

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

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

FEBRUARY 2018

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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.

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**JOINT MILITARY OPERATIONS DEPARTMENT
JOINT MARITIME OPERATIONS COURSE**

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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 trimester of the College of Naval Command and Staff/Naval Staff College (CNC&S/NSC), students will become skilled at 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 Naval War College mission, functions and tasks, CNO and JCS guidance. These objectives detail the expectations and learning outcomes for those who successfully complete the Joint Maritime Operations trimester. Each seminar or lecture has tailored objectives that support these course objectives:

- Expand critical and creative thinking and develop problem solving skills as they pertain to decision making and leadership in the maritime domain.
- Develop students grounded in Operational Art and Naval Warfare Theory including practical application across the spectrum of conflict.
- Apply the Joint/Navy Planning Process to volatile, uncertain, complex, and ambiguous problems and develop written orders designed to resolve them.
- Understand how to employ maritime power in the attainment of assigned joint and service objectives.

3. Course Overview

The Joint Maritime Operations Course presented by the Joint Military Operations Department is an in-depth study of the upper tactical and lower 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 for and executing major combat operations at sea.

As such, it will prepare students to excel in the operational arena through an understanding of the effective employment of naval power involving joint forces to achieve military objectives. A focus will be put on refining your analytical skills and enhancing your critical and creative thinking abilities. The emphasis in this Department is on developing your warfighting and leadership skills through the lens of operational art and the theory of naval warfare, to develop creative solutions to ill-structured problems. Although maritime operations and sea service contributions are emphasized, the capabilities of all services are studied with the ultimate focus on planning and execution of joint operations at the fleet and joint maritime component commander levels—in the maritime environment.

The trimester will flow from the simple to the more complex, culminating in a final planning exercise, *The War at Sea*, intended to allow students to display their comprehension of the employment of joint power and to demonstrate critical and creative thinking skills. There are themes that permeate the course: the theoretical themes include operational art and naval warfare theory, while the practical themes include naval tactics and operational art, operational leadership, naval operations short of war, maritime operational law, and joint operation planning. Through extensive study of multiple historical case studies, the JMO student is challenged with four enduring questions from the perspective of maritime and Joint Force Commanders (JFC) and their staff planners:

- 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)

The ability to answer these questions is the essence of the Joint Maritime Operations course.

4. CJCS Officer Professional Military Education Policy

The Title 10, Chapter 38 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 ... 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. This syllabus lists the CNC&S and NSC objectives to be addressed in each session, 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. Since 16 May 2007, the United States Navy awards an Additional Qualifying Designator (AQD) code of Joint Operational Planner (JPN) for all U.S. Navy (11XX, 12XX, 13XX, 16XX and 31XX designators) who graduate from the resident College of Naval Command and Staff Joint Professional Military Education (JPME I) course.

5. Course Organization. After the introductory lecture and seminar discussion, the syllabus begins building the intellectual foundation necessary for success at the upper tactical and lower operational levels of war. The introductory sessions focus on the opportunities and challenges ahead and introduce students to the themes, outcomes, and general requirements of the JMO trimester. We also discuss the requirements for the JMO Research Paper. Students next examine the building blocks of a navy—surface, subsurface, and air—in order to begin to understand how navies fight. In this block, entitled *Naval Tactics*, students will be exposed to basic tactical considerations and the capabilities and roles of various naval platforms, weapons, and sensors in order to have a general idea of what we are addressing in the following sections. This portion of the syllabus ends with an open-ended tabletop exercise that allows the students to (a) demonstrate understanding of the material presented thus far and (b) to organize naval forces creatively. The objectives of the *Naval Tactics* sessions include:

- Recognizing the general capabilities of naval forces.
- Understanding the differences between single arm and combined arms naval operations.
- Describing single arm naval tactics for surface, submarine, and naval air assets.
- Demonstrating an understanding of tactics and capabilities of naval forces through an aggregation/disaggregation of forces in a fictional scenario.

Next, a study of *Operational Art* as a general theory 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 milestone in understanding the military problems of today. Our *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. The final session of this block presents students with an in-depth look at current and service doctrine. Armed with the theory that provides the foundation for modern doctrine, students will critically analyze that doctrine given their understanding of operational art. The Objectives for the *Operational Art* sessions include:

- Comprehending *Operational Art* as a body of theory, including its historical roots.
- Applying operational art in the analysis of historical case studies involving ill-structured problems.

In the CNC&S/NSC Course's unique *Naval Warfare Theory* sessions that follow, students are introduced to the maritime domain in the context of proven theory, and discussions will focus on the theory and practice of mid- to high-intensity warfare at sea. By theory we mean the experiences—both successful and unsuccessful—of those practitioners who have gone before. The *Naval Warfare Theory* seminars expand on the theoretical foundations we explored in *Operational Art* and prepare students for the practical sessions that follow. Additionally, we examine some of the key commanders in our operational art case study to understand their processes for estimating the situation, making decisions, and commanding major operations. Examining operational leadership from historic examples links practice to theory in their approach to complex problems. Students should also appreciate the ethical dimensions of command and decision-making at the operational level in warfare. These sessions conclude with two tabletop exercises in which students will study a historical case study and evaluate the employment of combined naval arms. This study of theory as a whole culminates with an examination that covers selected aspects of the theory we have discussed thus far and is an opportunity for the student to (a) demonstrate mastery of the theoretical underpinnings of warfare, and (b) serve as a vehicle to demonstrate higher order thinking skills. The objectives for these seminars include:

- Reinforcing theoretical concepts through an appreciation of maritime warfare.
- Understanding the theory and practice of tactical and operational warfare at sea.

An introduction to *International Operational Law* will emphasize familiarity with specific aspects of the law with an eye toward using it to assist planners in meeting assigned objectives. These sessions are intended to address the following objectives:

- Comprehending and applying operational law concepts in order to understand international law as it relates to maritime operations.

- Identifying operational law-related constraints and restraints on potential courses of action.

Once students have grasped the fundamental theoretical underpinnings of military actions and the nexus of operational law and warfighting theory, we will investigate how each of the services is employed in combat, with emphasis on the naval services. The *Joint Force Operations and Functions* sessions signify the cognitive transition from the theoretical to the practical. As discerned during our critique of modern doctrine in an earlier session, one may only truly understand doctrine after an in-depth examination of the theory that informs it. These sessions begin with an overview of options for task organizing, commanding and controlling joint forces to accomplish operational objectives. Building on this foundation, students will examine the critical areas of naval command and control, logistics, intelligence, information operations and cyberspace. Completion of these sessions provides the doctrinal and practical foundation necessary to address U.S. military considerations for operations in the contemporary environment and to support detailed Joint and Service planning events. The final session is an open-ended table top exercise involving a fictional clash between the United States and a near-peer competitor. Students will be required to display an understanding of the theoretical concepts discussed thus far as well as present creative solutions to potential real-world problems against that peer competitor. These sessions satisfy the following objectives:

- Describe the organization and employment considerations of Fleet assets within a joint context.
- Broadly describe options for organizing and employing maritime, land, air and special operations components in joint warfare.
- Comprehend the Service capabilities that contribute to joint task forces and functional components.
- Explain operational functions in practice as opposed to theory.
- Consider an operational idea to resolve a fictional scenario against a near-peer competitor.

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. The development of an operations order, 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 in which students will craft an operations order intended to gain and maintain sea control against a fictional contested environment in and around Borneo. Students will apply the Navy Planning Process (NPP) to develop that operations order. The objectives for this first exercise include:

- Understanding the difference between complex and complicated problems and the approaches needed to resolve them.
- Using the Navy Planning Process (NPP) to create orders that demonstrate mastery of JMO subject matter thus far.
- Creating an operations order that integrates the maritime force in time, space, and purpose to obtain naval objectives in support of the joint force.

This exercise is followed by an investigation of those things that a navy does when it is not involved in mid- to high-intensity combat—*Naval Operations Short of War*. Objectives for these sessions include:

- Describing the roles of a navy when not engaged in mid-to high intensity combat.
- Discussing how a navy can support operations short of war.
- Distinguishing the unique requirements of naval forces in operations short of war.

At the conclusion of these sessions, the final multi-day planning exercise using the Joint Operation Planning Process (JPP) and the previously developed Operations Order will exercise our order against a thinking enemy. 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. This school-house ‘reset’ allows students to refine their operational designs. Students will note that the exercise pits the United States against an exceptionally robust enemy force requiring not only a theoretically sound approach, but also a creative approach. We will combine two seminars into an Operational Planning Team (OPT) and using the Joint Planning process, coupled with critical and creative thought, resolve a scenario that involves the projection of joint power. The final scenario provides all students the opportunity to interact with the media and to develop and present briefings to senior leadership. The final exercise will reinforce many of the concepts studied throughout the trimester. The objectives of the *War at Sea Exercise* are to:

- Apply the Joint /Navy Operation Planning Process (JPP / NPP) 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, service and joint doctrine, operational law, and operational planning by developing an operations order that accomplishes an assigned mission.
- Brief joint orders to senior decision makers.

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 *Discussion Topics* 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, students are responsible for 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. 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 discussion. 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 digitized and loaded on student iPads, 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. 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.

(2) *Supplementary 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. On occasion, faculty moderators may assign supplementary readings to individual students to read and provide oral synopses to the seminar in support of topic discussion. Supplementary readings also provide additional sources for student research in support of the JMO Research paper requirement.

(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 and have been uploaded on your iPad under the specific session.

(c) Finding Specific Readings. Readings for any specific session may be located as follows:

- (1) 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) 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

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.

(d) 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 300 to 400 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 study an upper tactical, operational, or in some cases, theater-strategic level issue, conduct research and analysis, and prepare a paper that advances the literature and expands the body of knowledge. (The paper is a requirement for both JPME and Master's degree.) Purely strategic or lower tactical level research papers are not appropriate for this research requirement. The research paper is a chance for students to address a real-world topic that they believe is of value. This assignment requires independent thought and graduate-level writing; the final product must be a 14-17 page paper suitable for publication in a professional journal. The amount and depth of research should be adequate to support the student's thesis, and sufficiently justify the conclusions and recommendations. Another use of the paper may be to provide a source of innovative thinking to the Service and Joint staffs involved with the many issues bearing on employment of forces.

Numerous combatant and headquarters commands actively solicit papers and monographs on topics of current interest to them. The Naval War College is frequently canvassed for papers by various commands on particular subjects, and requested to generate interest in specific areas for research and writing. Students who receive A grades are encouraged to submit their research papers for the Naval War College Prize Competition as described in the Naval War College *Student Handbook* and posted on the JMO Blackboard Website. Amplifying information and guidance on the selection and execution of a successful JMO Research Paper project is provided in **NWC 2062**. Seminar moderators will answer questions and otherwise assist you in this most important intellectual undertaking during the introductory seminars and student tutorials in February and March.

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 are also encouraged to 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 2013 Faculty Handbook (w/Changes 1-8)* 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).

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.

- a. The verbatim use of others' words without both quotation marks (and block quotation) and citation.
- b. The paraphrasing of others' words or ideas without citation.
- c. 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.

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:

- a. Gaining unauthorized access to exams.
- b. Assisting or receiving assistance from other students or other individuals in the preparation of written assignments or during tests (unless specifically permitted).
- c. Using unauthorized materials (notes, texts, crib sheets, and the like, in paper or electronic form) during tests.

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

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

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 25-30 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.

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.

(b) Oral and Written Requirements. The JMO Department has oral 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%	5- 6 Apr
JMO Research Paper	Written/Individual	30%	18 May
Examination #2	Written/Individual	20%	23 - 24 May
Seminar Contribution	Daily Assessment	35%	27 Feb – 8 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 2013 Faculty Handbook (w/Changes 1-8)*, student work that is not completed will receive a numeric grade of zero. 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 argument for the thesis, reflect consideration of conflicting points of view 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 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 editorially correct (spelling,

punctuation, grammar, syntax, format, and so forth). 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+ (67-<70) Considerably below graduate-level performance and lacking in any evidence
D (64-<67) of effort or understanding of the subject matter. In some measures, fails to
D- (60-<64) address the thesis, research question, present valid arguments, 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 case 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+ (67-<70) Considerably below graduate-level performance and lacking in any evidence
D (64-<67) of effort or understanding of the subject matter. In some measures, fails to
D- (60-<64) 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. It is recognized that 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, taking into consideration the above factors. 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 below. 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+ (67-<70) Rarely prepared or engaged. Contributions are uncommon and reflect

D (64-<67) Below-minimum acceptable understanding of lesson material. Engages in

D- (60-<64) 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. 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.

14. 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 weekly schedules available electronically to students.

15. 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 E. B. Hernandez, 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-421, 841-6480
Introduction to Naval Tactics.....	CAPT Fred Turner, (USN) Room C-430, 841-6466
Operational Art.....	PROF Doug Hime, (USAF (Ret)) Room C-423, 841-6463
Naval Warfare Theory.....	CDR Mike Loomis, (USN) Room C-421, 841-6480
Maritime Operational Law.....	CAPT Rob Sanders, (USN) Room C-424, 841-4644
Joint Forces and Functions.....	COL Chris Kidd, (USA) Room C-408, 841-7747
Operational Decision Making and Planning.....	PROF Michael McGauvran, (USAF (Ret)) Room C-414, 841- 6564
Naval Operations Short of War.....	COL Joseph McGraw (USA) Room C-403, 841-6709
War at Sea - Final Exercise.....	PROF Bill Hartig, (USMC (Ret)) Room, C-428, 841-6470

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 trimesters content, pacing, reading loads, and so forth. 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 try 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 Geographic and Functional 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. For example, a student may not publically ask a guest lecturer a question prefaced by, “Last week General Clausewitz stated that . . .” Similarly, statements made by faculty or students in a seminar cannot be reported and attributed outside of the seminar. Thus students, faculty, or guests cannot claim orally, on a blog, or any other way, “Admiral Mahan is being hypocritical in advocating the use of mines, because in seminar he argued that they were inhumane.” Specific quotations are also to be avoided if they are likely to be traceable to specific individuals. A professor should not say, for example, “one of my [students from a demographic category in which we have a few] students said that while deployed. . . .”

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. The policies do not protect an individual against improper speech, discussion or behavior.

20. Course Calendar

A course calendar is included at the end of the syllabus. Be forewarned that this calendar is subject to change. Changes will be announced by the Dean of Students and your moderators and can be accessed through your Google email calendar function.

21. Faculty Biographies

Faculty Biographies are available in the digital version of this syllabus and on BlackBoard.

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CHAIRMAN'S INTRODUCTORY LECTURE (Spruance)

Extraordinary as it may appear, the naval officer whose principal business is to fight is not taught the higher branches of his profession. The United States is not singular in this respect. The defect is common to nearly all navies and is an inheritance of a past and less enlightened age. But with the recent revolution in naval warfare comes a demand for a higher order of talent in the conduct of naval operations.

—Rear Admiral Stephen B. Luce, USN
First President of the U.S. Naval War College

A. Focus:

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

B. Objective:

- Understand the requirements and objectives of the upcoming trimester.

C. Background:

For the foreseeable future, the use of military power, together with the diplomatic, economic, and informational instruments of national power, will be essential in achieving national strategic objectives. During this trimester, you will study how to wield the military instrument of power effectively, in concert with the above mentioned instruments, to achieve operational and theater-strategic objectives. The emphasis, quite naturally, will be on the maritime domain. While many students arrive at the Naval War College flush with tactical knowledge and expertise, we will now open the intellectual aperture and examine higher levels of war, in this case, the operational level of war. Our focus will be on both naval operations at the numbered fleet level and joint operations at the Joint Force Commander level, within the context of planning and executing naval and joint operations in support of national strategic objectives.

