guidelines, expectations, and outcomes.
 - Discuss the JMO syllabus, grading policy, reading requirements, schedule, critique, and student and faculty expectations.
 - Discuss social and administrative matters and assign seminar responsibilities.
-

Focus

This session is devoted to the introduction of seminar moderators and students, a review of the administrative requirements and procedures for the trimester, and the general ground rules of seminar conduct.

Background

The introductory session provides the opportunity to meet your moderators and fellow seminar members. In preparation for the seminar, you will complete a short questionnaire that was provided by e-mail from your moderator team. Completed questionnaires will be collected at the beginning of the introductory session.

Course Requirements. In addition to contribution to daily seminar discussions and practical exercises, written course requirements include the Operational Art essay exam, the Research paper (JMO-04), and numerous other orders related tasks.

Grading. Grades are based on the criteria specified in the JMO syllabus.

Honor Code. The academic honor code is discussed in the Naval War College Student Handbook and Academic Policy Statements; cheating, plagiarism, and misrepresentation are specifically prohibited.

Point of Contact

The point of contact for this session is Professor Jamie Gannon, C-424.

Questions

None.

Required Readings (26 Pages)

Familiarize yourself with: The Blackboard web site at: <http://navalwarcollege.blackboard.com/>

Gilday, Michael M. ADM. "FRAGO 01/2019: A Design for Maintaining Maritime Superiority." Washington, D.C.: Headquarters, Department of the Navy, 4 December 2019.

Swift, Scott H. "A Fleet Must Be Able to Fight." *U.S. Naval Institute Proceedings* 144, no. 5 (May 2018). (NWC 2152).

Turner, VADM Stansfield. Convocation Address (Edited), U.S. Naval War College, Newport, RI. 24 August 1972. Read. (NWC 1121).

United States Navy. Headquarters, Commander in Chief United States Fleet. *War Instructions, 1944* (F.T.P. 143 (A)). Washington, D.C.: Navy Department. 1 November 1944. Read: Chapter 1: *The Human Element in Naval Strength* (1-2) and Chapter 2: *Command and Operations* (2-7). Available at: <https://www.ibiblio.org/hyperwar/USN/ref/WarInst/index.html>.

Supplemental Readings

None.

JMO-04

THE JMO RESEARCH PAPER

A nation that will insist on drawing a broad line of demarcation between the fighting man and the thinking man is liable to find its fighting done by fools and its thinking done by cowards.

~ Sir William Francis Butler, 1889

Session Objectives

- Discuss JMO research paper requirements, guidelines, expectations, and outcomes.
 - Recognize the linkage between critical and creative thinking and the research paper.
 - Understand how to submit papers for competitive prizes and awards offered by the Chairman, Joint Chiefs of Staff, the Naval War College, and other agencies.
-

Focus

This session addresses JMO research paper requirements, to include guidance on paper topics, research and writing, paper due dates, and grading criteria.

Background

The JMO research paper addresses a problem relevant to maritime or joint warfare at the high-tactical or operational levels of war, and be of interest to a Joint Force, Service, or Functional component commander. The result is not a background, information, or position paper. Rather the paper is one that considers an important operational problem, posits a hypothesis about that problem, and considers the evidence in order to decide whether the hypothesis is correct or not. Typically, practical recommendations for action follow from the analysis. This allows you to sharpen analytical and synthetic skills; researching and writing the paper is properly viewed as an opportunity to learn something new and to develop professionally. The final product should be suitable for publication in a professional journal. With the advice of your faculty moderators, you will select a research question, develop a sound hypothesis, and provide a cogent analysis of that hypothesis relevant to joint operational warfare. Appropriate topics include ideas regarding innovative approaches to potential threats, opportunities, and risks in the current or future operational environment. Lessons learned and operational insights from historic or contemporary operations with recommendations on warfighting are also appropriate topics.

The research paper requires independent thought and competent writing. The range and depth of research should be adequate to support your approach and sufficient for a rigorous analysis. Your paper may also serve to stimulate or shape thinking in Service or Joint Force staffs charged with addressing the complex issues attendant to effectively employing military force. The Naval War College's College of Naval Command and Staff and Naval Staff College is frequently canvassed for papers on particular subjects and is requested to stimulate interest in specific areas for research and writing. Combatant Commanders, operating forces, and headquarters staffs solicit papers and monographs on topics of current interest to support initiatives, develop concepts, provide depth to existing analytical efforts, and provide fresh looks at methods for executing missions.

1. Requirements.

- a. A Research Topic and Question. The topic specifies the subject of the paper and the problem that is to be investigated.

b. A thesis. The thesis, derived from your hypothesis, represents your major assertion that responds to the research question. A testable/refutable assertion, put forward as a premise that the paper considers in light of empirical evidence. The thesis is presented in the introductory paragraph.

c. Research appropriate to and sufficient to rigorously analyze the thesis. How will you know if your thesis is correct? Your hypothesis must be tested by critical analysis of the empirical evidence developed in your research. This is the core of the paper. You conduct your research to see if your thesis is correct—not to bolster a position or belief. Your thesis might be “common wisdom” or very plausible, but “is it true?” An acceptable outcome includes falsification of your original hypothesis, and its reformulation.

d. Logical conclusions drawn from the analysis. The conclusions allow the reader to tie together the analysis presented in the paper. In turn, your conclusions provide the foundation for your practical recommendations.

e. Practical recommendations or lessons learned, as appropriate, demonstrate the paper’s relevance to the commander or staff. This portion of the research paper requires creative but careful thought in order to make the paper of practical value to its consumer.

f. In sum, the JMO research paper body consists of an introduction containing your approved thesis, followed by your principal analysis, presented in logical, well-constructed paragraphs in a linear flow; then a conclusion providing a wrap-up and transition to your recommendations (or in certain cases, your lessons learned).

2. **Topics.** NWC 2063A, The C&NCS/NSC “JMO Paper: Guidance for Students” contains the JMO Chairman’s guidance for selecting a suitable topic and creating a research question. It also contains guidance on developing the paper from topic selection to final draft, information on the awards program, and instructions for submission of papers to professional journals.

3. **Paper Proposal.** Students shall submit paper proposals to their moderators; the format of the proposal is in enclosure (1) to NWC 2063A. Moderator acceptance of a proposal constitutes an understanding between the student and the moderator grading team. An approved proposal means that the student and the moderators understand in common the depth of research, extent of analysis, and quality of writing expected of the student, in addition to the requirements discussed above in paragraph 1.

4. **Research and Writing.** Research and writing must meet graduate-level standards.

5. **Format.** The *Naval War College Pocket Writing and Style Guide* is the standard for unclassified written work. Turabian’s *A Manual for Writers of Research Papers, Theses, and Dissertations*, 9th Edition, provides additional guidance on drafting, editing, and formatting papers. You are to use the *Chicago Manual of Style* (CMS) for formatting notes and bibliography. CMS Online provides a Citation Quick Guide to assist writers. Guidance for classified papers is available from the moderators. Additionally, the 2020 JMO Research Paper Template is be posted on Blackboard. You may save this template as a file on your own computers *and either compose in the file directly, or paste their work into the file.* Use of the template is intended to aid in formatting of page numbers and section breaks.

6. **Report Document Page.** High quality papers (A and A+) selected for submission to DTIC will require a Standard Form (SF) 298 as the report document page. As applicable, additional guidance will come from the Writing Center on DTIC submission.

7. **Length.** The text of the JMO research paper will be a 3,000 – 3,500 word, with double-spaced pages, in Times New Roman font size 12, with a one inch left and right, top and bottom margins. These are set

in the JMO Paper Template. Your moderators may accept longer papers depending on paper purpose and topic, but this acceptance must be obtained prior to paper submission.

8. **Faculty Advisor.** The paper advisor helps the students move from topic selection to research question hypothesis; define the scope of the research effort; keep research, analysis, and writing on track; and develop effective outlines and drafts. In JMO, seminar moderators will serve as paper advisors for the students in their seminars. A minimum of two tutorials will be conducted with your moderators. Additional subject matter expertise in a broad range of topics is resident in the Naval War College faculty. Your moderator will assist you, if required or desired, in coordinating a meeting with a SME in your area of interest.

9. **Grading.** The JMO research paper represents a substantial portion of the overall course grade. The paper will be evaluated for both substance and writing quality. Grades will be based on the criteria specified in the JMO syllabus.

10. **Prizes and Awards.** JMO research papers may compete for the prizes and awards bestowed annually during the June graduation ceremony. Students are encouraged to prepare their papers with the additional purpose of competing for one or more of these honors. Details on awards are provided in the Blackboard main page and in the NWC Writing Center link.

11. **Submission Schedule:**

16 - 19 Mar: Conduct initial tutorial regarding potential paper topic.

23 Mar: Submit paper proposal to moderators.

6 - 9 Apr: Conduct follow-up tutorial; moderators and student agree on thesis and course of action.

24 Apr: Recommended date to terminate research, commence analysis, and writing.

1 May: Peer critiques of research paper with fellow students.

4 May: Final allowable date to submit drafts to paper advisors for review.

11 May: JMO Research paper due to moderators NLT 0830.

Per Dean of Academics Policy Memorandum 2-17, all written products (exams and papers) will be submitted via Blackboard.

Point of Contact

The point of contact for this session is Professor Jamie Gannon, C-424.

Questions

None.

Required Readings (16 Pages)

Turabian, Kate L. *A Manual for Writers of Research Papers, Theses, and Dissertations*, 9th ed. Chicago: University of Chicago Press, 2018. Review Chapters 1-5. **(Issued)**.

U.S. Naval War College. *Naval War College Pocket Writing and Style Guide*. Newport, RI: Naval War College, August 2018. Scan. **(NWC Writing Center link)**.

———. Joint Military Operations Department. *Operations Paper: Guidance for Students*. Newport, RI: Naval War College, 2020. (NWC 2063A).

———. JMO Paper Template, 2020. Scan.

References

University of Chicago Press. *The Chicago Manual of Style*. 16th ed. Chicago: University of Chicago Press, 2010.

BLOCK I: NAVAL TACTICS

Block I explores how naval forces achieve tactical objectives. Students are exposed to the maritime domain; basic naval tactical theory; the capabilities and roles of naval platforms, sensors, and weapons; and the employment of naval forces. This block ends with an open-ended active-learning tabletop exercise that allows the students to: (a) demonstrate understanding of the material presented thus far; and, (b) to organize naval forces creatively, and (c) demonstrate critical and creative thought. The objectives of the *Naval Tactics* sessions are to:

OBJECTIVES

- Recognize the unique characteristics and challenges of the maritime domain.
- Comprehend the theory of naval tactics.
- Understand the capabilities and limitations of navy surface, submarine, air, strike, mine and information warfare.
- Comprehend the theory, employment, and advantages of combined arms in naval warfare.
- Demonstrate an understanding of naval tactics and capabilities in a fictional scenario

The point of contact for this block is Professor Fred Turner, C-430.

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JMO-05

THE MARITIME DOMAIN

The first and most obvious light in which the sea presents itself from the political and social viewpoint is that of great highway; or better, perhaps, of a wide common, over which all men may pass in all directions.

~ Captain Alfred T. Mahan, USN
The Influence of Sea Power Upon History, 1890

Session Objectives

- Understand the physical challenges and advantages for operations in the maritime domain.
 - Understand the political, economic, social, infrastructure and informational aspects of the maritime domain.
 - Understand the challenges of the littoral environment compared to the open ocean.
-

🔍 Focus

The focus of this session is on describing the components of the maritime domain and their effect on the planning and execution of major naval and joint operations.

≡ Background

The maritime domain is an extraordinarily complex environment in which to operate. First, the distances can be vast. The oceans cover more than 70% of the earth, with the Pacific Ocean covering nearly a third of the ocean area. Second, the oceans experience very diverse undersea conditions analogous to the earth's climate regimes. As all military sensors are dependent upon the physical properties of the environment in which they work, understanding these properties is critical to determining their effectiveness. Finally, the sea surface is influenced dramatically by the local weather as well as storms thousands of miles away.

As low-lying and mountainous areas in the same geographic region on land have different physical characteristics, so also do littoral and open ocean areas have different characteristics. Obviously, littoral areas are generally shallow while open ocean areas are deep. However, what does this mean for naval planners? An eight-foot swell in the open ocean is no concern for most modern naval vessels, but if coming ashore, an eight-foot swell could preclude amphibious and small boat operations. In deep ocean waters, poor charts are of relatively little concern for surface vessels, but in shallow littoral waters, uncharted reefs, rocks, and shoals provide significant dangers to naval forces. Additionally, the structure of open ocean water and littoral water columns are different. Open ocean deep water generally provides good, long-range acoustic conditions; littoral waters are highly variable with poor acoustics, eddies, and varying bathymetry. A smart submarine commander operating in the environment with intimate knowledge of his water conditions can hide within an eddy or behind a submerged ridge and lie in ambush of enemy forces. Deep water provides a relative haven from mines whereas littoral waters provide opportunities to seed bottom-moored minefields capable of sinking large warships.

Finally, 40 percent of all the world's cities with populations of 500,000 or more are on the coast, while more than two-thirds of the world's population lives within 250 miles of the coast. These built-up coastal areas and accompanying civilian infrastructure can also harbor coastal defenses. Small boats that cannot operate effectively on the open ocean can be formidable in shallow littoral waters. These small boats operate close to homeports, allowing them to rapidly sortie and retreat.

Coastal guns and surface-to-surface missiles also provide significant dangers. In 2006 the Israeli corvette Hanit, while operating more than 30 nm off shore, was struck by a Hezbollah C-802 coastal defense cruise missile (CDCM) fired from the back of a truck. Coastal infrastructure and efforts to minimize civilian casualties may preclude many of the offensive and defensive tools of the naval commander.

Operational planners and commanders must consider these factors when transitioning from open-ocean to littoral activities.

The environment influences nearly all aspects of naval operations. The ability to operate safely, the enhancement or degradation of combatant sensors, and the relatively mundane task of locating forces operating in the maritime domain are all driven by environmental conditions. With this in mind, a fundamental understanding of what conditions can be expected, and how they influence both friendly and adversary performance, is critical to the joint force and naval commanders.

Point of Contact

The point of contact for this session is CDR Shelley Caplan USN, C-408.

Questions

Compare and contrast the maritime and land domains.

Discuss the main characteristics of the physical environment and their effect on the employment of maritime forces. Why are space, cyberspace, and the electromagnetic spectrum included in the maritime domain today?

What are the main differences between the combat employment of naval forces on the open ocean and in the littorals?

Explain why the operational commander should incorporate climate (atmospheric and oceanic) during planning?

Discuss the effect of growing urbanization in the littorals and the economic importance of maritime domain access on the employment of maritime forces in combat as well as in operations short of war.

Required Readings (55 Pages)

U.S. Department of the Navy. *How We Fight: Handbook for the Naval Warfighter*. Washington, D.C: U.S. Government Printing Office (GPO), 2015. Read: 5-35.

Vego, Milan. "Fundamentals of Surface Warfare." Newport, RI: Naval War College, Joint Military Operations Department, 2016. Read: 1-10. (NWC 1164A).

———. *Joint Operational Warfare: Theory and Practice*. Newport, RI: Naval War College, Joint Military Operations Department, 2009. Read: IV-35 – IV-46. (Issued).

Gallaudet, Tim. "Charting the Invisible Terrain." U.S. Naval Institute Proceedings 141, no. 7 (July 2015). Read. (NWC 1229).

Harvison, Melissa. "USNWC JMO Law of the Sea Reference for Naval Operations." Newport RI: Naval War College: Joint Military Operations Department. January 2019. (Handout)

Supplemental Readings

None.

JMO-06

INTRODUCTION TO NAVAL TACTICS

Forces at sea are not broken by encirclement; they are broken by destruction.

~ Capt. Wayne P. Hughes, Jr. USN (Ret)
Fleet Tactics and Naval Operations. 3rd ed. 2018

Session Objectives

- Comprehend the tactical principles, elements, and processes of naval combat.
 - Describe the principal methods of tactical employment of naval forces.
 - Understand the influence of naval technology on the evolution of naval tactics.
-

🔍 Focus

The purpose of this session is to build an introductory theoretical framework for student understanding of naval warfare characteristics, capabilities and tactics. The concepts discussed will be reinforced throughout the remainder of the block.

📖 Background

Relatively recent events such as the Falklands War in 1982, which saw a combined loss of 16 ships, including an Argentinian cruiser and four British surface combatants; the 1987 missile attack on USS Stark during the Iran-Iraq war; and the attack on the Israeli ship INS Hanit in 2006 demonstrated that tactical failure at sea can have a profound impact on operations, strategy, and even the national mood. The key tenets of naval tactics are fundamentally different from those of tactics on land or in the air, and having an understanding of those differences is vital if a Joint Force Commander intends to use the naval component of a Joint Force. Understanding these “cornerstones” (as Hughes describes them), along with the fundamental elements and processes of naval tactical combat, allows students to think about how to best employ naval forces to accomplish tactical objectives—and the risk to force and mission that such employment entails. As an operational commander or planner, understanding the fundamentals of naval tactical actions is critical to developing rational estimates of the situation, developing options, and making sound operational and tactical decisions.

To gain that understanding, it is first important to have a common definition of what exactly one is trying to understand. In broad terms, naval tactics is the theory and practice of planning and employing naval tactical actions aimed to accomplish a tactical objective. This is different from naval strategy. Naval strategy deals with the overall plan for how one intends to use a naval force. Naval tactics is how one puts those plans into actual effect; it is the handling of naval forces in battle. In the words of Hughes, “strategists plan, tacticians do.”

As you will discover from the readings, naval tactical actions are conducted with and without the use of weapons. They can be planned or unplanned. They can be conducted at any time, regardless of the ratio of forces in a given theater; and they are conducted in a sea/ocean area varying in size from a combat zone/sector to a maritime area of operations. The main methods of tactical actions with the use of weapons are attacks, strikes, raids, engagements, and battles. These terms are not identical to those used in the employment of ground forces. When employing naval forces it is important to understand exactly what you are tasking them to do, as well as what objective you want them to accomplish (note that these are two different ideas). As Hughes describes, maneuver, firepower (fires), scouting (ISR), and command and control (C2) are functioning tactical elements of naval forces, which are opposed by the processes and elements of counterforce, anti-scouting (counter-ISR), and C2 counter measure (C2CM) systems. The naval tactician employs sensors to locate the enemy (while interfering with the enemy’s scouting) and makes command decisions that transform scouting and firepower into a delivered force (while

interfering with the enemy's C2). The successful delivery of firepower is at the center of naval tactical action.

Another way to envision the process is to view naval force-on-force combat as a "kill chain" where each opposing force seeks to find, fix, track, target, engage, and assess (F2T2EA) before the other side does the same. Each link in the kill chain leads to the next, from start to finish. This kill chain concept is not unique to naval combat. However, the imperative to "attack effectively first" by rapidly completing one's own kill chain before the enemy completes its kill chain applies much more so to naval combat than to land combat.

Point of Contact

The point of contact for this session is Professor Fred Turner, C-430.

Questions

Why is understanding naval tactics important to the naval operational commander?

Critique Hughes' Six Cornerstones of naval tactics. Which seems most relevant to modern navies today? Which seems least relevant?

Discuss Hughes' elements and processes of employing naval forces. Are these applicable to modern navies?

How could one attack/protect (enemy/friendly) each link in the "kill chain"?

What are Vego's methods of the tactical employment of naval forces? How are naval tactical actions different from tactical actions on land or in the air?

Why is there a mutual relationship between emerging technologies and naval tactics?

How does a contested electromagnetic operating environment impact naval tactics and the kill chain? How does the space and cyberspace domain impact naval tactics?

Required Readings (83 Pages)

Hughes, Wayne P. Jr and Robert Girrier. *Fleet Tactics and Naval Operations*. 3rd ed. Annapolis, MD: Naval Institute Press, 2018. Read: Chapters 1 and 8. (Issued).

Hornfischer, James D. *Neptune's Inferno: The U. S. Navy at Guadalcanal*. New York, NY: Bantam, 2012. Read: Prologue. (Issued).

Vego, Milan. "Naval Tactical Actions." Newport, RI: Naval War College, Joint Military Operations Department, August 2015. Read. (NWC 2155).

Supplemental Readings

None.

JMO-07**NAVAL CAPABILITIES: PLATFORMS, SENSORS, AND WEAPONS**

A sword never kills anybody; it is a tool in the killer's hand.

~ Lucius Annaeus Seneca

4 BCE – 65 AD

Session Objectives

- Comprehend the capabilities and limitations of platforms, sensors and weapons to conduct tasks in support of tactical objectives.
 - Understand the main methods of employing naval air, surface, and subsurface platforms and their sensors and weapons to support warfare mission areas to accomplish navy tactical objectives.
 - Analyze the influence of innovation, technology, and the evolving threat environment on naval weapons systems development.
-

Q Focus

Good tacticians must know the capabilities and limitations of their sensor and weapon systems. Developing an understanding of naval force capabilities is the foundation of effectively employing naval forces. This session provides an overview of the standard platforms, sensors, and weapons commonly found in navies today.

≡ Background

In each domain, forces move, see, and shoot differently. The maritime domain creates challenges and opportunities for the operational commander. The successful employment of a maritime strategy through the tactical use of forces is reliant upon many factors, one of which is the effective development and use of platforms, sensors, and weapons. The rapid advance in both sensor and weapon technology during the Second World War (WWII) had an inestimable effect on naval tactics, the kind of platforms navies procured and warship design itself. In the years following the close of WWII, technologies with a direct impact on naval warfare continued to evolve and improve. Both surface and air search radar, which were in their nascent stage at the beginning of the war, became commonplace among the major naval powers shortly thereafter. Such was also the case with sonar systems designed to locate, identify, and track stealthy submarines. With the advent of the nuclear powered submarine, the surface-to-air guided missile, the anti-ship cruise missile, and the supercarrier, the tactical considerations of naval commanders underwent a considerable change.

As weapon and sensor capabilities evolved, so did warship design and the tactics of employment. Tactical formations and dispersion of platforms underwent change. Ships that formerly emphasized offensive firepower switched to defensive roles and vice-versa. The advent of the guided missile, along with the increased range and capability of naval aviation and modern submarines, meant the heavy naval rifle (and the tactics to employ it effectively) was supplanted in importance. Heavily armored warships were likewise replaced with much lighter designs with an emphasis on increased sensor capability. With only the U.S. Navy and the Russian Navy maintaining a number of cruisers, the multi-role destroyer has now become the most prolific and capable surface combatant. Even smaller platforms such as frigates, corvettes, and fast missile craft may have significant offensive firepower capabilities that must be mitigated by maritime planners.

Due to the cyclical relationship between sensors, firepower, and command and control, as new weapon systems are developed and capabilities evolve, so do the tactics. Increases in the range and lethality of offensive firepower coupled with increases in detection capabilities shortened the decision cycle of commanders in both the defensive and offensive aspects of naval combat. Leaps in non-nuclear

propulsion technology, such as air-independent propulsion, have made the diesel submarine an extremely capable platform which in some environments is more desirable than its larger nuclear powered cousin. Modern subsonic as well as supersonic long range anti-ship cruise missiles continue to proliferate with ever increasing levels of accuracy and lethality. These weapons, which may be launched from surface, subsurface and air platforms, put surface forces increasingly at risk. Likewise, improvements in the performance of undersea mines as well as modern torpedoes further threaten naval forces. Lastly, the introduction and proliferation of remotely piloted or unmanned platforms throughout the maritime and air domains presents new challenges to naval warfighters now and into the foreseeable future.

The proper synchronization of platforms, sensors, and weapon systems is, therefore, a critical component in massing effective naval firepower on a desired target. By overwhelming a target's defensive capabilities with coordinated strikes, a naval force may gain significant tactical and operational advantage. As naval forces cannot be regenerated as quickly as ground forces, such an event may prove operationally or strategically decisive.

Point of Contact

The point of contact for this session is CDR Mitch Kloewer, USN, C-425.

Questions

What type of sensors and weapon systems are commonly found on most air, surface and subsurface combatants?

Describe the tactical advantages and disadvantages in the combat employment of one's naval air forces.

Describe the tactical advantages and disadvantages in the combat employment of one's naval surface forces.

Describe the tactical advantages and disadvantages in the combat employment of one's submarine forces.

Describe the relationship between sensor and weapon system capability relevant to naval tactical actions.

How have advances in sensor coverage and the proliferation of long-range anti-ship cruise missiles (ASCM) influenced naval warfare tactics?.

Required Readings (84 Pages)

Hughes, Wayne P. and Robert P. Girrier. *Fleet Tactics and Naval Operations*. 3rd ed. Annapolis, MD: Naval Institute Press, 2018. Read: Chapter 5, "World War II: The Revolution in Sensors," and Chapter 9, "The Great Constants." (Issued).

Leighton, Bruce G. "The Relation of Aircraft to Sea-Power." *U.S. Naval Institute Proceedings* 16, no. 4 (November 1928): 728-745. Read. (NWC 4109).

Lautenschlager, Karl. "The Submarine in Naval Warfare, 1901-2001." *International Security* 11, no. 3 (Winter 1986-1987): 94-111. Read. (NWC 4077).

Vego, Milan. "Fundamentals of Surface Warfare." Newport, RI: Naval War College, Joint Military Operations Department, May 2016. Read: 10-11 and Appendix A. (NWC 1164A).

U.S. Naval War College. "Forces/Capabilities Handbook." Newport, RI: Naval War College, Joint Military Operations Department, January 2020. Read: 10-30. (NWC 3153S). (Issued).

———. “Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook.” Slide pack, Newport, RI: Naval War College, Joint Military Operations Department, January 2020. Scan. (NWC 2164D).

Supplemental Reading

None.

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JMO-08

INTRODUCTION TO NAVAL COMBINED ARMS

“In case Signals can neither be seen or perfectly understood, no Captain can do very wrong if he places his ship alongside that of the enemy.”

~ Vice Admiral Horatio Nelson
October 1805

Session Objectives

- Analyze the importance of combined arms in naval warfare.
 - Understand the dominant principles of anti-surface, anti-submarine, air and missile defense, strike, mine, and information warfare.
 - Explain the primary objectives and tactical methods of employing combined arms, including joint approaches, in anti-surface, anti-submarine, air and missile defense, strike, mine, and information warfare.
-

🔍 Focus

This session will introduce students to the employment of naval forces synchronized across multiple domains to achieve tactical objectives. Using naval tactical theory and their understanding of naval capabilities learned in earlier sessions, students will explore how navies employ forces in practice as a cohesive whole using combined arms concepts.

🔧 Background

Historically, naval combat elicits visions of glorious individual ship-to-ship actions like the USS Constitution versus HMS Guerriere or line of battle ships (thus “ship of the line”) slugging it out in major fleet actions such as the Battle of the Chesapeake and Trafalgar. Despite the invention of naval mines in the late 18th century and steam propulsion, armor and turreted guns in the 19th century, naval tactics did not change dramatically for almost 400 years. They remained focused on one dimensional surface combat between ships or fleets from roughly the early 16th century until the early 20th century. However, rapid technological changes in the late 19th, throughout the 20th, and into the 21st century led to the invention of submarines, airplanes, improved forms of naval propulsion, increasingly powerful and sophisticated weapons, and pervasive information related technology linking all of these together. This changed naval warfare from one encompassing primarily a single domain to one where multiple domains were in play simultaneously. In each of these domains, navies developed platforms, sensors and weapons intended to provide an advantage in combat over those in another domain. As the 20th century progressed, and particularly during World War II and later the Cold War, navies realized the advantages of synchronizing capabilities across multiple domains to defeat enemy forces on, under, over or adjacent to the sea. Thus was born combined arms at sea.

Modern naval combined arms concepts are best expressed in the areas of Anti-Surface Warfare (ASUW), Anti-Submarine Warfare (ASW), Air and Missile Defense (AMD), Strike Warfare (STW), Mine Warfare (MIW) and Information Warfare (IW). While there are many other missions and tasks undertaken by navies, these warfare areas probably best encapsulate how navies employ combat power to achieve tactical objectives. ASUW is the oldest form of naval warfare and is conducted against targets on the surface of the oceans. A more modern concept arising in World War I, the purpose of ASW is to destroy or defeat enemy submarines. Providing freedom of action to conduct these and other naval warfighting tasks, AMD is designed to protect naval forces from air and missile attacks that have arguably dominated war at sea since World War II to the present. However, as Hughes states, “The seat of purpose is on the land,” so STW employs naval capabilities to attack targets ashore. Often overlooked,

mines present a significant challenge to navies, and thus MIW addresses offensive/defensive mining and mine countermeasures (MCM). Last but not least, the relatively recent exponential increase in the reliance on information related technologies for combat at sea has led navies to recognize IW as equal to the traditional warfighting functions.

Integrating platforms, weapons and sensors to achieve effects within each of these warfare areas, and then linking all of the warfare areas together as a cohesive whole, is an immense command and control challenge. Synchronizing naval capabilities to damage, destroy or defeat enemy targets while protecting one's own forces will require the continued evolution of technology, doctrine, and most importantly, creative thinking. Furthermore, while this session is focused on navies, with the dramatic technological changes of the past 100 plus years and the intertwining of warfare domains, warfare at sea is not only a navy fight but also a joint and coalition fight. These then are the challenges going forward.

Point of Contact

The point of contact for this session is Professor Fred Turner, C-430.

Questions

What is "naval combined arms?" What is the purpose in fighting in this manner?

Describe ASuW, ASW, AMD, STW, MIW and IW. What is the purpose of and how might each be executed? What are the advantages and challenges found in each warfare area? How does the physical environment effect the execution of each warfare area?

How do navies integrate or synchronize platforms, sensors and weapons across warfare domains to achieve tactical objectives? How do Hughes' processes of combat (his theoretical framework of naval combat) apply?

How might continuing advances in technology change the way navies execute combined arms warfare at sea in the future?

How might joint or combined forces contribute to combined arms warfare at sea, and what are some of the advantages and challenges in integrating these capabilities?.

Required Readings (123 Pages)

U.S. Department of the Navy. *How We Fight: Handbook for the Naval Warfighter*. Washington, D.C: U.S. Government Printing Office (GPO), 2015. Read: 145-156.

Polmar, Norman. *Guide to the Soviet Navy*. Annapolis: United States Naval Institute, 1986. Read: 29-35, 37-40. (NWC 1104).

Kline, Jeffery E. "A Tactical Doctrine for Distributed Lethality," Center for International Maritime Security, February 22, 2015. (NWC 2128).

Freedberg Jr, Sydney. "47 Seconds from Hell: A Challenge to Navy Doctrine." [www.breakingdefense.com. https://breakingdefense.com/2014/11/47-seconds-from-hell-a-challenge-to-navy-doctrine/](https://breakingdefense.com/2014/11/47-seconds-from-hell-a-challenge-to-navy-doctrine/) (Accessed December 19, 2017). (NWC 2143).