Master's Degree granting institutions require a significant amount of time invested by students in preparation, research, study, and reflection outside of the formal classroom. Students are generally expected to devote a minimum of two hours in preparation time each hour in seminar. The JMO Department has developed its curriculum such that, on average, students will devote two hours of outside preparation for every hour in seminar.

Accordingly, for a ninety-minute seminar, expect to budget up to three hours for reading, preparing, and reflecting on the material prior to discussion in seminar. You will note that there are days blocked off as student reading and reflection time specifically to allow you to reflect on what you have learned thus far and to prepare for what is scheduled in the following week. The faculty recognizes that in order for the student to fully prepare for the challenge of seminar participation, time must be dedicated to preparation. The Joint Maritime Operations course is designed to prepare U.S., international military officers, and civilian professionals to serve effectively at the upper tactical and operational levels of war.

The point of contact for this session is Captain Edmund B. Hernandez, USN, C-421.

D. Discussion Topics:

None.

E. Products:

None.

F. Required Reading:

Hernandez, Edmund B. Captain, USN. U.S. Naval War College, Joint Military Operations Department. *Expectations and Design, 2018*. Newport, RI: Naval War College, 2018. **(NWC 4154B)**.

U.S. Naval War College, Joint Military Operations Department. *Joint Maritime Operations (JMO) Syllabus and Study Guide, 2018*. Newport, RI: Naval War College, 2018. Read: pages ix—xxxiv. **(Issued)**.

_____. *Resident Student Handbook 2017*. Newport, RI: Naval War College, 2017. Review. **(Issued)**.

G. Supplementary Reading:

None.

INTRODUCTORY SEMINAR (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

A. 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.

B. 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.

C. 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 or put in your school mailbox. 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 Operations Research paper, and numerous other orders related tasks.

Grading. Grades will be 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.

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

D. Discussion Topics:

None.

E. Products:

A completed student recall roster and a student billet assignment sheet completed not later than Friday, 2 March.

F. Required Reading:

Familiarize yourself with: The Blackboard web site at:

<http://navalwarcollege.blackboard.com/>

Richardson, John M. ADM. *A Design for Maintaining Maritime Superiority*. Washington, D.C.: Headquarters, Department of the Navy. January 2016. Read. **(NWC 2154)**

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>

G. Supplementary Reading:

None.

THINKING ABOUT PROBLEMS (Seminar)

Sound strategy depends on a knowledge of all forces and their tactics sufficient to estimate the probabilities of winning. Thus, at the Naval War College, it will not do to study strategy and offer strategic plans without first studying in detail the forces and tactics on which those plans depend.

—Captain Wayne Hughes (USN, Ret), *Fleet Tactics*

A. Focus:

This seminar provides you with some of the formalized language of both the science and the doctrine regarding problems and problem solving. The seminar will introduce you to various structural considerations regarding problems as well as present the concept of complexity as it relates to problem solving. It will introduce students to the language of problem solving and set the conditions for a deeper understanding of material discussed in following sessions. This seminar also represents a formal foray into a topic that has captured the attention of many in the mainstream media and in intellectual circles—critical thinking.

In the Joint Military Operations Department, critical thinking is more than some catch phrase intended to fill in academic voids—rather it is a tangible and fungible asset that we intend to refine in our students. In this session, after firmly establishing an understanding of the structural considerations of problems, we will discuss arguments and their structure, we will deconstruct an argument, and lastly, we will discover the role of logical fallacies in argumentation. *Thinking About Problems* is a natural segue into the following seminar; *The Logic of the Commanders Estimate and Decision* which presents the role of human intellect in solving problems.

B. Objectives:

- Define critical thinking and understand it both as an artifact and a process.
- Comprehend the differences between critical and creative thought.
- Recognize arguments and potential faulty reasoning.
- 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.

C. Background:

Planning *is* the vehicle used in the Department of Defense to solve problems. We should think of planning as a learning process, as mental preparation that improves our understanding of a situation. In its simplest terms, planning is thinking before doing, and as

we will emphasize thinking, or more specifically critical thinking, the problems we will present this trimester will increase in ambiguity, scope, and potential for violence.

Even if the plan we develop is not executed precisely as envisioned—and few are—the process of thinking through that range of potential solutions should result in a deeper situational awareness that improves future decision-making. We should thus think of planning as a learning activity that facilitates the exercise of judgment and not as merely a mechanical procedure. The very first step in estimating a situation is to understand the environment in which the problem exists. In the past, this fell squarely into the J-2 Intelligence Directorates cone of fire. We are all familiar, or should be, with the Joint Intelligence Preparation of the Operating Environment (JIPOE) which provides commanders and planners information on the environment and the enemy. Unfortunately, the problems we will face as modern day officers manifest themselves—almost universally—as complicated problems. They are complex and they are often actually complex adaptive systems (CAS). To begin to understand this type of problem, an ill-structured problem that manifests itself as a CAS, we need far more than the Intelligence Directorate can provide.

As military professionals, we often seek a scientific understanding of war. This approach is appealing because the human mind tends to organize its perceptions according to familiar analogies and metaphors, like the powerful images of traditional Newtonian physics. Our military doctrine abounds with terms like leverage, center of gravity, and mass. Similarly, as you discovered in your studies in the Theater Security Decision Making Department, many political scientists treat political entities as "unitary rational actors," the social equivalents of Newton's solid bodies hurtling through space.

Real political units, however, are not unitary. Rather, they are collections of intertwined but fundamentally distinct actors and systems. Their behavior derives from the internal interplay of both rational and irrational forces, as well as from the peculiarities of their own histories and of sheer chance. Planners who accept the unitary rational actor model as a description of entities at war will never understand either side's motivations or actual behavior. Such planners ignore their own side's greatest potential vulnerabilities and deny themselves potential levers and targets—the fault-lines that exist within any human political construct. In fact, treating an enemy entity as a unitary actor tends to be a self-fulfilling and counterproductive prophecy, reinforcing a sense of unity among disparate elements which might otherwise be pried apart. Fortunately, the physical sciences, as well as Department of Defense planners, have begun to embrace the class of problems posed by social interactions like human politics and war. Therefore, "hard-science" metaphors for war and politics can still be useful. The appropriate imagery, however, is not that of Newtonian physics. Rather, we need to think of planning in terms of biology, and particularly ecology.

To survive over time, the various participants in any ecosystem must adapt—not only to the "external" environment but to each other. These agents compete or cooperate, consuming and being consumed, joining and dividing, and so on. In fact, from the standpoint of any individual agent, the behavior of the other agents is itself a major element of the environment. The collective behavior of the various agents can even change the nature of the "external" environment. For example, certain species, left unchecked, can turn a well-vegetated area into a desert. Our opponent, or threat, coupled with the 'ecology' in which we operate, requires planners who are intelligent, agile, and well-versed in operational art.

Earlier we spoke of the complex adaptive system. What exactly is that? A complex adaptive system (CAS) is characterized by four main points; they are first, and obviously, complex. Students are well advised to consider complexity as opposed to complicated. Complicated systems, such as an internal combustion engine, are well mapped and consist of a subsystem of parts. If we remove a part, the system will not work. A complex system, however, adapts. If we remove a 'part,' the system discovers a work-around and modifies itself. That brings us to the second point of a CAS, it is adaptable. It learns from its environment and adjusts. The CAS, in addition to being adaptable and complex, is also interconnected. Subsystems relate to each other and the actions of one may affect many. Last, a CAS manifests diversity. There is diversity in the system in the number of stakeholders as well as positions, opinions, objectives, and so forth. The subject of complexity as it relates to military problems will be discussed in this seminar and referred to in future sessions.

Much like the example above, military operations in the twenty-first century are exceedingly complex and generally address ill-structured problems. An ill-structured problem has no stopping rules, multiple and conflicting feedback loops, and is not suited well to algorithmic processes. A system created by such a multiplicity of internal feedback loops, by definition, is a complex adaptive system. Such systems nest one inside the other, constructing, interpenetrating, and disrupting one another across illusory "system boundaries." It is in this volatile, uncertain, complex, and ambiguous environment that you, as professional problem solvers, must plan and operate.

You will come to appreciate the similarities between the various processes and discover that military planning is highly nonlinear and requires a deep appreciation of operational art, organization, human dynamics, and further requires a nuanced leadership approach in order to reach a common and acceptable solution. A secondary purpose of this session is for students to develop an awareness of their own thinking: how to look at an argument, evaluate it, decide on its reasonableness, and then present an argument of your own. Commanders do not normally develop an estimate of the situation in a vacuum; rather, they evaluate the arguments made by others and, combined with their own insight, arrive at a conclusion.

The point of contact for this session is Professor Bill Hartig, C-428.

D. Questions:

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

Why do (or should) we first assess the structure and typology of a problem before we begin trying to resolve it?

If many of the problems we confront in the modern operating environment manifest themselves as Complex Adaptive Systems, how can they be adequately described?

What are the fundamental differences between an argument and a disagreement in formal logic?

Do all arguments present themselves in the manner described in the assigned reading?

E. Products:

None.

F. Required Reading:

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).**

_____. U.S. Naval War College. Joint Military Operations Department. "Thinking About Complexity." Newport, RI: Naval War College, 2012. **(NWC 1141).**

Kiersky, Kames H. and Nicholas J. Castle. *Thinking Critically: Techniques for Logical Reasoning*. West Publishing Co.: New York. 1995. Read: 1-38. **(NWC 4163).**

King, Charles. *How to Think*. Georgetown University, School of Foreign Service and Department of Government. 1999. **(NWC 4167).**

G. Supplementary Reading:

Banach, Stefan J. and Alex Ryan. "The Art of Design: A Design Methodology." *Military Review* (March–April 2009): 105–115.

Behar-Horenstein, L. S. and Niu, L. "Teaching Critical Thinking Skills in Higher Education: A Review of the Literature." *Journal of College Teaching & Learning* (2011), 8 (2).

Dewey, John. *How We Think*. Boston: Heath, 1910.

_____. *Reconstruction in Philosophy*. New York: Henry Holt, 1920.

_____. *The Public and Its Problems*. Athens, OH: Swallow Press, 1985 [1927].

Duggan, William. *Strategic Intuition: The Creative Spark in Human Achievement*. New York: Columbia University Press, 2007.

Gladwell, Malcolm. *Blink: The Power of Thinking without Thinking*. Boston, MA: Little Brown & Company, 2005.

Klein, Gary A., and J. Weitzenfeld. "Improvement of Skills for Solving Ill-Defined Problems." *Educational Psychologist* 13 (1978): 31–41.

- Landau, Martin, and Donald Chisholm. "The Arrogance of Optimism: Notes on Failure-Avoidance Management." *Journal of Contingencies and Crisis Management* No. 3 (1995): 67–80.
- Neustadt, Richard E., and Ernest R. May. *Thinking in Time: The Uses of History for Decision-Makers*. New York: Free Press, 1986.
- Lindblom, Charles E. "The Science of Muddling Through." *Public Administration Review* 19 (1959): 79–88.
- Rittel, Horst, and Melvin M. Webber. "Dilemmas in a General Theory of Planning." *Policy Sciences* 4 (1973): 155–69.
- Schön, Donald. *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books Inc., 1983.
- Simon, Herbert A. "The Executive as Decision Maker" and "Organizational Design: Man-Machine Systems for Decision Making." In Herbert A. Simon, *The New Science of Management Decision*. New York: Harper and Row, 1960.
- _____. "The Architecture of Complexity." *Proceedings of the American Philosophical Society* 106 (1962): 467–82.
- _____. "The Structure of Ill-Structured Problems." *Artificial Intelligence* 4 (1973): 181–201.
- _____. *The Sciences of the Artificial*, 3d ed. Cambridge, MA: The MIT Press, 1996.
- Tsui, L. Fostering critical thinking through effective pedagogy. *The Journal of Higher Education*, (2002): 73 (6), 740-763.

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THE LOGIC OF THE COMMANDER'S ESTIMATE AND DECISION (Seminar)

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

A. Focus:

The focus of this session is 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.

B. Objectives:

- Know the historical roots of the commander's estimate of the situation and understand the logical reasoning applied in the process of estimating the situation.
- Understand the relationship between process and the format of the estimate of the situation.
- Comprehend the role and importance of the commander in the estimate of the situation.

C. Background:

One of the principal responsibilities of commanders at any level of command is to make decisions for the employment of their forces in combat. Various automated decision aids can never replace the commander's experience, judgment, and wisdom in making a sound decision. Some of the most successful military commanders have and still use a mental process of *estimating the situation* before making a decision.

The first systematic estimate of the situation was used by the Prussian army in 1850. The Prussian / German Chief of General Staff, General (later Field Marshal) Helmuth von Moltke, Sr., used what the Germans call *Lagebeurteilung*, or the "assessment of the situation"—a mental process of reasoning in order to reach a sound decision. Other armies in Europe gradually introduced the Prussian method of conducting the estimate of the situation. In the United States, the Army's Infantry School at Fort Leavenworth, Kansas adopted the Prussian model in 1909 when Captain Roger S. Fitch published his *Estimating Tactical Situations and Publishing Field Orders*. One year later, the U.S. Army officially adopted Fitch's document as its standard training manual. In 1911, the President of the U.S. Naval War College,

Admiral Raymond P. Rodgers (1849-1925) adopted the "applicability system" or "estimate of the situation" as the method in teaching students on how to make sound military decisions. Afterward, the estimate of the situation became one of the key subjects taught and applied in the Naval War College's curriculum. The Navy's standard manual for estimating the situation, *Sound Military Decision* published by the Naval War College in 1936 during tenure of Rear Admiral E. C. Kalbfus (1877-1954) as the President. Afterward, it was revised several times and extensively used by the U.S. Navy.

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 decision previously arrived at but to develop a more reasoned, well informed approach to solving a military problem.

In general, any estimate process consists of (1) a general part and (2) a reasoning process. The general part consists, of a general appreciation of the existing situation; formulating the end to be attained with a view of localizing the problem, and comparison of basic data. The *reasoning process* is used to arrive at a selection of the method for attaining the desired end. Before one starts to reason, one must possess knowledge of the situation, recognize what is to be accomplished, and examine the factual elements at one's disposal. After the problem is localized (the mission) the next step is to use reasoning to make conclusions and then convert conclusions into a plan of action (the decision).

Reasoning can be defined as the action of thinking about something in a logical, sensible way, or simply the process of exercising the faculty of reason. It starts with the input (premises) and produces output (conclusions). In each specific case of surmising a conclusion, inferences are made on the basis of various bits of available information. *Logical reasoning* is the very foundation of a sound estimate of the situation.

Reasoning can be inductive or deductive. *Inductive reasoning* is used to discover general laws from particular facts. In inductive reasoning, the conclusion is reached by generalizing or extrapolating from initial information. In contrast, *deductive reasoning* proceeds to discover particular truths from general truths. It links premises with conclusions. If all premises are true, the terms are clear, and the rules of deductive logic are followed, the conclusion reached is necessarily true. It is essentially an analytical process, while inductive reasoning is a synthetic process. In inductive reasoning if arguments are sound, the conclusions are merely supported by the premises while in deductive reasoning if the arguments are sound then the conclusion is guaranteed. Deductive reasoning is predominantly applied in the estimate of the situation process. In some cases, however, inductive reasoning might be applicable.

Reflective thinking is used in a general appreciation of the initial situation in the estimate process. It refers to the process of analyzing and making judgments about what has

happened. It cannot be successful without *critical thinking*. A critical thinker collects information, evaluates, draws conclusion using logic and assesses logical conclusions. In contrast, a non-critical thinker collects information and then draws conclusions without logic. Critical thinking and reflective thinking are often used synonymously.

In general, a situation pertains to a state of affairs or combination of circumstances at a certain moment. In military terms, a situation can also be described as the entirety of conditions that exist in a certain area and certain time and affect the conduct of one's military action. Political, diplomatic, military, economic, demographic, informational, ethnic, religious, environmental, and other situations exist at the same time. In general, the scale of the military objective to be accomplished determines the scope of the military situation that must be evaluated. Hence, tactical, operational, and strategic (national-strategic and military or theater-strategic) situations can be differentiated. The larger the objective, the more complex the situation in terms of space, time, and force. The military situation is characterized through the status and actions of opposing forces; terrain; state of weather, and time of day and year; and other conditions. A military situation can consist, in turn, of ground, air (space), and naval situations, respectively.

Estimating the situation means analyzing the causality of all its elements and their influence on the accomplishment of one's mission. For that purpose, the operational commander should divide the situation into its constituent parts and determine how each part affects the employment of both the enemy and friendly forces, and, in some cases, neutrals as well. The commander must also determine how to make maximum use of favorable factors in the situation for the employment of friendly forces while at the same time accounting for those elements that can potentially preclude or weaken one's combat actions.

The commander's estimate of the situation should be a thorough and methodical process of reasoning. Great care should be taken that no relevant factors are omitted or, worse, willfully ignored in the analysis. Hasty and superficial considerations should be avoided. The process in itself will not necessarily result in the best decision, or even a sound decision. The commanders and their staffs should bear in mind that there are several methods for conducting the estimate as a whole and its individual steps. They should know the advantages and disadvantages of each method and then apply the one best suited to the mission and the situation and the commander's personal preferences and experience.

A standardized format for conducting an estimate of the situation is highly useful in ensuring that a certain logical process of reasoning is applied in conducting the estimate of the situation. However, the format is merely an arrangement by means of which the commander's thoughts may be developed in a logical order. The estimate's format should be based on logic and common sense. It contributes to the commander's decision only to the extent that it provides a solid framework for systematic analysis and reasoning. Yet the soundness of the estimate ultimately rests on the commander's earnest thought, mental ability, character, and experience. Rigidly applying the estimate's format would invariably lead to a faulty application of the process. It may well result in a decision that is not sound. Clarity of thinking also suffers when more time and effort are spent on formalities than on the essence of the estimate.

The principal elements of the commander's estimate of the situation are as follows: (1) the mission; (2) initial situation; (3) enemy courses of action; (4) friendly courses of action; and (5) the decision. There is no commonly agreed method of conducting the estimate of the

situation. In generic terms, the commander's estimate encompasses the following steps: mission analysis, estimate of the physical/human environment, the enemy situation and the friendly situation (and in some cases the situation of the neutrals), analysis of the opposing courses of action, comparison of friendly courses of action, and the decision. Steps in the estimate can be expanded or condensed according to the nature of a given problem.

The commander cannot conduct a proper estimate of the situation and make a sound decision without accurate, timely, and relevant information. Clearly, the most important basis for making decisions is information on the enemy and friendly subordinate forces. In general, the clearer the given picture, the better uncertainties will be mastered, and the more accurate the estimate and the sounder the decision will be. The focus should at all times be on the facts of the situation. In transmitting their reports to the higher commander, subordinate commanders are duty-bound to tell the absolute truth as they see it. Embellishment and exaggeration must be avoided. In forwarding reports to the higher commander, subordinate commanders must always be clear about what their subordinates actually did observe, what others observed, and what only speculation is. All subordinate commanders should report on the situation to higher commanders as quickly and as fully as possible and pass on all important information.

In conducting the estimate of the situation, the commander should focus his mental efforts on the most important things. The facts of the situation should be clearly differentiated from assumptions or speculation. All the facts should have a proof. The commander should remain calm, should think quickly but should not act in haste, and should rethink through the situation and make the decision independently while receiving reports from his subordinates. The commander should express the decision in short, clear sentences.

The more the commander practices 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.

The point of contact for this session is Professor Bill Hartig, C-428.

D. Discussion Topics:

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

How is reflective reasoning used in conducting an estimate of the situation? Describe advantages and disadvantages of deductive and inductive reasoning.

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

What is the role of information and reports in conducting an estimate of the situation?

Explain and discuss the role and importance of the commanders and their staffs in the estimate of the situation. What is the role of automated decision aids in the estimate process?

E. Products:

None.

F. Required Reading:

U.S. Naval War College. "Sound Military Decision." U.S. Naval War College. Newport, RI: Naval War College Press, 1942. Read: Part One, Chapter I, *Command and its Problems* and Chapter II, *Mental Processes and Human Tendencies*. (NWC 6047).

Vego, Milan. *Logic of the Commander's Estimate of the Situation*. Newport, RI: Naval War College, June 2016 (NWC 2158)

_____. *The Commander's Estimate and the Decision: An Alternative Approach*. Newport, RI: Naval War College, December 2016. (NWC 1219)

G. Supplementary Reading:

Cowan, Thomas H. *A Single Flexible, Rigorous Decision Making Process*. Fort Leavenworth, KS: School of Advanced Military Studies, United States Army Command and General Staff College, 1996.

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

Michel, Rex M., *Historical Development of the Estimate of the Situation*. Fort Leavenworth, KS: U.S. Army Research Institute, 1990.

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THE JMO RESEARCH PAPER (Seminar)

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

A. Focus:

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

B. 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.

C. Background:

The JMO research paper is an objective way for students to demonstrate competence at the Master's degree level and represents a physical manifestation of their thinking skills. The research paper provides each student with the opportunity to focus on an upper tactical (Fleet-level) or operational (Joint Force-level) issue, conduct research, analyze the issue, and synthesize a paper that advances the literature on that issue. Consequently, it enables students to concentrate on topics of significant value and interest to them as long as the topics are relevant to any of the individual sessions found in the JMO syllabus. The research paper represents a voyage of discovery in which students are free to select a research question, develop a sound thesis, and then present an argument for consideration—free from the day-to-day pressures of life in the Fleet. It allows students to sharpen their analytical and synthetic skills and as such should not be viewed as a burden but rather as an opportunity to learn something new.

The research paper requires independent thought and competent writing because the final product should be suitable for publication in a professional journal. The range and depth of research should be adequate to support the student's approach and justify sufficiently the conclusions and recommendations or lessons learned. Another use of the paper is to stimulate innovative thinking in Service component and joint force staffs involved with the many complex issues of military force employment.

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 the methods of accomplishing missions. The Naval War College's College of Naval Command and Staff and Naval Staff College is canvassed frequently for papers on particular subjects and is requested to stimulate interest in specific areas for research and writing. A recent example is consideration of innovation in the application of naval force—how to accomplish the goal of fighting *smarter* rather than fighting with *more*. While some aspects of this project fall outside the parameters of the JMO research paper requirement, many of the issues therein are applicable. These especially include doing the right things and doing them right—the result of integrating effectiveness and efficiency. In any case, open dialogue with your moderator team is essential in ensuring an appropriate topic is selected.

1. **Requirements.** The JMO research paper requires the following:

a. A thesis: A definitive position that the paper will aim to defend, support, or justify. The thesis represents your major conclusion, or the supposed 'answer' to a research question. The thesis is contained in the introductory paragraph.

b. Sufficient research to analyze the thesis properly. Your thesis must be supported by premises that are drawn from research or synthesized by the author because of that research. This portion of the paper represents the author's principal argument(s).

- Each paragraph should start with a topic sentence: What are you going to demonstrate in this paragraph? A topic sentence is really a mini-thesis statement – a thesis statement for just this paragraph that fits in with your thesis statement for your paper as a whole. It must come at the beginning of your paragraph and it must make a claim.

- This is followed by the first piece of evidence. This can be a direct quote, something paraphrased from research sources, or data of some kind from other sources. A second piece of evidence should follow that supports your conclusion. A second direct quote, something paraphrased from sources, or data of some kind from other sources.

- The writer will present an analysis. Here is the opportunity for students to clarify for the reader why this evidence is important and how it demonstrates that what was said in the paragraphs topic sentence is true. It makes sure the reader interprets the evidence correctly and it also advances the argument.

- Finally, a solid paragraph should end with a transition. Each paragraph must flow smoothly and logically into the next. This can be accomplished in a number of ways. In one case, the topic of one paragraph is so closely related to the topic in the next paragraph that the transition simply flows naturally. Alternatively, the way the topic sentence of the second paragraph is written can accomplish the transition. Something you add at the end of the first paragraph can also accomplish the transition (this one is often the hardest to do well). This is the structure of a well written paragraph in an argument-driven paper.

c. In many but not all cases, a counterargument may present itself as a result of the research conducted. "When you write an academic essay, you make an argument: you propose a thesis and offer some reasoning, using evidence that suggests why the thesis is

true. When you counter-argue, you consider a possible argument against your thesis or some aspect of your reasoning.” (Harvard Writing Center, Harvard University, 2017).

d. Logical conclusions which are drawn from the material presented within the paper. The conclusions allow the reader to tie together the arguments presented in the paper.

e. Recommendations or lessons learned, as appropriate, demonstrating the paper’s relevance to the modern commander or staff, as appropriate. This portion of the research paper requires creative thought in order to make the paper of value to its consumer.

f. In summation, the JMO research paper body consists of a brief introduction section that contains the student’s approved thesis statement. This is followed by the student’s principal argument or arguments, as appropriate in well-constructed paragraphs. A counterargument that should balance the author’s approach and allow the reader to consider an alternate argument follows. The conclusion provides a wrap up and transition to the recommendations (or in certain cases, lessons learned).

2. **Topics.** Broad topic areas can be selected from any of the JMO syllabus material, from one of the many calls for papers, or from a student’s curiosity regarding a subject area. These topic areas begin very generally, and are often too broad in scope for a JMO research paper so it is quite normal for the student to refine continuously his subject area as more and more research is done. The goal is, with moderator assistance, to construct a well thought out research question.

Note: The JMO research paper should not be an examination of simple tactics, technology, force structure, or future force planning concepts. In addition, it should not be a library search and recitation of published material, nor should it contain proposals or recommendations regarding numbers and types of weapons platforms, modifications to said platforms, weapons, sensors, or force structure. Moderators will answer any questions on specific issues relating to topic selection.

NWC 2062, Operations Paper: Guidance for Students contains the JMO Chairman’s guidance for selecting a suitable topic and creating a research question. It also contains detailed guidance on developing the paper from topic selection to final draft, extracts 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 2062**. Moderator acceptance of a proposal constitutes an understanding between the student and the moderator grading team. An accepted 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 shall meet graduate-level standards.

5. **Format.** Hacker and Sommers' *A Writer's Reference* and the *Naval War College Pocket Writing and Style Guide* is the standard for unclassified written work. Students should use the Chicago Manual of Style (CMS) format for notes and bibliography. The [CMS Online](#) provides a Citation Quick Guide to assist writers. Guidance for classified papers is available from the moderators. Additionally, the 2018 JMO Research Paper Template will be posted on Blackboard. Students may save this template as a file on their 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.** The final version of the paper submitted to the faculty requires a Standard Form (SF) 298 as the report document page. This page will be used as a coversheet for all other pages.

7. **Length.** The text of the JMO research paper will be 14 to 17 double-spaced pages in Times New Roman font size 12 with a one and a quarter left margin and one inch top, bottom, and right. The page count generally corresponds to a 4,200 word paper. (See 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 to thesis statement; define the scope of the research effort; keep research, analysis, and writing on track; and develop effective outlines and drafts. Each student will have a paper advisor; seminar moderators will serve as paper advisors for the students in their seminars. A minimum of two tutorials will be scheduled with your moderators. Subject matter expertise in a broad range of topics is resident in the 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 are included in reading **NWC 2062**.

11. **Submission Schedule:**

5-8 March:	Conduct initial tutorial regarding potential paper topic.
16 March:	Submit paper proposal to moderators.
26-29 March:	Conduct follow-up tutorial; moderators and student agree on thesis and course of action.
1 May:	Suggested date to terminate research, commence analysis, and writing.

3 May: Peer critique of research paper with fellow student.
8 May: Final date to submit drafts to paper advisors for review.
18 May: Operations 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.

The point of contact for this session is Professor Bill Hartig, C-428.

D. Discussion Topics:

None.

E. Products:

A quality 14-17 page research paper that demonstrates the ability to present a well-constructed and coherent argument and to demonstrate critical thought.

F. Required Reading:

Hacker, Diana and Nancy Sommers. *A Writer's Reference*, 7th Edition. Boston, MA: Bedford/St. Martin's, 2011. Read: 3-13, scan 498-537. **(Issued)**.

U.S. Naval War College. *Naval War College Pocket Writing and Style Guide*. Newport, RI: Naval War College, August 2012. Scan. **(Issued)**.

_____. Joint Military Operations Department. *Operations Paper: Guidance for Students*. Newport, RI: Naval War College, 2018. Scan. **(NWC 2062)**.

_____. JMO Paper Template, 2015. Scan.

G. Supplementary Reading:

Barzun, Jacques and Henry F. Graff. *The Modern Researcher*. Belmont, CA: Wadsworth Publishing, 2003.

Johns, Sylvia and Sarah Keller. *Cite it Right: the SourceAid LLC guide to citation, research, and avoiding plagiarism*. Osterville, MA: SourceAid, LLC, 2005.

Turabian, Kate L. *A Manual for Writers of Research Papers, Theses, and Dissertations*, 8th ed. Chicago: University of Chicago Press, 2013.

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

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THE MARITIME DOMAIN (Seminar)

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

A. 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.

B. Objectives:

- Understand the main effects of the physical environment on the employment of maritime forces.
- Understand the economic characteristics of the maritime domain.
- Understand the political aspects of the maritime domain.
- Understand the challenges of the littoral environment compared to the open ocean.

C. 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 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 dramatically influenced 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. But what does this mean for navy 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 very 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, operating close to home ports from which they can rapidly sortie and retreat. Coastal guns and surface-to-surface missiles also provide significant dangers, as clearly demonstrated in 2006 when the Israeli vessel *Hanit*, while operating more than 30 nautical miles off shore, was struck by a ground launched C-802 anti-ship cruise missile (ASCM) 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 will impact both friendly and adversary performance, is critical to the joint force and naval commanders.

The point of contact for this session is Commander Mike Loomis, USN, C-408.

D. Discussion Topics:

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.

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

How can the operational commander incorporate climate in 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.

E. Products:

None.

F. Required Reading:

U.S. Navy, Office of the Chief of Naval Operations. *How We Fight, Handbook for the Naval Warfighter*. Washington, D.C.: Government Printing Office, August 2015.

Read: 5-35.

Vego, Milan. *Joint Operational Warfare: Theory and Practice*. Newport, RI: Naval War College, reprint 2009. Read: IV-35 – IV-46. **(Issued)**.