Majumdar, Dave, and Sam LaGrone. "Inside the Navy's Next Air War." U.S. Naval Institute News (23 January 2014). Read. (NWC 2176).

- Rand Corporation. "The New Face of Naval Strike Warfare," www.rand.org.
https://www.rand.org/content/dam/rand/pubs/research_briefs/RB9137/RAND_RB9137.pdf
(Accessed December 5, 2019). (NWC 1234).
- Toti, William J. "The Hunt for Full-Spectrum ASW." *United States Naval Institute Proceedings* 140, no. 6 (June 2014). (NWC 3219).
- Winnefeld, James Jr. and Syed Achmad. "The Other Mine Warfare Will Work." *U.S. Naval Institute Proceedings* 144, no. 7, (July 2018). Read. (NWC 1230).
- Angevine, Robert G. "Hiding in Plain Sight: The U.S. Navy and Dispersed Operations under EMCON, 1956–1972." *U.S. Naval College Review* 64, no. 2 (Spring 2011): 79-92. Read. (NWC 2178).
- Brasswell, Bryan. "Evolving the Information Warfare Commander." *CHIPS Magazine*. July-September 2017. Read. (NWC 2180).
- Wise, Harold Lee. "One Day of War". *Naval History: Vol 27, Issue 2*. Annapolis, MD: Naval Institute Press, 2013. Read: 1-9. (NWC 4173).
- Chang, Edward. "Smoke 'Em," <https://warisboring.com/smoke-em/> (Accessed December 17, 2019). Read. (NWC 1106).
- Hughes, Wayne P. and Robert P. Girrier. *Fleet Tactics and Naval Operations*. 3rd ed. Annapolis, MD: Naval Institute Press, 2018. Read: Chapter 15, "The Battle of the Aegean." (Issued).
- U. S. Naval War College. "Selected U. S. Navy and The Peoples Liberation Army (Navy) (PLA(N)) Tactical Capability Handbook." Slide pack, Newport, RI: Naval War College, Joint Military Operations Department, January 2020. Scan. (NWC 2164D).

Supplemental Reading

None.

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JMO-09

TABLETOP EXERCISE #1: ORGANIZING NAVAL ASSETS IN THE OPEN OCEAN

This is not a game! This is training for war! I must recommend it to the whole Army.

~ General von Muffling
Chief of the Prussian General Staff, 1824

Session Objectives

- Apply critical and creative thinking skills and knowledge of naval power in task organizing a naval force based on objective, environment, threat, and friendly capabilities and vulnerabilities.
 - Demonstrate a general understanding of employing tactical naval forces to achieve tactical objectives at sea.
 - Demonstrate the utility of a war game to aid decision-making.
-

Focus

The focus of this session is on tactical level employment and disposition of surface, submarines, and naval air forces in the maritime domain. Students will come together, using critical and creative thinking, to solve a tactical naval problem using modern day naval assets in a fictional scenario.

Background

Tabletop exercises, sand table exercises, and all manner of educational tools have been in use since the Indians devised the game of chaturanga—modern day chess—to teach military strategy and maneuver. From a cursory scan of the reading, we discover that map exercises, staff or command post exercises, training trips, tactical talks, and sand-table exercises are common forms of war games.

Successful war-games are a combination of science and art – as are successful operations. Clausewitz said, “War is the province of chance...It increases the uncertainty of every circumstance and deranges the course of events.” Chance is an expression of risk, which is a fundamental concept that all military decision-makers should be experienced in calculating and managing. War gaming facilitates this education in a “safe-to-fail” environment.

This first tabletop exercise will help reinforce the students’ understanding of the capabilities and employment of various naval platforms, sensors and weapons in the maritime domain. For this exercise, students will present their decision(s) and argue (support) them based on what they know of naval capabilities and platforms learned up to this point. Leveraging the basic naval tactics and platforms introduced in seminar, students will apply critical thought and rudimentary problem solving skills to first disaggregate the assigned forces. Next, based on the objectives, environment, threat and friendly capabilities and vulnerabilities, students will then aggregate and task organize their forces to maximize likelihood of tactical success.

This tabletop exercise is the first in a series of exercises that will expand in scope, complexity, and ambiguity—all intended to sharpen one’s critical thinking and decision-making skills. It is, in the language of critical thinking, a logic exercise and presents an opportunity for students to demonstrate their understanding of the challenges and characteristics of naval warfare discussed thus far.

Point of Contact

The point of contact for this session is CDR Patrick Snow, C-409.

Questions

Describe the utility of war gaming as a training and educational tool.

Develop, propose, and support your potential solution(s) to the given problem regarding the aggregation of naval power in terms of task and purpose.

Discuss how the development of a disposition of forces translates into warfare or task organizations and force requirement list. How does your disposition and organization of forces exploit capability advantages and mitigate vulnerabilities?

Required Readings (4 Pages)

Hoffman, Rudolf M. General, with Generals Franz Halder, Friedrich Fangor, and Field Marshal Wilhelm List. "A Synopsis of War Games." U. S. Army Historical Division, 1952. Read. (NWC 4143).

U. S. Naval War College. "Selected U. S. Navy and The Peoples Liberation Army (Navy) (PLA(N)) Tactical Capability Handbook." Slide pack, Newport, RI: Naval War College, Joint Military Operations Department, January 2020. Scan. (NWC 2164D).

Supplemental Readings

None.

BLOCK II: OPERATIONAL ART

A study of *Operational Art* prepares students to examine the entire spectrum of joint warfighting by introducing a theoretical framework and then applying that framework at the upper tactical and operational levels of war. Operational Art and Naval Warfare, both examined as theory, present the best practices of the past and serve as a model for understanding the military problems of today. The *Operational Art* and the following *Naval Warfare Theory* sessions therefore, do not follow what many are accustomed to vis-à-vis scientific theory—idea, test, replicate, and then create law. Students will discover that there are very few, if any, laws in the art of war. At the end of the block students retrospectively analyze an historical case through the lens of operational art, and apply their knowledge in developing an operational idea to achieve military objectives, given the situation faced by both belligerents in a major operation. Following a retrospective analysis of the case, students will apply their understanding of operational art by gaming alternative outcomes in teams representing the two belligerents. Finally, we examine operational leadership as a critical component in comprehending operational art in practice. The Objectives for the *Operational Art* sessions are to:

OBJECTIVES

- Comprehend Operational Art as a body of theory, including its historical roots.
- Understand the relationship between theory and practice of operational art.
- Apply operational art in the analysis of historical case studies involving ill-structured problems.

The point of contact for this block is Professor Doug Hime, C-423.

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JMO-10

PROBLEM SOLVING, CRITICAL THINKING AND THE COMMANDER'S ESTIMATE

Before undertaking a task the commander makes an estimate of the situation and formulates a plan of action. The estimate follows in general the accepted form. In scope and thoroughness it is commensurate with the size and importance of the task and the time available.

—Navy Department, *War Instructions*
Paragraph 217, 1944

Session Objectives

- Develop the ability to think critically in applying joint warfighting principles and concepts to joint operations.
 - Understand the relationship between critical thinking and problem solving.
 - Recognize the differences in problem structure and the various methodologies available to problem solvers to address them.
 - Understand the historical roots of the commander's estimate of the situation as a framework to apply logical reasoning in support of commander's decisions.
 - Identify the role and importance of the commander in the estimate of the situation, and how staffs provide support to sound military decisions.
-

🔍 Focus

This session addresses the fundamental challenges of problem solving and decision making that planners and commanders face. Recognizing there are differences between traditional military problems, characterized as structured or tame problems and what has become known as ill-structured or wicked problems is a key part of understanding war in the twenty-first century. The United States and its Allies have historically been successful at planning and executing conventional wars or what is known as state-on-state conflict. These successes have been in large part due to the application of traditional military theories, such as operational art, maritime warfare, combined arms, and maneuver warfare. We have, however, struggled to understand the problems of war when the enemy elects not to fight us symmetrically. Recognition that there are different types of military problems with different theories of action and solutions is an important part of one's professional military education. The goal is to improve student problem solving abilities, especially as applied to organizing, planning, and commanding at the high tactical and operational levels.

The session focuses on explaining and analyzing the mental processes and the role of the commander/staff in the estimate of the situation and in making sound military decisions. The intent of this seminar is to help you, as future staff officers, improve critical problem solving capabilities to first understand the problem(s) you face and second, to develop ways for them to be solved.

📖 Background

For more than three decades, the foundation of U.S. joint military analysis has been the Joint Planning Process (JPP). Joint Publication (JP) 5-0, *Joint Planning*, explains that the JPP is an orderly, analytical set of logical steps to frame a problem; examine a mission; develop, analyze, and compare alternative courses of action (COAs); select the best COA; and produce a plan or order. The U.S. Navy's planning process constitutes essentially the same set of steps in its doctrine, Naval Warfare Publication (NWP) 5-01, *Navy Planning*. These processes are sufficient when the problems are understood and there is a clear mission. They fall short when we are presented problems which are ill-structured.

Ill-structured problems most often manifest as social problems: insurgency, mass violence, terrorism or civil war. These events occur in and among the people and in keeping with general ideas on complex, ill-structured problems they are not solved. Violence is managed down to an acceptable level and they are moved from the existing state to a desired better state. Recognizing how problems are structured, which theory of problem solving to apply and when to apply it is important knowledge for both planners and commanders.

You will be presented with various theories of war throughout the remainder of the JMO term—operational art, maritime warfare theory, insurgency and counterinsurgency. These all have roots in what is known as the mental process of estimating the situation. Developed by the Prussian Army in the middle of the nineteenth century, it was originally called *Lagebeurteilung*, or the *assessment of the situation*—a mental process of reasoning in order to reach a sound decision. The U.S. Army adopted a similar model called *Estimating Tactical Situations and Publishing Field Orders* in the first decade of the twentieth century. The U.S. Navy followed with the *applicability system* or *estimate of the situation* in 1911 as the method for teaching students on how to make sound military decisions at the Naval War College. During the inter-war years, the document was refined by faculty to become the Navy's standard manual for estimating the situation, *Sound Military Decision*, published by the War College in 1936. It was used extensively by planners and commanders in both the Atlantic and Pacific Theaters during World War II. The lineage of today's Joint and Service planning processes can be traced to the estimate of the situation.

The estimate of the situation is the very foundation of any sound decision-making process, whether it be personal life, business, or in military affairs. In making a decision, one must collect all the facts and then determine what options are open and what might stand in the way of these options. Each option is then weighed against possible obstacles and in terms of their advantages and disadvantages. The estimate process should end with a sound decision. In military terms, the commander's estimate of the situation is understood as a logical process of reasoning by which a commander considers all the factors affecting a military situation to determine a course of action to accomplish a given mission. The estimate is a reasoned solution to a problem in which each step in the process incrementally leads to a decision that, without these steps, could be arrived at only by accident. The purpose of the estimate of the situation is not to justify a predetermined decision, but to develop a more reasoned, well informed approach to solving a military problem.

This session is intended to be a foundation for thinking about the problems you may face and how you may apply what you learn in joint professional military education to the art of war. The more planners and commanders practice conducting the estimate of the situation, the more likely the commander is to make sound decisions. One of the main prerequisites for making a sound decision is a full understanding of the theoretical underpinnings of the estimate as a whole and its principal elements. If the process is properly applied, the estimate of the situation should ensure that the commander and his staff do not leave out any factor of importance that has a bearing on the decision. At the same time, no amount of education or training will ensure that the commander makes a sound decision unless it is coupled with sound judgment and wisdom based on practical experience.

Point of Contact

The point of contact for this session is Professor Dick Crowell, C-425.

Questions

How do you define critical thinking and what are some core critical thinking skills?

How does a problem's structure relate to the methodology to resolve it?

If social problems most often manifest themselves as Complex Adaptive Systems (CAS), what roles do culture and religion play in understanding the operating environment, problem framing and solving the problem? How does a problem solver know when these types of problems are 'solved'?

Describe advantages and disadvantages of deductive and inductive reasoning.

Discuss the historical roots of the commander's estimate of the situation.

What is the relationship between the mental process and the format of the estimate of the situation? What are advantages and disadvantages of each?.

Required Readings (97 Pages)

Facione, Peter A. *Critical Thinking: What It Is and Why It Counts*. Measured Reasons LLC, Hermosa Beach, CA, 2015. (NWC 4164).

Hartig, William J. U.S. Naval War College. Joint Military Operations Department. "Problem Solving and the Military Professional." Newport, RI: Naval War College, 2010. (NWC 1029).

King, Charles. "How to Think." Washington, D.C.: Georgetown University, School of Foreign Service and Department of Government, 1999. (NWC 4167).

U.S. Naval War College. "Sound Military Decision." U.S. Naval War College. Newport, RI: Naval War College Press, 1942. **Scan:** Part One, Chapter III, *Basic Principles Applicable to Military Problems* and **Read:** Part One, Chapter IV, *The Application of the Fundamental Principle (Objectives – Their Selection and Attainment)*. (NWC 6047).

Vego, Milan. *The Commander's Estimate of the Situation and the Decision*. Newport, RI: Naval War College, November 2019. (NWC 1227).

Supplemental Reading

Fitch, Roger S. *Estimating Tactical Situations and Composing Field Orders*. For Leavenworth, KS: U.S. Infantry and Cavalry School, 1909.

Kiersky, James H. and Nicholas J. Castle. *Thinking Critically: Techniques for Logical Reasoning*. West Publishing Co.: New York. 1995

Simon, Herbert A. "The Architecture of Complexity." *Proceedings of the American Philosophical Society* 106 (1962): 467-482.

Vego, Milan. "The Bureaucratization of the U.S. Military Decisionmaking Process." National Defense University Press, JFQ 88, 1st Qtr 2018,
<https://ndupress.ndu.edu/Publications/Article/1411771/the-bureaucratization-of-the-us-military-decisionmaking-process/>

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JMO-11

INTRODUCTION TO OPERATIONAL ART

The future of operational art depends on today's officer corps understanding the historical and theoretical basis of the concept... In an era of diminishing resources, understanding operational art will be an invaluable asset to the decision-makers who will have to select which technological advances will be pursued and which will not.

~ James J. Schneider, School of Advanced Military Studies
 "Theoretical Implications of Operational Art," 1990

Session Objectives

- Comprehend the meaning of the term operational art.
 - Understand the historical emergence of operational art.
 - Comprehend how operational art links strategy to tactics.
-

🔍 Focus

This session focuses on the historical roots of operational art and introduces the linkages between operational art, strategy, and tactics. The study of the theory known as operational art is presented here using mid- to high-intensity combat scenarios because that is the most direct manner in which to discern the nature of the art. That is not to say, however, that operational art does not apply to lower intensity combat scenarios as we shall see later in the trimester.

📖 Background

In Strategy and War you discussed, or in some cases will discuss, Clausewitz, Mahan, and Douhet—military theorists who looked to the past to predict how wars could be better fought in the future. These theorists lived in turbulent times, highlighted by technical advancements. As the size, speed, and diversity of military forces grew—as well as the space they occupied and in which they fought, these men understood that a good strategy alone could not guarantee a victory; conversely, one could win every tactical engagement and still lose the war. To achieve victory, they understood that one must effectively link strategy and tactics to ensure that tactical actions support strategic objectives. In modern warfare, the strategic perspective is often too broad to ensure the decisive employment of one's sources of power; likewise, the tactical framework is often too narrow.

Another field of study and practice exists to synchronize multiple sources of power properly in order to accomplish the ultimate strategic or operational objective. This third component of military art, operational art, occupies an intermediate position between the realm of policy and strategy and that of tactics—and is inextricably linked to both. Without operational art, war would be a set of disconnected engagements, with relative attrition the only measure of success or failure.

Operational art, as defined by Dr. Milan Vego in *Operational Warfare at Sea: Theory and Practice*, is the component of military art concerned with the theory and practice of planning, preparing, conducting, and sustaining campaigns and major operations aimed at accomplishing operational or strategic objectives in a given theater. Operational art emerged in the nexus of societal change and advancements embodied by industrialization and technology. As the size of military forces and the resultant complexity of their movement and sustainment grew, military leaders and theoreticians, both on land and at sea, sought effective methods for conducting war on a greater scale. The interaction among study, theory, and practice continues today.

The application of operational art is a cognitive process; the conduct of warfare at the operational level preceded the emergence of formal operational art. Operational art is not strategy; strategy is developed and implemented at the national and theater level. Operational art helps commanders make sound decisions and use resources efficiently and effectively to achieve strategic objectives. It requires broad

vision—the ability to anticipate—and effective joint and multinational cooperation. Finally, operational art is practiced not only by Joint Force Commanders, but also by their senior staff officers and subordinate commanders.

Point of Contact

The point of contact for this session is Professor Doug Hime, C-423.

Questions

How does theory contribute to our understanding of operational art?

How does operational art link strategy and tactics?

How does operational art assist commanders in making sound military decisions?

Discuss how an understanding of operational art assists commanders in non-traditional warfare.

Explain why operational art begins with the objective.

Required Readings (41 Pages)

Menning, Bruce W. “Operational Art’s Origins.” *Military Review* 77 (1997). Reprint. Read: 1-13. (NWC 1110).

Vego, Milan. *Operational Warfare at Sea: Theory and Practice*, 2d ed. London: Routledge, 2017. (Issued). Read: 1 - 20.

———. “A Guide for Deriving Operational Lessons Learned.” Newport, RI: U.S. Naval War College, 2006. (NWC 1159).

Supplemental Reading

None.

JMO-12

MILITARY OBJECTIVES AND THE LEVELS OF WAR

Pursue one great decisive aim with force and determination—a maxim which should take first place among all causes of victory.

~ Carl von Clausewitz
Principles of War, 1812

Session Objectives

- Understand the relationship among and between the strategic, operational, and tactical levels of war and their corresponding objectives.
 - Identify the concepts of regressive planning and operational-level planning that are the focus of the course.
 - Analyze how the “Four Questions” of warfare can help operational-level commanders employ assets in the pursuit of strategic objectives.
-

🔍 Focus

The foci of this session are the importance of the objective in operational warfare, the process of determining and articulating objectives, the scale of military objectives, the linkage between the objective and its constituent tasks, and the relationships between the military objectives and corresponding levels of war.

≡ Background

As pointed out in the session introducing operational art, a clearly stated and attainable objective is essential in order to link strategy and tactics; without a clearly attainable objective, any military effort expended is literally aimless and tactical actions, however successful, remain random. Almost all aspects of operational warfare are related, either directly or indirectly, to the objective to be accomplished.

Tactical, operational, and strategic objectives are differentiated according to their scale. Among other things, the objective determines the method of one’s combat force employment, the size of the physical space for accomplishing it, the level of war, and also the level of command, type of planning, and major phases and elements of one’s combat force employment. The scale of the objective determines the method of one’s combat force employment and the size of the physical space in which one’s forces are to be employed, not vice versa.

The selection of an objective is the first and most critical step in undertaking any military enterprise. As Liddell-Hart describes, this establishes purpose for the operation. Once the objective is determined, the entire problem becomes greatly simplified (but not necessarily easy to resolve). Determining a military objective, however, is often the most difficult aspect of operational planning, requiring a careful analysis of the enemy’s factors of space, time, and force. In general, the larger the scale of the objective, the more important the factors of space, time, and force to be considered become.

It is not sufficient to specify the objective alone; one must also clearly articulate what type of action must be carried out to accomplish the specific objective or the staff will be unable to plan the pending operation effectively. The operational commander and planners must also try to anticipate the possible effects (consequences or results) of the accomplishment of the military objective and the intermediate objectives that nest with the overall objective. This is more an art than a science and requires planning regressively: Working backwards from the desired end state to ensure that the required conditions are created at each step prior to executing the operation. Much depends on the commander’s knowledge and understanding of the enemy and all aspects of the military and nonmilitary situation. There are, however, many pitfalls in the process, which, in turn, can make predictions tenuous at best. A useful cognitive

approach is to ask four fundamental questions that can assist the commander in visualizing the scope of his or her operation:

- What are the objectives and desired military end state? (Ends)
- What sequence of actions is most likely to achieve those objectives and military end state? (Ways)
- What resources are required to accomplish that sequence of actions? (Means)
- What is the likely chance of failure or unacceptable results in performing that sequence of actions? (Risk)

Finally, the scale and complexity of the military objective to be accomplished determine the level of war to be conducted. This is a crucial point when initially preparing for an operation. Understanding the level of war allows commanders to focus on the appropriate environmental factors, centers of gravity, and decisions. An operational level commander focused too much on the tactical actions can overlook or fail to anticipate the need to create conditions that transition the operation to another follow-on operation or termination of conflict. For the Joint Maritime Operations Course, we will focus primarily on the operational and tactical levels of war.

Point of Contact

The point of contact for this session is CDR Joe Dransfield, RN, C-407.

Questions

How can the “four questions” help an operational commander respond to strategic guidance?

What is the relationship between the military objective and its constituent tasks?

How do U.S. military commanders derive military objectives from higher strategic direction?

Discuss the differences between and components of military art (strategy, operational art, and tactics) and the levels of war.

If strategy is a plan to achieve some end, how do we develop a concrete plan of action that employs the armed forces and other instruments of national power in a synchronized fashion to achieve these ends?

Required Readings (88 Pages)

Hime, Douglas N. U.S. Naval War College. Joint Military Operations Department. “The Leyte Gulf Case Study.” Newport, RI: Naval War College, December 2013. Read: 1-22. **(NWC 1196)**.

Vego, Milan. *Joint Operational Warfare: Theory and Practice*. Newport, RI: Naval War College, reprint 2009. Read: I-35 to I-50, “Policy-Strategy-Operational Art Nexus,” and II-3 to II-20, “Military Objectives and the Levels of War.” **(Issued)**.

Liddell-Hart, Sir Basil Henry. “The Objective in War: National Object and Military Aim.” *Naval War College Review* 5, no. 4 (December 1952). **(NWC 2046)**.

JMO-13

OPERATIONAL FACTORS

Armies do not burst from one theater of war into another; rather a projected strategic envelopment may easily take weeks and months to carry out. Besides, distances are so great that the chances of even the best measures finally achieving the desired result remain slight.

~ Carl von Clausewitz
On War, 1832

Session Objectives

- Comprehend the operational factors of space, time, and force.
 - Comprehend the interrelationship between the operational factors.
 - Analyze the process by which an operational commander balances the operational factors against each other in order to expose opportunities and risks towards the achievement of the objective.
-

🔍 Focus

This session addresses a foundational aspect of operational art—the analysis of operational factors of space, time, and force and the interrelationship between these factors in achieving objectives. As we have already discovered, all aspects of operational art are linked to objectives. The concept of using information obtained from the analysis of operational factors in order to understand the operating environment better and to make sound operational decisions is examined in this session. This session builds on the theories introduced in earlier sessions, Introduction to Operational Art and Military Objectives and the Levels of War. Additionally, the assigned Leyte Gulf case study reading along with the historic information presented in the War in the Pacific lecture provide context for illustrating applications of operational factors in planning and conducting tactical actions and operations.

≡ Background

Understanding military problems begins with factors: Space, Time, and Force. The operational commander evaluates the objective through the lens of factors space, time, and force to expose opportunities and risks towards the achievement of the objective. This visualization is the genesis of the operational idea and subsequently, the concept of the operation. As the commander develops the operational idea, operational functions can help mitigate disadvantages and exploit advantages in space, time and force in order to accomplish the objective.

Since force employment and space for force employment are determined by the objective, analysis of operational factors begins with the objective. Without an objective, the analysis has no purpose. Critical aspects of information from both the enemy and friendly sides are included in this analysis. Although operational commanders may not be able to choose their space, they do have the ability to manage the characteristics of time and force. The size, shape, and nature of a space will affect the quantity and type of forces employed, as well as the time required to conduct a successful military operation. Managing aspects of all three of these factors allows the commander to shape the operational environment to his or her advantage and mitigate operational and tactical risks.

👤 Point of Contact

The point of contact for this session is Lt Col Ed Seibert, USAF, C-403.

?? Questions

Explain the theoretical relationships between the operational factors space/time, space/force, and time/force. How might an operational commander balance these relationships to achieve objectives?

Leyte Case Study: Students will analyze the Leyte Gulf case study either individually or in groups.

Assess the factors space, time and force as they appeared to the Japanese and American commanders during the planning for the invasion of Leyte Island. Frame the problem as the commanders and their planners did during planning. Your point in time is September 1944, prior to the Allied invasion. Look for those aspects of each factor, and more importantly, those key interactions between factors, that had the most impact on the options available to the commander.

Some Topics to Consider: (Not all inclusive)

- Geography of Leyte Island and the surrounding archipelago.
- Disposition, strength and readiness of defending Japanese forces.
- Disposition, strength and readiness of Allied forces.
- Intangible factors (leadership, doctrine and training).
- Availability of resources, such as fuel.

Required Readings (70 Pages)

Hime, Douglas N. U.S. Naval War College. Joint Military Operations Department. "The Leyte Gulf Case Study." Newport, RI: Naval War College, December 2013. Review: 1-22, Read: 23-32, and Appendices A thru F. **(NWC 1196)**.

Vego, Milan. *Joint Operational Warfare: Theory and Practice*. 2009. Reprint, Newport, RI: Naval War College Press, 2009. Read: III-3 to III-63, "Operational Factors." **(Issued)**.

Supplemental Reading

None.

JMO-14

OPERATIONAL FUNCTIONS

I don't know what the hell this 'logistics' is that Marshall is always talking about, but I want some of it.

~ Admiral Ernest King
Commander-in-Chief of the Fleet and
Chief of Naval Operations (CNO), 1942-1945

Session Objectives

- Comprehend the role and importance of operational and joint functions in operational planning and execution.
 - Understand how operational and joint functions support major operations and campaigns.
-

🔍 Focus

The focus of this session is to examine what operational functions are and how planners and commanders use them to exploit advantages in operational factors and mitigate operational and tactical risks. In order to achieve objectives effectively, commanders use various operational functions to maintain freedom of action while simultaneously limiting the options of an opponent.

📖 Background

Operational functions include *supporting structures and activities* that exist at all levels of war and are key elements to consider in operational art. Called *joint functions* in joint doctrine and *warfighting functions* in USA and USMC doctrine, they are activities with which planners and commanders can mitigate unfavorable factor (space, time, force) disadvantages and exploit favorable advantages. Operational commanders should ensure these functions are balanced and integrated with due consideration of competing resources, support capabilities, shifting operational priorities, and differences among service component practices. Careful analysis of operational factors and their relationship to an objective allows operational functions to emerge that are most relevant to the major operation. Operational commanders establish, protect, and use these functions to sequence and synchronize operations along cognitive and physical lines of operation in order to defeat (or protect) centers of gravity which facilitate tactical success.

Although Milan Vego discusses operational functions in *Joint Operational Warfare: Theory and Practice*, Part VIII, in *Operational Warfare at Sea: Theory and Practice*, he subsequently labels these “functions” as operational support elements, which he argues should be fully organized and developed by the operational commander for maximum effectiveness in employing one’s combat forces. These elements include: intelligence, information operations, fire, logistics, and protection, and their integration ensures efficiency and effectiveness. The sequencing and synchronization of operational support elements [aka ‘operational functions’] ensures and enhances the ability of operational commanders and their subordinate elements to carry out their assigned responsibilities throughout a campaign or major operation. Similarly, joint doctrine states that “joint functions” are related capabilities and activities grouped together to help the Joint Force Commander (JFC) integrate, synchronize, and direct joint operations. Joint Publication 3-0, *Joint Operations*, states that joint functions are common to joint operations at all levels of war, and fall into seven basic groups—command and control, intelligence, information, fires, movement and maneuver, protection, and sustainment. Operational functions reinforce and complement each other and over- or under-resourcing any single function occurs at the expense of the combat force’s aggregate capability. Operational commanders, by deliberately disrupting enemy functions, create vulnerabilities that tactical commanders exploit on the battlefield. Therefore, operational commanders manage operational functions in order to facilitate success by tactical component commanders.

Point of Contact

The point of contact for this session is Lt Col Ed Seibert, USAF, C-403.

Questions

What is the relationship between operational factors and operational support?

Combatant commanders establish, maintain, and protect operational functions for routine peacetime activities as well as for war. What risks does the commander assume in an immature theater in which these operational functions have not yet been fully established?

Leyte Case Study: Students will analyze the Leyte Gulf case study individually or in groups.

Looking at the Japanese and American plans prior to the landings at Leyte Gulf, identify and assess both sides' planned use of operational functions to balance space, time and force to achieve their objectives. Some topics to consider include the following:

- How effectively were the operational support elements managed and orchestrated to offset disadvantages in space, time, or force?
- What operational functions did they synchronize and what effect did this synchronization have on the operation?
- Assess their methods of obtaining a force advantage.
- What was the impact of their resource shortages at that point in the war, especially fuel?
- Assess their C2 Structure (Command Organization) and arrangement of forces, including the location and tasking of reserve forces and the timing of their commitment.
- Assess the division of space between LTG Kruger/VADM Kinkaid and VADM Halsey.
- Assess the control / coordination measures for the AO as they relate to naval forces.
- Assess the operational and strategic reserve force composition and ready location, commitment triggers, employment time, and so forth.

Required Readings (39 Pages)

Vego, Milan. *Operational Warfare at Sea: Theory and Practice* 2d ed. New York: Routledge, 2017. Read: 166-185. **(Issued)**.

Hime, Douglas N. U.S. Naval War College. Joint Military Operations Department. "The Leyte Gulf Case Study." Newport, RI: Naval War College, December 2013. Review: 1-32, and Appendices A thru F. **(NWC 1196)**.

U.S. Office of the Chairman, Joint Chiefs of Staff. *Joint Operations*. Joint Publication (JP) 3-0. Washington, D.C.: CJCS, 17 January 2017, incorporating Change 1, October 22, 2018. Scan: III-1 to III-48.

———. *Doctrine for the Armed Forces of the United States*. Joint Publication (JP) 1. Washington, D.C.: CJCS, March 25, 2013, incorporating Change 1, July 12, 2017. Read: I-17 to I-19.

JMO-15

THE THEATER: ITS STRUCTURE AND GEOMETRY

War is the business of positions.

~ Napoleon I

Session Objectives

- Comprehend the relationship between the military objective(s) and the physical structure of a theater.
 - Understand the considerations that may inform and influence theater structure.
 - Understand the meaning and importance of the key terms pertaining to theater geometry (positions, bases of operation, lines of operation, decisive points, lines of communication, and objectives).
-

Focus

This session explores the meaning of the term “theater,” its structure, and its elements or geometry. The inextricable linkages among and between the objective(s), theater, and levels of war and command will be discussed, and the Leyte case study will be introduced to illustrate and enable a critical analysis of the theater structure and selected parts of the theater geometry in seminar.