G. Supplementary Reading:

Angove, Michael. *Owning the Weather in the Maritime Environment*. Newport, RI: Naval War College, 2005.

Barker, Jeffrey. U.S. Naval War College, Joint Military Operations Department. "The Environmental Influences upon Naval Warfare." Newport, RI: Naval War College, November 2008.

_____. U.S. Naval War College, Joint Military Operations Department. "Meteorological Factors at the Operational Level of War." Newport, RI: U.S. Naval War College, Nov 2008.

Winters, Harold A. *Battling the Elements, Weather, and Terrain in the Conduct of War*. Baltimore, MD: Johns Hopkins University Press, 1998.

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INTRODUCTION TO NAVAL TACTICS (Seminar)

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

—Capt. Wayne P. Hughes, Jr. USN (Ret),
Fleet Tactics and Coastal Combat, 2nd edition, 2000

A. Focus:

The principal purpose of this session is to begin building student understanding of naval tactics theory and concepts. This session will set the stage for all the subsequent sessions on tactics of single naval combat arms.

B. Objectives:

- Comprehend the fundamental tactical principles, elements and processes of employing naval forces.
- Describe the principal methods of tactical employment of naval forces.
- Understand the relationship between the development of naval technology and the evolution of naval tactics.
- Understand the difference between land and maritime warfare.

C. Background:

“The young officer deals in tactics.” So begins the forward to Captain Hughes’ book on *Fleet Tactics and Coastal Combat, 2nd edition*. While Flag officers conceive and draw large arrows on white boards and charts, unit commanding officers must bring combat power to bear on the enemy at great risk to the crew, ship (or aircraft), and mission. As the October 2000 terrorist attack on USS Cole, the 1987 missile attack on USS Stark, and the 1982 sinking of Argentina’s ARA Belgrano demonstrated, tactical failure at sea has a profound impact on operations, strategy, and even the national mood. While naval tactics are fundamentally different from the tactics on land or in the air, they remain grounded in principles that influence the development and evolution of general and specific naval tactics. Understanding these “cornerstones” (as Hughes describes them), along with the fundamental elements and processes of naval tactical combat, allows naval officers to think about how to *best* employ naval tactical forces in order to accomplish tactical objectives—and the risk to ship and mission that such employment entails. As an operational commander/planner, understanding the fundamentals of conducting naval tactical actions is critical to developing rational estimates of the situation, developing options, and making sound operational and

tactical decisions. As Hughes writes, “Our ablest naval officers were tacticians who knew their weapon systems.”

So what are naval tactics? In generic terms, naval tactics can be defined as the *theory and practice of planning and employing naval tactical actions aimed to accomplish a tactical objective*. The theory of naval tactics can further be arbitrarily grouped into two categories: general theory and tactics of naval forces. *General naval tactics* explain and analyze mutual relationships and patterns of both tangible and intangible elements of tactics common to tactics of platforms and forces as a whole. In contrast, *tactics of naval forces* deal with the tactical employment of naval weapons/sensors/equipment, individual naval platforms and their groups, naval combat arms, and combined naval combat arms. This session and the following sessions on naval combat arms will deal primarily with *tactics of naval forces*. Later in the course, you will explore *general naval tactics* and naval combined arms as part of planning for a joint maritime operation.

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 and regardless of the ratio of forces in a given theater. They are conducted in a sea/ocean area varying in size from a combat zone/sector to a maritime area of operations. In generic terms, the main methods of tactical actions with the use of weapons are attacks, strikes, raids, engagements, and battles. These terms are not necessarily identical to those used in the employment of ground forces. As Hughes describes, firepower (fires), scouting (ISR), and 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 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.

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

D. Discussion Topics:

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?

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?

E. Products:

None.

F. Required Reading:

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

Hughes, Wayne P. Jr. *Fleet Tactics and Coastal Combat, 2nd ed.*, Annapolis, MD: Naval Institute Press 2000. Read: Chapter 1, *Six Cornerstones*, and Chapter 7, *The Great Trends*. **(Issued)**.

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

G. Supplementary Reading:

Hone, Trent. "The Evolution of Fleet Tactical Doctrine in the U.S. Navy, 1922-1941," *The Journal of Military History*, vol. 67, no. 4 (October 2003).

Hughes, Wayne, P. Jr., editor, *The U.S. Naval Institute on Naval Tactics*. Annapolis, MD: Naval Institute Press, 2015.

Lautenschlaeger, Karl, "Technology and the Evolution of Naval Warfare," *International Security*, Vol. 8, No. 2 (Fall 1983).

Robison, Samuel S., and Robison, Mary. *A History of Naval Tactics From 1530 to 1930. The Evolution of Tactical Maxims*. Annapolis, MD: The United States Naval Institute, 1942.

Tunstall, Brian. Ed. by Dr. Nicholas Tracy. *Naval Warfare in the Age of Sail. The Evolution of Fighting Tactics 1650-1815*. Edison, NJ: Wellfleet Press, 2001.

Vego, Milan. *Objectives of Naval Warfare*. Joint Military Operations Department, Newport, RI: Naval War College. August 2015. **(NWC 1102)**.

_____. *On Naval Tactics*. Joint Military Operations Department, Newport, RI: Naval War College. September, 2015. **(NWC 2148)**.

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NAVAL PLATFORMS, SENSORS, AND WEAPONS (Seminar)

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

—Seneca

A. 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 will provide an overview of the standard platforms, sensors, and weapons commonly found in navies today.

B. Objectives:

- Describe the sensors and weapons found on most naval air, surface and subsurface combatants.
- Comprehend the capabilities and limitations of naval platforms to conduct tasks in support of tactical objectives.
- Analyze the importance of adaptation and innovation to naval warfare tactics.

C. 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 effective development and use of platforms, sensors and weapons. The rapid advance in both sensor and weapon technology during the Second World War had an inestimable effect on naval tactics, the kind of platforms navies procured and warship design itself. In the years following the close of World War II, 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 much more capable submarines. With the advent of the nuclear powered submarine, the surface to air guided missile, the anti-ship cruise missile, and the super-carrier; 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 most effectively employ it) 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 (AIP), have made the diesel submarine into 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.

The point of contact for this session is Commander Brad Donnelly, USN, C-405.

D. Discussion Topics:

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

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

How have advances in sensor coverage and the proliferation of long range Anti-Ship Cruise Missiles (ASCM) impacted naval warfare tactics?

E. Products:

None.

F. Required Reading:

Hughes, Wayne. *Fleet Tactics and Coastal Combat*, 2nd ed., Naval Institute: Annapolis, MD 2000. Read: “The Sensory Revolution,” Chapter 5; and “The Great Constants,” Chapter 8, 203-231. **(Issued)**.

U.S. Naval War College, Joint Military Operations Department. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, 2018. **(NWC 3153R)**. Scan 9 - 11. **(Issued)**.

_____. *Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook Slide Pack*. Newport, RI: Naval War College, 2018. Scan. **(NWC 2164B)**.

Vego, Milan. *Fundamentals of Surface Warfare*. Newport, RI: Naval War College. May, 2016. Read: 1-10. **(NWC 1164A)**

G. Supplementary Reading:

Friedman, Norman. *The Naval Institute Guide to World Naval Weapon Systems, Fifth Edition*. Annapolis, MD: The United States Naval Institute Press, 2006.

Janes Fighting Ships 2014-2015 116th Revised Edition. London, UK; Janes Information Group. 2014.

Janes Weapons Systems Naval 2012-2013. London, UK; Janes Information Group. 2012.

Wertheim, Eric. *The Naval Institute Guide to Combat Fleets of the World, 16th Edition: Their Ships, Aircraft, and Systems*. Annapolis, MD: The United States Naval Institute Press, 2013.

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SURFACE WARFARE: TACTICAL FUNDAMENTALS (Seminar)

No captain can do very wrong if he places his ship alongside that of the enemy.

—Vice Admiral Horatio Nelson,
21 October 1805, Battle of Trafalgar

A. Focus:

This session will focus on the tactical fundamentals of the combat employment of surface forces.

B. Objectives:

- Comprehend the tactical capabilities and limitations of employing surface combatants.
- Understand the influence of the physical environment on the employment of surface combatants.
- Understand the main methods of tactically employing surface combatants.

C. Background:

Historically, the backbone of any navy is in surface forces. From the Battle of Salamis in 480 BCE, through the age of sail and down to today, surface forces remain a critical component in tactical naval actions. Until the 20th Century, the history of naval warfare was primarily the history of the surface combatants. From the triremes of the classical age to the ships of the line during the Napoleonic Wars and the battleships of the first half of the 1900s, the power of a fleet was defined by the design and armament of surface ships along with the fighting characteristics of the men who served on them.

As technology has progressed throughout the centuries so have the types of platforms from which surface warfare is conducted. The oar powered triremes of the classical age with their rams and crews that fought ship to ship as soldiers eventually developed into the wooden warship propelled by sail and mounting an ever increasing number of guns. These vessels, which began to proliferate in the 15th Century and reached their zenith in the early 19th Century, gave way in turn to the steam powered, iron armored warships of the mid to late 1800s.

With the launching of the HMS DREADNOUGHT in 1906, the British Royal Navy introduced the age of the modern battleship which was to remain the primary naval combatant until being displaced by the aircraft carrier during the Second World War. Designed primarily for ship to ship combat through the use of ever larger guns with

increasing range, the anti-surface role of the battleship was eventually overtaken by a number of ship types armed with anti-ship cruise missiles (ASCMs). Originally developed as a radio controlled, air launched weapon by Germany in WWII, the proliferation of ship launched ASCMs enabled relatively small surface combatants to engage surface targets at much longer ranges with devastating effect. First used successfully by the Egyptians against the Israeli destroyer EILAT in the Six-Day War of 1967, the ASCM can now be found on numerous surface combatants around the world.

The primacy of the surface combatant in naval warfare was not challenged until well into the 20th century with the development of the airplane and the submarine as legitimate components of a battle fleet. Despite the introduction of those platforms, the surface combatant and surface warfare itself remains a cornerstone of naval power. Today, surface forces operate both in the open ocean and in the littorals, and include a number of platforms ranging in size from large cruisers to much smaller corvettes and missile patrol craft. The primary surface combatant of today's blue water navies is the destroyer which is a multi-role platform capable of engaging surface, air, and sub-surface targets with a mixture of guns, missiles, and torpedoes.

The point of contact for this session is Commander Brad Donnelly, USN, C-405.

D. Discussion Topics:

What are the tactical advantages and disadvantages of employing surface combatants?

What are the tactical differences between employing surface combatants in the open ocean and in the littorals?

What are the effects of the physical environment (weather/climate) on surface forces as they attempt to use sensors and weapons and/or avoid counterforce?

Has the proliferation of ASCMs rendered surface combatants tactically impotent? Explain why or why not.

E. Products:

None.

F. Required Reading:

Hone, Trent. "Give Them Hell!: The U.S. Navy's Night Combat Doctrine and the Campaign for Guadalcanal." *War in History*, April 2006, vol. 13, no. 2. (NWC 4166)

Stille, Mark. *The Naval Battles for Guadalcanal 1942*. Oxford: Osprey Publishing, 2013.
Read: 34-44. (Issued).

United States Naval War College, Joint Military Operations Department. *Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook Slide Pack*. Newport, RI: Naval War College, 2018. Scan. **(NWC 2164B)**.

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

Ya'ari, Yedida. *The Littoral Arena, A Word of Caution*. Naval War College Review, 48, No. 2 (Spring 1995): 7-21. **(NWC 4110)**.

G. Supplementary Reading:

Adkins, Roy. *Nelson's Trafalgar: The Battle That Changed the World*. New York, NY: Penguin. 2006.

Gordon, Andrew. *The Rules of the Game: Jutland and British Naval Command*. Annapolis, MD: Naval Institute Press. 2013.

Grace, James. *The Naval Battle of Guadalcanal: Night Action 13 November 1942*. Annapolis MD, Naval Institute Press. 1999.

Hornfischer, James D. *The Last Stand of the Tin Can Sailors: The Extraordinary World War II Story of the U.S. Navy's Finest Hour*. London: Bantam Press, 2004.

Muir, Malcolm. *Black Shoes and Blue Water: Surface Warfare in the United States Navy, 1945-1975*. Washington, D.C.: Department of the Navy, 1996.

Roscoe, Theodore. *United States Destroyer Operations in World War II*. Annapolis, MD: Naval Institute Press, 1953.

Strauss, Barry. *The Battle of Salamis: The Naval Encounter that Saved Greece- and Western Civilization*. New York, Simon and Schuster 2005.

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**SUBMARINE WARFARE:
TACTICAL FUNDAMENTALS (Seminar)**

The theoretical knowledge of the weapon, and of the appropriate tactics, must be supplemented, in the last resort, by the decisive requirement of a war-like spirit and an audacious outlook. The essence of submarine warfare is the offensive! For the commander of a submarine, therefore, the maxim: "He who wants to be victorious on the sea must always attack!" has special meaning.

*—The Submarine Commander's Handbook, "U.Kdt.Hdb"
1942, New Edition 1943, High Command of the *Kriegsmarine**

A. Focus:

This seminar will focus on the tactical fundamentals of employing submarine forces.

B. Objectives:

- Comprehend the tactical capabilities and limitations of employing submarines.
- Understand the influence of the physical environment on the employment of submarines.
- Understand the main methods of tactically employing submarines.

C. Background:

The epigraph above, though written during the Second World War, gets at the heart of submarine employment. While technological innovations have continued to expand submarine roles and missions, many of the tactical precepts of the *Kriegsmarine* instructions to its U-boat commanders are suitable today. How valid previous wartime experience will be in the future is still in question. At the start of the First World War, senior officers of all the Great Powers were unsure as to the role of the submarine. Submarines were originally employed for coastal defense and as an arm of the battle fleet, operating in support of the main line of battle. Submarines were not very effective in this role. In 1917 during World War I, German U-boats adopted unrestricted warfare, sinking thousands of tons of merchant shipping and threatening the flow of vital commerce and supplies along the Allied Sea Lines of Communication. The British eventually countered this offensive with the effective use of convoys. During World War II, Germans U-boats employed Wolfpack tactics that concentrated firepower, permitting simultaneous attacks that often-overwhelmed convoy escorts. This German submarine offensive was only curtailed by the use of massed antisubmarine warfare assets, though advanced U-boats were deadly up to the last days on the war. The American submarine offensive in the Pacific was even more devastating,

effectively cutting off the Japanese home islands from the raw materials in the Southern Resource Areas of the Empire. During the Cold War, submarines were employed in a wide variety of roles, testing tactical concepts that had been in existence since World War I. Now, with the experiences of both World Wars and the Cold War fading away and new undersea technology testing the previous paradigms of submarine warfare, ambiguity in the employment and purpose of submarines has resurfaced.

Submarines provide commanders a diverse set of capabilities that go far beyond using stealth to sink surface ships with torpedoes. Submarines offer unique (and often unmatched) capabilities in intelligence, surveillance, and reconnaissance (ISR); naval special warfare, strike operations, mine employment, and other tactical actions such as maritime interdiction and counter narcotics. At the national level, submarines provide a critical strategic deterrence capability. Taken together, the inherent stealth and independence associated with the employment of submarines continues to challenge the enemy and provide a unique ability to contest the subsurface and surface domains.

The point of contact for this session is Professor Paul Povlock, C-410.

D. Discussion Topics:

What are the traditional capabilities of the various classes of submarines and the sensors and weapons that they employ?