Background

As discussed during the Military Objectives and Levels of War session, the objective determines the level of war and the employment of the required force. Force employment determines the space required to best employ this force. Therefore, a theater of war should be militarily organized to ensure the most favorable conditions for the employment of one’s forces across the entire spectrum of conflict, from peacetime competition to high-intensity conventional war. The larger the assigned military objective(s), the greater the force required and, therefore, the larger the physical environment required to deploy, concentrate, and maneuver the force, and the larger the infrastructure needed to support the employment of one’s forces. Hence, the theater has to be divided into a number of geographically-based areas to ensure the most effective employment of one’s military and nonmilitary sources of power. The structure of a three-dimensional theater, overlaid with the information environment, can include one or more theaters of operations, areas of operations, and combat zones (or sectors). The size of each subdivision should be primarily based on the scale of the military objective to be accomplished and the selected method of combat force employment. The latter, in turn, dictates the size and mix of one’s forces required to accomplish a given objective. The theater and its subdivisions are the very basis for establishing and maintaining tactical, operational, and strategic levels of command or command echelons.

Any theater contains a variety of natural and artificial features called “theater elements” or “theater geometry” that significantly affect the planning and execution of military action at any level of war. These theater elements include: positions, distances, bases of operation, physical objectives, decisive points, lines of operation (LOO)/lines of effort (LOE), and lines of communication (LOC)—any of which may have tactical, operational, or even strategic significance. The key to evaluating the military importance of these features involves not only their number and characteristics, but also their relative position and distance from each other—the geometry of the situation. Operational commanders and their staffs must, therefore, know and understand the advantages and disadvantages of these elements to ensure the most effective employment of their forces against the enemy, but also to protect friendly forces from reciprocal actions by the enemy.

Point of Contact

The point of contact for this session is CDR Joe Dransfield, RN, C-407.

?? Questions

In building an appreciation of the operational environment, what physical and intangible factors bear on theater structure and how are they balanced?

Explain the advantages and disadvantages of central and exterior positions.

What is the original meaning and importance of the Jominian concept of a “decisive point”? Has the information age changed that concept? If so, how?

To what extent are there differences in using lines of operations on land, in the air, or at sea? Explain.

Leyte Case Study: Either individually or in groups, students will analyze the Leyte Case Study.

Given the military objective and looking at the theater from the perspectives of the Japanese and American fleet and numbered army on each side, explain how the principal elements of the theater impact the following:

1. Balancing the required force to achieve the objective with the space requirements and their inherent limitations.
2. The exercise of effective command and control.
3. Aspects of the theater geometry that offer advantages to exploit or disadvantages to mitigate or protect.

Elements to consider:

- Geography of the Philippine archipelago, South China Sea, SE Asia, Indonesia
- Positions relative to the force that the opposing sides have to employ, given their objectives.
- (Current) Bases of Operation; (Anticipated) Bases of Operations
- Key distances for consideration: maritime transit times, air coverage, land movement, and so forth.
- Points considered decisive, relative to the objective and the employment of forces.

📖 Required Readings (39 Pages)

Vego, Milan. *Joint Operational Warfare: Theory and Practice*. Newport, RI: Naval War College, reprint 2009. (**Issued**). Read: APP-5 to APP-10, “Levels of Command,” IV-3 to IV-10, “The Theater and Its Structure,” and IV-49 to IV-74, “Theater Geometry.”

Hime, Douglas N. U.S. Naval War College. Joint Military Operations Department. “The Leyte Gulf Case Study.” Newport, RI: Naval War College, December 2013. Review: 9-22. (**NWC 1196**).

JMO-16

MAJOR OPERATIONS / CAMPAIGNS AND THEIR ELEMENTS

What the theorist has to say here is this: one must keep the dominant characteristics of both belligerents in mind. Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends. That is the point at which all our energies should be directed.

~ Carl von Clausewitz
On War, 1832

Session Objectives

- Identify and examine the principal elements of warfare through the lens of the operational objective.
 - Understand the concepts of ‘critical factors,’ ‘culminating point,’ and ‘center of gravity.’
 - Explain the usefulness of the concept of center of gravity in facilitating tactical success.
 - Using the Leyte Gulf case study, deduce, and analyze the opposing side’s centers of gravity.
 - Deduce the operational ideas developed by opposing commanders during planning for the invasion of Leyte Island.
-

🔍 Focus

This session will examine how a commander analyzes critical factors with a focus on the operational objective to determine the operational centers of gravity. This allows the commander to develop an operational idea on how to defeat the enemy’s center of gravity while protecting one’s own, which is the heart of operational design. The point of culmination is also examined, including how it relates to center of gravity.

📖 Background

Understanding the theory of the concept of center of gravity is crucial if operational commanders and their staffs intend to employ their combat power successfully in the shortest time and with the least losses for friendly forces. In order to save both blood and treasure, operational commanders must focus the major portion of their efforts against the strongest source of the enemy’s power: the center of gravity (COG). Commanders risk wasting scarce resources and time when combat power is applied to sources of power that do not lead to the accomplishment of the objective.

Identifying centers of gravity is one of the outcomes of a solid, thorough analysis of the operational factors and functions. This allows planners and commanders to identify critical factors: those activities and requirements that are crucial for accomplishing the objective (friendly) or for the enemy to accomplish its objective (enemy). While critical, some of these factors are strengths and others are weaknesses. Always tied to an objective, the foremost critical strength is the center of gravity. Centers of gravity arguably exist at all levels of war—both friendly and adversary. Consequently, it is critical to be clear when discussing COGs—which side’s, at what level of war, and associated with what objective? Moreover, like objectives, COGs are nested; destruction of an operational-level COG should undermine the strength of the strategic COG. If not, then one’s critical factor analysis is likely flawed. Thorough analysis of the factors and functions—and how they evolve over time—allow commanders to determine critical factors, identify critical strengths and critical weaknesses, and then select a critical strength as the center of gravity.

How to do this forms the basis for a commander’s operational idea and subsequently, the concept of the operation. It should include, in broad terms, the commander’s vision of what the commander intends to do to accomplish the overall objective, and the conditions that must be created in order to achieve success. It includes a concept of the defeat (or stability) mechanisms, and the sequence of major events required for operational success—in sufficient detail to allow subordinate tactical commanders to draw their own schemes for their respective forces. By applying focused combat power against the enemy’s

COG (while protecting one's own), the astute commander avoids early culmination while forcing culmination upon his or her opponent.

During this session, students will develop a working definition of a COG, identify Japanese and Allied operational objectives and deduce enemy and friendly COGs. Once the COGs have been deduced, students will hone their critical thinking skills as they deconstruct the COGs in order to determine a method for defeating the COG and for forming the basis for an operational idea.

Point of Contact

The point of contact for this session is Professor Al Bergstrom, C-430.

Questions

Why and how is the COG tied to an objective?

How does a planner or commander deduce an enemy center of gravity? Describe another method for deducing a center of gravity.

To what extent does the center of gravity apply across the entire spectrum of conflict? What other analytical tools may planners use to develop an operational idea?

How are the concepts of center of gravity and culmination related? Explain factors that may determine whether an indirect or direct approach to the center of gravity is appropriate.

Explain the relationship between defeat and stability mechanisms and center of gravity.

Explore the concept of the operational idea. How is it linked to the commander's estimate of the situation (CES) and commander's guidance for planning?

Leyte Case Study: Students will report on the following, either individually or as part of a group:

What were the Japanese and Allied operational-level centers of gravity (from the perspective of the opponents in 1944, not in hindsight)? How well did the respective commanders identify and exploit critical factors?

What were the indications that either the Japanese or the Allies (or both?) reached a culmination point in the battle for Leyte?

Articulate the Japanese and Allied operational ideas for the invasion and defense of Leyte, as developed during planning. How well did the operational ideas properly focus on the objective and on defeating the opposing COG?

Required Readings (76 Pages)

Hime, Douglas N. U.S. Naval War College, Joint Military Operations Department. "The Leyte Gulf Case Study." Newport, RI: Naval War College, December 2013. Review: 9-32. Review: Appendices A through F. (NWC 1196).

Strange, Joseph L., and Richard Iron. "Understanding Centers of Gravity and Critical Vulnerabilities: Part 2: The CG-CC-CR-CV Construct: A Useful Tool to Understand and Analyze the Relationship between Centers of Gravity and Their Critical Vulnerabilities." Air University Website, Last modified July 1 2014. Read. (NWC 1098).

- U.S. Office of the Chairman, Joint Chiefs of Staff. *Joint Planning*. Joint Publication (JP) 5-0. Washington, D.C.: CJCS, 16 June 2017. Read: IV-23 to IV-34. **(Issued)**.
- U.S. Naval War College, Joint Military Operations Department, *The Joint Operations Planning Process Workbook*, Newport, RI: Naval War College, 1 July 2013. Read: Appendix C. **(NWC 4111J w/Chg 1). (Issued)**.
- Vego, Milan. *Operational Warfare at Sea: Theory and Practice*, 2nd ed. New York: Routledge, 2017. Read: Chapters 7 and 8. **(Issued)**.

Supplemental Reading

- Butler, James P. "Godzilla Methodology." *Joint Force Quarterly* 72 (1st Qtr, 2014): 26-30. **(NWC 1097)**.
- Hartig, William. U.S. Naval War College, Joint Military Operations Department. "Complexity and the Center of Gravity." Newport, RI: Naval War College, 2010.
- Hecht, Edo. "Defeat Mechanisms: The Rationale Behind the Strategy." *Infinity Journal* 4, No. 2 (Fall 2014): 24-30.
- Mendel, William W. and Lamar Tooke. "Operational Logic: Selecting the Center of Gravity." *Military Review* (June 1993): 3-11.
- Strange, Joe. "Centers of Gravity & Critical Vulnerabilities: Building on the Clausewitzian Foundation So That We Can All Speak the Same Language." *Perspectives on Warfighting*, No. 4, Quantico, VA: Marine Corps University Foundation, 1996.
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JMO-17

ENHANCED TABLETOP EXERCISE PREPARATION

War games are a proven method for evaluating plans and operational concepts. They provide means of testing ideas of coordinating services and combat arms/branches and exploring and considering all possible options prior to drafting of the final operational plan... They are an important means for the spiritual preparation for war and for shaping unified and tactical and strategic views.

~ Milan Vego, Operational Warfare at Sea, 2^d ed.

Session Objectives

- Understand the tabletop wargame rules, materials, and game-play mechanics sufficiently to play and achieve the game's learning objectives.
 - Apply game rules and mechanics during a walk-through practice game turn.
-

🔍 Focus

This session is preparation for an upcoming two-sided tabletop educational war game based on the WWII Battle of Leyte Gulf. The focus of this session is on establishing a working understanding of the game so that students will be able to focus on the content of the game on game day. This session will include a walk-through, paced, practice game turn based on the historical battle.

🔧 Background

Competitive war games are an effective active learning technique because they place students in a competitive environment where they must deal with uncertainty, make decisions in the presence of a thinking enemy, and deal with the consequences of those actions. In order for this to work, there must be a set of rules, or game mechanics, that effectively model combat to an acceptable level of fidelity. Rules and game mechanics, however, must not be allowed to compromise learning. Designing an educational wargame involves balancing the factors of accuracy, playability and student immersion. A moderate amount of effort spent studying the game documentation and conducting a walk-through game turn will greatly facilitate learning during the game.

👤 Point of Contact

The point of contact for this session is Ivan Luke, C-432.

?? Questions

Explain the various game components and how they are used in simulating naval combat.

Describe the steps of a game turn.

Demonstrate how to complete Move, ISR, and Fires cards.

📖 Required Readings (XX Pages)

U.S. Naval War College, Joint Military Operations Department. *War at Sea Quick Start*. Newport, RI: Naval War College, 2020. Read. **(Issued)**.

U.S. Naval War College, Joint Military Operations Department. "War at Sea: Philippines Assault and Defense; Student Scenario Guide, United States." Newport, RI: Naval War College, 2020. **Limited Distribution to U.S. team only.**

U.S. Naval War College, Joint Military Operations Department. "War at Sea: Philippines Assault and Defense; Student Scenario Guide, Japan." Newport, RI: Naval War College, 2020. **Limited Distribution to Japan team only.**

References

U.S. Naval War College, Joint Military Operations Department. *War at Sea: Rules to Simulate Naval Battles from World War 2 to Today*. Newport, RI: Naval War College, January 2020.

JMO-18

COMMANDER'S ESTIMATE OF THE SITUATION AND THE OPERATIONAL IDEA: A PROSPECTIVE ANALYSIS (PE)

Making a quick and good (not necessarily the best) decision is one of the most important responsibilities of a military commander at any level of command.

~ Milan Vego
NWC 1219

Session Objectives

- Apply the logic of the Commander's Estimate of the Situation to generate and evaluate options to accomplish a given military mission.
 - Synthesize and apply operational art concepts to balance ends, ways, means and risk during conceptual planning for a military operation.
 - Create an original operational idea for employing forces to accomplish assigned objectives.
-

🔍 Focus

The focus of this session is the practical application of material introduced during JMO-10, the "Commander's Estimate of the Situation" (CES). In this session students apply this logical reasoning process to the same military problems faced by the Allied and Japanese commanders in the 1944 Battle of Leyte Gulf. Given the same factors of space, time, and force as the historical commanders, students apply the logic of the Commander's Estimate to develop original operational ideas to achieve the assigned objectives. These operational ideas will be tested in a two-sided wargame in a subsequent session.

🔧 Background

The Commander's Estimate of the Situation is the logical reasoning process where a military commander considers all relevant factor in order to make a decision about how to accomplish a given mission. Within the larger context of Operational Art, an estimate of the situation entails a thorough analysis of all relevant aspects of a military problem. This includes the assigned objectives, the friendly and enemy military situations, and the various factors of the operating environment that constrain or enable action. Out of this analysis, the commander generates and evaluates various alternatives to achieve the objective. Properly done, the CES leads to a sound, timely decision on a general approach to achieve assigned objectives. The CES is conceptual planning. It is the underlying thorough and methodical process of reasoning that underpins the formatted steps of a detailed planning processes.

👤 Point of Contact

The point of contact for this session is Ivan Luke, C-432.

?? Questions

Analyze factors time, space and force relative to your team's assigned objectives. What advantages or opportunities do you see?

What challenges do factors time, space and force present? To what degree do those challenges limit or constrain your options?

What are the friendly and enemy Centers of Gravity (COG) relative to your assigned objectives at the operational level of war? To what degree does a deconstruction of those COGs inform you're your alternatives for achieving your assigned objectives?

Given your analysis, broadly speaking how might you employ your assigned forces to achieve your assigned objectives?

Required Readings (xx Pages)

Vego, Milan. "The Logic of the Commander's Estimate and the Decision." Newport, RI: Naval War College, December 2019. Review (Previously assigned in JMO-10). (NWC 1227).

———. *Joint Operational Warfare: Theory and Practice*. Newport, RI: Naval War College, reprint 2009. (Issued). Read IX-103 to IX-129, "The Operational Idea." (Issued).

U.S. Naval War College, Joint Military Operations Department. "War at Sea: Philippines Assault and Defense; Student Scenario Guide, United States." Newport, RI: Naval War College, January 2020. **Limited Distribution to U.S. Team only.**

———. "War at Sea: Philippines Assault and Defense; Student Scenario Guide, Japan." Newport, RI: Naval War College, January 2020. **Limited Distribution to Japan Team only.**

References and Supplemental Reading

U.S. Naval War College, Joint Military Operations Department. *War at Sea Quick Start*. Newport, RI: Naval War College, January 2020.

———. *War at Sea: Rules to Simulate Naval Battles from World War 2 to Today*. Newport, RI: Naval War College, January 2020.

———. "War at Sea: Philippines Assault and Defense; Detailed Scenario Guide, United States." Newport, RI: Naval War College, January 2020. **Limited Distribution to U.S. Team only.**

———. "War at Sea: Philippines Assault and Defense; Detailed Scenario Guide, Japan." Newport, RI: Naval War College, January 2020. **Limited Distribution to Japan Team only.**

Vego, Milan. "Operational Commander's Estimate of the Situation and the Decision," *Joint Operational Warfare: Theory and Practice*. Newport, RI: Naval War College, reprint 2009. (Issued).

JMO-19

TABLETOP EXERCISE #2, OPERATIONAL DESIGN, THE BATTLE FOR LEYTE GULF (PE)

In the context of training, wargaming needs to be used more broadly to fill what is arguably our greatest deficiency in the training and education of leaders: practice in decision-making against a thinking enemy.

~ General David H. Berger
Commandant of the Marine Corps, 2019

Session Objectives

- Synthesize and apply operational art concepts to balance ends, ways, means and risk during simulated naval combat.
 - Make sound time-constrained military decisions that support commander's intent based on ambiguous and incomplete information.
 - Assess simulated combat actions against a thinking enemy and adjust as necessary to accomplish assigned objectives.
 - Evaluate the results of simulated combat and draw lessons learned of future value.
-

Focus

This session is a two-sided tabletop educational wargame based on the WWII Battle of Leyte Gulf. The focus is active military decision making in the presence of a thinking enemy in order to reinforce and synthesize theoretical concepts studied to date. Students play the roles of the Allied and Japanese commanders and engage in simulated combat in a realistic, time-constrained context. Students begin with the historical military situation including the same objectives and factors of time, space and force that the commanders faced in 1944, but are not constrained by the historical actions or outcomes. Instead, based on a clean-sheet commander's estimate of the situation conducted in a prior session, students employ forces in accordance with their own original operational idea. They must deal with ambiguous and incomplete information as well as the element of chance and luck inherent in combat in order to assess and adjust as necessary. At the conclusion of the simulation, students will evaluate the results of the game during a moderated debrief to draw lessons learned of future value.

Background

There are many kinds of war games, each serving a different purpose. Some war games are predictive, foreshadowing how certain weapons or tactics will perform against a specific enemy. Other war games are developmental, intended to test and refine operational or strategic concepts. This game is educational in nature. Its purpose is to provide an opportunity for active learning—learning through the experience of making decisions and seeing their effects in real time. Following game conclusion, a hot wash, to include discussion of lessons learned will be conducted.

Active learning has become increasingly important in post-secondary education in recent years because it is particularly effective for adult learners. The U.S. Joint Force in particular is moving toward greater use of wargaming and other active learning techniques. For example, one of the policy recommendations of the Department of the Navy's 2018 *Education for Seapower* final report was for the Navy to “institute naval wargaming and competitive team learning as a necessary part of a continuum of learning at the junior, middle, and senior stages of a naval officer and enlisted person's career path, as well as ‘just-in-time’ education as new conditions arise.”

Point of Contact

The point of contact for this session is Ivan Luke, C-432.

?? Questions

To what degree did factors time, space and force constrain or enable the historical commanders' choice of options when planning for the battle?

Evaluate the strength of the Japanese commander's operational idea. To what degree did the Japanese operational idea impact the outcome of the battle?

Evaluate the strength of the Allied commander's operational idea. To what extent did the Allies prevail because of their operational idea or in spite of it?

Given the same military situation as your team's historical commander (objectives, factors time, space and force), but unconstrained by their decisions, how would you employ your forces to accomplish your assigned objectives? Keep in mind that you enemy is not constrained to his historical counterpart's decisions either.

☰ Required Readings (XX Pages)

U.S. Naval War College, Joint Military Operations Department. *War at Sea Quick Start*. Newport, RI: Naval War College, January 2020. Review.

———. “War at Sea: Philippines Assault and Defense; Student Scenario Guide, United States.” Newport, RI: Naval War College, January 2020. **Limited Distribution to U.S. team only.**

———. “War at Sea: Philippines Assault and Defense; Student Scenario Guide, Japan.” Newport, RI: Naval War College, January 2020. **Limited Distribution to Japan team only.**

📄 References

U.S. Naval War College, Joint Military Operations Department. *War at Sea: Rules to Simulate Naval Battles from World War 2 to Today*. Newport, RI: Naval War College, 2020.

JMO-20

OPERATIONAL LEADERSHIP

I am not afraid of an army of lions led by a sheep; I am afraid of an army of sheep led by a lion.

—Alexander the Great

Session Objectives

- Comprehend the concepts of operational thinking and operational vision.
 - Understand why operational commanders need an operational perspective, and how this perspective is achieved.
 - Comprehend the tenets of mission command and the Desired Leader Attributes for Joint Force 2020.
 - Examine common military leadership characteristics of successful commanders at the operational level of command.
 - Assess the impact of leadership style and command decisions at the operational level of war.
-

🔍 Focus

This session explores both the characteristics and elements of operational thinking and leadership at the operational level of command and assesses the impact of decisions on the outcome of military operations. It also introduces students to the concepts of mission command and of the Chairman of the Joint Chiefs of Staff Desired Leader Attributes (DLAs) for Joint Force 2020.

≡ Background

At the operational level of war, effective commanders require a broad perspective of all the elements of national power influencing their areas of operations in order to understand how their actions may impact the achievement of strategic objectives. In addition, operational commanders must establish priorities, allocate resources, and manage functions to facilitate success at the tactical level. This broader operational level perspective, which requires an understanding of operational art, joint operations, and tactical capabilities, renders decision-making processes more complex and challenging than at the tactical execution level.

In contrast to their subordinate counterparts, operational commanders must focus on military objectives beyond immediate tactical actions. Instead of concentrating on fighting battles and engagements, the operational commander plans and conducts major operations and campaigns. In doing so, the operational commander must place trust in subordinate commanders and resist the temptation to become pre-occupied with the tactical level of war. Therefore, appropriately studying historical commanders and the operational decisions that they made requires gaining perspective on several fundamental concepts: *operational thinking*, *operational vision*, and *mission command*.

On 3 April 2012, then Chairman of the Joint Chiefs of Staff, General Martin Dempsey released a White Paper entitled “Mission Command” in which he outlined the requirement to “pursue, instill, and foster mission command” throughout the U.S. military. This concept, a notion based on decentralization of effort and speed of execution based on a commander’s intent, will also be discussed in seminar. The former Chairman issued a second memorandum on 28 June 2013 entitled “Desired Leader Attributes for Joint Force 2020,” in which he approved a set of Desired Leader Attributes (DLAs) “as guideposts for joint officer leader development” to aid in efforts to “institutionalize the essential knowledge, skills, attributes, and behaviors that define our profession.” How they relate to mission command and to the characteristics of operational commanders will be discussed in seminar.

Point of Contact

The point of contact for this session is Colonel Matt Tackett, USA, C-429.

Questions

Explain the relationship between a commander's character traits, personal intellect, and personal intuition. How much does character matter? How does one develop intuition?

How is operational vision a subset of operational thinking?

How does the study and application of operational art aid in developing a leader's ability to think "operationally"?

To what extent is mission command new? Explain the role and reciprocal nature of "trust" in the concept of mission command.

To what degree is demonstrated tactical success a good predictor of leadership ability at the operational level? Why?

How can the Services best apply experience, education, and training to develop leaders who possess the abilities outlined in the "Desired Leader Attributes for Joint Force 2020" and who are capable of thriving in an increasingly complex and uncertain operating environment?.

Required Readings (70 Pages)

U.S. Office of the Chairman, Joint Chiefs of Staff. "Mission Command." White Paper. Washington, D.C.: CJCS, 2012. Read. (NWC 1193).

———. Desired Leader Attributes for Joint Force 2020. CJCS Memorandum, CM-0166-13, June 28, 2013. Review. (NWC 1194).

Vego, Milan. *Joint Operational Warfare: Theory and Practice*. Newport, RI: U.S. Naval War College, 2009. Read: "Operational Leadership," X-5 to X-13; "Tenets of Operational Leadership," X-47 to X-48; "The Decisions," X-61 to X-71; "What Is Operational Thinking?" XI-4 to XI-5; and "Operational Vision," XI-35 to XI-39. (Issued).

Case Studies:

Tomoyuki Yamashita:

Hoyt, Edwin P. *Three Military Leaders: Heihachiro Togo, Isoroku Yamamoto, Tomoyuki Yamashita*. 1st ed. Tokyo: Kodansha International, 1993. "Tomoyuki Yamashita and the Army Militarists," Read: 119-127, "The End of a National Hero," 153-157. (NWC 4105).

Reel, A. Frank. *The Case of General Yamashita*. Chicago, IL: University of Chicago Press, 1949. "The War through the Enemy's Eyes," Read: 12-13, 16-26. (NWC 4108A).

Walter Krueger:

McDonald, Major John H. (USA) "General Walter Krueger: A Case Study in Operational Command." Research paper, Fort Leavenworth: School of Advanced Military Studies, 1989. "General Walter Krueger—The Case Study (excerpt)." Read. (NWC 4146B).

Taaffe, Stephen R. *Marshall and His Generals: U.S. Army Commanders in World War II*. Lawrence, KS: University of Kansas Press, 2011. Read: 33-36, 212-220. (NWC 4103).

Takeo Kurita:

Thomas, Evan. *Sea of Thunder: Four Commanders and the Last Great Naval Campaign, 1941-1945*. New York: Simon & Schuster, 2006. Read: 74-80 and 173-187. (NWC 4136).

William Halsey, Jr.:

Reynolds, Clark G. "William F. Halsey, Jr.—The Bull (1882-1959)." In *The Great Admirals: Command at Sea, 1587-1945*, ed. by Jack Sweetman. Annapolis, MD: Naval Institute Press, 1997. Read: 482-505. (NWC 4137).

 **Supplemental Reading**

Crevald, Martin van. *Command in War*. Cambridge, MA: Harvard University Press, 1985, 261-275.

Slim, Sir William. "Higher Command in War." U.S. Army Command and General Staff College, Fort Leavenworth, KS. 1970, 1–10.

Summers, Harry G., Jr. "Leadership in Adversity: From Vietnam to Victory in the Gulf." *Military Review* (May 1991): 2–9.

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BLOCK III: OPERATIONAL WARFARE AT SEA

In the CNC&S/NSC Course's unique *Operational Warfare at Sea* sessions, students are introduced to the maritime domain in the context of proven theory. The *Operational Warfare at Sea* sessions expand on the theoretical foundations we explored in *Operational Art* and prepare students for the practical sessions that follow. Discussions will focus on the theory and practice of mid- to high-intensity warfare at sea at the high-tactical to the operational level of war.

The heart of the *Operational Warfare at Sea* sessions is how naval forces obtain, maintain, deny, and exploit control of the sea to achieve operational and strategic objectives. These sessions will examine the objectives, methods, and elements employed in naval warfare in support of sea control.

These sessions conclude with a practical exercise in which students will study an historical case and examine the commanders' estimates, operational ideas, and employment of combined naval arms towards achieving the operational objectives. This exercise allows students to integrate operational art and Operational Warfare at Sea concepts. As with the previous block, student teams will then apply these concepts through gaming, using the same historic conditions, forces and capabilities of each side, but testing alternative operational ideas that they develop. The game is followed by a discussion of lessons learned and feedback to reinforce the block's objectives.

OBJECTIVES

- Understand the theory of operational warfare at sea.
- Understand the relationship between operational art and naval warfare theory.
- Comprehend the key factors that affect the character of naval warfare.
- Understand the concepts of sea control and sea denial and their relationship to joint force and strategic objectives.
- Analyze and apply naval warfare in supporting joint military objectives.

The point of contact for this block is Professor Erik Wright, C-424.

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JMO-21

OBJECTIVES OF NAVAL WARFARE

*Knowledge of naval matters is an art as well as any other
and not to be attended to at idle times and on the by...*

~ Pericles
460 BC

Session Objectives

- Understand differences in the nature and character of operational warfare at sea and warfare on land.
 - Understand how technological advances have shaped operational warfare at sea.
 - Understand the meaning of the theoretical concept of sea control, its evolution and its variations
 - Understand the theoretical concept of sea denial
 - Understand the concepts of choke point control/denial, basing/deployment area control, and destruction/preservation of military-economic potential at sea
-

🔍 Focus

The purpose of this session is to introduce operational warfare at sea by considering the character of naval warfare, the differences between warfare at sea and warfare on land, and differences between warfare conducted on the open ocean and warfare in the littorals. The session will also present, in broad terms, the principal objectives of naval warfare and key concepts of naval theory. These concepts will be developed in some detail in subsequent seminars.

📖 Background

Strategic objectives determine the part each service plays in war. Given that the “seat of purpose is on the land,” accomplishment of those objectives normally requires the coordinated employment of all the services of a country’s armed forces. War at sea should be considered intrinsically related to war on land and in the air. In particular, the highest degree of cooperation among the services is necessary in conducting war at sea.

In generic and broad terms, the main objectives of warfare at sea are sea control, choke-point control/denial, basing/deployment area control/denial, and destroying/weakening enemy and preserving friendly military-economic potential at sea. These objectives are, in turn, subordinate to the respective political strategic and military/theater strategic objectives.

In its simplest and broadest definition, sea control can be described as *one’s ability to use a given part of the sea/ocean and associated air (space) for military and nonmilitary purposes and deny the same to the enemy*. Sea control implies sufficient and extensive control of a major part of a given maritime theater by a stronger side. An ocean or sea area may be considered under control when friendly naval/air forces can operate freely and conduct seaborne traffic while the enemy cannot do the same except at considerable risk. Control of a specific sea/ocean area ensures one’s naval forces can exercise that control. At the same time, the weaker opponent is forced to contest control by conducting sporadic actions of limited duration.

Sometimes the terms “sea control” and “sea denial” are used interchangeably, as if they mean the same thing. All too often, it is contended that the stronger navy, by virtue of obtaining sea control, has also somehow conducted sea denial. However, sea denial is the principal objective of a weaker side at sea. Sea denial could be defined as *one’s ability to deny partially or completely the enemy’s use of the sea for military and commercial purposes*.

Point of Contact

The point of contact for this session is Professor Erik Wright, C-424

Questions

Explain the purpose and importance of naval warfare theory. What is the linkage between naval warfare theory and practice?

Discuss the key factors affecting the character of warfare at sea.

What are the main differences in conducting offensive and defense in a war at sea versus a war on land?

What are the main differences in conducting a war on the open ocean and in the littorals?

Explain the main differences in the conduct of war on land and at sea. What are their mutual relationships?

What are the primary objectives associated with operational war at sea?

How are the concepts of sea control and sea denial related? How are they different?

How does choke point control/denial relate to sea control?

Discuss the principal advantages and disadvantages in the employment of multi-service/ multi-national (joint/combined) forces in a war at sea.

Required Readings (69 Pages)

Vego, Milan. "Introduction to Naval Warfare." Newport, RI: Naval War College, January, 2011. Read 1-9, 15-26. **(NWC 1032B)**.