How has the employment of the submarine changed over the last 100 years? What lies ahead in the near future?

Describe the tactical challenges of conducting submarine operations in various operating environments.

How do submarines fit into Hughes' cornerstones of attacking effectively first?

Lautenschlager argues that today's submarines are gaining the capability to engage and defeat first-line naval forces in a fleet action. Do you agree with his conclusion? Why or why not?

E. Products:

None.

F. Required Reading:

Clark, Bryan. *The Emerging Era in Undersea Warfare*. Washington, D.C.: Center for Strategic and Budgetary Assessments, 2014. Read: 1-18. **(NWC 3223)**.

Harper, Stephen. *Submarine Operations During the Falklands War*. Newport, RI: U.S. Naval War College, Joint Military Operations Paper. June 1994. Read: 1-24. **(NWC 3212)**.

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

U.S. Naval War College, Joint Military Operations Department. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, 2018. **(NWC 3153R)**. Scan Submarine Section. **(Issued)**.

G. Supplementary Reading:

Blair, Clay. *Hitler's U-Boat War: The Hunters, 1939-1942*. New York: Random House, 1996.

Doenitz, Karl. *Memoirs: Ten Years and Twenty Days*. Annapolis, MD: Naval Institute Press, 1958.

High Command of the Navy (Kriegsmarine). *The Submarine Commander's Handbook*. "U.Kdt.Hdb." Commander 32 Submarine Flotilla, New Edition, 1943.

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**NAVAL AIR WARFARE:
TACTICAL FUNDAMENTALS (Seminar)**

If you want to go anywhere in modern war, in the air, on the sea, on the land, you must have command of the air.

— Fleet Admiral William F. “Bull” Halsey, USN
Testimony to Congress following WW II

A. Focus:

The focus of this session is to describe and analyze the tactical fundamentals of employing naval air forces and to differentiate them from land based air forces.

B. Objectives:

- Comprehend the tactical capabilities and limitations of naval aviation.
- Understand the influence of the physical environment on the employment of naval aviation.
- Understand the main methods of tactically employing naval aviation.
- Comprehend the tactical differences between naval aviation and land based aviation.

C. Background:

It was not until the early twentieth century that navies organized and funded aviation programs specifically intended to develop airplanes for use in the maritime domain. These early aircraft were initially used as naval gunfire spotters—intended to improve the accuracy and extend the effective range of their main warship, the battleship. By 1914, the testing of air delivered ordnance was accomplished; and within a few short years, forward firing ordnance for the purpose of countering aircraft attack was also introduced. Since then, naval aviation has supported operations across the air, surface, and subsurface domains.

Today, naval aviation greatly extends the range and increases the speed at which a commander may either attack enemy forces in the air, land, surface, or undersea domains. Similarly, naval aviation forces improves our ability to defend our own forces in a maritime environment at greater ranges. Naval aviation also has the capacity to enhance situational awareness in the maritime environment by enabling the commander to dispatch sensors beyond surface sensor ranges.

Naval air forces —while an aid to warfare in the maritime environment due to its speed, range and lethality—has certain challenges associated with its efficacy. Projecting naval airpower generally requires air superiority in the operational environment in which the Fleet is operating such that an opposing air force can be detected and neutralized before it becomes

a threat to the Fleet. Sustainment and persistence can become challenging if circumstances require continuous coverage for extended tactical actions in situations in which only one aircraft carrier is assigned to a task force. Meteorological conditions can also threaten naval air operations (for example, heavy sea states that do not permit launch and recovery of aircraft). Aircrew and flight deck personnel fatigue as well as aircraft reliability can also reduce sustainment and persistence with only one aircraft carrier assigned to a specific area of operation.

Naval air forces are relatively cheap—when compared to other naval platforms—and are fast and effective with respect to achieving positive identification of threats with multiple sensors for weapons employment. However, if a commander desires continuous air presence in the maritime environment, the costs associated with continuous coverage can be exceptional. Also, it may require multiple carriers, increasing logistics requirements in the form of fuel, parts, and so forth. For these reasons, it is important for naval aviation to be viewed as an integral part of the overall naval force and not in isolation.

Additionally, naval aviation (from aircraft carriers) offers some unique differences from land based aviation that one should consider in planning. For instance, carrier aviation is expeditionary in nature—being highly mobile and relatively stealthy. Carrier aviation can maneuver to reach many austere or remote locations around the world. Carrier aviation can typically find suitable airspace to operate compared to land based aviation, which may be restricted by weather or diplomatic/territorial airspace restrictions (if forward deployed). Land based air forces, however, can provide more air refueling capacity than carrier aviation—increasing the endurance and composition of strike air assets. Also, land based aircraft are not restricted in size or weight. This offers unique surveillance, targeting, and command and control capability and endurance that cannot be fully replicated in smaller, carrier based aircraft.

With respect to the other services' ability to support naval air operations, naval air forces ultimately require sustainment from land similar to surface ships and submarines. Ground and other land-based air forces may be used to secure and maintain friendly force lodgments and access to vital sustainment bases. These land bases can help extend the reach of naval aviation assets by providing ground based fuel and supply or aerial refueling from land-based air force tankers. Furthermore, friendly air and ground forces could destroy or seize enemy bases, which threaten friendly naval assets in the littorals. Forward ground and land based air assets can also provide situational awareness in areas where naval aviation might be used for power projection ashore.

Finally, as technology advances, there is the potential for increased reliance on unmanned aerial vehicles (UAVs) in maritime operations. A survey of reports of ongoing discussions in defense establishments across the world indicates many countries recognize the strengths of maritime UAVs. It may be useful to consider how the development and employment of UAVs will affect maritime operations and naval tactics in the future. One should also consider how operating in an ever growing contested and congested electromagnetic operating environment will impact both manned and unmanned air operations.

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

D. Discussion Topics:

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

Discuss how the effects of the physical environment can affect the employment of one's naval aircraft on the open ocean and the littorals such as enclosed/semi-enclosed seas.

How can other services (air and ground forces) support carrier-based naval air forces in naval tactical actions?

Manazir argues that carriers should remain the dominant naval arm for naval strike operations and naval tactical actions. Do you agree with his conclusions? Why or why not?

Discuss how the increasing prevalence of UAVs may affect naval aviation operations.

What is the impact of modern/advanced intelligence, surveillance, and reconnaissance (ISR), integrated air defense systems (IADS), and advanced anti-ship cruise missiles (ASCMs) capabilities have on future naval aviation operations and planning?

E. Products:

None.

F. Required Reading:

Allison, Robert. "Can Drone Swarms Save America's Aircraft Carriers?" *National Interest*. 28 June 2016. <http://nationalinterest.org/feature/can-drone-swarms-save-americas-aircraft-carriers-16763>. Read. **(NWC 4171)**.

Keegan, John. *The Price of Admiralty: The Evolution of Naval Warfare*. New York, NY: Viking Penguin, 1989. Read: 224-247. **(Issued)**.

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

Manazir, Michael C. "Responsive and Relevant." *U.S. Naval Institute Proceedings* 140, no. 4, (February 2014). Read. **(NWC 4155)**.

Shoemaker, Michael. *Naval Aviation Vision 2016-2025*. San Diego, CA: Commander, Naval Air Forces, Naval Aviation Enterprise, January 2016. Read: 27-30.

G. Supplementary Reading:

Douglas, A. H., Captain, USN. "Employment of Aviation in Naval Warfare." Newport, RI: U.S. Naval War College, 14 December 1939.

Hallion, Richard P. "Air Power and the Changing Nature of Warfare." *Joint Force Quarterly*, Autumn/Winter 1997-98

Lambeth, Benjamin S. *American Carrier Air Power at the Dawn of a New Century*. Santa Monica: RAND, 2005.

Lin, Jeffrey, and P. W. Singer. "China Flies Its Largest Ever Drone: The Divine Eagle." *Popular Science*, 6 February 2015. Accessed 13 November 2017.
<https://www.popsci.com/china-flies-its-largest-ever-drone-divine-eagle>.

Moffett, William A., RADM, USN. "Some Aviation Fundamentals." *U.S. Naval Institute Proceedings*, October 1925.

Ramsey, Logan C. "The Influence of Aircraft on the Exercise of Sea Command." *U.S. Naval Institute Proceedings*, October 1938.

Willmott, H. P. "The Battle of the Philippine Sea." in *Great American Naval Battles*, ed. Jack Sweetman. Annapolis, MD: Naval Institute Press, 1998.
(NWC 4073).

TABLETOP EXERCISE #1: ORGANIZING NAVAL FORCES IN THE OPEN OCEAN (Exercise)

Show me a good loser, and I'll show you a loser.

—Vince Lombardi, 1965

A. Focus:

Students will be presented a tactical problem in the form of a brief scenario and using the information learned in the previous seminars on surface, submarine, and naval air power, will aggregate (task organize) their forces based on objective, friendly and threat capabilities, and the environment. Moderators will serve as the opposing force. The purpose of this simple exercise is to allow students to demonstrate an understanding of the capabilities of various naval platforms, weapons, and sensors.

B. Objectives:

- Apply critical and creative thinking skills and knowledge of naval power in task organizing a naval force based on objective, threat, environment, and capabilities.
- Demonstrate a general understanding of the broad capabilities of the United States Navy's principal weapons, platforms, and sensors.

C. 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 to their officers. From a cursory scan of the readings, we discover that map exercises, staff exercises or Command Post Exercises (CPX), training trips, tactical talks, and sand-table exercises are the more common form of these 'war games.' The purpose of this specific exercise presented here is to allow students to come together to solve a real-world problem using a fictional scenario.

You are expected to concisely present your decision(s) and to argue (support) them based on what we know of capabilities of the various platforms. Leveraging the very basic information discovered thus far, students will apply critical thought and rudimentary problem solving skills to first disaggregate the assigned forces and then, based on objectives, threat, capabilities, and the environment, aggregate their forces to maximize likelihood of tactical success.

This is not a war fighting exercise, merely the first in a series of exercises that will expand in scope, complexity, and ambiguity—all intended to sharpen your critical thinking and decision making skills. It is, in the language of critical thinking, a logic exercise in

which students are presented an opportunity to demonstrate understanding of materials discussed thus far. Your moderator will provide input/feedback on the various decisions considered. Students are forewarned, however, that future exercises are designed to increase in complexity, depth, and ambiguity.

The point of contact for this session is Commander Brad Donnelly, USN, C-405.

D. Discussion Topics:

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.

E. Products:

An in-seminar discussion regarding potential task organizations based on mission, threat, capabilities, and environment for U.S. naval forces in a fictional scenario.

F. Required Reading:

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. (NWC 4143).

United States Naval War College, Joint Military Operations Department. *Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook Slide Pack*. Newport, RI: Naval War College, 2018. Scan. (NWC 2164B).

G. Supplementary Reading:

Cheatham Ernest C. Major USMC. The Educational War Game. A Command and Staff College Research paper. Marine Corps Command and Staff College: Quantico, VA, 1967.

Crevelde, Martin van. *Wargames: From Gladiators to Gigabytes*. New York: Cambridge University Press, 2013.

Nofi, Albert A. *To Train the Fleet for War: The U.S. Navy Fleet Problems: 1923-1940*. Naval War College Press: Newport, RI. 2010.

INTRODUCTION TO OPERATIONAL ART (Seminar)

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, Professor, School of Advanced Military Studies
“Theoretical Implications of Operational Art,” 1990

A. 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.

B. Objectives:

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

C. 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 a turbulent time, highlighted by technical advancement. 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.

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

D. Discussion Topics:

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.

E. Products:

None.

F. Required Reading:

Hartig, William J. “War in the Pacific.” PowerPoint presentation. Newport, RI: U.S. Naval War College, Joint Military Operations Department, 21 January 2017. **(Available on Blackboard via the iPad)**. View.

Menning, Bruce W. "Operational Art's Origins." *Military Review* 77 (1997). Reprint. Read: 1-15. (NWC 1110).

Vego, Milan. *Operational Warfare at Sea: Theory and Practice*. London: Routledge, 2009. (Issued). Read: 1 - 20.

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

G. Supplementary Reading:

Greer, James K. "Operational Art for the Objective Force." *Military Review* 82 no.5 (Sep-Oct 2002): 22-29.

Hope, Ian. "Misunderstanding Mars and Minerva: The Canadian Army's Failure to Define an Operational Doctrine." *The Army Bulletin* 4, no. 4 (Winter 2001). Also available at http://www.army.forces.gc.ca/caj/documents/vol_04/iss_4/CAJ_vol4.4_07_e.pdf.

Krause, Michael D., and Cody R. Phillips, eds. *Historical Perspectives of the Operational Art*. Washington, D.C.: Center for Military History, Department of the Army, 2006.

Matheny, Michael R. "The Roots of Modern American Operational Art." United States Army War College Paper, Carlisle, PA, n.d. Also available at http://www.au.af.mil/au/awc/awcgate/army-usawc/modern_operations.pdf.

Naveh, Shimon. *In Pursuit of Excellence: Evolution of Operational Theory*. London: Frank Cass, 1997.

Schneider, James J. "Theoretical Implications of Operational Art." *Military Review* LXX, No. 9 (September 1990): 19-27.

Vego, Milan. "Glossary of Operational Terms." *Joint Operational Warfare: Theory and Practice*. Newport, RI: Naval War College, reprint 2009. GL-1.

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MILITARY OBJECTIVES AND THE LEVELS OF WAR (Seminar)

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

A. Focus:

The foci of this session is 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.

B. 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.

C. 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.

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

D. Discussion Topics:

Discuss the differences in the meaning of the terms aim, goal, and objective.

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.

E. Products:

None.

F. Required Reading:

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)**.

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)**.

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

G. Supplementary Reading:

MacGregor, Douglas A. “Future Battle: The Merging Levels of War.” *Parameters* 22, no.4 (Winter 1992–93): 33–47.

Vego, Milan. *Joint Operational Warfare: Theory and Practice*. Newport, RI: Naval War College, reprint 2009. “Objectives of Land Warfare.” II-25 to II-43.

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OPERATIONAL FACTORS (Seminar)

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

A. Focus:

This session addresses another foundational aspect of operational art—the analysis of operational factors of space, time, and force and the interrelationship of 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.

B. 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.

C. 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.

The point of contact for this session is Lieutenant Colonel Mike LePage, USAF, C-403.

D. Discussion Topics:

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.
- State of training of naval aviators, infantry divisions, etc.

E. Products.

None.

F. Required Reading:

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).

G. Supplementary Reading:

Anderson, Charles Robert. “Leyte” in *U.S. Army Campaigns of World War II*, Washington, D.C.: U.S. Army Center of Military History, 1994.

Cannon, M. Hamlin. “The Strategic Plan,” “The Nature of the Target,” “Plans Are Made and Forces Are Readied,” and Appendix A. In *Leyte: The Return to the Philippines, United States Army in World War II, The War in the Pacific*. Washington, D.C.: Center for Military History, United States Army, 1954.

Meilinger, Phillip S. “Time in War.” *Joint Force Quarterly* No. 87 (4th Quarter 2017): 93-100.

Morison, Samuel Eliot. *Leyte, June 1944-January 1945: History of the United States Naval Operations in World War II, Volume 12*. Annapolis, MD: Naval Institute Press, 1958.

Vego, Milan. *The Battle for Leyte, 1944: Allied and Japanese Plans, Preparations, and Execution*. Annapolis, MD: Naval Institute Press, 2006.