Vego, Milan. "The Objectives of Naval Warfare." Newport, RI: Naval War College, June 2015. Read 1-15. **(NWC 1102)**.

Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. 3d ed. London and New York: Routledge, 2013. Read Chapter 6, "Command of the Sea and Sea Control," 144-156. **(Issued)**.

Vego, Milan. *Maritime Strategy and Sea Control: Theory and Practice*. London and New York: Routledge, 2016. Read Chapter 2, "Sea Control," 24-46. **(Issued)**.

Supplemental Reading

None.

JMO-22

OBTAINING AND MAINTAINING SEA CONTROL

[My operations] must depend absolutely upon the naval force which is employed in these seas... No land force can act decisively unless accompanied by a maritime superiority.

~ General George Washington
To the Marquis de Lafayette, 15 November 1781

Session Objectives

- Understand the prerequisites for main methods of obtaining and maintaining sea control.
 - Understand the main methods for obtaining and maintaining sea control.
 - Understand the main differences between obtaining/maintaining sea control on the open ocean and in the littorals.
 - Analyze how anti-surface warfare, anti-submarine warfare, naval air warfare, information warfare, space capabilities, and offensive mining contribute to sea control.
 - Comprehend the challenges associated with obtaining/maintaining sea control in war against a near peer adversary.
-

Focus

The session will focus on sea control, its prerequisites, the main methods for obtaining/maintaining sea control, and the challenges associated with sea control in war against a peer adversary. This session will lay foundation for all subsequent sessions in this block of the curriculum.

Background

Sea control represents a desired condition associated with the operating environment. However, that desired condition is rarely static or absolute. Rather, it is often highly dynamic because of the actions of an adversary who seeks to prevent one's use of the sea. In warfare at sea, sea control tends to be an ongoing struggle between adversaries. Once initial objectives are attained that enable a maritime force to obtain a degree of sea control in a given space, energetic efforts must be made to maintain that sea control, which involves continued neutralization of adversary forces in some manner.

Experience shows that ultimate success in the struggle for sea control is predicated on fulfilling a number of preconditions or prerequisites. This session will cover some of those prerequisites. Additionally, this session will be centered on the main methods of obtaining and maintaining sea control at the operational level of war. Seminar discussion will also consider some of the naval combined arms warfare concepts that were covered in Block I of the course and their contributions to sea control, as well as potential contributions of land and air forces.

In understanding the concept of sea control as an ongoing struggle, this session will explore the historical examples of the naval battles waged to determine possession of Guadalcanal during World War II. Over a 6-month period, American and Japanese maritime forces clashed repeatedly. Each adversary possessed certain advantages over the other. Ultimately, sea control was a necessary condition for either side to ultimately attain its operational objective and both sides fought brutally to obtain and maintain it.

Point of Contact

The point of contact for this session is Professor Erik Wright, C-424.

?? Questions

What are some prerequisites for obtaining sea control and why are they relevant?

Discuss the main methods for obtaining and maintain sea control. What factors should be considered when pursuing each of these methods?

How do naval combined arms warfare areas, such as anti-submarine warfare, air and missile defense, anti-surface warfare, information warfare, and mining, contribute to sea control?

How is obtaining sea control in littoral waters different than obtaining sea control in the open ocean?

Discuss the role of land and air forces in obtaining and maintaining sea control.

Case Study Discussion:

What were the Japanese objectives at Guadalcanal? What were the objectives of the U.S. forces?

How was the concept of sea control relevant to each side's objectives?

What were the methods of obtaining sea control attempted by each side?

How did the U.S. forces use technology, tactics and doctrine to counter Japanese forces in the naval battles around Guadalcanal?

How did the Japanese use technology, tactics and doctrine to counter U.S. forces in the naval battles around Guadalcanal?

Required Readings (92 Pages)

Vego, Milan. *Maritime Strategy and Sea Control: Theory and Practice*. London and New York: Routledge, 2016. Read Chapter 3, "Obtaining and Maintaining Sea Control," 54-68. **(Issued)**.

_____. "Obtaining & Maintaining Sea Control." Newport, RI: Naval War College, June 2015. Read 1-36. **(NWC 1108)**.

Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. 3d ed. London and New York: Routledge, 2013. Read Chapter 7, "Securing Command of the Sea," 157-183. **(Issued)**.

Case Study:

Mahnken, Thomas G. "Asymmetric Warfare at Sea: The Naval Battles off Guadalcanal, 1942-1943." *Naval War College Review* 64, no.1 (2011): Scan: 95-103, Read: 104-117. **(NWC 3233)**.

Stille, Mark. *The Naval Battles for Guadalcanal, 1942*. Oxford; Osprey Publishing 2013. Scan: 5-93. **(Issued)**.

Supplemental Reading

None.

JMO-23

DISPUTING SEA CONTROL

Sea denial is accomplished by conducting a series of combat actions and measures over time. This is collectively called disputing (or contesting) sea control.

~Milan Vego

Session Objectives

- Understand the meaning of the concept of disputing sea control
 - Understand the main methods for disputing sea control on the open ocean and in the littorals
 - Understand the key concepts in defense of the coast
 - Understand how mining/ countermining/ mine-countermeasures contribute to sea control/sea denial operations
-

Focus

The session will explain and discuss the key objectives in disputing sea control.

Background

When one cannot gain complete sea control the only two options available are to relinquish control entirely or to dispute sea control. As discussed in JMO-22, sea control can be described as *one's ability to use a given part of the sea/ocean and associated air (space) for military and nonmilitary purposes and deny the same to the enemy*. It logically follows, then, that disputing sea control means one is attempting to disrupt that free use of the sea by the opposing side. It may be impossible to gain sea control for the friendly side, but there many ways to interfere with the opposing side's sea control even if on the weaker side. In can be argued, as Corbett does, that in war control (command is the term he uses) of the sea is normally in dispute.

One method a weaker side may interfere with sea control is to attack the enemy's maritime trade. Another method is to conduct offensive and defensive mining. These are but two examples. The selected readings for this session go into detail and offer a concise definition of the concept of disputing sea control as well as laying out the main methods of doing so. The methods chosen will depend on the weaker side's relative strength as well as geography; how one disputes sea control in the open ocean is different than how one disputes it in the littoral, as the Milan Vego reading discusses. In addition, more than one method should be used in combination with others. No single method is likely sufficient to effectively dispute sea control.

Point of Contact

The point of contact for this session is Professor Erik Wright, C-424 .

Questions

What is the meaning of disputed sea control?

What are the main methods for disputing sea control? What factors should be considered when pursuing each of these methods?

How does choke point differ from choke point control?

How do naval combined arms warfare areas, such as anti-submarine warfare, air and missile defense, anti-surface warfare, and information warfare, contribute to sea denial?

Discuss the role of land and air forces in disputing sea control and sea denial.

What is the importance of basing/deployment area control?

How can mining contribute to sea control or sea denial?

Required Readings (Approximately 62 Pages)

Vego, Milan. *Maritime Strategy and Sea Denial: Theory and Practice*. London and New York: Routledge, 2019. Scan 104-115. Read 116-120, “Disputing Sea Control.” (**Issued**).

Vego, Milan. “Disputing Sea Control.” Newport, RI: Naval War College, June 2015. Read 1-17. (**NWC 1139**).

Winnefeld, James Jr. and Syed Achmad. “The Other Mine Warfare Will Work.” *U.S. Naval Institute Proceedings* 144, no. 7, (July 2018). Scan/Review. (**NWC 1230**).

Goldrick, James. “Antiaccess for Sea Control: The British Mining Campaign in World War I.” *U.S. Naval Institute, Naval History Magazine* 32, no. 5 (October 2018). (**NWC 3244**). Read.

Truver, Scott C. “Taking Mines Seriously: Mine Warfare in China's Near Seas.” *Naval War College Review*, Spring 2012, Vol. 65, No. 2: 30-66. Read: 30-50. (**NWC 1221**).

Students will read the following readings as assigned by Seminar Moderators:

Reed, Rowena. “Central Mediterranean Sea Control and the North Africa Campaigns, 1940-1942.” *Naval War College Review* 37, No. 4 (1984): 82-96. (**NWC 3246**).

Wu, Shang-su. “The Development of Vietnam’s Sea Denial Strategy.” *Naval War College Review* 70, No. 1 (2017): 1-17. (**NWC 3245**).

Hilger, Ryan. “The Battle of the Atlantic: Command of the Seas in a War of Attrition.” *Center for International and Maritime Security*, 24 October 2018. **Available via E-Reserves**. Also available at: <http://cimsec.org/the-battle-of-the-atlantic-command-of-the-seas-in-a-war-of-attrition/38686>. (**NWC 3247**).

Supplemental Reading

None.

JMO-24

EXERCISING SEA CONTROL

A Navy performs one or more of four functions and no others: At sea it (1) assures that our own goods and services are safe and (2) that the enemy's are not. From the sea, it (3) guarantees safe delivery of goods and services ashore, and (4) prevents delivery ashore by an enemy navy.

~ Geoffrey Till, *Seapower*, 2013

Session Objectives

- Understand the main methods in exercising sea control
 - Understand the main methods of destroying the enemy's and preserving friendly military-economic potential at sea.
 - Understand the objectives and methods in capturing positions on the opposed shore.
 - Understand methods used for destroying enemy's military-economic potential ashore
 - Understand methods of employing naval forces in support of offensive/defensive major ground/joint operations on the coast.
-

🔍 Focus

The session will explain and discuss the key objectives in exercising sea control

📖 Background

Obtaining sea control is not an end in and of itself. Rather, exercising sea control is the ultimate purpose of the struggle for sea control. In Milan Vego's words, "...it equates to exploitation of the operational or strategic success" As the above quote from Geoffrey Till states, sea control (command of the sea) is not an end, but rather a means to larger ends. One "use to which commanding the sea could be put" is to attack the enemy's maritime trade while protecting friendly trade. This is generically called "trade warfare," as was briefly discussed in JMO-21, Objectives of Naval Warfare. In a broader sense, the primary purpose of a navy in wartime is to guarantee the unimpeded use of the sea to influence events on land while preventing the same by the enemy. In this context, one should not think only of delivery ashore of goods and services (food, munitions, and so forth), but also of combat power in the form of kinetic fires (cruise missile strikes, carrier aviation, and naval gunfire) and transportation of personnel and equipment (whether amphibious assault or more permissive offload of ground combat units). In the latter case, transportation of personnel and equipment, one can think of a navy as a means to expand the available maneuver space for a ground force, as demonstrated many times throughout history in places such as Normandy and Inchon. It has been argued by some that the era of amphibious assault is over given the potential lethality of littoral and coastal defenses. That may or may not be true. However, the era of expeditionary operations in a broader sense is certainly not over; delivering combat power from the sea to the land in some form will continue to be an option for the foreseeable future and will remain one of the most important facets of exercising sea control.

👤 Point of Contact

The point of contact for this session is Professor Erik Wright, C-424.

?? Questions

What does it mean to "exercise" sea control?

What are the main methods of exercising sea control?

How might one destroy enemy and preserve friendly military and economic potential at sea?

How does a commercial blockade differ from a naval blockade? What considerations and challenges are associated with commercial blockade?

How are the concepts of “power projection” and “sea control” related?

What are some considerations for projecting power via amphibious landing/assault?

Required Readings (101 Pages)

Vego, Milan. “Exercising Sea Control.” Newport, RI: Naval War College, June 2015. Read 1-28. (NWC 1131).

Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. 3d ed. New York: Routledge, 2013. Read Chapter 8, “Maritime Power Projection,” 184-209, Chapter 9, “Control of Maritime Communications,” 210-220, and sections 11.6 and 11.7 of Chapter 11, “Expeditionary Operations,” 262-280. (Issued).

Erdelatz, Scott. “Operation POSTERN and the Capture of Lae,” *Marine Corps Gazette*, 103, No. 7 (July 2019), 53-63. Read. (NWC 3242).

Gatchel, Theodore L. *At the Water’s Edge: Defending Against the Modern Amphibious Assault*. Annapolis, MD: Naval Institute Press, 1996. Read: 1-9. (NWC 2170).

Reference and Supplemental Reading

Vego, Milan. “Maritime Trade Warfare.” Newport, RI: Naval War College, July 2015. Read 1-50. (NWC 1135).

Deputy Commandant of the Marine Corps. *Expeditionary Advanced Base Operations (EABO) Handbook*. Quantico, VA: Marine Corps Warfighting Lab, Concepts and Integration Division, June, 2018. See 5-6 and 23-26.

JMO-25

THE FALKLANDS / MALVINAS CONFLICT

A senior officer said after the war that it had proved that 'the things we did on the basis of well-trying and proven formations worked, and the ad-hoc arrangements turned out much less happily.' Joint-service liaison and staff work left much to be desired.

~ Hastings and Jenkins
The Battle for the Falklands

Session Objectives

- Apply and analyze the components of operational art and maritime warfare theory studied to date.
 - Analyze and evaluate how commanders and their staffs applied operational art in a historical case study.
 - Analyze the operational lessons valid for the employment of modern, multinational and joint forces.
 - Apply and Analyze concepts of maritime warfare theory in order to evaluate specific tactical actions.
-

Focus

This session serves as a synthesis event for the components of naval warfare theory and operational art discussed in preceding sessions. It also provides collective preparation for the upcoming examination. The emphasis of the session is placed on the decisions, instructions and actions of operational-level commanders on both sides of the conflict.

Background

This case study is divided into three sections spread over four working days. The initial focus is on historical analysis of the application of operational art and naval warfare theory. This commences with a presentation of the historical/strategic background to the conflict by the JMO Royal Navy exchange officer. Students will then have seminar time available to discuss and further analyze the case in order to derive operational level lessons learned. The next session focusses on a prospective analysis, where the students will use the commander's estimate to develop their own operational ideas. In the final session the students will break into teams and execute their preferred operational ideas against their respective adversaries through the medium of an enhanced table-top exercise (ETTX).

Point of Contact

The point of contact for this session is CDR Joe Dransfield, RN, C-407.

Questions

Applying the principles and elements of operational design, analyze the Falklands/Malvinas conflict. How did each side use the concepts of operational design in developing its plan?

To what extent were the objectives for each side appropriate? Why?

How well did each side employ forces relative to theater geometry to achieve its objectives?

Critique the British and Argentinian operational theater organization and the relevant command structures. What could they have done differently?

What key aspects of naval warfare theory does the conflict illuminate and are these aspects still relevant today?

What major operational lessons learned can be derived from this conflict?

Historic Analysis Required Readings (Days 1 and 2) (55 Pages)

Hime, Douglas N. U.S. Naval War College. Joint Military Operations Department. "The 1982 Falklands-Malvinas Case Study." Newport, RI: Naval War College, 2010. (NWC 1036).

Vego, Milan. *Joint Operational Warfare: Theory and Practice*. 2006. Reprint, Newport, RI: Naval War College Press, 2009. Read: APP 91-93 and 97-101. (Issued).

Prospective Analysis Required Readings (Day 3) (53 Pages)

Vego, Milan. *Operational Warfare at Sea: Theory and Practice, 2d ed.* New York, Routledge, 2017. Read: Chapter 8. (Issued)

U.S. Naval War College, Joint Military Operations Department. "War at Sea: Falklands / Malvinas Conflict; Student Scenario Guide, United Kingdom." Newport, RI: Naval War College, January 2020. Read. **Limited Distribution to United Kingdom Team only.**

_____. "War at Sea: Falklands / Malvinas Conflict; Student Scenario Guide, Argentina." Newport, RI: Naval War College, January 2020. Read. **Limited Distribution to Argentina Team only.**

ETTX Required Readings (Day 4) (25 Pages)

U.S. Naval War College, Joint Military Operations Department. *War at Sea Quick Start*. Newport, RI: Naval War College, January 2020.

_____. "War at Sea: Falklands / Malvinas Conflict; Student Scenario Guide, United Kingdom." Newport, RI: Naval War College, January 2020. Review. **Limited Distribution to United Kingdom Team only.**

_____. "War at Sea: Falklands / Malvinas Conflict; Student Scenario Guide, Argentina." Newport, RI: Naval War College, January 2020. Review. **Limited Distribution to Argentina Team only.**

Supplemental Reading

A 60-minute documentary will be available through BlackBoard.

Vandenengel, Jeff. "Fighting Along a Knife Edge in the Falklands," *U.S. Naval Institute Proceedings*, 145, no. 12 (December 2019), 62-67. (NWC 3248).

U.S. Naval War College, Joint Military Operations Department. *War at Sea: Rules to Simulate Naval Battles from World War 2 to Today*. Newport, RI: Naval War College, January 2020.

_____. "War at Sea: Falklands / Malvinas Conflict; Detailed Scenario Guide, United Kingdom." Newport, RI: Naval War College, January 2020. **Limited Distribution to United Kingdom Team only.**

_____. "War at Sea: Falklands / Malvinas Conflict; Detailed Scenario Guide, Argentina." Newport, RI: Naval War College, January 2020. **Limited Distribution to Argentina Team only.**

JMO-26 EXAMINATION #1

No wonder then, that war, though it may appear to be uncomplicated, cannot be waged with distinction except by men of outstanding intellect.

~ Carl von Clausewitz
On War, 1832

Session Objectives

- Synthesize operational art and maritime warfare theory concepts through the analysis of a historical, real-world case study.
 - Create a coherent response to the examination questions that demonstrate an internalization of various concepts of operational art.
-

Focus

This session is intended to permit the Command and Naval Staff College/Naval Staff College student to demonstrate a synthesis of the material presented to date and to further demonstrate higher order thinking skills.

Background

Written examinations serve three fundamental purposes: to evaluate student understanding of a given subject, to evaluate the student's ability to think critically and respond to a complex question, and last, to evaluate the faculty's ability to convey information and to create new knowledge. This session presents the student with the opportunity to demonstrate mastery of the first two purposes stated above and further allows the moderators to ensure that no intellectual gaps exist in student learning to this point.

Students will be provided with a case study that contains sufficient information to address the questions presented. This case study will be issued in sufficient time to allow students to prepare as individuals and as a group. Time is dedicated on the port/starboard research and reflection day for seminars on either Monday, 6 April or Tuesday, 7 April 2020 (0830-1145) for student preparation as a group. Students are encouraged to prepare as a seminar; however, once the exam is issued, it is an individual effort. The examination will be issued at 0830 on Wednesday, 8 April 2020 and is due to the moderators not later than 1600 on Friday, 10 April 2020. Grading criteria for the examination may be found in paragraph 12 of the front matter of the course Syllabus.

The exam response to the assigned question shall demonstrate student mastery of the various concepts studied thus far. This effort should not exceed 10 double spaced typed pages (approximately 2,500 words) in Times New Roman font, 12 point, with one inch margins at top, bottom, and right, and one and a quarter inches left. (Use the mirrored option under page layout in Microsoft Word.)

Point of Contact

The point of contact for this session is Professor Doug Hime, C-423.

Questions

See examination question sheet.

Required Readings TBD

A case study will be issued prior to the examination with sufficient time for students to conduct a thorough analysis and prepare for the examination.

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BLOCK IV: JOINT WARFARE

Once students have grasped the fundamental theoretical underpinnings of military actions and warfighting theory, we will investigate how joint forces are employed in combat, with emphasis on the naval services within a joint force maritime component command (JFMCC). We open the block with a discussion of “jointness” – its origins, advantages and challenges – and the strategic direction that drives operational planning. After a brief introduction to joint operations and planning, the capabilities of the joint force, including contracted support, are explored based on the experiences of service representatives within the seminar. While an understanding of services are important, we fight under a single Joint Force Commander (JFC) and therefore command and control (C2) is thoroughly examined in subsequent sessions through joint, multinational and functional lenses. Following this focus on commanders’ responsibilities, we examine the role of intelligence in understanding the enemy in the Operating Environment (OE) facing the joint force. This OE is further refined into the information environment and the domain of cyberspace with a focus of how the joint force operates within these spaces. Next, a brief study of how to both sustain the force, through organic and contracted services, and deploy the force will explore the unique requirements and assets available to the JFC. Completing this study of the application of functions in joint warfare, an introduction to Maritime Operational Law emphasizes familiarity with specific aspects of the law with an eye toward using it to assist planners in meeting assigned military objectives in the maritime domain. Finally, the last session is an open-ended tabletop exercise involving a fictional clash between the United States and a near-peer competitor. Here, students will demonstrate their understanding of concepts discussed thus far as well as present creative solutions to potentially real-world problems.

OBJECTIVES

- Comprehend key sources of strategic guidance, direction, and coordination that drive joint force and service component planning and execution.
- Describe the organization and employment considerations of Fleet assets within a joint context.
- Describe the capabilities, limitations, and options for organizing and employing joint force components and multinational forces in major operations.
- Comprehend how the Joint Force Commander and staff apply joint functions to maritime operational problems.
- Comprehend and apply operational law concepts in order to understand international law as it relates to maritime operations.
- Develop an operational idea to resolve a fictional scenario against a near-peer competitor.

The point of contact for this block is Professor Chris Kidd, C-407.

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JMO-27

JOINT OPERATIONS

[Goldwater-Nichols Act] is probably the greatest sea change in the history of the American military since the Continental Congress created the Continental Army in 1775.

~ Les Aspin
Secretary of Defense (1993-1994)

Session Objectives

- Understand the concept of “jointness,” its origins, and its inherent advantages and challenges.
 - Understand how the Joint Force can be employed throughout the Range of Military Operations.
-

Focus

Operations are military actions performed by forces from individual Services, or as a Joint Force, under the leadership of a single commander. Although Services may plan and conduct operations independently to accomplish tasks and missions in support of assigned military objectives, Department of Defense’s (DOD) primary method to employ force, particularly in combat, is from two or more Services (from Military Departments) during joint operations. This session explores this preference for joint operations and the concept of “jointness” in the context of military operations conducted across the Conflict Continuum from peace to war.

Background

For forty years after World War II, service separateness denied the defense establishment the ability to conduct joint warfare as effectively as possible. In 1983, former Defense Secretary James Schlesinger stated bluntly: “In all of our military institutions, the time-honored principle of ‘unity of command’ is inculcated. Yet at the national level it is firmly resisted and flagrantly violated. Unity of Command is endorsed if and only if it is endorsed at the service level. The inevitable consequence is both the duplication of effort and the ultimate ambiguity of command.” During this period, Service interest primacy led to both operational inefficiencies and ineffectiveness during joint operations along the spectrum of conflict from small scale contingencies to large scale combat. In 1982, DOD’s decades-old problem of parochialism prompted Chairman of the Joint Chiefs of Staff, General David Jones to request mandated congressional reforms after admitting “the system is broken.”

Four years later, the U.S. Congress passed the Goldwater-Nichols Reorganization Act. This seminal piece of legislation, resisted by the Services at the time, is credited with forcing the military to implement several key institutional changes: improving DOD-level strategic planning, re-balancing Service and Joint interests, and increasing the authority of unified commanders while creating clarity for operational chains of command, among other re-organization goals. The objective of improved strategic planning will be addressed in the next session, JMO-28; operational effectiveness, stemming from improved command and control and better synergy of Service capabilities, is explored in this session.

Military actions before and after Goldwater-Nichols show the impact of the landmark legislation. While the failure of Operation EAGLE CLAW and disunity of command and control witnessed during Operation URGENT FURY revealed a lack of service connectedness, functional execution of Operation JUST CAUSE and DESERT SHIELD/STORM demonstrated substantial improvements in “jointness.”

Nearly three decades removed from the original Gulf War, today’s joint force faces numerous missions every year across the Range of Military Operations. From Engagement to Crisis Response to potential Large Scale Combat Operations, the necessity to integrate joint capabilities, rather than merely treat them as additive elements, has never been more important to accomplishing military objectives.

Point of Contact

The point of contact for this session is Professor Chris Kidd, C-407.

?? Questions

How did a lack of inter-service cooperation reveal problems with jointness prior to the 1986 passage of the Goldwater-Nichols Act?

What are the advantages of operating as part of a joint force? Challenges?

How does the concept of jointness apply to operations at the lower level of the Range of Military Operations, such as Military Engagement or Security Cooperation?

☰ Required Readings (30 Pages)

Locher, James R. III. "Has It Worked?: The Goldwater-Nichols reorganization act – Dept of Defense reorganization." Address, Naval War College, Newport, RI, 8 May 2001. Read or listen to audio address (30 minutes): -- Panopto link-- . (NWC 4209).

McInnes, Christopher. "Lessons from Operation URGENT FURY-Grenada, 1983." Research Paper, Australian Command and Staff Course, Canberra, Australia, 2015. (NWC 4208).

Marqis, Christopher G., Denton Dye, and Ross S. Kinhead. "The Advent of Jointness During the Gulf War. A 25 Year Retrospective." Joint Force Quarterly 85, 2nd Quarter 2017. (NWC 4210).

U.S. Office of the Chairman of the Joint Chiefs of Staff. Joint Operations. Joint Publication (JP) 3-0. Washington, D.C.: CJCS, 17 January 2017 Incorporating Change 1, 22 October 2018. Read: V-1 thru V-5.

📖 References and Supplemental Reading

U.S. Office of the Chairman of the Joint Chiefs of Staff. Doctrine for the Armed Forces of the United States. Joint Publication (JP) 1. Washington, D.C.: CJCS, 25 March 2013 Incorporating Change 1, 12 July 2017.

Deployable Training Division. "Insights and Best Practices Focus Paper: Joint Operations." Suffolk, VA: Joint Staff J7, November 2017. (NWC 6060)

JMO-28

INTRODUCTION TO STRATEGIC GUIDANCE AND JOINT PLANNING

Plans are nothing; Planning is everything.

~ General Dwight D. Eisenhower
Supreme Allied Commander

Session Objectives

- Understand how strategic guidance documents frame planning requirements.
 - Understand how commanders apply both conceptual and detailed planning elements to joint operations.
-

🔍 Focus

Planning is problem solving. A deliberate planning process, resulting in a plan or order, is the military's mechanism to convey the commander and staff's intellectual labor to subordinate commands for execution. This process requires the understanding of both strategic guidance and senior leaders' intent in order to ensure planning efforts are nested with higher level objectives. This session is focused on understanding how strategic guidance drives military planning as well as the basic fundamentals of that deliberate planning effort as presented in naval theory and joint doctrine.

≡ Background

The Secretary of Defense and the Chairman, Joint Chiefs of Staff translate national security objectives into definitive planning guidance for combatant commanders and the joint force. Campaign plans operationalize commanders' strategies and the planning process ensures a focus toward force and resource requirements. The Joint Strategic Planning System guides the way in which planning and execution occur, enabling a shared understanding of problems, threats, and options.

Planning is required at every level of war. The most fundamental elements of this process were first introduced during JMO 10 *Problem Solving, Critical Thinking, and Commander's Estimate of the Situation* and in the Naval War College's *Sound Military Decisions*. RADM Kalbfus' text states the function of planning is "to afford a proper basis for effective execution." This goal of "effective execution" is synonymous with the proper employment of force, and within the context of military problems faced by a Joint Force Commander (JFC), means the proper employment of the joint force.

While the JFC's planning effort formally starts with the receipt of a mission/objective, it truly begins in the mind of the commander and the formation of his/her Estimate, Planning Guidance, and Intent. Given this guidance, the JFC's planning staff also prepares their own estimates in order to develop, analyze, compare, and present options (i.e. courses of action) to the commander for decision.

Over the last several decades, U.S. naval and joint doctrine have formalized this planning process but the fundamentals of military planning have changed very little. As an example, U.S. Marine Corps' 1997 foundational guide, MCDP 5 *Planning* outlines a theoretical planning model that is applicable to any military scenario: assess the situation; establish goals and objectives; conceptualize, detail, and evaluate courses of action; and issue a plan or order. Key to this conceptual model is the need for re-evaluation, termed "replanning," in order to maximize all available time, before and after the initiation of action, to account for changes in the situation.

Today's joint doctrine provides further guidance on how to solve military problems using both conceptual (operational design) and detailed (seven step Joint Planning Process (JPP)) models. The commander's role in these planning efforts is paramount. First, he/she is responsible for the planning output (e.g. operational approach, operation plan, or operations order) as the formal means of

communicating to subordinates. Additionally, throughout the process, his/her critical and creative thinking is imperative as it enhances the staff's ability to employ operational art when answering planning's Ends, Ways, Means, and Risk questions. Overall, commanders and the staffs strive to blend operational art, operational design, and the JPP to produce plans and orders that drive the joint operations discussed during the previous session.

Point of Contact

The point of contact for this session is Professor Chris Kidd, C-407.

Questions

What types of plans does the Joint Strategic Planning System direct? Explain the concept of Global Campaign Plans.

Describe the concept of Joint Combined Arms as presented in the National Military Strategy.

How do the National Military Strategy's five Mission Areas (i.e. "Ways") relate to joint operations across the Range of Military Operations?

Describe the commander's role in planning.

Describe the differences between conceptual planning and detailed planning.

Required Readings (30 Pages)

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Joint Strategic Planning System (JSPS)*. CJCSI 3100.01D. Washington, D.C.: CJCS, 20 July 2018. Read: Enclosures A, B, C, and H.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Joint Operations*. Joint Publication (JP) 3-0. Washington, D.C.: CJCS, 17 January 2017 Incorporating Change 1, 22 October 2018. Read: II-1 thru II-7.

U.S. Marine Corps. *Planning*. Marine Corps Doctrinal Publication (MCDP) 5. Washington, D.C.: Headquarters, U.S. Marine Corps, 1997. Read: 29-33.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Description of the National Military Strategy 2018*. Washington, D.C.: CJCS, 2018.

References and Supplemental Reading

U.S. Naval War College. *Sound Military Decision*. U.S. Naval War College. Newport, RI: Naval War College Press, 1942. (NWC 6047).

U.S. Office of the Chairman, Joint Chiefs of Staff. *Joint Planning*. Joint Publication (JP) 5-0. Washington, D.C.: CJCS, 16 June 2017.

JMO-29

THE JOINT FORCE: SERVICE CAPABILITIES

Integrate joint capabilities to be complementary rather than merely additive.

~ Common Operating Precept
JP 3-0 *Joint Operations*

Session Objectives

- Understand the roles, missions, and culture of the Services and Special Operating Forces (SOF).
 - Understand Service and SOF employment capabilities available to the Joint Force Commander.
 - Identify how Service and/or Joint Force Commanders use Operational Contract Support to fill capability gaps.
-

Focus

All Service components contribute their distinct capabilities to the joint force, however, it is their interdependence that is critical to creating overall joint effectiveness. This interconnectedness, however, is not a given; Service capabilities must be consciously integrated as parochialism and bias remain real obstacles based on years, even centuries, of single-Service operational experience. This session focuses primarily on the capabilities of each service within the Department of Defense, as well as SOF and the U.S. Coast Guard, while cognizant of the commonality and friction that can exist between these forces.