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THE THEATER: ITS STRUCTURE AND GEOMETRY (Seminar)

War is the business of positions.

—Napoleon I

A. 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.

B. 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).

C. 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), 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.

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

D. 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.

E. Products:

None.

F. Required Reading:

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)**.

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

G. Supplementary Reading:

Collins, John M. *Military Geography for Professionals and the Public*. Washington, D.C.: Brassey's, 1988.

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OPERATIONAL FUNCTIONS (Seminar)

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

A. Focus:

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

B. 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.

C. Background:

Operational functions generally are supporting structures and activities that exist at all levels of war and are key elements to consider in operational art. They are activities with which planners and commanders can mitigate unfavorable factor (space, time, force) disadvantages and exploit favorable advantages. Since operational functions broadly define this group of related activities and systems that enable a commander to sequence events and synchronize effects, they are not prescriptive. 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.

In *Operational Warfare at Sea: Theory and Practice*, Milan Vego identifies six operational functions which he argues should be fully organized and developed by the operational commander for maximum effectiveness in employing one's combat forces. These operational functions include: command organization (or command structure), intelligence, command and control warfare (C2W), fires, logistics, and protection, and their integration ensures efficiency and effectiveness. The sequencing and synchronization of 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 six basic groups—command and control, intelligence, fires, movement and maneuver, protection, and sustainment. Recently, a seventh joint function, Information, was added to Joint Publication 1-0, *Doctrine for the Armed Forces of the United States*.

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 functions in order to facilitate success by tactical component commanders.

The point of contact for this session is Lieutenant Colonel Mike LePage, USAF, C-403.

D. Discussion Topics:

What is the relationship between operational factors and operational functions?

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 the 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 functions managed and orchestrated to offset disadvantages in space, time, or force?
- What 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.

E. Products.

None.

F. Required Reading:

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. Scan: III-1 to III-48.

_____. *Doctrine for the Armed Forces of the United States*. Joint Publication (JP) 1-0. Washington, D.C.: CJCS, March 25, 2013, incorporating Change 1, July 12, 2017. Scan: I-17 to I-19.

Vego, Milan. *Operational Warfare at Sea: Theory and Practice*. New York: Routledge, 2009. Read: 69-98. **(Issued).**

G. Supplementary Reading:

Anderson, Charles Robert. “Leyte” in *U.S. Army Campaigns of World War II*, Washington, D.C.: U.S. Army Center of Military History, 1994.

Cannon, M. Hamlin. “The Strategic Plan,” “The Nature of the Target,” “Plans Are Made and Forces Are Readied,” and Appendix A. In *Leyte: The Return to the Philippines, United States Army in World War II, The War in the Pacific*. Washington, D.C.: Center for Military History, United States Army, 1954.

Morison, Samuel Eliot. *Leyte, June 1944-January 1945: History of the United States Naval Operations in World War II, Volume 12*. Annapolis, MD: Naval Institute Press, 1958.

Vego, Milan. *The Battle for Leyte, 1944: Allied and Japanese Plans, Preparations, and Execution*. Annapolis, MD: Naval Institute Press, 2006.

_____. *Joint Operational Warfare: Theory and Practice*. Reprint, Newport, RI: Naval War College Press, 2009.

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MAJOR OPERATIONS/CAMPAIGNS AND THEIR ELEMENTS (Seminar)

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

A. 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.

B. 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.

C. 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 does 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.

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

D. Discussion Topics:

Why and how is 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?

E. Products:

An in-seminar analysis of Japanese and U.S. objectives, critical factors, and centers of gravity for the Battle of Leyte Gulf and seizure of Leyte will be conducted during this session.

F. Required Reading:

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, <http://www.au.af.mil/au/awc/awcgate/usmc/cog2.pdf>. 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*. New York: Routledge, 2009. Read: Chapters 6 and 7. **(Issued)**.

G. Supplementary 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.

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.

TABLETOP EXERCISE #2: OPERATIONAL DESIGN (Exercise)

Thus, partly from what he knew, but still more from what he imagined, Kurita reached the conclusion that his prospects in Leyte Gulf were both thin and grim, and that he had better save the rest of his fleet, possibly to fight another day.

—Samuel Eliot Morison, *Leyte*,
History of U.S. Naval Operations in WWII

A. Focus:

This session serves as a synthesis of the previously discussed operational art concepts. Commanders develop the operational idea into a full operational design with emphasis on sequencing tactical actions and synchronizing desired effects. They do this by establishing priorities, managing functional activities, and tasking subordinate commanders with the accomplishment of intermediate objectives.

B. Objectives:

- Comprehend how to develop an operational design from an operational idea.
- Know and understand the importance and key elements of an operational design.
- Using the Leyte Gulf case study, compare the outcome of the battle to the respective operational designs developed by the opposing sides.

C. Background:

The basis of any operational plan is the operational design (the concept of operations) developed by the commander. The operational design is in turn based on the operational idea that is formed from the commander's initial estimate of the situation—shaped by a rational analysis of the factors, functions, and theater geometry respective of a military objective. The main elements of a sound operational design include the desired end state; ultimate and intermediate objectives; forces required to achieve objectives; identification of critical factors and centers of gravity; initial positions and lines of operation and/or effort; directions/axes; and operational sustainment.

Warfare, by its nature, is a series of trade-offs. Commanders and staffs must continuously balance competing demands for scarce resources while still accomplishing assigned objectives and while avoiding unlooked for culmination. Developing a commander's idea into a sound operational design is not a simple job based a few hours of discussion. It requires time, creativity, detailed calculations, and above all, rational thinking on the part of

the commander and the staff. Operational design synthesizes all the conclusions generated by an operational art approach and turns an exhaustive effort into a coherent plan.

An operational design provides a sound framework for subsequent detailed planning that result in executable orders. It does not, however, remain immutable. As Clausewitz has written, “Friction is the only concept that more or less corresponds to the factors that distinguish real war from war on paper.” (Clausewitz, *On War*, Book I, Chapter 7) This means that the operational design should remain flexible to accommodate changes brought about by combat. Consider the Battle of Leyte Gulf—specifically, the Japanese SHO-1 Plan, which on paper, should never have had a chance; the Americans were simply too strong and too many things had to break the right way. The American Operation KING II, on paper, should have gone like clockwork. Yet, as you will discover in your analysis, real war consists of often hard-to-explain events and decisions. Up to now, you have used operational art concepts to analyze the rationale behind the opposing plans. Now you will walk-thru the Operation itself and determine why it unfolded the way it did. The Japanese almost won, but ultimately were defeated; why? Was it because of questionable leader decisions, unaccounted for changes in the factors, or a poor operational design to begin with? Or perhaps the Americans were simply too strong, too talented, and had a better plan? This session will use the elements of operational design to assist your analysis of this tabletop exercise as you ‘replay’ the Battle of Leyte Gulf.

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

D. Discussion Topics:

How are the concepts of operational idea and operational design related?

Discuss how operational functions exploit advantages and mitigate disadvantages in destroying/neutralizing (the stronger side) or degrading/deceiving (the weaker side) enemy COG.

Explain the concept of operational sequencing and synchronization. What is the relationship among operational objectives, tasks, and the factor of time?

How are intermediate objectives selected?

Explain the concept of branches and sequels.

Battle of Leyte Case Study:

Identify and describe the major elements of the American operational design for the landing on and seizure of Leyte Island.

Given the outcome, critique the operational design developed by Americans. Based on what they knew at the time, what could they have done differently?

Identify and describe the major elements of the Imperial Japanese Navy's operational design for defense of Leyte Island and the defeat of the U.S. invasion fleet. How did this differ from the Imperial Japanese Army's perspective?

Given the outcome, critique the operational design developed by the Japanese. Based on what they knew at the time, what could they have done differently?

E. Products:

None.

F. Required Reading:

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. (NWC 1196).

Vego, Milan. *Operational Warfare at Sea: Theory and Practice*. New York: Routledge, 2009. Review: Chapters 6 and 7. (Issued).

G. Supplementary Reading:

Cutler, Thomas J. *The Battle of Leyte Gulf, 23–26 October 1944*. New York: Harper Collins, 1994.

Vego, Milan. *The Battle for Leyte, 1944: Allied and Japanese Plans, Preparations, and Execution*. Annapolis, MD: Naval Institute Press, 2006.

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OPERATIONAL LEADERSHIP (Seminar)

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

A. 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.

B. 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 and attributes of successful commanders at the operational level of command.
- Assess the impact of leadership style and command decisions at the operational level of war.

C. 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*.

Operational thinking, or the ability to have a broad vision beyond the tactical perspective, can be developed through a synthesis of practical experience in war, exercises and maneuvers during peace, operational and strategic war gaming, professional education, and the systematic self-study of history, geography, international relations, economics, nationalism, society, culture, and so forth. The study of past wars, and their major operations, and campaigns in particular, can help a commander acquire an operational perspective. It is the practical application of operational thinking in planning, preparing, and executing a major operation or campaign that allows the commander to anticipate and foresee the effects of his actions on the enemy and then take timely and proper counteractions.

Operational vision is the commander's ability to visualize the military conditions that will exist after the mission is accomplished. In essence, operational vision is the combination of a commander's personal traits, professional education, and experience that together are applied to ambiguous and uncertain situations. Imagination, anticipation, intuition, *coup 'd oeil* (the innate ability to evaluate a situation quickly), introspective thought, and historical perspective are critical leadership elements necessary to envision all phases of an operation (or campaign) in support of the political leadership's decision to terminate hostilities, or to be able to operate effectively in the absence of perfect information. Without proper operational vision, the commander cannot translate the strategic objective assigned by political and military leadership into a military-strategic or theater-strategic objective.

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 commander's intent (one of the principal elements of the Commander's Estimate of the Situation) is a key link between operational vision and the successful employment of mission command.

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.

The points of contact for this session is Colonel Glen Moore, USA, C-406, and Colonel Matt Tackett, USA, C-429.

D. Discussion Topics:

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?

Case Study Discussion Topics:

What leader attributes did operational leaders demonstrate during the War in the Pacific? How are they different from or similar to the Desired Leader Attributes (DLA) for Joint Force 2020?

Using the learned concepts of operational thinking, operational vision, and mission command, evaluate the demonstrated leadership and decision-making of the commanders in the case studies.

How did personal character traits, intellect, and intuition affect the decisions of the commanders? To what degree did these commanders rely on intuition and reason?

What operational leadership lessons can be derived from these commanders that are applicable today?

In relation to their assigned objective, how would you assess the effectiveness of these commanders at the operational level?

E. Products:

Student led discussions of four historical case studies.

F. Required Reading:

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)**.

G. Supplementary Reading:

Blumenson, Martin and James L. Stokesbury. *Masters of the Art of Command*. Boston: Houghton Mifflin, 1975.

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

Gardner, Gregory C. "Generalship in War: The Principles of Operational Command." Research paper, Fort Leavenworth, KS: School of Advanced Military Studies, U.S. Army Command and General Staff College, 4 May 1987.

Gerner, Mark, H. "Leadership at the Operational Level." *Military Review* (June 1987): 26-35.

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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INTRODUCTION TO NAVAL WARFARE (Seminar)

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

A. Focus:

The purpose of this session is to explain the character of naval warfare, the differences between wars at sea and those on land, and warfare conducted on the open ocean compared to war in the littorals. It will also present in broad terms the principal objectives of naval warfare that will be developed in some detail in subsequent seminars.

B. Objectives:

- Know and understand the purpose and importance of naval theory.
- Comprehend differences between the nature and character of war at sea.
- Know and understand the key factors that affect the character of naval warfare.
- Comprehend the effect of new technologies on the character of war at sea.
- Know the main distinctions between the offensive and defense in a war at sea and war on land.
- Understand the main differences between a war on the open ocean and in the littorals.
- Discern the key differences between naval and land warfare.
- Comprehend mutual relationship between war on land and at sea.
- Know the importance of close cooperation (joint warfare) between a navy and other services of the armed forces.

C. Background:

The value and critical importance of theory are generally either ignored or misunderstood by many naval officers. Too many of them believe that all that counts is practice. They are also contemptuous of theory because they overemphasize the importance of technology. Another cause of the distrust is many officers' apparent lack of knowledge and understanding about what naval theory is in general and what is its real purpose.

Experience shows the critical importance of a systematic approach in organizing all quantifiable and unquantifiable elements of a given discipline or field of science into a coherent and comprehensive theory. Likewise, all the aspects of the conduct of war need to be systematically studied and then converted into a theory. Complete knowledge and understanding of naval warfare cannot be obtained by personal experience, because the

lifetime of any single individual is too short. This gap in knowledge and understanding can be bridged only by developing a comprehensive naval theory. Experience shows that one's performance in combat is bound to be adversely affected by the lack of or ignorance of naval theory.

Like warfare in general, naval warfare is shaped by human nature, the complexities of human behavior, and the limitations of human and physical conditions. The material and psychological aspects of a war form an organic whole. In contrast to war on land, war at sea (and war in the air) is directed to a greater extent against the enemy's materiel. Nevertheless, to paraphrase Clausewitz, war at sea cannot be considered in purely material terms. The employment of one's naval forces is never directed against materiel force alone but is always aimed simultaneously at moral forces.

The character of naval warfare in general is primarily determined by the prevailing international relations, domestic politics, economic, social, demographic, religious, legal, and other conditions in a certain era and also, last but not least, the influence of new technological advances. War at sea is generally influenced to a much greater extent than war on land with technological advances. Law of the sea also greatly affects character of naval warfare. In addition, war at sea is also influenced with the changes in the character of war on land and in the air.

Like war on land, naval warfare can be conducted using offensive, defensive, or a combination of these methods. However, the overall posture and progress of the war on land will determine whether one's naval forces would be on the strategic offensive or defensive. A side on the strategic offensive on land and having a stronger navy would try to obtain and maintain sea control at the strategic level. At the same time, the weaker side on land would be forced on the strategic defensive at sea.

Clausewitz insisted that defense is a stronger form of fighting than attack. Among its weaknesses, the offensive requires a large superiority of one's forces over the defender. He wrote that the weaker the motives for action, the more will they be overlaid and neutralized by the disparity between attack and defense. The superiority of strategic defense is based on the fact that the attack itself cannot exist without some measure of defense. However, his dictum that "attack [is] the weaker and defense the stronger form of war" is not fully applicable to naval warfare (and war in the air too). For one thing, the stronger navy has to be on the offensive if it aims to obtain and then maintain sea control in a given part of a theater.

Naval warfare in the littorals has many commonalties with, but also differences from, war conducted on the open ocean. Among other things, waters and airspace in the littorals, and enclosed and semi-enclosed seas (collectively called "narrow seas"), are often confined. In a typical narrow sea, many offshore islands, shoals, and reefs, combined with strong currents and high tides, make navigation in the littoral waters extremely difficult and dangerous. In many littorals, it is commonplace to operate in the presence of multilayered, possibly sophisticated, defenses. The weaker opponent at sea may not operate in the way one expects and he may use asymmetric responses to neutralize or even nullify the advantages normally enjoyed by a blue-water navy. Waters in a typical narrow sea are cluttered because of the presence not only of the enemy's and friendly forces but also those of the neutrals. In a typical narrow sea, density of maritime traffic is generally high, especially in the

straits/narrows and the proximity of large ports. It is difficult to differentiate between friend and foe, because of the presence of a large number of commercial vessels, ferries, and fishing boats.