Background

The Armed Forces of the United States acknowledges “jointness” as the fundamental organizing construct and ideal method of employing force. This cross-Service combination of capabilities is understood to be synergistic, with the joint force sum greater than its service component parts. Properly organized, a high degree of interoperability reduces technical, doctrinal, and culture barriers that limit the ability of Joint Force Commanders (JFC) to achieve objectives.

Historical roots influence the roles and missions that each Service provides to the Nation; likewise, each Service brings both individual culture and capability to the joint fight. It is incumbent on the military and security professional to understand these key attributes of each Service in order to better plan, and fight, alongside them.

Service capabilities can be best understood by analyzing the operational factor of “Force” that is employed by each service to support joint operations. These “force packages” range in size and function but all contribute towards mission accomplishment. This force is usually depicted as organizational units and are generally depicted at high-tactical level as Marine Expeditionary Brigades, Army Divisions, Air Expeditionary Task Forces, or Carrier Strike Groups and at the low-operational level as Marine Expeditionary Forces, Army Corps, Air Expeditionary Forces, and numbered Fleets. Each force has unique planning and employment considerations which can be described in terms of operational factors “Time” and “Space.” Balancing these factors against a military objective highlights the strengths of each deployable element as well their limitations, which reveals the necessity of fighting as a joint force.

Point of Contact

The points of contact for this session is Professor Chris Kidd, C-407, CDR Tom Pham (USN), COL Matt Tackett (USA), CAPT Eric Bader (USCG), Col. Dan “Curly” Rauch (USAF), and CAPT Chris Rohrbach (SOF), LtCol Chris Dalton (USMC).

?? Questions

Describe the roles that each Service and SOF in support of national defense and security. What are their specified missions and where is there overlap between them? How does such overlap translate into Service competitiveness, both operationally and in relation to limited national resources?

How much does culture influence how a Service sees itself as part of a joint force?

Identify the major deployable forces from each Service that would routinely be employed as part of a joint force in support of a contingency operation. What are the employment considerations for each of these forces?

How does a Service or Joint Force Commander use contracts to augment their force or fill capability gaps in their force?

☰ Required Readings (17 Pages) + 2.5 hours viewing

Dalton, Christopher. U.S. Naval War College, Joint Military Operations Department. "Operational Contract Support Primer." Newport, RI: Naval War College, January 2020. (NWC 4215).
Read: 1-4, Appendix B.

Watch each of six Service videos found at the following link (log onto Bb prior to clicking link):

USMC. <https://usnwc.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=2d5c1ed9-631a-41fb-87ee-aaa000b0f532>

USCG. <https://usnwc.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=f8ca8d19-e329-46a8-bb3e-aaa000ae558f>

USAF. <https://usnwc.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=c33183ae-bcc2-4a80-8813-aaa000abe397>

SOF. <https://usnwc.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=d54b7538-7366-4a36-8867-ab1a00eee4b3>

USN. <https://usnwc.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=972ed623-08a6460e-8672-aaa0009fc537>

USA. <https://usnwc.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=5744c666-a749-4a30-a7f4-ab2701443786>

Zimmerman, S. Rebecca, Kimberly Jackson, Natasha Lander, Colin Roberts, Dan Madden, and Rebeca Orrie, *Movement and Maneuver: Culture and the Competition for Influence Among the U.S. Military Services*. Santa Monica, CA: RAND Corporation, 2019. Read: xi-xxi. (NWC 4211).

☰ References

Papp, Robert J. ADM. *Coast Guard Publication 3-0, Operations*. Washington, D.C.: Headquarters, United States Coast Guard. February, 2012.

U.S. Air Force. *Air Force Doctrine Volume 1 – Basic Doctrine*. Air Force Doctrine Center, Maxwell Air Force Base, AL, 27 February 2015.

- U.S. Department of the Army. Training and Doctrine Command. The U. S. Army in Multi-Domain Operations, 2028. TRADOC Pamphlet 525-3-1. Washington, D.C.: U.S. Department of the Army, Training and Doctrine Command, December 6, 2018.
- U.S. Department of the Navy. *Commandant's Planning Guidance*. 38th Commandant of the Marine Corps, General David H. Berger, Issued July 2019.
- U.S. Department of the Navy. *How We Fight: Handbook for the Naval Warfighter*. Washington, D.C: U.S. Government Printing Office (GPO), 2015.
- U.S. Naval War College. Joint Military Operations Department. "Forces/Capabilities Handbook." Newport, RI: Naval War College, JMO, 2020. (NWC 3153S).
- U.S. Office of the Chairman of the Joint Chiefs of Staff. *Special Operations*. Joint Publication (JP) 3-05. Washington, D.C.: CJCS, 16 July 2014..
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JMO-30

JOINT AND MULTI-NATIONAL COMMAND AND CONTROL (C2)

The teams and staffs through which the modern commander absorbs information and exercises his authority must be a beautifully interlocked, smooth-working mechanism. Ideally, the whole should be practically a single mind.

~ General Dwight D. Eisenhower
U.S. Army

Session Objectives

- Comprehend the key headquarters functions of the JTF and the staff organization and processes that support these functions.
 - Comprehend joint force command relationships (COCOM, OPCON, TACON, and Support) and the authorities that each include.
 - Identify the challenges and opportunities of coalition task force operations.
-

🔍 Focus

This session examines Joint Operational Warfare from an organizational perspective and initiates an analysis of what many consider the most important of the Joint Functions: Command and Control (C2). It addresses the Joint Force Commander's (JFC's) authorities, command relationships and organizational options when establishing the joint force, focusing primarily on the formation of Joint Task Forces (JTFs). Additionally, it provides an introduction to the multi-national considerations of coalition task force operations.

≡ Background

Operational Art stressed the effective employment of a diverse force, optimally a joint force, in support of operational or strategic objectives. As a joint force, organization may take the form of a combatant command (CCMD), sub-unified command, or joint task force (JTF). A JTF is established when the scope, complexity, or other factors of the contingency or crisis require capabilities of Services from at least two Military Departments operating under a single JFC. The JTF establishing authority designates the JTF's commander (CJTF), assigns the mission, designates forces, delegates command authorities and relationships, and provides other C2 guidance necessary for the CJTF to form the joint force and begin operations. The appropriate authority may establish a JTF on a geographic or functional basis or a combination of the two. In either case, the establishing authority typically assigns a joint operations area (JOA) to the JTF.

Effective C2 enables the combat power of the joint force. It is the primary means by which the commander, leveraging Mission Command, sequences and synchronizes the joint force to achieve objectives across the Range of Military Operations (ROMO). In this session, students will delve more deeply into this joint function to gain greater understanding on how best to organize forces to achieve unity of command, unity of effort, centralized direction, and decentralized execution. Command relationships determine the level of authority exercised by the commander over subordinate forces. The selection of command relationships depends on many factors, and it is often contentious because these relationships determine how much authority the CJTF will exercise over assigned or attached forces.

The roles of the subordinate service and functional components are important to the achievement of the JTF's objectives. In order to achieve unity of effort, planners must have a clear understanding of the span of responsibility and level of authority within each component. Longstanding issues such as aircraft control over water, control of cyberspace assets, and force sustainment responsibilities can degrade operational effectiveness. The CJTF must also look beyond the U.S. military, examining the complex

challenges—and opportunities—presented by interagency, intergovernmental, and multinational partners across the ROMO.

Point of Contact

The point of contact for this session is Commander Joe Dransfield Royal Navy, C-407.

Questions

It has been said that command and control is one of the most unforgiving of the joint functions if you do not get it right at the beginning. Do you agree? Support your argument.

What factors should be considered when determining the level of command authority a JTF commander should exercise over forces under their command (i.e. OPCON, TACON, etc.)?

What seams exist between service and functional components and what measures could the JTF commander and staff use to minimize confusion?

Has technology changed C2 across the ROMO? If so, how?

How does the concept of ‘mission-command’ apply at the JTF level?

Multi-national and interagency relationships are essential to the modern commander but can also present an array of challenges. How can effective C2 help to offset challenges such as culture, doctrine, readiness, intelligence sharing, equipment/communications compatibility, objectives, ROE, or logistics?

Required Readings (57 Pages)

Deployable Training Division, “Insights and Best Practices Focus Paper: JTF C2 and Organization.” Suffolk, VA: Joint Staff J7, January 2020. Read: 1-14. (NWC 6055A).

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Joint Task Force Headquarters*. Joint Publication (JP) 3-33, Washington, D.C.: CJCS, 31 January 2018. Read: II-1 thru II-25.

U.S. Naval War College, Joint Military Operations Department. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, January 2020. Read: section on “Operational Command and Control.” (NWC 3153S). (Issued).

References and Supplemental Reading

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Doctrine for the Armed Forces of the United States*. Joint Publication (JP) 1. Washington, D.C.: CJCS, 25 March 2013 Incorporating Change 1, 12 July 2017

U.K. Development, Concepts and Doctrine Centre. *Joint Concept Note 2/17 – Future of Command and Control*. Swindon, U.K.: Ministry of Defence, September 2017.

JMO-31

THE JOINT FORCE MARITIME COMPONENT COMMANDER

One day, the U.S. military is going to encounter an enemy who is multidimensional, well equipped, well trained, willing to fight, and intending to win. When that day comes, the commanders who are best trained to exert exacting control over their forces to relentlessly advance their plans will win the day—every time.

~ Admiral Robert F. Willard
U.S. Naval Institute Proceedings, October 2002

Session Objectives

- Comprehend the roles and responsibilities of the JFMCC and the JFMCC staff including C2, organizational options, and the maritime operations center (MOC).
 - Comprehend the broad doctrinal concepts guiding the employment of maritime forces at the high-tactical and operational levels of war.
 - Comprehend the Navy Composite Warfare Doctrine including the role of the Officer-in-Tactical Command (OTC) and the OTC's relationship to the Composite Warfare Commander.
-

🔍 Focus

This session provides an overview of the command and control (C2) of joint maritime operations (JMO) with emphasis on the responsibilities of a Joint Force Maritime Component Commander (JFMCC). The Joint Force Commander (JFC) employs maritime power to influence events on land either directly through maritime power projection (e.g., amphibious assault or strike operations) or indirectly through control and dominance of the maritime domain. As designated by the JFC, the C2 of these forces will normally be the responsibility of the JFMCC. Finally, this session examines the Composite Warfare Commander (CWC) concept and how this model is organized to coordinate and synchronize multiple warfare functions in the maritime domain at the tactical level.

📖 Background

Effective C2 of maritime forces is complex due to the domain in which they operate, the requirement to operate continuously—in both the physical domain and the information environment—and by the multi-mission nature of most maritime platforms. The speed, flexibility, mobility, lethality, and persistence of maritime forces, together with the expanse and unique characteristics of the maritime domain present both opportunities and challenges to the JFMCC. Furthermore, effective C2 of maritime forces is critical in gaining and maintaining sea control, conducting sea denial, or projecting power ashore in support of achieving the JFC's operational objectives.

The methods to achieve sea control depend on many variables—the location of the operating area (littoral, open ocean, or enclosed sea, for example), friendly and enemy capabilities, and so forth. Historically, destruction of the fleet, chokepoint control or denial, and attacks on the enemy bases/ ports have been used to gain control of the sea locally. These operations often occur over vast distances and often with limited or no communications, requiring mission command and decentralized control. Maritime operations also encompass operations to locate, classify, track, and target surface vessels, submarines, and aircraft. In addition, amphibious operations, as a form of power projection, increase the commander's options for maneuver in the littorals and forcible entry operations and serve to expand the maritime commanders' area of influence over land. To accomplish the myriad of maritime operations, the commander must coordinate and synchronize these maritime tasks in time, space, and purpose.

At the operational level, the JFC will often designate a JFMCC to coordinate the activities of assigned maritime forces. The JFMCC must be able to develop a plan to best support joint force objectives, provide centralized direction for the allocation and tasking of forces/capabilities made available, and control the operational level synchronization and execution of maritime operations. The JFMCC will

also assign and coordinate target priorities within the assigned area of operations (AO) by synchronizing and integrating maneuver and movement, and fires as well as nominate targets located within the maritime AO to the joint targeting process that may potentially require action by another component commander's assigned forces.

The JFMCC's staff is typically sourced from an existing service component, numbered fleet, Marine Air-Ground Task Force, or subordinate service force staff and then augmented as required. If a Navy component or numbered fleet commander is designated as the JFMCC, his or her existing staff and Maritime Operations Center (MOC) will normally form the nucleus of the JFMCC staff. In a maritime headquarters, two complementary methods of organizing people and processes exist. The first is the doctrinal Napoleonic J/N-code structure, that organizes people by function (i.e. intelligence, logistics, etc.). The second is a cross-functional approach that organizes the staff into boards, centers, cell, and working groups. These organizations manage specific processes or tasks that do not fit well under the Napoleonic structure and are best suited to those tasks that require cross-functional participation, such as targeting, assessment, and information operations. The addition of this cross-functional network to the doctrinal J/N-code organizational structure is what constitutes the MOC.

The MOC is simply another center and can be thought of as a loosely-bound network of staff entities overlaying the J/N-code structure. The MOC's primary focus is on operational tasks and activities, as well as fleet management or support and provides an organizational framework through which maritime commanders may exercise operational level C2. The MOC was established to address shortfalls in the Navy's ability to command and control at the operational level of war. This MOC initiative focused on defining and developing operational level headquarters with some degree of baseline commonality around the globe. The MOC provides the framework from which Navy commanders at the operational level exercise C2.

At the tactical level, C2 transitions to the CWC concept where the Officer in Tactical Command (OTC) is responsible for the missions, forces assigned, and task organization. The OTC is the senior officer present eligible to assume command, or the officer to whom the senior officer has delegated tactical command. The commander of a task organization is its OTC when the organization is operating independently. Although the OTC may retain the CWC duty, these are always separate and distinct, even when the same commander fills both roles. The CWC is a command duty subordinate to the OTC. The CWC is an officer to whom the OTC of a naval task organization may delegate authority to conduct some or all of the offensive and defensive functions of the force.

While acknowledged in joint doctrine, the OTC and CWC are maritime, unique constructs. Joint community understanding of these command and control constructs is important when coordinating or working with maritime forces. The OTC controls CWC and subordinate warfare commanders' actions through "command by negation." Command by negation acknowledges that in many aspects of often distributed and dispersed maritime warfare, it is necessary to pre-plan the actions of a force to an assessed threat and delegate some warfare functions to subordinate commanders. Once such functions are delegated, the subordinate commander is to take the required action without delay, always keeping the OTC informed of the situation. The CWC orchestrates operations to counter threats to the force, while the OTC retains close control of power projection and specific sea control operations.

Point of Contact

The point of contact for this session is CDR Tom Pham, USN, C-426.

?? Questions

Describe the roles and responsibilities of the JFMCC. How can the JFMCC task organize naval forces to facilitate C2 in order to achieve objectives?

How is the JFMCC staff organized? What are its responsibilities? Describe the MOC concept in terms of its role, organization, and how it supports the JFMCC.

Describe the relationship between the OTC and CWC. How does the CWC concept seek to minimize seams between various functional/warfare areas?

How can today's JFMCC and CWC maintain C2 in a highly contested and exploitable information environment?

📖 Required Readings (45 Pages)

Swift, Scott H. "Master the Art of Command and Control." *U.S. Naval Institute Proceedings* 144, no. 2 (February 2018). (NWC 4181).

Graham, Carl. "The Mirage of Mission Command." *U.S. Naval Institute Proceedings* 144, no. 8 (August 2018). (NWC 4207).

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Command and Control for Joint Maritime Operations*. Joint Publication (JP) 3-32. Washington, D.C.: CJCS, 8 June 2018. Read: II-1 to II-18 and IV-1 to IV-4. Scan: IV-5 to IV-21.

U.S. Navy. Office of the Chief of Naval Operations. *Maritime Operations Center*. Navy Tactics, Techniques, and Procedures (NTTP) 3-32.1. Washington, D.C.: Department of the Navy, CNO, April 2013. Read: 1-1 to 1-9 and C-1 to C-5.

📄 References

U.S. Naval War College. Joint Military Operations Department. "Forces/Capabilities Handbook." Newport, RI: Naval War College, JMO, 2020. (NWC 3153S).

U.S. Navy. Office of the Chief of Naval Operations. *Composite Warfare: Maritime Operations at the Tactical Level of War*. Navy Warfare Publication (NWP) 3-56. Washington, D.C.: Department of the Navy, CNO, December 2015.

———. *Maritime Operations at the Operational Level of War*. Navy Warfare Publication (NWP) 3-32. October 2008 with Change 1 ed. Washington, D.C.: Department of the Navy, CNO, August 2010..

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JMO-32

THE JOINT FORCE AIR, LAND, AND SPECIAL OPERATIONS COMPONENT COMMANDERS (JFACC, JFLCC, & JFSOCC)

You can't have force structure without proper training, without proper equipment, without proper leadership, without proper funding to conduct exercises and perform maintenance.
~ General Joseph Dunford
CJCS

Session Objectives

- Comprehend the responsibilities and Command and Control/organizational options of the JFACC, JFLCC, and JFSOCC.
 - Comprehend broad doctrinal service concepts guiding the employment of air forces, land forces, and SOF at the high tactical and operational levels of war.
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Focus

This session provides an overview of the command and control (C2) of the Joint Force when integrating a Joint Force Air Component Commander (JFACC), Joint Force Land Component Commander (JFLCC), and Joint Force Special Operations Component Commander (JFSOCC) into operations. Similar to the roles and responsibilities of the JFMCC discussed in the previous session, the Joint Force Commander (JFC) directs the JFACC, JFLCC, and JFSOCC to solve multi-domain problems. Each functional component possesses service capabilities, operating under a joint command, to influence events within the Joint Operating Area either directly through air or land power projection (e.g., land assault or strike operations) or indirectly through control and dominance of the land or air domain. Finally, this session examines Operation ANACONDA and the operation's integration of the JFACC, JFLCC, and JFSOCC to identify what lessons were learned and carried forward to future conflicts.

Background

This is an integrated joint functional component session that challenges the student to understand what it takes to integrate and C2 joint operations in the non-maritime domains of land and air. The session forces us to think beyond individual Service Components and consider how their capabilities can more efficiently be commanded/controlled by a functional commander to accomplish objectives in the multi-domain battlespace. Students who are affiliated with the Air Component, the Land Component, or the SOF Component, or have worked with them in the past, should be eager to share their experiences of how well, or poorly, this is executed in the field.

Operation ANACONDA provides a recent case study to discuss what challenges and lessons can be learned from combat integration of the JFACC, JFLCC, and JFSOCC. Specifically, it is valuable to note the implications the operation had on command structures for future joint expeditionary operations and tactical battles. Additionally, the case is helpful in examining the challenge of generating accurate intelligence estimates of enemy forces, intentions, and capabilities for tactical battles when integrating the JFACC, JFLCC, and JFSOCC.

Point of Contact

The points of contact for this session are JFLCC: COL Matt Tackett (USA) and LtCol Chris Dalton (USMC); JFACC: Col. Dan "Curly" Rauch (USAF); JFSOCC: CAPT Chris Rohrbach (USN)

Questions

Describe the roles and responsibilities of the JFACC, JFLCC, and JFSOCC. How can each task organize forces to facilitate C2 in order to achieve objectives?

Describe the C2 relationship between the JFACC, JFLCC, and JFSOCC during Operation ANACONDA. What was effective? What changes did the After Action Review recommend?

How can today's JFACC, JFLCC, and JFSOCC elements establish and maintain C2 in a highly contested and exploitable information environment?

Required Readings (25 Pages)

Kugler, Richard. "Operation Anaconda in Afghanistan: A Case Study of Adaptation in Battle." *Case Studies in Defense Transformation Number 5*.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Command and Control of Joint Air Operations*. Joint Publication (JP) 3-30. Washington, D.C.: CJCS, 10 February 10, 2014. Scan: II-1 to II-24, and E-2.

_____. *Joint Land Operations*. Joint Publication (JP) 3-31. Washington, D.C.: CJCS, 3 October 2019. Scan: Chapter II and Chapter III.

_____. *Special Operations*. Joint Publication (JP) 3-05. Washington, D.C.: CJCS, 16 July 2014. Scan: II-1 to II-18, III-1 to III-25.

References and Supplemental Reading

Holmes, James M. "The Counter-air Companion, A Short Guide to Air Superiority for the JFC." Air University Press, April 1995. Read: 57-62. (NWC 4149).

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Countering Air and Missile Threats*. Joint Publication (JP) 3-01, Washington D.C.: CJCS, April 2017. Review Chapters IV and V.

Dupuy, T.N. *Understanding War: History and Theory of Combat*. Paragon House Publisher, 1987. (NWC 6058).

Malvesti, Michele, "To Serve the Nation-U.S. Special Operations Forces in an Era of Persistent Conflict," *Center for a New American Security*, June 2010. (NWC 1127).

JMO-33

UTILIZING JOINT INTELLIGENCE

By 'intelligence' we mean every sort of information about the enemy and his country – the basis, in short, of our own plans and operations.

~ Carl von Clausewitz
On War, 1832

Session Objectives

- Understand Joint and Navy doctrinal terminology relating to intelligence, including the intelligence process and associated intelligence functions.
 - Understand how the intelligence process is synchronized to support decision-making and operational planning, specifically towards a more comprehensive understanding of the adversary and the operational environment.
 - Examine intelligence organizations and operational-level integration.
 - Comprehend the roles and responsibilities of the commander and the intelligence officer in the intelligence process at the operational level.
 - Assess how intelligence has been utilized -- optimally or less so -- in historical context, to determine enduring lessons and consider implications for future joint military and navy planning and operations.
-

🔍 Focus

Intelligence, as a discipline and an operational function, is essential to the successful conduct of military operations in both peacetime and war. Intelligence operations are often described as a high-demand/low-density enterprise, meaning requirements routinely outstrip available resources. It is therefore imperative intelligence resources be utilized as efficiently as possible and be driven by a clear set of priorities informed by commander's intent and guidance. This will ensure limited resources are applied against the commander's most pressing concerns.

This seminar focuses on the nature and principles of intelligence, the responsibilities of both the joint force and maritime commander and the duties of the staff intelligence officer/J2/N2, primarily at the operational level. It will explore the critical nature of the commander's relationship with the intelligence officer, and how commander's priorities and Priority Intelligence Requirements (PIRs) drive the intelligence process to support operational decision-making. Additionally, the seminar will examine the importance of the Intelligence Estimate and Intelligence Preparation of the Operational Environment (IPOE), and how they support the Navy Planning Process (NPP).

≡ Background

History provides numerous examples of military and political leaders' quests for detailed information regarding their enemies. From Sun Tzu and Alexander the Great to the present day, leaders' thirst for information to help make informed decisions has only increased with the progress of information technology. To this end, the United States has developed, over time, an intelligence community of considerable scale and budget. Beginning with personnel dedicated to intelligence duties in the Continental Army, to the establishment of the Office of Naval Intelligence in 1882, military intelligence led the way to more expansive national intelligence operations, namely the Office of Strategic Services (OSS) during World War II. The OSS evolved into the first permanent peacetime—and largely civilian—intelligence agency, the Central Intelligence Agency (CIA), following the war. Since that time, dedicated intelligence departments and operations have proliferated throughout the U.S. government. Currently there are 17 federal agencies with significant intelligence sections that comprise the overall U.S.

Intelligence Community (IC). As one of the recommendations from the 9/11 Commission, and in an attempt to manage and coordinate these intelligence operations optimally, Congress and President George W. Bush established a Director of National Intelligence (DNI) in 2004.

The IC covers a broad waterfront, from providing intelligence on a daily basis to the President and key personnel in the National Security Council and cabinet, to informing the theater-wide plans and operations of geographic combatant commanders, all the way down to providing actionable intelligence at the tactical level. While agencies of the IC, guided by the DNI, principally provide intelligence to national-level decision-makers, it is the Joint Intelligence Officer (J2) who is responsible for providing intelligence to the Joint Force and the N2 who is responsible for providing intelligence to naval forces. From the Joint Staff J2 at the national level, through Combatant Command J2s and Joint Task Force J2s at the theater-strategic and operational level, to N2s at the operational and tactical levels, operational intelligence plays a key role within the U.S. military. Operational intelligence supports military strategy, theater-wide campaign plans, joint operations, maritime operations and tactical actions in all domains.

To this end, operational intelligence has the key role of providing the commander and staff a deep understanding of the operational environment and enemy (or potential enemy) threat. This includes detailed predictive assessments of the enemy military forces, including capabilities and intent, but extends further to include a wide range of environmental, cultural and political factors that affect maritime, joint and multi-national operations. This process is termed the Intelligence Preparation of the Operational Environment (IPOE). The requirement for this wide-ranging assessment of the enemy and the operational environment existed since the earliest days of intelligence.

Despite the considerable capabilities the U.S. Intelligence Community brings to the joint force and maritime operations, they remain imperfect, and the conduct of intelligence remains as much an art as a science. Intelligence has had its share of failures, both through inaccuracy or even absence, which has had detrimental effects on national policy decisions and military operations. Even when intelligence is accurate, timely and predictive, it has sometimes been poorly appreciated, or even disregarded, by both military and civilian leaders, with corresponding ill effects on operations. It is therefore critical senior decision-makers and staff planners alike be critical consumers of intelligence, partnering closely with intelligence professionals and organizations to ensure the adversary and the operational environment are as well analyzed and comprehended as possible before committing forces to combat.

Point of Contact

The point of contact for this session is Captain Rob Dahlin, USN, C-428.

Questions

What is operational intelligence? How does it differ from strategic and tactical intelligence?

How does the intelligence officer at the operational level leverage the capabilities of the intelligence community for military operations and tactical actions?

How is the intelligence process synchronized to support operational decision-making, as well as joint and navy planning? What specific intelligence products does the J2/N2 bring to bear?

Intelligence must be driven by a clearly defined set of priorities to ensure limited resources are applied against the most critical intelligence needs. What is the military decision-maker's role in defining these priorities? How does the J2/N2 translate these priorities into intelligence operations to satisfy the Commander's requirements?

What are some of the intelligence challenges associated with multinational operations?

What is the future of joint and maritime intelligence? What does the commander need to make decisions in the likely operational environment of the future?

Required Readings (87 Pages)

United States Navy. Office of the Chief of Naval Operations. *Naval Intelligence*. Naval Warfare Publication (NWP) 2-0. Norfolk, VA: Department of the Navy, March 2014. Read: Chapter 1 and 3-5 thru 3-35. Scan: 4-1 thru 4-5, 5-1 thru 5-13, and Annex J.

U.S. Office of the Chairman, Joint Chiefs of Staff. *Joint Intelligence*. Joint Publication (JP) 2-0. Washington, D.C.: CJCS, October 22, 2013. Read: Executive Summary and Chapter III.

United States Navy. Office of the Chief of Naval Operations. *Intelligence Support to Naval Operations*. Naval Warfare Publication (NWP) 2-01. Norfolk, VA: Department of the Navy, April 2017. Scan: Chapter 4.

U.S. Office of the Chairman, Joint Chiefs of Staff. *Joint Task Force Headquarters*. Joint Publication (JP) 3-33. Washington, D.C.: CJCS, 31 January, 2018. Scan: Chapter VI.

Moderators will assign the below readings by team:

Dahl, Erik J. *Intelligence and Surprise Attack: Failure and Success from Pearl Harbor to 9/11 and Beyond*. Washington DC: Georgetown University Press, 2013. Read: 29-46. (NWC 4184).

Ford, Christopher A., and David A. Rosenberg. "The Naval Intelligence Underpinnings of Reagan's Maritime Strategy." *Journal of Strategic Studies* 28, no. 2 (Apr 2005): Read: 379-402. (NWC 4141).

Shuster, Richard. U.S. Naval War College. Joint Military Operations Department. "Intelligence, Leadership, and Decisive Victory at Midway." Newport, RI: Naval War College, 2011. (NWC 2080).

Supplemental Reading

None.

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JMO-34

OPERATIONS IN THE INFORMATION ENVIRONMENT

The profoundest truth of war is that the issue of battle is usually decided in the minds of the opposing commanders, not the bodies of their men.

~ Captain Sir Basil Liddell Hart
British Army

Session Objectives

- Comprehend the role of Information as an instrument of national power in achieving operational objectives.
 - Assess the integration of information operations (IO) and operations in the information environment (OIE) in Service and Joint plans and orders.
 - Examine the role and perspective of the joint force commander and staff in developing various plans and orders that include IO and OIE to be used to achieve operational and tactical objectives across the spectrum of conflict.
 - Evaluate the principles, capabilities and limitations of IO and OIE in contemporary conflict.
-

🔍 Focus

This session builds on the concept of Navy Information Warfare addressed earlier in the course by taking a broader look at the operations in the information environment (OIE) and information operations (IO). Students will investigate how both the U.S. Joint Force and potential enemies view IO and how OIE are used to inform, persuade, and influence decision-making. This session will explore the doctrinal basis of IO and discuss how information-related capabilities and OIE are used in conflict, and review IO successes and failures from the last decade plus of war. This session links directly with JMO 35 Operating in Cyberspace as information in the form of computer code is what moves through cyberspace.

≡ Background

With the emergence of information as key terrain in modern warfare, our understanding of the information environment—how information is sent and received, how it is perceived, and how it is acted upon—are all integral to contemporary warfare. Understanding Information as an element of national and military power, how it is moved, prioritized, analyzed and synthesized to support decision makers, is key to twenty-first century operations as well. The confluence of information connectivity, content and cognition combine to form the information environment (IE), a term of art in U.S. Joint doctrine. As data is collected and prioritized to create information, it is synthesized into knowledge that decision makers leverage to make decisions.

Joint Publication 3-13 (JP 3-13), *Information Operations*, characterizes IO as “The integrated employment, during military operations, of information-related capabilities (IRCs) in concert with other lines of operations to influence, disrupt, corrupt, or usurp the decision making of adversaries and potential adversaries while protecting our own.” Broadly speaking, all operations, short of unconditional surrender, should influence an adversary to make a decision favorable to larger U.S. objectives. The integrated employment of IRCs is central to achieving the commander’s objectives at every level of warfare.

The *Joint Concept for Operations in the Information Environment* (JCOIE) is yet another attempt by the Department of Defense (DoD) to get their arms around the power on information in contemporary conflict. The DoD recognizes OIE are used by belligerents on both sides to affect decision-making across the range of military operations, yet our adversaries consistently control the narrative. The 2018 JCOIE resembles the 2003 Information Operations Roadmap in many ways, yet we have had few successes in changing the adversaries’ behavior. This is due in part to the fact that our civilian and military leaders struggle to understand these forms of soft power, and our adversaries, whether they are

state or non-state actors, are not constrained by truth and laws, enabling them to out-inform us on and off the battlefield.