In the modern era, success in war requires the closest cooperation among the services. The political objective determines the role and relative importance of each service in a war. The navies and air forces play a supporting role because the outcome in a war is ultimately decided on land. Yet a high-intensity conventional war cannot be ultimately won without control of the sea and the air. Hence, the success of each service in war is critically dependent on the support of the other, sister services.

The point of contact for this session is Professor Milan Vego, C-427.

D. Discussion Topics:

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

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

Describe the role of the human factor in naval warfare.

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

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

E. Products:

None.

F. Required Reading:

Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. 3d ed. New York: Routledge, 2013. Read: 79-86. **(Issued)**.

Vego, Milan. *On Naval Theory*. Newport, RI: Naval War College, August 2015. **(NWC 1101)**.

_____. *Introduction to Naval Warfare*. Newport, RI: Naval War College, January 2015. **(NWC 1032B)**.

G: Supplementary Reading:

Bridge, Cyprian. *The Art of Naval Warfare*. London: Smith, Elder, & Co., 1907.

Brodie, Bernard. *A Layman's Guide to Naval Strategy*. Princeton, NJ: Princeton University Press, 1942.

Creswell, John. *Sea Warfare 1941–1945*. Berkeley, CA: University of California Press, rev. ed., 1967.

Custance, Reginald. *A Study of War*. Port Washington, NY/London: Constable, 1924.

Darrieus, Gabriel. *War on the Sea. Strategy and Tactics* Translated by Philip R. Alger. Annapolis, MD: The United States Naval Institute 1908.

Daveluy, René. *The Genius of Naval Warfare, I: Strategy*, translated by Philip R. Alger. Annapolis, MD: The United States Naval Institute, 1910.

Vego, Milan. *Importance and the Use of Naval History*. Newport, RI: Naval War College, November 2016. **(NWC 1235)**.

SEA CONTROL AND SEA DENIAL (Seminar)

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

—General George Washington to the
Marquis de Lafayette, 15 November 1781

A. Focus:

The session will explain and discuss the key objectives in a high-intensity conventional war at sea. The focus will be on sea control and sea denial. Another aim of this session is to explain main methods for obtaining/maintaining and exercising sea control and disputing control of the sea. This session will lay foundation for the discussion of all subsequent sessions in this block of the curriculum.

B. Objectives:

- Know and understand the meaning and all the aspects of the concept of sea control.
- Comprehend the true meaning of sea denial.
- Understand distinctions between denying control on the open ocean and in the littorals.
- Comprehend the role and importance of other services in sea control and denial.
- Know and understand the main methods for obtaining/ maintaining, and exercising sea control and disputing control of the sea. Explain and understand the concept of “choke point” (strait/narrows) control and denial.
- Comprehend the concept of basing/deployment area control and denial.
- Know and understand the objective of destroying the enemy’s and preserving friendly military-economic potential at sea.

C. Background:

Strategic objectives determine the part to be played by each service in war; however, accomplishment of those objectives normally requires employment of all the services of a country’s armed forces. Therefore, war at sea should be considered not in isolation from, but as intrinsically related to, war on land and in the air. Wars are rarely won by the efforts of a single service and normally require close service cooperation. 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, sea denial, choke-point control/denial, basing/deployment area control/denial, and destroying/weakening enemy and preserving friendly military-economic potential at sea (see figure 1). 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 one's 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 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*. A weaker side at sea would normally try to contest or dispute control in certain sea or ocean areas for the duration of the hostilities at sea. In some cases, a stronger side might be forced to go on a strategic defensive temporarily in a theater of secondary effort while being on a strategic offensive in the theater of main effort. After the objectives in the main theater were accomplished, a stronger side would go on the strategic offensive in the secondary theater.

The struggle for control of the straits and narrows, or "choke points," is a unique feature of war for control of a typical narrow sea. Physical control of a strait that is one of the sea's exits or the sea's sole exit is often prerequisite to obtaining (or denying) control of a certain sea/ocean area. For a blue-water navy, general sea control is hardly possible without establishing not only control on the open ocean but also direct or indirect control of several critical passages of vital importance to the world's maritime trade, or by obtaining control of a given enclosed or semienclosed sea theater. The objective for a weaker side is, then, just the opposite: *choke-point control denial*. In either case, but particularly for a weaker side, this objective would normally require the highest degree of cooperation among naval forces and combat arms of other services.

The principal and most important naval objective is to obtain *and maintain control of its basing and deployment areas*. For a stronger side at sea, the objectives will be to deny security of the enemy basing/deployment area. Basing/deployment area control is an integral part of the operational protection in a given maritime theater. The ultimate objective is to ensure the safety of friendly naval/maritime forces at their bases and deployment areas (close to one's controlled shores) from the enemy's attacks on the sea, in the air, and on the ground. Basing/deployment area control is normally organized within a respective fleet's area of responsibility.

Optimally, control of one's basing and deployment areas should be established and maintained in peacetime. Only the maritime interests of other countries limit the extent of

that control. Control of one's basing/deployment areas must then be maintained in wartime. Without sea control, one cannot maintain control of one's basing/deployment area. At the same time, one's actions to obtain sea control are so much easier if one's forces operate from secure basing and deployment areas. This, of course, does not preclude one's obtaining sea control in an area where control of one's basing/deployment area does not exist. This is especially true in the operations of one's naval/maritime forces in the enemy-controlled sea areas. Then, one's basing and deployment area is gradually extended by establishing new bases and facilities on the conquered territories.

In any protracted war at sea, both sides would make intensive efforts to *destroy or weaken the enemy's and preserve friendly military-economic potential at sea*. They can only be accomplished by employing not only one's naval forces but also forces of other services. They are an integral part of the actions aimed to destroy/weaken the enemy's and preserve friendly military-economic potential as a whole. Hence, they have a strategic importance. Destroying the enemy has and preserving friendly maritime trade / military shipping, generically called "trade warfare," are conducted by both stronger and weaker sides at sea throughout an entire war. In the modern era, this encompasses not only shipping but all shore-based elements of maritime trade (e.g. ports/[port facilities, shipyards/ship repair facilities, road/railroads in the littoral area) Obviously. in time of war major part of the shipping will be used in support of war economy and the needs of the armed forces. The focus of a weaker side at sea would be on attacking the enemy's maritime trade, while the stronger side would make greater efforts to defend and protect friendly maritime trade. Both attack and defense of maritime trade are inherently attritional methods of warfare. Hence, they require large forces and are very time-consuming. The ultimate success cannot be achieved without committing both military and nonmilitary sources of power.

The point of contact for this session is Professor Milan Vego, C-427.

D. Discussion Topics:

What is the true meaning of sea control? Does sea control exist in peacetime? Explain the meaning of 'naval influence'.

Explain the relativity of sea control in terms of space, time, and force.

Discuss the main methods for obtaining and maintain sea control.

Explain the main methods of exercising control of the sea.

Discuss sea denial and the main methods of disputing control of the sea.

Explain and discuss 'choke point control/denial'.

Discuss the role of an army and air force in obtaining, maintaining, and disputing sea control.

Explain and discuss the concept of basing/deployment area control and denial.

Discuss the objective of destroying the enemy's and preserving friendly military-economic potential at sea.

Case Study Discussion:

What were the Japanese objectives in the Midway-Aleutians operation? What were the objectives of the U.S. forces?

Identify major tactical objectives for the Japanese forces in the Midway-Aleutians operation.

E. Products:

None.

F. Required Reading:

Till, Geoffrey. *Seapower: A Guide for the Twenty-first Century*. 3d ed. New York: Routledge, 2013. Read: 144-156 and 184-188. **(Issued)**.

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

_____. *Obtaining and Maintaining Sea Control*. Newport, RI: Naval War College, June 2015. **(NWC 1108)**.

_____. *Exercising Sea Control*. Newport, RI: Naval War College, June 2015. **(NWC 1131)**.

_____. *Disputing Sea Control*. Newport, RI: Naval War College, June 2015. **(NWC 1139)**.

Case Study:

Vego, Milan. "The Midway-Aleutians Operation, 25 May-14 June 1942." *Major Fleet Versus-Fleet Operations in the Pacific War, 1941-1945*. Newport, RI: Naval War College, 2nd ed., 2016. Read: 99-103; 119-128. **(NWC 1202)**. **(Issued)**.

G. Supplementary Reading:

Armstrong, Benjamin F., *21st Century Mahan. Sound Military Conclusions for the Modern Era* Annapolis, MD: Naval Institute Press, 2013.

Brodie, Bernard. *A Guide to Naval Strategy*. 5th ed. New York: Frederick A. Praeger, 1965.

- Callwell, Charles Edward. *The Effect of Maritime Command On Land Campaigns Since Waterloo*. (London: William Blackman and Sons, 1897. Repr., New Dehli: Isha Books, 2013).
- _____. *Military Operations and Maritime Preponderance, Their Relations and Interdependence*. London, William Blackwood and Sons, 1905.
- Castex, Raoul, *Strategic Theories*. Selections translated and edited, with an introduction by Eugenia C. Kiesling, Annapolis, MD: Naval Institute Press, 1994.
- Colomb, Philip H. *Naval Warfare. Its Ruling Principles and Practice Historically Treated*. Annapolis, MD: Naval Institute Press, 1990.
- Corbett, Julian S. *Some Principles of Maritime Strategy*. Annapolis, MD: Naval Institute Press, 1992.
- Elleman, Bruce A. and S.C.M Paine, eds. *Naval Blockades and Seapower: Strategies and Counter-strategies, 1805-2005*. London and New York: Routledge, 2006.
- Hill, J. R. *Maritime Strategy for Medium Powers*. Annapolis, MD: Naval Institute Press, 1986.
- Mahan, Alfred Thayer. *The Influence of Sea Power Upon History, 1660–1783*. New York: Dover, 1987, reprint of 1890 edition.
- _____. *Naval Strategy. Compared and Contrasted With the Principles and Practice of Military Operations on Land*. Boston, MA: Little, Brown, and Company, 1911.
- Moineville, Hubert. *Naval Warfare Today and Tomorrow*. Oxford, UK: Basil Blackwell, 1983.
- Richmond, Herbert W. *Statesman and Sea Power*. Oxford at the Clarendon Press, 1946.
- Rosinski, Herbert. *The Development of Naval Thought*. Ed. B. Mitchell Simpson III. Newport, RI: Naval War College Press, 1977.
- Vego, Milan, *Maritime Strategy and Sea Control*. London: Taylor & Francis Group, Routledge, 2016.
- _____. *Naval Classical Thinkers and Operational Art*. Newport, RI: Naval War College, 2009 (NWC 1005).
- Wegener, Wolfgang. *The Naval Strategy of the World War*. Trans. Holger H. Herwig, Annapolis, MD: Naval Institute Press, 1989.

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FUNDAMENTALS OF ANTI-SURFACE WARFARE (Seminar)

There seems to be something wrong with our bloody ships today.

—Vice Admiral David Beatty, May 31st 1916,
Battle of Jutland

A. Focus:

The remaining sessions in the Naval Warfare Theory section of the syllabus are intended to introduce the student to the concept of *naval combined arms*, the synergistic combination of fires from different domains and platforms intended to put an enemy on the horns of a dilemma. This session will focus on the objectives and methods of warfare against surface targets in the struggle for sea control and sea denial.

B. Objectives:

- Understand the dominant principles of naval warfare particular to surface warfare/anti-surface warfare.
- Explain the primary objectives and tactical methods of employment of combat arms in finding, tracking, and attacking enemy surface forces.

C. Background:

Anti-surface warfare is conducted against targets on the surface of the oceans. It is the oldest form of naval warfare and is primarily conducted against surface targets. From ancient times until the advent of flight, this meant that surface forces sought each other out and fought for command of the sea. Over the last 100 years this has changed. Aircraft and submarine forces have provided additional means with which to attack and destroy surface targets. Today, there are a wide variety of weapon and platform types: traditional guns and torpedoes, ship- and air-launched cruise missiles, guided and unguided aircraft-deployed ordinance, and even directed energy weapons. The missile in particular has had the most effect on the evolution of surface force tactical employment - both in ship survivability as well as ranges of tactical engagement. Just as airpower signaled the end of the battleship's dominance, the anti-ship cruise missile (ASCM) has posed a similar paradigm shift for surface forces. Anti-surface warfare is no longer the sole province of surface warships.

Yet, anti-surface warfare continues to play a pivotal role in the on-going struggle for sea control. As maritime access potentially becomes more threatened in an increasingly contested environment, navies can no longer count on the luxury of launching power projection strikes from maritime areas of safety. Moving closer places strike forces within

range of shore-based air and missile forces, as well as littoral ships equipped with anti-ship missiles. Anti-surface warfare is required to obtain control of seas by destroying or mitigating surface targets in order to create areas from which to project power. This is not done with surface forces only, and relies on the integrated efforts of undersea, air, and cyber forces to attack effectively first, and avoid the enemy's counterforce. In this session, we will explore the predominant principles of anti-surface warfare, and how various air, surface, and subsurface platforms network in real-time and space to find, track, and attack enemy surface targets.

The point of contact for this session is Commander Brad Donnelly, USN, C-405.

D. Discussion Topics:

What are the dominant principles of anti-surface warfare?

How does anti-surface warfare contribute to sea control?

Explain why anti-surface warfare has evolved over time to require a combined arms approach.

Explain the unique challenges of conducting anti-surface warfare in littoral areas.

E. Products:

None.

F. Required Reading:

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/> (Accessed December 19, 2017). (NWC XXXX)

Hughes, Wayne. *Fleet Tactics and Coastal Combat*, 2nd ed., Naval Institute: Annapolis, MD 2000. Read: Chapter 6. (Issued).

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

United States Naval War College, Joint Military Operations Department. *Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook Slide Pack*. Newport, RI: Naval War College, 2018. Scan. (NWC 2164B).

Vego, Milan. *Fundamentals of Surface Warfare*. Newport, RI: Naval War College. May, 2016. Read: 11-25. (NWC 1164A).

G. Supplementary Reading:

Bollinger, Martin J. *Warriors and Wizards: Development and Defeat of Radio-Controlled Glide Bombs of the Third Reich*, Annapolis, MD: Naval Institute Press, 2010.

Dyke, David H. *Four Weeks in May: The Loss of "HMS Coventry"*. Atlantic Books, 2007.

Levinson, Jeffrey L. *Missile Inbound: The Attack on the USS Stark in the Persian Gulf*. Naval Institute Press, May 1997.

Tangredi, Samuel J. *Anti-Access Warfare: Countering A2/AD Strategies*. Naval Institute Press, October 2013.

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FUNDAMENTALS OF ANTI-SUBMARINE WARFARE (Seminar)

The U-Boat will never again be capable of confronting us with the problem with which we found ourselves faced in 1917.

—Memo from the British Admiralty to
the Shipping Defence Advisory Committee, 1937

A. Focus:

This session focuses on the objectives and methods of employing Anti-Submarine Warfare (ASW) forces in the struggle for sea control or in sea denial operations.

B. Objectives:

- Understand the dominant principles of anti-submarine warfare.
- Comprehend how ASW forces contribute to sea control/sea denial operations.
- Explain the primary objectives and tactical methods of employing ASW forces.