Today, OIE inform, persuade, and influence decision-makers in conflict around the globe. The weapons that are being employed use information as force instead of physical means to compel adversaries and decision-makers to act. This session is the foundation for understanding of how IRCs can be leveraged to achieve objectives across the spectrum of operations.

Point of Contact

The point of contact for this session is Professor Dick Crowell, C-425.

Questions

Can modern conflicts be won by the use of lethal operations alone? Explain your answer.

Why is information considered an element of national power?

How can joint force commanders use information-related capabilities to inform, persuade, and influence decision makers across the spectrum of conflict?

Why is commander's communication synchronization important in contemporary conflict?

What lessons for future operations can be drawn from Russian use of Information Warfare – Informationsionnoe Protivoborstvo (Information Confrontation) and Informationsionnaya Voyna (Information War) in support of their military objectives and political ends?

What lessons for future operations can be drawn from the China's use of Information Warfare in support of their military objectives and political ends?

Required Readings (82 Pages)

Crowell, Richard M. "War in the Information Age: A Primer for Information Operations and Cyberspace Operations in 21st Century Warfare." Newport, RI: U.S. Naval War College, January 2019. Read: 1-8 and 16-36. (NWC 2021E).

U. S. Office of the Chairman of the Joint Chiefs of Staff. *Joint Concept for Operations in the Information Environment*. Washington, D.C.: CJCS, July 25, 2018. Read: 1-30. Scan remainder. (NWC 4185).

Reilly, Robert R. "Information Operations: Successes and Failures." Westminster Institute, 2013. (NWC 2163).

Wang Xueping. "Chinese Military Informationized Warfare – Integrating New Combined Arms," *Red Dragon 1949*, 12 September 2018. (NWC 4186).

U. S. Office of the Chairman of the Joint Chiefs of Staff. *Information Operations*. Joint Publication (JP) 3-13, Washington, D.C.: CJCS, 27 November 2012 Incorporating Change 1, 20 November 2014. Read: Executive Summary; Scan: Chapters I, II, III, and IV.

Supplemental Reading

None.

JMO-35

OPERATING IN CYBERSPACE

We can thus only say that the aims a belligerent adopts, and the resources he employs, must be governed by the particular characteristics of his own position; but they will also conform to the spirit of the age and to its general character.

~ Carl von Clausewitz
On War, 1832

Session Objectives

- Understand the role and perspective of the joint force maritime component commander in integrating cyberspace operations into plans and orders across the spectrum of conflict.
 - Comprehend the use of cyberspace operations in the pursuit of military objectives and political ends.
 - Understand the ability of cyberspace operations to achieve mass destruction and effects.
-

🔍 Focus

This session focuses on how cyberspace operations at the operational level can support the Joint Force Commander (JFC) and Joint Force Maritime Component Commander (JFMCC) objectives. This session builds on the naval warfare theory and practice sessions, information operations session, and focuses on developing an understanding of how cyberspace operations may be used in contemporary conflict to achieve military objectives and political ends. A theory of cyber warfare is presented where the use of content and code is a form of power projection in the cyberspace domain that must be carefully planned and integrated in the joint targeting process.

≡ Background

Some of the most significant changes in contemporary conflict are the speed at which information moves around the world, its depth of penetration into society, and the continuous invention and adaptation of machines for human use in peace and war. The speed and depth of the movement of information are a result of the largely man-made domain of cyberspace. Cyberspace, much like the sea, is a domain in which humans maneuver in and through to achieve objectives in the physical spaces where they live. The parallels between the naturally uncontrolled maritime domain and the deliberately uncontrolled cyberspace domain are highlighted in the human use of the two spheres. Both are a medium for the transportation of information and ideas and for trade.

What moves through cyberspace is information in the forms of code (software) and content. In what can be seen as the intertwining of cyberspace and human activity, the number of humans utilizing cyberspace for commonplace activities (communication, navigation, news, shopping, banking, entertainment, etc.) is accelerating. Examples of the scope of global activity in cyberspace in the early 21st century include approximately 4.2 billion Internet users, or 55 percent of people on Earth, and more than 2.2 billion Facebook users. In fact, the U.S. Department of Defense (DOD) operates over 15,000 networks and more than seven million edge devices (electronic computing devices that provide entry points to move content and code around the internet).

In an effort to bring together the concepts of cyberspace operations, information operations, and warfare in the physical domains, the DOD has moved the lexicon of cyberspace operations towards terminology that is recognizable to warfighters in all domains. Cyberspace operations, defined in U.S. Joint doctrine, is the employment of cyberspace capabilities where the primary purpose is to achieve objectives in or through cyberspace. Cyberspace operations include Offensive Cyberspace Operations (OCO), Defensive Cyberspace Operations (DCO), and DoD Information Network Operations (DODINOPS). DCO and OCO lexicon, in particular, standardize warfighting terminology and allow warfighters to better understand and communicate actions and objectives across multiple warfare areas. Not surprisingly, as human competition has evolved, it now encompasses struggles for control and denial of cyberspace.

Point of Contact

The point of contact for this session is Professor Dick Crowell, C-425.

Questions

Describe the vulnerabilities to modern weapon systems created by networking.

Can cyberspace be controlled? If so, what impact does that control have on operations in the traditional domains of war? Can cyber control be disputed or denied? If so, describe how denial or dispute supports military operations.

Describe the impact that cyberspace operations can have on the operational factors of time, space, and force.

How can cyberspace operations be used to complement or support joint / operational functions of C2, Intelligence, Movement & Maneuver, Fires, Sustainment, Protection, and Information?

How might Joint Force Commanders integrate cyberspace operations into plans and orders?

What lessons for future conflict can be drawn from both Russian and PRC use of cyberspace operations in support of their military objectives and political ends?

Describe how non-state actors might use cyberspace operations against the U.S. Joint Forces.

Required Readings (108 Pages)

Crowell, Richard M. “Some Principles of Cyber Warfare Using Corbett to Understand War in the Early Twenty-First Century.” London: King’s College London, The Corbett Centre for Maritime Policy Studies, January 2017. (NWC 2137).

U.S. Government Accountability Office. *Weapons Systems Cyber Security DOD Just Beginning to Grapple with Scale of Vulnerabilities*. Report to the Committee on Armed Services, U.S. Senate. Washington, D.C.: GAO, October 2018. Scan: 1-5; Read: 6-37. (NWC 4179).

Crowell, Richard M. “War in the Information Age: A Primer for Information Operations and Cyberspace Operations in 21st Century Warfare” Newport, RI: U.S. Naval War College, January 2019. Scan: 8-16; Read: 36-51. (NWC 2021E).

Fahrenkrug, David T. “Countering the Offensive Advantage in Cyberspace: An Integrated Defensive Strategy.” NATO Center for Cyber Defense Centre of Excellence, Tallinn, 2012. (NWC 2161).

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Cyberspace Operations*. Joint Publication (JP) 3-12. Washington, DC: CJCS, 8 June, 2018. Scan: Executive Summary; Read: Chapter IV.

Supplemental Reading

None.

JMO-36

SUSTAINING THE FORCE

The war has been variously termed a war of production and a war of machines... Whatever else it is, so far as the United States is concerned, it is a war of logistics. The ways and means to supply and support our forces in all parts of the world – including the Army of course – have presented problems nothing short of colossal and have required the most careful and intricate planning.

~ Admiral Ernest King
Operation WATCHTOWER, 1942

Session Objectives

- Comprehend planning considerations in sustaining joint operations across the range of military operations.
 - Comprehend the challenges in sustaining the force when conditions require prioritization of efforts due to limitations on time, space, force, objectives and end state.
 - Comprehend how operational contract support contributes to effective logistical planning in support of joint operations.
-

Q Focus

This session focuses on the challenges of sustaining the force once introduced into the area of operations. The session also emphasizes the challenges and limitations that face commanders and logisticians when considering options that must support operational plans. Drawing from a complex humanitarian and security operation, Operation RESTORE HOPE, students will study the impacts and considerations of operating as part of a coalition as well as the challenges of changes to the joint force's strategic guidance. The role of operational contract support (OCS), as an enabler and complement to operational planning, is reinforced in this session in order to acquaint the student with operational contracting's unique considerations, costs, and opportunities when employed.

≡ Background

Sustaining the force involves all elements of the national military establishment. Strategic sustainment ties the industrial and contracting might of the United States to the end user through a complex and highly connected series of planning, sourcing, manufacturing, transporting and distribution agencies.

Sustainment begins before the first unit deploys and continues until the last remaining unit departs the area of operations. Sustainment planning requires an understanding of all the elements of the operating environment, commander's intent, scheme of maneuver, forces available, force flow requirements, restrictions on footprint, capabilities existing within the host nation, time, space, risk tolerance, and the list goes on. Additionally, sustaining the force during any mission across the Range of Military Operations requires that military professionals be aware of the variety of both sustainment needs and capabilities available to the commander. Every operation is unique and the risk of marginalizing the logistical requirements of an operation, often by relying on a simplistic data-based sustainment solution rather than a mission/force-based solution, can result in operational failure.

Recent operations, from Operation DESERT SHIELD/DESERT STORM in 1990-1991 to today's ongoing missions in Iraq and Afghanistan, have also infused planners with the appetite for operational contract support (OCS) as a significant enabler to manage uniformed footprint and allow the armed forces to focus on core missions. As a core joint logistics capability, OCS synchronizes and integrates contracted specialties to support Combatant Command-directed operations. OCS can be a force multiplier, enhancing deployed forces' operational reach and/or providing options to mitigate force caps or skills shortages within the uniformed Services. However, there are inherent challenges and risks with contract support that must be identified and mitigated. OCS is "Commander's business" and as such, this capability needs attention, emphasis and inclusion throughout the planning process in order for it to add value to the commander and his/her staff's efforts in planning/conducting joint and naval operations.

Point of Contact

The point of contact for this session is LtCol Chris Dalton, USMC, C-403.

Questions

Explain how sustaining the force requires a thorough understanding of Operational Art.

How can operational planners produce actionable and sustainable options when planning factor limits are imposed, such as force footprint, duration of the operation, or limited materiel?

How might the unique logistical basing and replenishment capabilities associated with naval operations allow naval forces to maintain freedom of action?

How does Operational Contract Support serve to enhance efficiency in sustaining operations? What planning considerations and challenges are associated with employing operational contract support?

Discuss the commander's role when considering potential options associated with incorporating operational contract support.

Operation RESTORE HOPE was envisioned as a humanitarian operation with a managed security threat. It didn't turn out that way. Discuss where sustainment planning and execution worked well and areas where the Joint Task Force commander and his staff had to adapt to unforeseen or changing circumstances.

Required Readings (61 Pages)

Gannon, James. U.S. Naval War College, Joint Military Operations Department. "Naval Logistics Primer." Newport, RI: Naval War College, January 2019. Read: 1-25. (NWC 1218A).

Dalton, Christopher. U.S. Naval War College, Joint Military Operations Department. "Operational Contract Support Primer." Newport, RI: Naval War College, January 2020. (NWC 4215). Read: 5-19, Appendix A. Review 1-4, and Appendix B.

Jespersen, David M. LtCol, USMCR. "Coalition Logistics in Somalia." Marine Corps Gazette, April 1994. Read: 32-34. (NWC 4213).

McGrath, John J, LT, USN. "A History of Sealift and Force Sustainment Operations during the Somalia Intervention (1992-1994). Naval Postgraduate School, Monterey, CA, March 1996. Read: 65-85. (NWC 4212).

References

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Joint Logistics*. Joint Publication (JP) 4-0. Washington, DC: CJCS, 4 February 2019 Incorporating Change 1, 8 May 2019.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Operational Contract Support*. Joint Publication (JP) 4-10. Washington, DC: CJCS, 4 March 2019.

JMO-37 DEPLOYING THE FORCE

Future force projection missions, like those throughout history, will demand well developed operational and logistical planning, force mix, appropriate sequencing into and out of a theater, and a constant requirement for soldier and unit versatility. Such missions will require leaders and units that can operate in ambiguity and have the agility to adapt and adjust. Set piece thinking does not fit force projection. All of these requirements will occur in a joint or combined environment.

~ General Frederick M. Franks, Jr., U.S. Army
Commander, VII Corps, Gulf War August 1989–June 1991

OBJECTIVES

- Understand how joint forces deploy to an area of operations.
 - Understand the strengths and limitations of the elements of the mobility triad.
 - Understand and apply deployment planning considerations and challenges.
-

🔍 Focus

To effectively employ joint forces to meet objectives, Combatant Commanders (CCDR), as well as their supporting service components and staffs, must understand how to deploy these forces. The deployment process is a core element of synchronizing and sequencing forces in time and space to support the commander's operational concept. Each service component faces unique deployment challenges; this session exposes students to the inherent advantages, limitations, risks, and opportunities for each deployment method. It also introduces the national-level deployment system (strategic mobility triad) through an examination of the mission of U.S. Transportation Command (USTRANSCOM), its subordinate transportation component commands, and their role deploying joint forces in support of global contingencies.

🔗 Background

The previous session focused on logistics sustaining joint forces once deployed. This session explores movement of forces from their home station to the area of operations, providing the commander with combat power (as well as re-deployment upon mission completion). According to Joint Publication 3-35, "Deployment operations are the activities required to plan, prepare, and move forces and materiel from home station to a destination to employ an operational capability required to execute a mission. The focus of these operations is to globally position forces in time to conduct military activities, including campaigns and major operations, and to respond to other contingencies."

Every contemporary campaign and major operation began with a plan, arrived at through operational or contingency planning. The end result of planning was an operation plan (OPLAN) or operation order (OPORD) whose force movement was supported by the Time Phased, Force Deployment Data (TPFDD) system. The TPFDD serves as the commander's primary tool for managing flow of forces / capability into the area of operations to execute a mission.

Navy ships with embarked forces, Naval air squadrons, detachments, and Marine Expeditionary Units (MEUs) are self-deploying. Other joint forces, including non-embarked Marine Corps forces and Naval Expeditionary Combat Command forces, and their sustainment move to and from theater via strategic, common-user land, sea, and air transportation, and may integrate with pre-positioned equipment at or near their place of employment. This combined, joint deployment and distribution system is commonly referred to as the Strategic Mobility Triad. The Joint Staff J3 serves as the DOD's Joint Deployment Process Owner, and USTRANSCOM serves as DOD's Joint Deployment and Distribution Coordinator. Actual movement is executed by USTRANSCOM's service component commands: Military Surface Deployment & Distribution Command (SDDC -Army), Military Sealift Command (MSC - Navy), and

Air Mobility Command (AMC - Air Force). The Department of Transportation's Maritime Administration (MARAD) augments MSC by contracting U.S. flag, commercial carriers for sealift procurement and operations. Military Sealift Command, the Naval component of USTRANSCOM, plays a major role in the global deployment to "move the joint force" from where it is to where it is needed. Approximately 90% of US warfighting equipment and supplies travel by sea.

Point of Contact

The point of contact for this session is Lt Col M. Troy Rittenhouse, USA, C-404.

Questions

How does the supported Joint Force Commander get units from wherever they are in the world to where they are employed in support of the JFC's operational idea?

What are the major planning considerations facing operational planners in deploying a force to the theater of operations? By who/how is this operation managed?

What are the advantages and disadvantages of each leg of the strategic deployment triad?

How is the TPFDD used to manage the movement of forces into and out of an area of operations?

Required Readings (50 Pages)

U.S. Office of the Chairman of the Joint Chiefs of Staff. Deployment and Redeployment Operations. Joint Publication (JP) 3-35. Washington, D.C.: CJCS, 10 January 2018. Read: Executive Summary, III-1 thru III-6.

U.S. Naval War College, Joint Military Operations Department. "Forces/Capabilities Handbook." Newport, RI: Naval War College, January 2020. Read: "Strategic Mobility" section. (NWC 3153S). (Issued).

McMahon, Christopher. "The Great White Fleet Sails Today? Twenty-First Century Logistics Lessons from the 1907-1909 Voyage of the Great White Fleet." Naval War College Review Vol. 71, No.4 (2018). Read: 67-86. (NWC 4118).

References

Creveld, Martin van. *Supplying War: Logistics from Wallenstein to Patton*. Cambridge, UK: Cambridge University Press, 1997.

McGarvey, Ronald, Robert Tripp, Rachel Rue, Thomas Lang, Jerry Sollinger, Whitney Conner, and Louis Luangkesorn. *Global Combat Support Basing: Robust Prepositioning Strategies for Air Force War Reserve Materiel*. Santa Monica, California: RAND Corporation, 2010.

Peltz, Eric, Marc Robbins, Kenneth Girardini, Rick Eden, John Halliday, and Jeffrey Angers. *Sustainment of Army Forces in Operation Iraqi Freedom: Major Findings and Recommendations*. Santa Monica, California: RAND Corporation, 2005.

Pettyjohn, Stacie L. and Alan Vick. *The Posture Triangle*. Santa Monica, California: RAND Corporation, 2013..

JMO-38

MARITIME OPERATIONAL LAW

Law is a strategic partner for military commanders when it increases the perception of outsiders that what the military is doing is legitimate.

~ David Kennedy, *Of War and Law*

Session Objectives

- Value the integration of operational law into the planning and execution of maritime operations.
 - Analyze the application of the law of the sea and law of armed conflict to maritime operations.
 - Analyze freedom of navigation issues in disputed maritime areas, such as the Strait of Hormuz, Arctic, and East/South China Seas.
 - Analyze challenges and opportunities in application of international law and rules of engagement at the operational and high-tactical levels of war across the competition continuum.
-

🔍 Focus

The purpose of this lecture is to foster critical thinking on how the law is integrated into military operations, rather than to teach rote operational law. This lecture and the reading for the lecture set the stage for the subsequent two operational law seminars, as well as later sessions in JMO. Students arrive at the NWC with a wide range of operational experience and knowledge of operational law. The reading for this lecture, the Operational Law Primer, provides the foundational knowledge of the areas of operational law critical to the planning and execution of joint military operations. Based on their prior experience, students should spend more time reading the portions of the Operational Law Primer that are not as familiar to them in preparation for both the lecture and discussions in seminar.

⚙️ Background

Operational law is a broad term encompassing those facets of international law, U.S. domestic law, U.S. military regulations and the domestic law of other nations affecting military planning and operations. When planning and conducting military operations, commanders and their subordinates must take into consideration a wide range of international and domestic laws and ensure they have the appropriate authorities to accomplish the mission.

Freedom of movement in international waters and airspace is fundamental to implementing national and military strategies. The legal bases for these navigational freedoms are customary international law of the sea (LOS) and the United Nations Convention on the Law of the Sea (UNCLOS). Navigational freedom allows access to strategic areas of the world, facilitates support and reinforcement of forward-deployed forces, enables military forces to operate worldwide, and ensures uninterrupted global commerce. In the maritime domain, compliance with international law, particularly the law of the sea, is part of everyday operations.

For the operational planner, the factor space is heavily influenced by international law – principles of state sovereignty and boundaries of land, sea, and air. International law directly impact freedom of movement of military forces. For example, during the deterrent or pre-hostilities phase of an operation, military forces generally respect the sovereign rights of nations regarding their land territory, national waters, and national airspace. During the hostilities phase of an operation, when the law of armed conflict (LOAC) governs the situation, the movement of military forces may be conducted without regard to the sovereign territorial rights of the enemy belligerent nation. However, the traditional sovereign rights of other states (e.g., neighboring/neutral states) must, as a matter of law, continue to be respected. Limitations on freedom of movement of forces within land, sea, and air boundaries of such states must be factored into operational planning. For instance, when navigation and overflight rights within another

states' sea and air space prove insufficient, operational planners must use alternative routes or consider notifying the State Department of the need to obtain access and transit agreements in order to facilitate planned operations.

Authority for the use of force will vary across the spectrum of military operations; therefore, commanders and in particularly their staffs must understand and take authorities into consideration in planning and executing operations. These authorities can include a UN Security Council Resolution (UNSCR), international criminal jurisdiction, consent of a flag state, self-defense, rules for the use of force (RUF), or rules of engagement (ROE). In contrast to most land operations, maritime operations may have the same unit use different authorities for actions taken nearly concurrently in time.

International law governing the use of military force in war is divided into two parts: (1) the *jus ad bellum* (when and under what circumstances a nation has a right to use military force or go to war) and (2) the *jus in bello* (the use of military force during war - the law of armed conflict (LOAC)). The Department of Defense mandates that all members comply with the law of war during all armed conflicts, and in all other military operations, especially those holding the potential for use of force. Therefore, all military commanders, planners, and operators must thoroughly understand the application of LOAC regardless of the type of operation. When studying LOAC, one must bear in mind that LOAC has historically been called the Law of War and the international community often refers to LOAC as International Humanitarian Law (IHL).

States frequently limit or authorize the use of military force in rules of engagement (ROE). While ROE normally comply with LOAC, the State may use the ROE or other policy measures (e.g. civilian casualty limits) to restrict the use of force beyond restrictions required by LOAC. The strategic objectives and policy of the State shape the ROE more than the law. Military requirements for mission accomplishment are often in tension with the policy limits reflected in the ROE.

Compliance, or perceived compliance, with international law conveys legitimacy. Considering the speed with which information is passed in this digital age, failure to comply with the law at the tactical, operational, or strategic level can be immediately exploited by one's adversaries and jeopardize the mission. The international community, including allies and partners, and domestic populations judge the use of military force largely based on whether the action taken is perceived to be in accordance with international law. The term "lawfare" has been defined as "using – or misusing – law as a substitute for traditional military means to achieve an operational objective." (Col. C. Dunlap, USAF (ret.)) Lawfare is increasingly utilized by States, as well as non-state actors, to achieve not only operational objectives but also strategic objectives across the spectrum from competition to conflict. In recent years, competitors and potential adversaries have leveraged their interpretation of international law to further their national interests and objectives. In some cases, lawfare has accomplished national objectives without resorting to force, or at least not armed conflict, and in other cases lawfare has furthered objectives during armed conflict. The use of such approaches drives the U.S. military to understand and prepare for legal warfare as an element of operational plans.

For students interested in operational law, references are available through the NWC Library Stockton e-Portal at <https://usnwc.libguides.com/c.php?g=86619&p=556945>.

Point of Contact

The point of contact for this session is CDR Melissa A. Harvison, JAGC, USN, C-406.

?? Questions

What is the relationship between the law and legitimacy? How does the desire for legitimacy impact military operations?

What are the spectrum of authorities for a State to use force? Where do they come from? In what circumstances do they apply?

How is operational law integrated into the planning and execution of military operations? How are military planning and operations affected by State sovereignty and the various legal regimes of oceans and airspace?

How are competitors using “lawfare” as an approach to achieve objectives and constrain opposition military operations?

How are ROE shaped by policy, the law, and military requirements? What plays the dominate role?

Why should the U.S. comply with international law when our competitors or adversaries do not?

Required Readings (31 pages)

Harvison, Melissa. “Operational Law Primer.” Newport RI: U.S. Naval War College: Joint Military Operations Department. January 2020. Read: Preface, 1-30. (NWC 2147A).

References and Supplemental Reading

Clapham, Andrew and Paola Gaeta, ed. *The Oxford Handbook of International Law in Armed Conflict*. Oxford, UK: Oxford University Press, 2014.

Gill, Terry D. and Dieter Fleck, ed. *The Handbook of the International Law of Military Operations, 2nd Edition*. Oxford, UK: Oxford University Press, 2015.

Gray, Christine. *International Law and the Use of Force, 4th Edition*. Oxford, UK: Oxford University Press, 2018.

Orde E. Kittrie. *Lawfare: Law as a Weapon of War*. New York: Oxford University Press, 2016.

U.S. Chairman Joint Chief of Staff. *CJCS Standing Rules of Engagement and Rules for the Use of Force*, CJCS Instruction 3121.01B. 13 Jun 2005.

U.S. Congress, Joint Resolution. *Authorization for Use of Military Force [AUMF]* Public Law. 107-40 [S.J. RES. 23], September 18, 2001.

U.S. Department of Defense, Office of General Counsel. *Department of Defense Law of War Manual*. December 2016.

United Nations. United Nations Convention on the Law of the Sea. December 10, 1982.

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JMO-39

MARITIME OPERATIONAL LAW – NAVAL WARFARE

Nothing in the present Chapter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a member of the UN until the Security Council has taken measures necessary to maintain international peace and security.

~ UN Charter, Article 51

Session Objectives

- Analyze the relationship between national policy, ROE, LOAC, and maritime operations.
 - Analyze the effect and application of international law (LOS, LOAC, law of neutrality) on naval warfare.
-

Focus

During this session, students will be given an opportunity to discuss the Maritime Operational Law lecture and reading. Building on the preceding session, this seminar explores the implications of operational law on naval warfare using the Falklands/Malvinas Conflict of 1982 case study, discussed previously in JMO-25. The case study will be used to discuss the following in the context of naval warfare: justification for war; political/strategic objectives vice military objectives; legitimacy; policy influence on rule of engagement (ROE); ROE and risk to force and risk to mission; utility of maritime exclusion zones; self-defense vice the law of armed conflict (LOAC); impact of neutral states; and civilians participating in hostilities.

Background

While the armed conflicts of the last few decades have been primarily on land, based on the current geopolitical environment, it is likely that a future U.S. armed conflict would involve warfare in the maritime domain; therefore, it is useful to evaluate the effects and application of international law in the context of warfare at sea. The Falklands/Malvinas Conflict of 1982 is a useful historical case study for discussion of operational law and particularly naval warfare, as it is one of the only major naval conflicts that has occurred in the age of surface-to-surface missiles, jet aircraft, and nuclear-powered submarines.

Point of Contact

The point of contact for this session is CDR Melissa A. Harvison, JAGC, USN, C-406.

Questions

What was the legal basis for Argentina and UK military operations in the Falklands/Malvinas in 1982? Why did the UK seek a UN Security Council Resolution (UNSCR)? Did the UNSCR authorize military operations?

What were the strategic and operational objectives of the UK and Argentina? How did they change over time? Was there tension between strategic and operational objectives? If so, why, and how were those tensions resolved?

What influenced the restrictive UK ROE? What influenced changes to that ROE? What can a commander do when ROE puts forces or mission at risk?

How can operational planners use the concepts of belligerent control of the immediate area of operations, maritime zones, and/or blockade to assist mission accomplishment?

To what extent may the military operations of a belligerent nation be conducted within the land territory, national airspace, or national waters of a neutral or non-belligerent nation? If conducted, what are the associated risks?

How does LOAC apply to civilian vessels (e.g, fishing vessels) during naval warfare? When is a civil vessel directly participating in hostilities? What action can be taken against such a vessel?

Required Readings (59 Pages)

Harvison, Melissa. "Operational Law Primer." Newport RI: U.S. Naval War College: Joint Military Operations Department. January 2020. Read: 31-77. (NWC 2147A).

Hime, Douglas N. U.S. Naval War College. Joint Military Operations Department. "The 1982 Falklands-Malvinas Case Study." Newport, RI: Naval War College, 2010. Review: 18-30. (NWC 1036).

United Nations Security Council. *Security Council Resolution 502* (1982). (NWC 1109).

References and Supplemental Reading

Doswald-Beck, Louise, ed. *San Remo Manual on International Law Applicable to Armed Conflict at Sea*. New York: Cambridge University Press, 1995.

U.S. Department of the Navy. *The Commander's Handbook on the Law of Naval Operations*. Naval Warfare Publication 1-14M, August 2017.

United Nations. *The Charter of the United Nations*. June 26, 1945.

JMO-40**MARITIME OPERATIONAL LAW – CONTEMPORARY APPLICATION**

The sea, in contract to [land], cannot be held or captured.... No one possesses the sea or an ocean permanently.

~ *The Nature of Naval Warfare*,
Naval War College Staff, 1938

Session Objectives

- Analyze how changes to national policy and operational authorities for use of force affects maritime operations.
 - Analyze the differences in the use of force in self-defense and under LOAC during maritime operations.
 - Analyze the legal and operational challenges to maintaining freedom of navigation and protecting maritime commerce, particularly in narrow or disputed maritime areas.
 - Analyze legality and risk surrounding the use of force at sea along the full spectrum of military operations in the competition continuum.
 - Comprehend impacts of operational law on use of unmanned maritime systems in maritime operations.
-

Q Focus

This seminar analyzes the integration of international law and authorities across the full spectrum of military operations, from peacetime to war, in the competition continuum. The Tanker Wars of the 1980s will be used to discuss rights of belligerents, neutrality, naval mining, and use of force in self-defense under rules of engagement (ROE) and the law of armed conflict (LOAC). Drawing comparisons to the Tank Wars, the contemporary challenges and risks to maintaining freedom of navigation and protecting maritime commerce and resources will be analyzed, particularly in areas of tension such as the Strait of Hormuz and South China Seas. Impacts of operational law on utilization of unmanned maritime systems in maritime operations will also be considered.

≡ Background

Freedom of navigation in the commons of international waters and airspace is fundamental to implementing U.S. national and military strategies. The legal basis for these navigational freedoms is customary international law as reflected in the United Nations Convention on the Law of the Sea (UNCLOS). Freedom of the commons allows access to strategic areas of the world, facilitates support and reinforcement of forward-deployed forces, enables U.S. and coalition forces to operate worldwide, and ensures uninterrupted global commerce.

The security of the global commons is threatened by state and non-state actors. Non-state actors use the commons for criminal or terrorist activity, or mass migration. States are using the commons to violate sovereignty and sovereign rights of coastal states, and some state challenges to or rejection of international laws is destabilizing both the legal regime and portions of the sea commons. Increasingly the natural resources of the exclusive economic zones (fish, oil, and gas) precipitate crime and violence resulting in nations using maritime assets to police and protect these areas and on the other side to protect their national entities seeking to obtain these resources. The United States and other nations conduct maritime operations around the globe to enhance security of the commons and ensure freedom of navigation, thereby facilitating global trade and upholding the legal regimes of the maritime domain.

In contrast to land warfare, where ground forces deploy to foreign territory to accomplish military objectives, naval forces operate in an environment that has more potential to escalate from peacetime,

day-to-day operations to conflict very quickly given the speed and range of ships, sensors, aircraft, missiles and other weapons. Incidents on the sea or in the air over the sea between military vessels and aircraft have increased in severity and significance over the past few years in areas such as the South /East China Sea, Baltic Sea, Black Sea, Arctic, and Arabian Gulf. In the current environment of great power competition, one of these military encounters could quickly escalate from harassment or unprofessional actions to a use of force that, while perceived as necessary by the units involved, could jeopardize national interests and risks armed conflict. Alternatively, a nation could direct such an encounter to further their political objectives, but find it quickly escalates beyond the threshold intended.

Given today's strategic environment, there is increasing likelihood of hostile encounters at sea or further escalation between countries with disputes over maritime claims, illegal fishing or encroachment on other maritime resources. Conflict in a key transit area could result in a situation similar to the Tanker Wars for the United States.

The use of unmanned maritime systems can further complicate interactions between nations in the global commons. Unmanned and autonomous systems present new challenges in the law of armed conflict. There is not yet consensus on the legal status of unmanned maritime systems, thus some speculate that nations could take more aggressive action in encounters with such systems than with warships and piloted aircraft. Such attacks could result in serious retaliatory action if the aggrieved nation treats the unmanned system as a warship.

Point of Contact

The point of contact for this session is CDR Melissa A. Harvison, JAGC, USN, C-406.

Questions

What were the strategic/operational objectives of Iran, Iraq, and the United States during the Tanker Wars?

What was the status of the United States during the Tanker Wars? Neutral? Belligerent? Did it change? Why?

How did the authorities for use of force change for U.S. naval forces during the Tanker Wars? Why?

How is the neutral status of a nation lost in a conflict? What actions can belligerents take under LOAC regarding neutral shipping assisting the enemy? When can naval mines be used?

During the Tanker Wars, did the United States properly use force in accordance with self-defense, ROE, or LOAC? Was the force proportional? Did the United States provoke attacks? Does it matter?

How did the actions or report to higher headquarters of the USS Vincennes affect the need for or authorization to use force? Were the actions of the USS Vincennes in accordance with operational law?

How are the different interpretations of UNCLOS and national interests affecting actions by China and the U.S. in the SCS? What are the risks of the United States continuing to conduct freedom of navigation operations in disputed maritime areas claimed by China?

What impact will operational law have on the use of unmanned maritime systems in maritime operations?

Required Readings (51 Pages) + 42 minutes viewing

Crist, David B. “Gulf of Conflict: A History of U.S.- Iranian Confrontation at Sea.” *The Washington Institute for Near East Policy*. Policy Focus #95 (June 2009): Read: 1-9. (NWC 1107).

BBC video, “Shooting down of Iran Air 655.” View.

Part 1 of 3: https://www.youtube.com/watch?v=Onk_Wi3ZVME

Part 2 of 3: <https://www.youtube.com/watch?v=50sYFs6p7lk>

Part 3 of 3: <https://www.youtube.com/watch?v=Rgu5FNtpBzM>

Bernard, Vincent. “War and Security at Sea: Warning Shots.” *International Review of the Red Cross*, 98 (2) (2016): 383-392. (NWC 1223).

Colin, Sebastien. “China, the US, and the Law of the Sea.” *China Perspectives* No. 2016/2 (2016): 57-62. (NWC 1224).

Schmitt, Michael N. and David S. Goddard. “International Law and the Military Use of Unmanned Maritime Systems.” *International Review of the Red Cross*, 98 (2) (2016): 567-592. (NWC 1228).

References and Supplemental Reading

Kraska, James. *Maritime Power and the Law of the Sea: Expeditionary Operations in World Politics*. New York, NY: Oxford University Press, 2011.

Kraska, James and Raul Pedrozo. *The Free Sea: The American Fight for Freedom of Navigation*. Annapolis, MD: Naval Institute Press, 2018.

Program on Humanitarian Policy and Conflict Research. *Commentary on the HPCR Manual on International Law Applicable to Air and Missile Warfare*. Cambridge, MA: Harvard University, March 2010.

Schmitt, Michael N. and Liis Vihul, ed. *Tallin Manual 2.0 on the International Law Applicable to Cyber Operations*, 2nd Edition. New York, NY: Cambridge University Press, 2017.

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JMO-41

PEER REVIEW

To avoid criticism say nothing, do nothing, be nothing.
~ Elbert Hubbard

Session Objectives

- Demonstrate critical thinking skills by reviewing a peer's work.
 - Analyze an argument by identifying its thesis and supporting rationale.
 - Communicate areas of improvement and strength in a peer's work through constructive feedback.
-

Focus

This session provides an opportunity for each student to critically examine the scholarly work of a peer with the intent of improving both students' writing. This exercise will be conducted outside of seminar with student pairs assigned by the moderator.

Background

Reviewing a fellow student's scholarly work is strikingly similar to other analysis in JMO, such as the examination of the operational decisions made at Leyte Gulf. With written work, a reader should identify the author's argument along with its key elements (e.g., thesis and premises) and then apply value to them based on an understanding of the author's intent. It should be apparent that one cannot simply separate an author's argument from his/her ability to write clearly and correctly; the two complement one another. By using a peer review method to analyze an argument, students will not only provide constructive feedback to a classmate but will also learn to be a better reader and writer themselves.

Prior to this event, students will receive a peer's draft JMO research paper. Using critical thinking techniques presented in JMO and those included in the provided peer review worksheet, students will identify the author's argument, deconstruct it, and evaluate its component parts. While a detailed assessment of the author's writing (e.g. usage, development, organization, format, etc.) is not the principal objective of this assignment, reviewers will also assess the quality of the paper's presentation to provide the author a holistic review of the work.

Students will meet with the author outside of class time and provide specific feedback, ideally in a conversational format. This process requires the reviewer to carefully craft their analysis and present it in a tactful manner while providing the author useful feedback. Additionally, the author must be receptive to the feedback in a way that shows a willingness to grow as a writer.

Point of Contact

The point of contact for this session is Professor Chris Kidd, C-407.

Questions

None.

Required Readings (0 Pages)

None.

References

JMO Peer Review Worksheet

NWC Writing Center. *Five-Element Template for Body Paragraphs in Argument-Driven Papers.*

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JMO-42

TABLETOP EXERCISE #4:

OPERATIONAL DESIGN: MAJOR NAVAL OPERATION

The United States Navy will be ready to conduct prompt and sustained combat incident to operations at sea. Our Navy will protect America from attack, promote American prosperity, and preserve America's strategic influence. U.S. naval operations—from the seafloor to space, from the blue water to the littorals, and in the information domain—will deter aggression and enable resolution of crises on terms acceptable to the United States and our allies and partners. If deterrence fails, the Navy will conduct decisive combat operations to defeat any enemy.

—Admiral Jonathan Richardson, USN (Ret),

A Design for Maintaining Maritime Superiority 2.0, 2018

Session Objectives

- Apply the concepts of operational art theory to understand an operational problem facing the commander and staff.
 - Apply the knowledge of the naval capabilities, limitations, and employment considerations to operations in a high-intensity combat environment against a near-peer competitor.
 - Reinforce the application of doctrinal terms and course theoretical frameworks.
 - Design a major naval/joint operation using the synthesis of art (theory) and science (capabilities).
-

Focus

The focus of this session is to provide students an opportunity to apply critical and creative thinking to produce an operational idea/design for a maritime operation as part of a commander's estimate of the situation to defeat a near peer enemy. This session is a six-hour tabletop practical exercise designed to synthesize the material covered in the trimester thus far. Students will consider naval capabilities, limitations, and employment relevant to a variety of warfare areas. Students will apply operational art, naval warfare theory, and operational law in a contemporary fictional vignette in the maritime domain. Students will apply their knowledge and understanding of maritime command and control options in the design of a major joint maritime operation.

Background

Designing a major naval/joint operation resembles in many ways designing a major land operation. However, considerable differences exist because of the characteristics of the physical environment in which maritime forces operate as well as other aspects of the factor of space. Clearly, maritime forces are employed very differently than forces of their terrestrial brethren. In generic terms, an operational design for a major naval/joint operation includes various elements to include: ultimate operational (and sometimes limited strategic) and intermediate objectives; balancing operational factors against the ultimate objective; identification of critical factors and centers of gravity; initial positions and lines of operations; directions/axes; force requirements; operational sustainment; and the operational idea.

The operational idea for a campaign or major operation is developed during the operational commander's estimate of the situation and is broad or conceptual in nature. The operational idea is later refined with amplifying details during the planning process. Vego states, "The operational idea [concept of operations or scheme of maneuver] is the very heart of a plan for a maritime campaign or major naval operation. The operational idea should be developed in a rudimentary form during the operational commander's estimate of the situation." Additionally, the operational idea for a campaign or major operation is developed first because the strategic objective should dominate the operational objectives. The operational idea for a campaign provides a framework for the operational idea of each subordinate major and minor operation. The operational commander should ensure that subordinate operational ideas in each phase of a maritime campaign are consistent with his own operational idea. Most importantly, an operational idea should be simple, novel, and flexible. It should facilitate speed and be ambiguous to the enemy, lacking readily apparent patterns while posing multiple threats to the enemy, using deception and asymmetric employment of one's combat forces.

Point of Contact

The point of contact for this session is CDR Tom Pham, USN, C-426.

Questions

Seminar discussions will be from the Joint Force Maritime Component Commander (JFMCC) staff point of view and centered on the following tasks and questions:

Describe the employment considerations given the threat, capabilities, environment, and mission to include command/task organization options.

What broad capabilities and options do U.S. naval forces bring to a Joint Force Commander? How can one integrate these capabilities and options into joint operations?

What vulnerabilities exist in U.S. forces that can be exploited by the adversary in exercising sea denial operations? How can the JFMCC compensate for those vulnerabilities?

How might the U.S. commander limit threats to his/her might forces and vital lines of communication (LOCs) from an adversary's surface, subsurface, and air threats?

How does a commander's operational idea lay the framework for his staff to plan the designed naval operation?

Required Readings (3 + Borneo Reading (97) Pages)

U.S. Naval War College. Joint Military Operations. "A Borneo Case Study for Expeditionary Warfare." Newport, RI: Naval War College, JMO Department, January 2020. Read: vii to 92 and scan the rest. **(NWC 6036M)**.

U.S. Navy. Office of the Chief of Naval Operations. *Navy Planning*. Navy Warfare Publication (NWP) 5-01. Norfolk, VA: Department of the Navy, December 2013. Read: Annex K-6. (Issued).

Vego, Milan. *Operational Warfare at Sea: Theory and Practice*, 2nd ed. New York: Routledge, 2017. Review: Chapters 7 and 8. (Issued).

References

Erickson, Andrew, Lyle J. Goldstein, and William S. Murray. "Chinese Mine Warfare: A PLA Navy 'Assassin's Mace' Capability." U.S. Naval War College China Maritime Studies Institute number 3. Newport, RI: Naval War College Press, June 2009. **(NWC 2131)**.

Office of Naval Intelligence. *The People's Liberation Army Navy; New Capabilities and Missions for the 21st Century*. Suitland, MD: Office of Naval Intelligence, August 2015. **(NWC 5032A)**.

U.S. Naval War College. Joint Military Operations. "Forces/Capabilities Handbook." Newport, RI: Naval War College, Joint Military Operations Department, January 2020. **(NWC 3153S)**.

———. Joint Military Operations. "Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook." Slide pack, Newport, RI: Naval War College, Joint Military Operations Department, January 2020. **(NWC 2164D)**.

BLOCK V: OPERATIONAL DECISION MAKING AND PLANNING

Successfully prosecuting a modern war requires more than technical competence in the military domain and effective operational concepts. In the seminars that make up the *Operational Decision Making and Planning* portion of the course, we move deeper into the practical and discuss the Logic of the Commander's Estimate and the language of problem solving. Using the knowledge gained in previous sessions, students are next introduced to additional skills that develop a broader understanding of the complexity of military operations. Orders development provides an overview of how we convert the critical and creative thinking in a planning group into tangible products for others to execute. Crafting an operations order and stressing the detailed requirements associated with writing the order, will be accomplished during our first major exercise. The first exercise is a multi-day, detailed planning exercise. This will lead into a multi-day, detailed planning exercise in which students will create an operations order, using the Navy Planning Process (NPP), to gain and maintain sea control against a fictional contested environment in and around Borneo.

OBJECTIVES

- Analyze complex and complicated problems and be able to resolve them using critical and creative thinking.
- Comprehend joint and service planning considerations for major naval combat operations in a highly contested environment.
- Apply the Navy Planning Process (NPP) to create an operations order that demonstrates mastery of joint maritime operations.

The point of contact for this block is CDR Tom Pham, USN, C-426.

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JMO-43**TABLETOP EXERCISE #5: ANALYSIS OF A NAVAL OPERATIONS ORDER (Operation DETACHMENT) (Exercise)**

There is a distinction between ability as a leader of men and ability as a strategist or tactician. The commander may be a great leader, a natural leader, and fail through lack of knowledge. Leadership is the art of inspiring, guiding, and directing bodies of men so that they ardently desire to do what the leader wishes. But the wishes of the leader will not bring victory unless as a commander he has the strategic knowledge and the tactical skill to make a good plan.

~ Navy Department, *War Instructions*
Paragraph 108, 1944

Session Objectives

- Evaluate an operations order through the lens of operational art.
 - Understand how operational art, in particular commander's intent, the operational idea, and operational design, are captured and articulated in the five-paragraph operations order.
-

Q Focus

This exercise builds on previous sessions and seeks to foster creative thought through the evaluation of an operations order (OPORD), the principal tool that a commander uses to direct operations.

≡ Background

During Block II, our studies of Operation KING II (Battle of Leyte) of the MUSKETEER (Philippines) Campaign Plan provided the backdrop against which we studied the theory of joint operational warfare. In JMO-28, *Introduction to Strategic Guidance and Joint Planning (Seminar)*, we explored how strategic guidance documents frame planning requirements and how commanders apply both conceptual and detailed planning elements to joint operations. The OPORD, derived from a detailed plan, translates the critical and creative thought of a commander and his staff into products that direct actions of both subordinate elements and operational functions in time and space. The five-paragraph OPORD is a directive issued to subordinate commanders to coordinate and execute a specific operation(s). In short, the OPORD is the physical product of a staff or planning group's effort and serves as a vehicle to direct the execution of an operation in accordance with the commander's intent. An effective OPORD should clearly articulate the commander's vision and intent, the commander's operational idea, and the associated operational design. It should:

- Clearly convey the commander's intent and purpose.
- Be simple, brief, clear, complete and timely.
- Allow subordinates flexibility in execution.
- Contain critical facts and necessary assumptions.
- Be positive and authoritative in expression.
- Use doctrinal language and avoid meaningless or vague expressions.

👤 Point of Contact

The point of contact for this session is CDR Tom Pham, USN, C-426.

?? Questions

From Operation DETACHMENT:

Explain the commander's intent. Does it effectively communicate the "personal vision of victory and the conditions and methods for obtaining it"? If so, why? If not, explain why and how you would change it.

How well does the operational idea (Vego) or operational approach (Joint Doctrine) describe the broad actions the force must take to achieve the military end state?

How well does the OPORD communicate command support relationships?

Identify and describe other elements of Operational Art found in the OPORD.

Identify any additional gaps or weaknesses in the OPORD. How would you improve it?

Required Readings (58 Pages)

Commander, U.S. Fifth Fleet. Operations Plan 13-44 Serial 00040-A with Change 1 dated 3 January 1945. Read. (NWC 6046).

U.S. Navy. Office of the Chief of Naval Operations. *Navy Planning*. Navy Warfare Publication (NWP) 5-01. Norfolk, VA: Department of the Navy, December 2013. Read: 6-1 thru 6-9. Scan L-1 thru L-3-19. (Issued).

———. *Universal Naval Task List (UNTL)*. OPNAVINST 3500.38B. Norfolk, VA: Department of the Navy, 30 January 2007. Scan.

———. *Universal Naval Task List (UNTL)*. OPNAVINST 3500.38B. Change 1. Norfolk, VA: Department of the Navy, 10 November 2008. Scan revised Chapter 3.

References

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Universal Joint Tasks*. Washington, D.C.: CJCS, 19 October 2018. http://www.jcs.mil/Portals/36/Documents/Doctrine/training/ujtl_tasks.pdf

———. *Universal Joint Task Manual (UJTM)*. CJCSM 3500.04F. Washington, D.C.: CJCS, 1 June 2011.

Vego, Milan. "Plans and Orders." Newport RI: Naval War College, September 2002. (NWC 2159A).

JMO-44**THE NAVY PLANNING PROCESS: THE STRUGGLE FOR SEA CONTROL (Planning Exercise)**

To plan well is to demonstrate imagination and not merely to apply mechanical procedures. Done well, planning is an extremely valuable activity that greatly improves performance and is an effective use of time. Done poorly, it can be worse than irrelevant and a waste of valuable time. The fundamental challenge of planning is to reconcile the tension between the desire for preparation and the need for flexibility in recognition of the uncertainty of war.

~ Marine Corps Doctrinal Publication 5, Planning
1997

Session Objectives

- Comprehend and apply the Navy Planning Process to develop an operations order to gain sea control.
 - Employ critical and creative thinking to develop a sound course of action to defeat a near-peer adversary in a complex maritime environment.
 - Gain an understanding and appreciation of the planning considerations and challenges associated with employing joint/combined forces in a contested environment.
-

🔍 Focus

This seminar orients students to the Navy Planning Process (NPP) designed as an exercise conducted over eight days. This exercise provides students the opportunity to apply critical and creative thinking as well as operational art, maritime warfare theory, and their knowledge of orders writing to address a fictional crisis scenario in and around the island of Borneo. Students, as Joint Force Maritime Component Commander (JFMCC) staff members, will develop an operations order (OPORD) that establishes local sea control to set the conditions for a forcible entry operation on the island of Borneo.

Through a moderator-led application of the NPP, students will leverage knowledge they have gained in previous sessions to develop an operational design for gaining, maintaining, and exploiting sea control in a contested environment in order to project power onto the island of Borneo.

≡ Background

In this exercise, students will expand their understanding of the planning process through practical application. Students are assigned to a JFMCC staff Operational Planning Team (OPT) in receipt of a Warning Order. Students will leverage their understanding of operational art, planning, naval warfare theory, and leadership to draft an OPORD (and supporting materials) that captures their OPT's operational idea/ design. The final product is a JFMCC OPORD that include the following components:

Base Order (Five-Paragraph format (SMEAC): Situation, Mission, Execution, Administration and Logistics, and Command and Control)

Annex A Task Organization

Annex B Intelligence

Appendix 1 Priority Intelligence Requirements

Tab B Integrated Collection Matrix

Appendix 4 Targeting

Tab A Target List

Appendix 6 Intelligence Support to Information Operations

Annex C Operations

Appendix 3 Information Operations

Tab B Military Deception

Appendix 16 Cyberspace Operations

Tab B Defensive Cyberspace Operations

Tab C Offensive Cyberspace Operations

Appendix 18 Operations Overlay

Annex D Logistics

Appendix 7 Non-nuclear ammunition

Tab A Munitions Matrix

Annex J Command Relationships

Appendix 1 Command and Control Diagram

Additionally, the OPT will develop a JFMCC Synchronization Matrix and other materials as directed by the moderator.

Point of Contact

The point of contact for this session is CDR Tom Pham, USN, C-426.

Questions

How is operational art captured in the NPP? Explain.

The NPP is often portrayed as a rigid, serial, step by step process. Is it? Explain.

How does the planning process ensure flexibility and adaptability in an operations order while clearly communicating intent?

How can one enable mission command when developing an operations order?

Required Readings (17 Pages)

Moderators will assign additional daily reading assignments to facilitate planning familiarization.

U.S. Navy. Office of the Chief of Naval Operations. *Navy Planning*. Navy Warfare Publication (NWP) 5-01. Norfolk, VA: Department of the Navy, December 2013. Read: Chapter 1. Scan: The rest.

U.S. Naval War College, College of Maritime Operational Warfare. “Operational Planning Team (OPT) Leader Guidebook.” Newport, RI: Naval War College, College of Maritime Operational Warfare, 20 January 2017. Read: Chapter 1. Scan: The rest.

U.S. Naval War College, Joint Military Operations Department. “A Borneo Case Study for Expeditionary Warfare.” Newport, RI: Naval War College, JMO, January, 2020. Review. (NWC 6036M). (Issued).

 **References**

- Depuy, William E., “Concepts of Operation: the Heart of Command, the Tool of Doctrine,” *Army* 38, no. 8 (August 1988). (NWC 4114).
- U.S. Naval War College, Joint Military Operations Department. “Forces/Capabilities Handbook.” Newport, RI: Naval War College, JMO, 2020. (NWC 3153S). (Issued).
- . “Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook.” Slide pack, Newport, RI: Naval War College, Joint Military Operations Department, January 2020. (NWC 2164D).
- U.S. Navy. Office of the Chief of Naval Operations. *Universal Naval Task List (UNTL)*. OPNAVINST 3500.38B. Norfolk, VA: Department of the Navy, 30 January 2007.
- . *Universal Naval Task List (UNTL)*. OPNAVINST 3500.38B. Change 1. Norfolk, VA: Department of the Navy, 10 November 2008. Scan revised Chapter 3.
- U.S. Office of the Chairman of the Joint Chiefs of Staff. *Universal Joint Tasks*, Washington, D.C.: CJCS, 19 October 2018.
http://www.jcs.mil/Portals/36/Documents/Doctrine/training/ujtl_tasks.pdf
- . *Universal Joint Task Manual (UJTM)*. CJCSM 3500.04F. Washington, D.C.: CJCS, 1 June 2011.
-

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JMO-45**TABLETOP EXERCISE #6****CRITIQUING THE OPERATIONS ORDER AND ORDERS CROSSWALK
(Planning Exercise)**

*You are part of the world's most feared and trusted force.
Engage your brain before you engage your weapon.*

~ MajGen James Mattis, USMC
From a letter to 1st MARDIV, March 19, 2003

Session Objectives

- Analyze a commander's operational idea, the articulation of decisions, and how a commander directs military operations through written orders.
 - Apply the orders development process which includes preparation of the base order and annexes, reconciliation, and crosswalks to the evaluation of another seminar's operations order.
 - Understand the importance of transition as it relates to shifting from planning to execution.
-

🔍 Focus

The purpose of an operations order (OPORD) is to translate the commander's decision into oral, written, and/or graphic communication sufficient to guide execution of the order while also promoting initiative by subordinates. It is the physical product of our intellects and our processes for understanding problems and coming up with creative and innovative ways of resolving them. Previously, you analyzed and critiqued the order developed for the seizure of Iwo Jima. During this session, you will critique your operational planning team's OPORD, developed during JMO-44, using the tools of reconciliation and crosswalk to ensure the order is ready to shift from planning to execution.

≡ Background

Commanders are the most important participants in the planning process with the staff performing essential functions that amplify the effectiveness of operations. One of the most important tasks of the staff is to clearly articulate the commander's operational idea/design to subordinates in the form of an order. The development of the order begins during mission analysis and continues throughout the planning process. The orders development step is the formal part of the process that communicates the plan to subordinate units for execution. It is important to understand that OPORDs are not meant for those who write them, but for those who receive and execute them. As such, the OPORD should be as clear, simple, and concise as the situation permits.

The order should only contain critical or new information, not routine matters normally found in Standard Operating Procedures (SOPs). Orders development includes an essential two-step quality control approach during the writing phase of the order or plan. Reconciliation is an internal review that the staff conducts of the entire order. It identifies gaps and discrepancies in the order. Specifically, the staff compares the Commander's Intent, the mission, and Commanders Critical Information Requirements (CCIRs) against the concept of operations and supporting concepts. Orders Crosswalk is an external review of higher and adjacent orders to ensure unity of effort and to ensure the Higher Headquarters (HHQ) Commander's Intent is met.

This session provides yet another opportunity for critical thought. You will analyze an OPORD critically to gain a better understanding of how an order communicates a commander's operational idea/design to subordinates—and brief your conclusions. At the conclusion of this seminar, students will be able to identify positive practices and pitfalls in orders writing to improve future orders development and will have reconciled an order for execution.

Point of Contact

The point of contact for this session is CDR Tom Pham, USN, C-426.

Questions

Using the OPORD developed during NPP, critique the following:

Is the OPORD clear? Does it use simple, understandable English and proper military (doctrinal) terminology (e.g. use of Universal Joint or Naval Task List (UJTL or UNTL) terms)?

Is the OPORD concise and complete, stating all major tasks to subordinates clearly to include the task's purpose? Are the tasks written in active voice?

Is the affirmative form of expression used throughout to reinforce the authoritativeness of the OPORD?

Is the plan simple, reducing all reasonable possibilities for misunderstanding? Are the proper UJTL/UNTL terms used correctly?

Is the plan flexible? Does the OPORD instruct only as far as conditions can be reasonably foreseen?

Based upon the concept of mission command, evaluate the order from the perspective of the people tasked to execute it. Does it allow for initiative?

How well does the OPORD express the commander's intent behind the ordered actions to ensure cooperation, cohesion, and initiative of subordinates?

To what extent does the OPORD provide the necessary command organization and clearly articulate command-and-support relationships and assign responsibilities?

To what extent is the OPORD internally valid—meaning are the annexes supportive of the base plan mission, tasks, and specific coordinating instructions?

Required Readings (17 Pages)

U.S. Office of the Chairman, Joint Chiefs of Staff. *Joint Planning*. Joint Publication (JP) 5-0, Washington, D.C.: CJCS, 16 June 2017. Read: V-49 to V-62. Scan: Appendix A. **(Issued)**.

U.S. Navy. Office of the Chief of Naval Operations. *Navy Planning*. Navy Warfare Publication (NWP) 5-01. Norfolk, VA: Department of the Navy, December 2013. Review: 6-1 to 6-9 and Appendix L. **(Issued)**.

U.S. Naval War College, College of Maritime Operational Warfare. "Operational Planning Team (OPT) Leader Guidebook." Newport, RI: Naval War College, College of Maritime Operational Warfare, 20 January 2017. Read: 72-74.

References

None.

BLOCK VI: MARITIME OPERATIONS IN THE COMPETITION CONTINUUM

Block VI investigates those things that a navy does in the current era across the competition continuum—*Maritime Operations in the Competition Continuum*. The block focuses on the range of activities that navies conduct in the current operational environment: protection of the commons, support to foreign policy, power projection, forward posture in great power competition, and naval operations in environments marked by political, irregular and hybrid warfare.

OBJECTIVES

- Describe the tasks that a navy performs in support of a maritime strategy.
- Discuss how a navy can support operations short of war.
- Distinguish the unique requirements of naval forces in the competition continuum.
- Describe the challenges that political, hybrid, and unconventional warfare presents to naval forces.

The point of contact for this block is Professor Joe McGraw, C-431.

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JMO-46**NAVAL OPERATIONS ACROSS THE COMPETITION CONTINUUM**

For in this modern world, the instruments of warfare are not solely for waging war. Far more importantly, they are the means for controlling peace. Naval officers must therefore understand not only how to fight a war, but how to use the tremendous power which they operate to sustain a world of liberty and justice, without unleashing the powerful instruments of destruction and chaos that they have at their command.

~ Admiral Arleigh Burke, CNO
Change of Command Address, 1 Aug 1961

Session Objectives

- Examine the role of naval forces in cooperation and competition below armed conflict.
 - Comprehend the uniqueness of the maritime environment as a venue for simultaneous cooperation and competition between nations.
 - Appreciate the difference between naval warfare theory and the principles that underpin naval operations other than combat.
-

🔍 Focus

The focus of this lecture is on the range of activities that navies conduct in support of policy aims across the lower end of the competition continuum; that is during cooperation and competition below armed conflict. Much of the course to date has focused on naval warfare, but the growing strategic importance of today's globalized maritime domain in an era of great power competition suggests the need for study of the principles that underpin naval operations below the level of armed conflict.

🔧 Background

International relations at sea involve a mixture of cooperative and coercive activities. Naval forces have always contributed toward national policy aims in ways other than fighting. Nelson's Royal Navy, for example, spent far more time protecting British trade than engaging in Trafalgar-like pitched battles. This is even more the case now, in this time of great power competition and maritime globalization. Actual naval combat has been a rarity since the Second World War and yet the navies of the world are busier than ever operating in what we now understand as the "competition continuum."

Naval warfare has long been studied; the theory and practice of combat at sea are the subject of a robust body of work. In contrast, naval operations short of armed conflict have received comparatively scant attention from theorists. As a result, planners and operators don't have the benefit of anything as tangible and focused as Wayne Hughes' "Six Cornerstones" to guide operations at the lower end of the continuum. Nonetheless, much of the Operational Art can be applied across the board; the principle of the primacy of the objective being perhaps the most important. Also, the joint principle of legitimacy bears special consideration. Success often hinges on naval actions being perceived as legitimate. In all cases, success in achieving policy aims through naval operations other than combat requires a clear-eyed understanding of the complexity inherent in employing naval forces upon the global commons.

👤 Point of Contact

The point of contact for this session is Professor Ivan Luke, C-431.

?? Questions

In what ways do naval forces contribute to policy aims through cooperation? Through competition?

To what degree can naval forces contribute to policy aims through cooperation and competition simultaneously? Can you cite any examples?

What aspects of the global commons influence the ability of naval forces to achieve national policy aims across the competition continuum? How should these factors influence the planning and conduct of naval operations other than combat?

What role does the principle of legitimacy play in naval operations short of armed conflict?

Required Readings (18 Pages)

Luke, Ivan T. “Legitimacy in the Use of Seapower” Newport, RI: U.S. Naval War College, Joint Military Operations Department, February 2020. (NWC 2133A).

U.S. Officer of the Chairman of the Joint Chiefs of Staff. Joint Doctrine Note 1-19. *Competition Continuum*. Washington DC: CJCS, 3 June 2019. Read.

References

None.

JMO-47

IRREGULAR WARFARE IN THE MARITIME ENVIRONMENT

With the burning of the revenue privateer Liberty in Newport Harbour in 1769, and then the violent destruction of His Majesty's schooner Gaspee in 1772, American revolutionaries adopted maritime irregular warfare long before the conflict spread ashore.

~ Benjamin F. Armstrong
Small Boats and Daring Men

Session Objectives

- Apply naval warfare theory principles across the competition continuum
 - Comprehend how maritime forces can be used in irregular warfare by insurgents, counterinsurgents and great powers
 - Comprehend the concepts of scouting, anti-scouting, targeting, and counter-targeting when applied in irregular warfare.
-

Q Focus

This session examines the irregular use of maritime forces in the competition continuum. Modern insurgents and weaker maritime powers have noted opportunities in the maritime domain and have demonstrated an ability to exploit them. Additionally, rising and revisionist powers recognize the advantages of using irregular maritime forces below the threshold of armed conflict to secure policy aims. American maritime forces were arguably born of irregular warfare. Irregular warfare in the maritime environment is neither new nor unique. In the age of the competition continuum, maritime insurgents can be expected to conduct operations that threaten the maritime superiority of government forces and revisionist powers are demonstrating the utility of both irregular forces and irregular tactics. Great power competitors have realized the potential of combining regular and irregular maritime forces to achieve policy aims. Achieving objectives in great power competition will require conventional navies to comprehend both the opportunities and vulnerabilities that have long existed in irregular warfare at sea.

≡ Background

Few revolutionary groups have taken to the maritime environment to achieve victory during violent struggles. The cost of building capital ships was too high, the technological operating demands were too steep and the crew training requirements too demanding for the rebellious faction to attempt to attain command of the sea. While the rebels in the American Revolutionary War operated numerous privateers and small warships to attack the sea lines of communication of the British Empire, twisting the tail of the British lion was ultimately less effective than the intervention of the French Navy at Yorktown. During the American Civil War the Confederates attempted to break the Union blockade and attack the maritime trade of the Union, but in the end the Federal Navy's blockade was decisive. The insurgents pushed the technological envelope during both conflicts, operating immature submersibles and laying sea mines, even constructing armored ships in the Civil War. In the end, mass and persistence overcame innovation and guile; however, the combination of irregular and regular maritime forces on the part of the rebels appears to have been uniquely powerful.

In the current era of the competition continuum, the rapid spread of inexpensive yet lethal naval ordnance may make the maritime environment a more attractive domain for the violent competition between insurgents and government forces. Insurgents are no longer constrained by the technical requirements and expenses of naval platforms that can only be manufactured in some immense industrial complex. Merchant vessels can be equipped with modern weaponry and small scale vessels that barely register on radar displays can be mass produced. Commercially available electronics allow the command and control of irregular maritime forces with a precision previously unimaginable. Even submersibles can be constructed in the jungles and carried to the oceans where they can be used to transport illegal material

under the waves. Operating in the interstices of the international maritime legal construct, insurgents, pirates, seaborne human traffickers and drug smugglers can now boast of capabilities that are much closer to those of the dominant naval powers. The prospects appear particularly bright for those groups that can simultaneously perform some or all of these criminal or illegitimate activities unconstrained by the Law of the Sea (or any other legal regime).

Great power competitors also recognize the benefits of irregular forces employed in irregular ways. The PRC's maritime militia is one such example that provides an auxiliary of maritime power designed to confuse and delay an adversary's response. The combination of irregular maritime forces with regular forces, coupled with activities designed to stay below the designation of armed conflict, presents a unique challenge to modern navies. When such hybrid operations threaten more lethal exchanges, often in the highly congested littorals or inland waters, conventionally minded navies appear to take a long time to adapt to the character of the conflict. Commanders may encounter great difficulty in determining whether the appropriate response for such threats is a broadside from the main battery or a small boat with a Coast Guard legal detachment embarked.

This inertia is unfortunate, as while the emerging character of conflict creates challenges for maritime commanders to resolve, it also opens up opportunities for them to exploit. It is a brave new world for the leadership of all of the parties operating at sea, with the prize of access and control of the maritime commons up for grabs by the most adaptive and capable force.

Point of Contact

The point of contact for this session is Joe McGraw, C-431.

Questions

Navies designed for high intensity combat often experience challenges conducting operations short of armed conflict. Are these challenges due to platforms, doctrine, training, culture or leadership?

Do the principles of naval warfare theory apply in irregular warfare? How should naval Commanders and planners consider when responding to or employing irregular forces at sea?

How do insurgent forces—past and present—leverage the maritime domain to create challenging dilemmas for their adversaries? How do navies respond effectively to irregular maritime threats?

How might great powers combine regular and irregular forces across the competition continuum to achieve policy aims?

Required Readings (52 Pages)

Armstrong, Benjamin. "The Most Daring Act of the Age: Principles for Naval Irregular Warfare." *Naval War College Review* (Autumn 2010): 106-118. (NWC 4040).

Molly Dunigan et al., Characterizing and Exploring the Implications of Maritime Irregular Warfare, RAND Corporation, Santa Monica (CA), 2012, pp. 66-86.
https://www.rand.org/content/dam/rand/pubs/monographs/2012/RAND_MG1127.pdf

Poling, Gregory. "China's Hidden Navy." *Foreign Policy*, June 25, 2019. Accessed at <https://foreignpolicy.com/2019/06/25/chinas-secret-navy-spratlys-southchinasea-chinesenavy-maritimemilitia/>.

JMO-48

SEA CONTROL IN A CONTESTED ENVIRONMENT (CLASSIFIED LECTURE)

[O]nce Germany achieved naval supremacy...this in itself regardless of German intentions-would be an objective threat to Britain, and incompatible with the existence of the British Empire.

~ Henry Kissinger
On China

Session Objectives

- Evaluate the current threat environment through the lens of operational art and naval warfare theory.
 - Comprehend the relationships between platforms, sensors, & weapons in the current threat environment.
 - Comprehend the concepts of scouting, anti-scouting, targeting, and counter-targeting as applied in the current threat environment.
 - Analyze the current threat environment against the theoretical constructs and U.S. Joint/Service Doctrine.
-

Q Focus

This session is intended to provide students an understanding of current military developments in the Western Pacific. This is a classified lecture, indented to stimulate students' thinking about challenges in potential contingencies, and implications for future warfare with peer competitors.

Background

For over two thousand years, the ability of a navy to achieve sea control in a particular area was heavily dependent on the capabilities of surface ships. Whether powered by oar, sail or steam, or armed with ram or gun, surface ships were essentially the only military units able to seek out and destroy the enemy's surface forces. Weaker forces might attempt to conduct sea denial against a stronger adversary using land fortifications or lighter forces, but these actions were still constrained by the surface of the sea. In rare cases, non-naval forces could destroy an adversary's maritime forces. Triremes could be seized on land when a besieged city was sacked, or audacious cavalry could capture ice bound ships of the line, but a similar surface force was required to compete at sea against a proficient enemy.

Just over a hundred years ago, advances in technology began to challenge this paradigm. While the large gun armed dreadnought of the First World War was the capital ship of its era, other weapon systems developed to challenge the hegemony of the surface forces. Submarines, sea based mines, dirigibles and aircraft all began to erode the clear primacy of the surface ship in obtaining sea control. In the Second World War, these technologies matured into war winning weapons. Control of the surface of the sea became more dependent on domination of the air above it and the water space below it. Competition over the electromagnetic spectrum for communication and detection of enemy forces became equally as important. The effective synchronization of the effects of these new technologies was crucial to attain, maintain and exploit the benefits of sea control.

The acceleration of weapons technology since the last major fleet engagement in the Second World War has only made the fight to obtain local sea control more challenging. Instead of the surface battle line engaging the enemy in a symmetric force-on-force engagement between sailors of fighting warships, technicians operating complex weapon and sensory systems from thousands of miles away may render enemy maritime forces open to devastating attack.

The rising power of China, and its competition with the United States and neighboring states, raises the concern of a possible great power military confrontation. The expanding military capabilities of the People's Republic of China, and specifically the People's Liberation Army (Navy), are arrayed against the U.S. Navy's pivot to the Pacific. If war occurs between the United States and a modern, capable

enemy navy, both belligerents will attempt to use their technology, doctrine and trained forces to first find then attack effectively first.

The readings for this session are designed to give you some insight to Chinese Military Strategy and Maritime Strategy to help put the presentation into operational context. The reading from the 2019 DoD Report to Congress is a very good review for the overall problem faced by the United States from the DoD's perspective. The entire publication is a good resource for this problem, but we ask to read the Executive Summary and the portion of Chapter 1 that discusses Military Strategy and the PLA's support to Foreign and Economic Policies. The second reading is a chapter from Professor Hu Bo from Peking University. Internationally, he is considered the premier authority in Chinese Maritime Strategy. Some have even gone so far as to dub him "The Chinese Mahan." Although his writings aren't authoritative Chinese Communist Party documents, his writings are thought to heavily influence the Central Maritime Rights Protection Leading Small Group, which Xi Jinping personally heads. In this book, we ask you to review Chapter 1 on objectives of military power.

Point of Contact

The point of contact for this session is CDR Matt Acanfora, C-410

Questions

How do the domains (air, sea, land, cyber, space, information, and human) affect gaining, maintaining, and exploiting sea control?

How do land-based forces impact the fight for sea control in the contemporary environment? How do they impact sea denial?

What is the current technological relationship between the offense and defense? What does this mean for the contemporary environment and the future of navies?

How has technology impacted the theory of fleet tactics? Do the cornerstones posited by Wayne Hughes still hold, or has technological innovation made them moot?

How does the modernization of the Chinese People's Liberation Army affect U.S. thinking on competition with China?

Required Readings (52 Pages)

U.S Office of the Secretary of Defense, Department of Defense. *Military and Security Developments Involving the People's Republic of China, 2019*. Washington, DC: Department of Defense, May 02, 2019. Read i-v, 1-21. (NWC 1236A).

Bo, Hu. *Chinese Maritime Power in the 21st Century: Strategic Planning, Policy and Predictions*. New York: Routledge, 2020. Read 1-26.

JMO-49

FUTURE NAVAL WARFARE

Changes are shifting the character of naval competition and warfare, and are being exploited, to varying degrees, by a range of competitors.

—ADM John Richardson
Chief of Naval Operations, *Future Navy*, 2017

Session Objectives

- Understand the capabilities and limitations of U.S. naval forces operating in a contested environment.
 - Comprehend emerging U.S. joint and naval concepts that influence fleet design and methods of combat force employment.
 - Understand changes needed across the operational functions particularly command & control.
 - Analyze the validity of operational concepts presented in the course thus far and their applicability to future warfare in the next 5 - 7 years.
-

🔍 Focus

This session examines emerging threats, adversary capabilities, and trends in the global environment that challenge us to think about the changing character of war, and its implications for naval warfare. This (classified) session and the (classified) lecture that follows are intended to offer considerations for reflection about naval warfare in the near future.

📖 Background

Changes in the global security environment have included significant advances in the modernization and military capabilities of potential peer competitors, namely the China's People's Liberation Army (Navy). The global security environment has changed exponentially in the pace, complexity and lethality of adversary military power. Such changes challenge previous assumptions that many military planners had taken for granted, that U.S. forces could count on sea control, air superiority and freedom of maneuver when developing plans. Advancements in technology and the proliferation of advanced sensors and weapons by other states and non-state actors have eroded the U.S. advantage in naval warfare, requiring us to think critically about how to accomplish military objectives in a contested environment. The proliferation of long range anti-ship cruise missiles (ASCMs), disruptive information technologies, advanced sensors across multiple domains, weaponized space assets, and unmanned aircraft, ships, and submersibles continue to challenge a diminishing U.S. warfighting advantage. Other technology such as swarms of drones and other robotics could overwhelm methods for tracking and targeting inbound threats, complicating force protection. The pace of innovation of our potential adversaries' mandates that we cannot be complacent in operational thinking. We must be able to think holistically about the ways and means required to fight and win amidst threats and challenges that are multi-domain, multi-functional and trans-regional. These are not necessarily new conditions in the history of warfare, but we are in an age where numerical and qualitative advancements of other militaries will challenge us in ways that require creative and critical thinking, sound operational leadership, effective mission command, thorough planning and bold execution.

As we have discussed in the sessions preceding this one and in the Operational Law block, the PLA (N) and others may not challenge us conventionally at the high end of combat, but may employ asymmetric means including the use of information warfare, maritime militias or non-military forces towards contesting our military objectives. We will carry forward the discussion from the previous sessions, and will further discuss the notion of "hybrid" and unconventional warfare in the final session in this block.

Trends in maritime warfare will require us to examine warfighting doctrine, ensuring that we can integrate naval the actions of all capabilities including naval aviation, submarines, surface ships,

unmanned/autonomous vehicles, command and control, intelligence and other joint capabilities to prevail in combat. Concepts such as Distributed Lethality, Electromagnetic Maneuver Warfare, Expeditionary Maneuver Warfare, Operational Maneuver From the Sea, and the Joint Operational Access Concept to name a few, were all conceived to address challenges in the current and future combat environment.

During this seminar discussion, students should discuss the key considerations for naval operations in a contested environment, based on adversary weapons and capabilities expected to be fielded within the next ten years. By now, we should be well grounded in operational art and naval warfare theory as frameworks for analyzing the implications of future conflict. The readings we've assigned for this session are U.S. Navy strategy documents over the past four years. They are designed to help answer the discussion questions below and to inform your discussion on whether the actions and strategies articulated in the documents are relevant today and the near future.

Point of Contact

The point of contact for this session is CDR Matt Acanfora, C-410.

Questions

Describe the key challenges in the future maritime environment.

Discuss the key emerging concepts within the naval service and DoD developed to address threats and complexities in the changing character of war.

Discuss the operational implications for operational decision-making and planning in future combat scenarios.

Are there gaps in our currently understood methods of combat force employment that require new approaches to naval warfare?

What authorities, political, or legal constraints should be considered when developing an operational approach to naval warfare in a contested environment?

What other joint capabilities should be integrated to enhance naval task forces' operational advantages.

Required Readings (35 Pages)

Gilday, Michael M. ADM. "FRAGO 01/2019: A Design for Maintaining Maritime Superiority." Washington, D.C.: Headquarters, Department of the Navy, 4 December 2019. Review.

Richardson, John M. *The Future Navy*. Washington, D.C.: Office of the Chief of Naval Operations, 17 May 2017. Read. (NWC 2150)

———. *A Design for Maintaining Maritime Superiority*. Washington, D.C.: Headquarters, Department of the Navy, January 2016. Review. (NWC 2154)

———. *A Design for Maintaining Maritime Superiority (Version 2.0)*. Washington, D.C.: Headquarters, Department of the Navy, December 2018. Review. (NWC 2154A).

JMO-50

MARITIME TRADE WARFARE

“You’re on your own. U.S. sealift cannot count on Navy escorts in the next big war. The Navy has been candid enough with Military Sealift Command and me that they will probably not have enough ships to escort us. It’s: ‘You’re on your own; go fast, stay quiet.’”

~ Rear Admiral Mark Buzby, USN (ret.),
Maritime Administrator
Defense News, October 2018

Session Objectives

- Understand the theory and practice of maritime trade warfare at the operational level of war.
 - Understand the objectives, ways, means, and associated risk of attacking an enemy’s maritime trade while protecting friendly maritime trade.
 - Understand the joint, interagency, and multi-national aspects of both maritime trade and maritime trade warfare.
 - Analyze the utility of maritime trade warfare across the competition continuum in the current operational environment.
-

🔍 Focus

This session will focus on the objectives, methods, and tenets employed in attacking an enemy’s maritime trade and in defending friendly maritime trade at the operational and theater-strategic levels of war. This will include the possibility of attacks on military logistics ships. Is maritime trade warfare even a likely strategy in the twenty-first century? Both the theory and practice of maritime trade warfare will be examined, with attention given to its conduct in the littorals, its direct, indirect, and secondary effects, and issues a combatant commander must review with respect to commerce warfare in a modern threat environment. The roles of submarine, mine, and air warfare in attacking and defending trade, and the importance of intermodal transportation in sustaining wartime economies and supplying forward deployed militaries will also be explored.

📖 Background

In the era prior to aircraft, a principal task of any navy was to attack enemy shipping at sea while, at the same time, defending and protecting friendly shipping. This situation changed drastically in World War II and afterward when land and carrier-based aircraft were used to attack not only shipping but also other elements of maritime trade: ships in port and port facilities, shipyards/ship repair facilities, storage areas, and intermodal rail, road, and waterborne transport systems. Yet these considerable changes were often not recognized by naval theoreticians and practitioners. The importance of commercial shipping is reflected in the use of terms such as “anti-SLOC,” “pro-SLOC,” and “naval control of shipping.” The arbitrarily selected term here, “maritime trade warfare,” is more accurate because it encompasses both attack and defense/protection of all the facets of maritime trade, not just of merchant shipping.

Today, there are some maritime and naval experts who apparently believe that in the era of globalization, there will be no attacks on an enemy’s maritime trade. According to this reasoning, no belligerent would take such an action due to business related interdependency, and/or because his own trade would suffer considerable losses. However, experience shows that, in any significant war, all belligerents will engage in a struggle to destroy/neutralize and defend/protect merchant shipping or maritime trade to the greatest degree possible. Hence, in any future high-intensity conventional war at sea, both the stronger and the weaker side may be expected to conduct maritime trade warfare in some fashion. The focus of a weaker side, at sea, is often on attacking the enemy’s maritime trade, while the stronger side will focus on defense and protection of friendly maritime trade.

The size of the sea area – short distances versus long – and the peculiar features of the physical environment, often necessitate considerable differences between maritime trade warfare conducted on the open ocean versus in enclosed or semi-enclosed seas (popularly called “narrow seas”). In the broader

context, one's attack on enemy maritime trade is conducted in support of a strategic objective to weaken the enemy's military-economic potential; i.e. weaken a nation's economy and/or its ability to project and sustain forward deployed military forces. Operationally, the objective is to destroy or neutralize the flow of maritime trade in a given part of a maritime theater. This is accomplished by the employment of one's naval forces and those of other services to interfere, interdict, curtail, or cut-off the enemy's maritime trade. The main methods of employment of one's combat forces consist of a series of major and minor tactical actions conducted over a relatively long period of time. From time to time, major naval/joint operations may be conducted as well.

Defense of maritime trade is one of the most important responsibilities of a government and its armed forces. It pertains to both defensive and offensive employment of one's combat forces to protect commercial ships supporting the economy and/or military forces. A country that fails to safeguard its seaborne trade may find that it not only suffers significant economic harm but also that its entire war effort may be crippled. Consequently, defense and protection of maritime trade is among a navy's principal operational tasks in a high-intensity conventional war. However, given limited assets, this would be a big challenge for the U.S. Navy today.

Point of Contact

The point of contact for this session is Rear Admiral Christopher McMahon, USMS, (C-411).

Questions

What role does maritime trade play in projecting joint military forces to distant regions of the world? How does the U.S. military rely on maritime trade for this purpose?

What are some of the lessons learned in World War II with regard to maritime trade warfare?

Describe the elements of maritime trade. How might the differences between maritime trade conducted on the open ocean and in enclosed/semi-enclosed seas affect a commander's operational planning?

Discuss the main methods of combat employment of naval forces and aviation in attacking an enemy's maritime trade, including the conduct of submarine, surface, and mine warfare.

What are the principal methods traditionally employed in the defense and protection of friendly maritime trade? How should a Joint Force Commander plan to protect maritime trade, both military and/or commercial, in a modern threat environment?

Describe some key prerequisites for success in attacking an enemy's maritime trade and for defending/protecting one's own.

Is unrestricted commerce warfare, such as occurred in WWII, possible in the 21st Century?

What are the challenges in effectively pursuing maritime trade warfare?

What are some of the legal, environmental and economic issues in attacking commercial vessels?

Is commerce warfare possible through the employment of business practices such as marine insurance?

What is the likelihood and danger of attacks on military logistics ships? Is it possible to adequately protect U.S. military logistics ships?

Required Readings (48 Pages)

McMahon, Christopher. "Maritime Trade Warfare – A Strategy for the Twenty-First Century?" *Naval War College Review* Vol. 70, No. 3 (2017). Read: 15-35. (NWC 1215).

McMahon, Christopher. "The Great White Fleet Sails Today? Twenty-First Century Logistics Lessons from the 1907-1909 Voyage of the Great White Fleet." *Naval War College Review* Vol. 71, No.4 (2018). Review (see JMO-37). (NWC 4118).

Vego, Milan. "Maritime Trade Warfare." Newport, RI: Naval War College, July 2015. Read: 1-21, 32-34, 48-50. (NWC 1135).

References

None.

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JMO-51

UNCONVENTIONAL STATECRAFT

If the war [between Israel and Hizballah] showed anything, it was how insidious the effect of “professional” lingo can be. How does one distinguish “strategic intelligence superiority” from “operational intelligence dominance”... so thick was the nonsense, and such the resulting verbal confusion that the need to reform officer training and education... became one of the cardinal lessons to emerge from the conflict.

~ Martin Van Creveld
The Changing Face of War, 2008

Session Objectives

- Comprehend evolving trends in warfare and their implications for operational planning and execution.
 - Understand contemporary notions of hybrid warfare, asymmetric warfare, unrestricted warfare and irregular warfare, and their effect on joint doctrine.
 - Evaluate the effectiveness of contemporary state and non-state actors in achieving their objectives through use of hybrid, asymmetric, unrestricted, and irregular warfare operational approaches.
-

🔍 Focus

This session complements the preceding seminars by examining the concepts of hybrid, asymmetric, and irregular warfare in order to address the challenges of determining the patterns of conflict in the contemporary environment as well as the challenges of shaping an effective operational approach for seemingly incomprehensible (and therefore insoluble) conflicts. While the nature of war arguably remains unchanged, its character, or how warfare is waged, changes on an evolutionary (and sometimes revolutionary) scale. This session will examine this changing character of warfare where diplomatic, informational and economic applications of power appear to take priority over the employment of military power towards attaining operational objectives.

🔧 Background

Hybrid, asymmetric, unrestricted, and irregular warfare are terms that are used to capture multiple and evolving patterns of modern conflict. Strategists and military experts struggle to categorize the current conflict in eastern Ukraine or the multiple conflicts sweeping Syria /Northwestern Iraq. While the former example could be a state (Russia) fomenting instability in another state (Ukraine) through irregular means, the latter includes a chaotic mix of insurgent groups vying for political control of Syria: internationally recognized terrorist groups with opaque agendas and non-state actors that are seeking to establish regional political control irrespective of the international borders of several states. In the past, conflicts such as these may not have figured largely in U.S. strategic calculations. In today’s global security environment, where second- and third-order effects are not limited by geography, this is no longer true.

Non-state actors and terrorist organizations actively recruit and procure resources using information networks that span the globe and easily cross language, culture, ethnic, and religious boundaries. Insurgent groups have far greater access to successfully co-opt external military and diplomatic support to negate the traditional advantages possessed by adversarial government regular forces. Weaker states increasingly are turning to the cyber domain in order to find asymmetric ways to compete with stronger military and economic powers. Strong regional powers are using unconventional warfare and proxy forces to pursue strategic objectives while avoiding diplomatic and economic condemnation by the international community. While history may provide comparable examples, most would agree that the exponential growth of computer networking over the last 20 years has afforded new and innovative opportunities for armed groups and organizations to successfully pursue their objectives while avoiding the debilitating blows by strong, professional military forces such as the U.S. military.

Naval Forces are not exempt from this seemingly evolving character of warfare. In fact, Naval Forces—military, para-military and non-state—are becoming central in such environments. Conflict and competition ongoing in the South China Sea and East China Sea already exhibit asymmetric, hybrid and irregular warfare characteristics. Operational Law and the perception of legitimacy are components of this environment, and opponents appear to target the vulnerabilities of an American Way of War to achieve national or organizational objectives.

The term, “American Way of War” has historically suggested an ‘on/off’ switch indicating whether the nation is at war or at peace. Other cultures embrace a tradition where the nation (or an organization) is always at war, and the application of power is determined by the conditions, opportunities and the adversary’s strategic vulnerabilities. Unconventional Statecraft—the application of the nation’s power towards objectives in an environment not dominated by military forces—seeks to address this dichotomy. The term may be useful in determining how best to plan operations in an environment where combatants and competitors seek to gain objectives through hybrid, asymmetric or irregular means; in other words, achieving objectives without flipping the American war-switch to ‘on’.

Point of Contact

The point of contact for this session is Professor Joe McGraw, C-431.

Questions

Are emerging trends in warfare new, or do they represent a return to historical ways of prosecuting war?

Discuss the common threads in several concepts of conventional, irregular, hybrid, asymmetric, political, and unrestricted warfare. How do these concepts differ?

How do irregular forces use Land, Sea, Air, Space, and Cyber domains asymmetrically against a state that employs traditional regular military forces?

How can the United States counter states engaging in these types of warfare? How does the concept of Unconventional Statecraft fit?

What complexities do hybrid warfare and irregular warfare present to the joint force commander and staff when conceptualizing military operations? Are existing planning processes adequate for addressing these challenges?

Required Readings (36 Pages)

Hoffman, Francis G. “The Evolution of Hybrid Warfare and Key Challenges.” Statement before the House Armed Services Committee, 22 March 2017. (NWC 4180).

Kennedy, Conor M. and Erickson, Andrew S. “China’s Third Sea Force, The People’s Armed Forces Maritime Militia: Tethered to the PLA.” China Maritime Report No. 1, China Maritime Studies Institute (March 2017). (NWC 4182).

Boot, Max. “Chapter One: The Changing Character of Conflict.” *Armed Conflict Survey*, Vol 1:1 (2015). Read: 11-20. (NWC 4183).

Valencia, Mark J. “China, U.S. Both Using Lawfare in the South China Sea.” *Asia Maritime Review*, October 11, 2017. Accessed at <http://asiamaritime.net/china-us-both-using-lawfare-in-the-south-china-sea/>. (NWC 4177).

JMO-52

EXAMINATION #2

In the absence of orders, go find something and kill it.

~ General Erwin Rommel

Session Objectives

- Synthesize course concepts through the analysis of JMO course material.
 - Create a reasoned response to the examination questions demonstrating an internalization of the various concepts of the Joint Military Operations curriculum.
 - Demonstrate critical thinking skills.
-

Focus

This session is designed to allow Joint Maritime Operations Course students to demonstrate a synthesis of the education presented to date and to demonstrate higher order thinking skills in a complex, uncertain, and ambiguous environment involving the use or contemplated use of military force.

Background

The examination questions will be issued on Monday, 1 June 2020 at 0830, and student responses are due to the moderators NLT Tuesday, 2 June NLT 1200. All exam responses will be submitted via Blackboard to a dropbox established for each seminar. Some Moderators may also request that paper copies be submitted in addition to the submission in Blackboard. Grading criteria for Joint Maritime Operations Course examinations are located in this syllabus.

Point of Contact

The point of contact for this session is Professor Joe McGraw, C-431.

Questions

See examination question sheet.

Required Readings (TBD)

The examination will be based on JMO course material presented to date.

References

None.

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BLOCK VII: THE WAR AT SEA EXERCISE - PLANNING GAME

The *War at Sea*, a joint planning exercise, will utilize the previously developed Operations Order for the struggle for sea control and will be supported by the College's War Gaming Department. The War Gaming Department will adjudicate the order, requiring students to quickly reassess and plan accordingly, amidst the uncertainty of combat and without perfect information. This academic 'reset' allows students to refine their operational designs. Students will note that the exercise pits the United States against a robust enemy force requiring a theoretically sound and creative approach. The final exercise will reinforce many of the concepts studied throughout the trimester.

OBJECTIVES

- Apply the Navy Planning Process to develop a military solution to an ill-structured problem.
- Explain the challenges and responsibilities of members of an Operational Planning Team.
- Synthesize the concepts of operational art, leadership, maritime warfare theory, service and joint doctrine, operational law, and operational planning by developing an operations order that accomplishes an assigned mission.
- Demonstrate the ability to brief joint orders to senior decision makers.

The point of contact for this block is Professor Joe McGraw, C-431.

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JMO-53

THE WAR AT SEA EXERCISE – PLANNING GAME

My belief is that we have to stay focused on the military that is so lethal that on the battlefield, it is the enemy's longest day and worst day when they run into that force...

~ General James N. Mattis (USMC (Ret))
Senate Confirmation Hearing, 2017

Session Objectives

- In addressing a complex conflict that is both volatile and unpredictable, and under time constraints, assess combat actions and adjust accordingly.
 - Apply the analytic framework of the Joint / Navy Planning Process (JPP / NPP) for developing potential solutions to military problems.
 - Determine objectives and operational approaches that support major combat operations and theater strategy and synchronize efforts at the operational level to facilitate component tactical success.
 - Develop and present a series of plans, military briefs, and written products associated with the JPP / NPP.
-

🔍 Focus

The final event in the JMO curriculum is a continuation of the The Struggle for Sea Control (JMO-44). In this phase of the exercise, students will ‘fight’ their order against a thinking entity that understands US joint force capabilities and can deduce with fair accuracy US joint force intentions. This is an educational wargame that requires students to apply many of the principles and concepts studied throughout the trimester in order to accomplish the assigned mission. The goal for the College of Naval Command and Staff and Naval Staff College students is to understand the challenges in gaining sea control in order for the joint force to exploit it.

📖 Background

This scenario picks up from *The Struggle for Sea Control* exercise. The Joint Force Maritime Component Commander has approved the student planning team OORDER to establish local sea control in the vicinity of Bintulu, Sarawak Province, East Malaysia. Day one of this exercise is also day one of combat at sea; D-Day. Adjudication of the OORDER by the Wargaming Department will present new conditions that students will have to assess and address using the Naval Planning Process (NPP). Students will be required to develop fragmentary orders and in some cases generate a new operations order (with selected annexes) in a time-constrained environment. Information Operations will be exercised by both sides across the spectrum of IO capabilities. Maritime operational law and the Law of Armed Conflict will impact combat actions for the U. S. Commander and staff. U.S. forces are engaged in combat; sound command decisions and clarity of orders are required to achieve the objective with the least cost of blood and treasure.

This exercise is a decision-making wargame. It is not a real-time simulation with an up-to-the-minute Common Operating Picture. The exercise is designed to allow student teams to assess the situation and present options for a Commander's decision (planning). What do we know about the enemy forces, the friendly situation, and the operating environment? What don't we know, why don't we know it and what can we do about it? What must we protect and where are we willing to assume risk? What decisions need to be made and what are our options? These are the questions that planning teams will encounter and solve as they seek to achieve the JFMCC objective(s).

During the course of the exercise, students will develop Fragmentary Orders, Warning Orders, Operations Orders with selected Annexes, Staff Estimates, Courses of Action and Mission Briefings,

and other Joint Planning related products, depending on the situation presented by the enemy and the reaction of the Planning Group.

Point of Contact

The point of contact for this session is Professor Joe McGraw, C-431.

Questions

How does an Operations Planning Team (OPT) adapt the planning process and allow a Commander to make decisions in a time constrained, combat environment?

How does an OPT analyze combat reports in the absence of perfect knowledge?

How does an OPT anticipate future changes in the operating environment created by hostile military forces or other actions?

How does an OPT effectively leverage joint force capabilities when planning and executing operations?

How does an OPT best integrate elements of national power with the joint force to accomplish operational objectives?

Required Readings (35 Pages)

U.S. Naval War College, Joint Military Operations Department. “A Borneo Case Study for Expeditionary Warfare.” Newport, RI: Naval War College, January, 2020. Review. (NWC 6036M). (Issued).

———. “Selected U.S. Navy and The People Republic of China Army (Navy) (PLA (N)) Tactical Capability Handbook Slide Pack.” Newport, RI: Naval War College, 2020. Review. (NWC 2164D).

———. Joint Operation Planning Process (JOPP) Workbook. Newport, RI: Naval War College, 1 July 2013. (NWC 4111J w/Chg 1). Review. (Issued).