C. Background:

Large areas, complex and variable environments, an immense demand on time and resources, and the increased emphasis on operations in the littorals combine to make ASW one of the most difficult problems in naval warfare. At the operational level of war, maritime commanders have undertaken various courses of action to degrade the enemy submarine threat. To defeat the submarine threat in their construction sites or training areas, the transit routes to their patrol areas, or while on station, require different methods and decisions for the joint commander. Those who concentrated on only one of these methods, or focused only on the use of maritime forces to degrade enemy capabilities, limited the effectiveness of their joint effort. Land based air, ground, and cyber forces all play an important role in defeating enemy submarines.

Exercising control over the subsurface allows the exploitation of maritime operating area by other forces to accomplish objectives. Essential maritime trade could be conducted, amphibious forces could travel to their landing sites, or nuclear missile-launching submarines could be protected in bastions. Denying that same capability to the enemy allows one force to prosecute the conflict more effectively, maintaining the initiative in the maritime, and consequently, terrestrial realm. There are no panaceas in ASW, but focusing on the required operational objectives and using all elements of the joint force to address the ASW problem provide a greater opportunity to achieve success.

The point of contact for this session is Professor Paul Povlock, C-410.

D. Discussion Topics:

Why is ASW operationally and tactically challenging?

What are the dominant principles of ASW?

Explain why successful ASW requires a naval combined arms approach, as well as the cooperation of joint forces.

How can joint forces increase the effectiveness of ASW efforts?

Historically, ASW has been force and time intensive. Can the improvements in information technology transform “Awfully Slow Warfare” into a faster method to defeat enemy undersea threats?

E. Products:

None.

F. Required Reading:

Blee, Ben W. “Whodunnit?” *United States Naval Institute Proceedings* 114, no. 7 (July 1988): 1-4. (NWC 3211).

Clark, Bryan. *The Emerging Era in Undersea Warfare*. Washington, D.C.: Center for Strategic and Budgetary Assessments, 2014. Scan. (NWC 3223).

Linder, Bruce R. “The Future of Joint ASW.” *United States Naval Institute Proceedings* 121, no. 9 (September 1995). (NWC 3218).

Toti, William J. “The Hunt for Full-Spectrum ASW.” *United States Naval Institute Proceedings* 140, no. 6 (June 2014). (NWC 3219).

Vego, Milan. “Fundamentals of Antisubmarine Warfare (ASW).” U.S. Naval War College: Newport, RI, June 2016. Read: 1- 16. (NWC 1081A).

G. Supplementary Reading:

Blair, Clay. *Hitler’s U-Boat War: The Hunters, 1939-1942*. New York, Random House, 1996.

Burgess, Richard R. “‘Awfully Slow Warfare’.” *Seapower* 48, no. 4 (April 2005): 12-14.

- Cote, Owen R. Jr. *The Third Battle: Innovation in the U.S. Navy's Silent Cold War Struggle with Soviet Submarines*. Newport Papers no. 16. Newport, RI: Naval War College Press, 2003.
- Haydon, Peter. "Is Anti-Submarine Warfare Dead?" *Canadian Defense Quarterly* (May 1993): 15-23.
- Oi, Atsushi. "Why Japan's Antisubmarine Warfare Failed." *United States Naval Institute Proceedings* 78, no. 6 (June 1952): 587-601.
- Polmar, Norman and Kenneth J. Moore. "Cold War Strategic ASW." *Undersea Warfare*. (Summer 2005): 20-24.
- Vego, Milan. "Antisubmarine Warfare (ASW) in the Littorals." U.S. Naval War College. Joint Military Operations Department. Newport, RI: Naval War College, 2010.
- _____. *A Short History of Antisubmarine Warfare (ASW), 1914-1945*. U.S. Naval War College. Joint Military Operations Department. Newport, RI: Naval War College, December 2013. (NWC 1093)

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FUNDAMENTALS OF NAVY AIR AND MISSILE DEFENSE (Seminar)

Find the enemy and shoot him down, anything else is nonsense.

— Captain Manfred Baron von Richtofen,
The Red Baron, 1917

A. Focus:

This session is designed to introduce the U.S. Navy's air and missile defense (AMD) concept. Navy AMD is far more than simply the employment of the Carrier Air Wing (CVW). Navy AMD is most effective when the CVW is understood as one of several tools that include surface ships as well as sister service capabilities. As the range and lethality of our potential enemies increase, an understanding of Navy AMD principles become more essential in today's increasing threat environment.

B. Objectives:

- Understand the dominant principles of AMD as it pertains to warfare at sea.
- Comprehend how AMD contributes to sea control.
- Explain the primary objectives and tactical methods of employing naval assets, especially naval aviation, towards executing offensive/defensive counter-air.

C. Background:

The threats to modern navies are numerous and diverse. Modern navies must be prepared to defend themselves from a mix of sea and shore based anti-ship cruise missiles, anti-ship ballistic missiles, fighter/attack aircraft, electronic/cyber-attack, and armed unmanned aerial vehicles. The proliferation and lethality of modern naval weapons pose a growing threat to maritime operations.

Navy AMD is a concept designed to protect naval forces from air and missile attack, providing freedom of action to conduct other naval warfighting operations. Navy AMD seeks to gain and maintain air superiority within the maritime environment to defend friendly forces and to retain the capability to conduct offensive strikes or power projection. High value platforms that project power such as the aircraft carrier and amphibious assault ships are likely the main targets of enemy air and missile attacks. The naval commander must balance the inherent tension between allocating assets to protect these platforms while retaining enough forces to conduct strikes against surface or shore targets. A carrier strike group (CSG) that is focused on self-protection alone adds little to achieving military objectives. In addition, the CSG commander may have additional requirements to protect other forces, as in detached surface forces or maritime shipping, further complicating the

balance between offense and defense. Given these challenges, the Navy's AMD concept applies a combined arms warfare approach that integrates both defensive and offensive counter-air operations from embarked naval aviation units and surface platforms. Modern Navy AMD also coordinates and synchronizes Fleet and shore based electronic and information warfare systems along with command and control (C2) networks/links and space based sensors, providing a robust and integrated fires approach. This highly responsive and integrated approach provides defense-in-depth (layered defense), mutual support, and power projection—thereby increasing the Fleet's survivability in a highly contested maritime environment.

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

D. Discussion Topics

Define AMD and explain how it contributes to the struggle for sea control.

Explain how AMD principles can assist in neutralizing or reducing the air threat risk.

What are some of challenges in performing AMD today? How can the Navy overcome these challenges? How can other services support Navy AMD?

Explain the concept of defense-in-depth and how can it contribute to AMD. What is meant by integrated fires and how can it improve AMD?

Describe the difference between offensive counter-air (OCA) and defensive counter-air (DCA).

E. Products:

None.

F. Required Reading:

Buell, Thomas B. *The Quiet Warrior*. Little, Brown and Company: Boston, MA, 1974. Read: 343-358. **(NWC 3213)**.

Holmes, James M. "The Counter-air Companion, a Short Guide to Air Superiority for the JFC." Maxwell AFB, AL: Air University Press. April 1995. Read: 35-40, 60-61, scan the rest. **(NWC 4149)**.

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

O'Neil, William D. "Naval Antiair Warfare." *National Defense* 65, no. 365 (February 1981). Read. **(NWC 1137)**.

U.S. Naval War College, Joint Military Operations Department. *Selected U.S. Navy and People's Liberation Army Navy (PLA (N)) Tactical Capability Handbook Slide Pack*. Newport, RI: Naval War College, 2018. Scan. (NWC 2164B).

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. Read: Executive Summary; Scan Chapters 4 and 5.

G. Supplementary Reading:

Caravaggio, A. "The Attack at Taranto." *Naval War College Review* 59, no. 3 (2006): 103-127.

Douglas, A. H., CAPT, USN. "Employment of Aviation in Naval Warfare." Newport, RI: U.S. Naval War College, 14 December 1939.

Hallion, Richard P. "Air Power and the Changing Nature of Warfare." *Joint Force Quarterly*, (Autumn/Winter 1997-98): 39-46.

Heginbotham, Eric, et al. *The U. S.-China Military Scorecard: Forces Geography, and the Evolving Balance of Power 1996-2017*. Santa Monica, CA: RAND, 2015.

Lambeth, Benjamin S. *American Carrier Air Power at the Dawn of a New Century*. Santa Monica, CA: RAND, 2005.

Moffett, William A. "Some Aviation Fundamentals," *U.S. Naval Institute Proceedings* 51, no. 10 (1925): 1871-1881.

Ramsey, Logan C. "The Influence of Aircraft on the Exercise of Sea Command." *U.S. Naval Institute Proceedings* 64, no. 10 (1938): 1401.

Trimble, William F. *Admiral William A. Moffett Architect of Naval Aviation*. Washington, D.C.: Smithsonian Institute Press, 1994.

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FUNDAMENTALS OF AMPHIBIOUS WARFARE (Seminar)

You are Athenians, who know by experience the difficulty of disembarking in the presence of the enemy.

—Demosthenes to Athenian troops, 425 BC

A. Focus:

This session examines the theory of amphibious warfare broadly and the ability of maritime nations to project power through the employment of this type of warfare. Amphibious warfare provides an excellent example of naval combined arms and as students will discover, is inherently a joint effort. We will explore the fundamental concepts of amphibious warfare and the options provided by amphibious forces to operational commanders.

B. Objectives

- Comprehend the fundamental concepts of amphibious warfare.
- Comprehend the potential effects that amphibious forces can generate on an enemy.
- Understand the vulnerabilities that amphibious forces, and other elements of the amphibious task force, are exposed to during landing operations.
- Understand the unique considerations for employing amphibious forces in support of operational objectives.

C. Background:

The theoretical underpinnings of amphibious warfare have been established through trial and error over thousands of years. For readers of classic literature, it was the poet Homer who 3,000 years ago wrote in the *Iliad* of the ancient Greeks employing amphibious operations when attacking the city of Troy in Asia Minor, near modern-day Turkey. Greek soldiers crossed the Aegean Sea and stormed ashore on the beaches near Troy during the ten-year struggle to destroy the city. In amphibious operations, therefore, one sees a clear example of a nation exploiting local sea control, for without local sea control and in modern times, local air superiority, amphibious operations are an exceptionally risky course of action to pursue.

The concept is simple, but like many simple military concepts it frequently has proven difficult to realize in practice. At its foundation, command of the sea (sea control) is the critical enabler; it allows the use of the sea as a means of transportation, in this case for military purposes. As stated earlier, certain prerequisites are necessary before even

attempting amphibious operations. A very high level of at least localized sea control and air superiority is a prerequisite for attempting an amphibious operation. The failure of Napoleon's and Hitler's intended invasions of England are examples of the inability of obtaining localized sea control for amphibious operations. Even with control of the sea, however, the difficulties in executing a successful amphibious operation are considerable, and must be weighed against potential results. Geoffrey Till mentions the British siege and capture of Havana in 1762, Wolfe's capture of Louisburg in 1757 and Quebec in 1759 in the Seven Years' War (1757-1764), Wellington's Peninsular Campaign 1807-1814, the operations in the Crimean War of 1854-1856, and MacArthur's amphibious envelopment at Inchon of the North Korean People's Army in 1950 as proof that amphibious operations can have a significant—even decisive—impact on the success of land campaigns.

Amphibious operations generally consist of the assault, withdrawal, raid, demonstration, and other types of operations (humanitarian assistance and noncombatant evacuation operations, for example). Regardless of the type of operations, the theory holds true; establish local sea control and air superiority, designate a landing beach or beaches, develop a ship-to-shore movement plan, develop an amphibious fires plan, develop an afloat sustainment plan, and execute. Once the landing force is on shore, and command and control has been phased ashore to the Landing Force Commander, the amphibious operation is terminated and a land operation or campaign begins.

Sea control enables the use of the sea as a conduit for amphibious operations and the sea is, therefore, generally viewed by amphibious forces (the so-called Gator Navy and Marines) as maneuver space. Amphibious operations are extremely complex requiring detailed planning and combined arms cooperation to ensure success. Based on the circumstances, the risks to the amphibious forces can be high, but the potential reward for successful amphibious operations, as history demonstrates, can be immense and alter the course of the conflict. Students should depart the seminar with a firm grasp of the inherent value of amphibious warfare and the utility that amphibious forces provide an operational commander.

Since amphibious operations are characteristically complex and the Landing Force (LF) dependent on functional support (fires, movement, sustainment, information, C2, protection, and intelligence) from other organizations and agencies, the execution of a major amphibious operation is inherently joint and must be a combined arms effort. Only through the synergistic application of force and functions can the Landing Force generate operational effects for the Joint Force Commander.

The point of contact for this session is Professor Bill Hartig, C-428.

D. Discussion Topics:

Describe the principle requirements to successfully conduct amphibious warfare.

Discuss the types of operational effects can be generated by amphibious forces.

What are the differences between conducting amphibious landings on the beaches fronting the open ocean or a peripheral sea and enclosed or semi-enclosed sea?

Is sea control an *absolute* prerequisite for conducting an amphibious operation?

E. Products:

None.

F. Required Reading:

An Amphibious Warfare Compendium. Excerpted from: Hough, Frank, Verle Ludwig, and Henry Shaw Jr. "Origins of a Mission and the Evolution of Modern Amphibious Warfare." *History of U.S. Marine Corps Operations in WWII Pearl Harbor to Guadalcanal*. Vol. One. Washington, D.C.: Government Printing Office, 1957. **(NWC 1099)**.

Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. 3d ed. London: Routledge, 2013. Read: 186-201, 252-280. **(Issued)**.

United States Naval War College, Joint Military Operations Department. *Selected U. S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook Slide Pack*. Newport, RI: Naval War College, 2018. Scan. **(NWC 2164B)**.

Vego, Milan. *Operational Warfare at Sea, Theory and Practice*. London & New York: Routledge, 2009. Read: 57-60. **(Issued)**.

G. Supplementary Reading:

Gatchel, Theodore L. *At the Water's Edge: Defending Against the Modern Amphibious Assault*. Annapolis, MD: Naval Institute Press, 1996.

Heinl, Robert D. "The Inchon Landing: A Case Study in Amphibious Planning." *Naval War College Review* (March 2006): 117-135.

Kennedy, Michael R. "Expeditionary Strike Group Concepts and Recommendations." *Marine Corps Gazette* (March 2006): 16–25.

Mahan, Alfred Thayer. *The Influence of Sea Power Upon History, 1660–1783*. New York: Dover, 1987, reprint of 1890 edition.

United States Marine Corps. *Marine Corps Operating Concepts Assuring Littoral Access. . . Winning Small Wars* (MOC), Quantico VA: Government Printing Office, 3d Edition, June 2010, Chapter 2, "Mission Command," Chapter 6, "Power Projection."

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FUNDAMENTALS OF MINE WARFARE (Seminar)

We have lost control of the seas to a nation without a Navy, using pre-World War I weapons, laid by vessels that were utilized at the time of the birth of Christ.

—Rear Admiral Allan Smith, USN,
Advance Force Commander, Wonsan, Korea 1950

A. Focus:

This session addresses naval Mine Warfare (MIW) which consists of offensive and defensive mine laying and Mine Countermeasures (MCM). It will discuss how the offensive and defensive employment of mines can assist naval forces in acquiring sea control or in denying the use of the sea to an enemy. Additionally examined are the complexities faced by a naval component commander when having to deal with mined waters in an operating area, and the methods to clear mined waters (MCM).

B. Objectives:

- Comprehend the fundamental principles and elements of mine/countermine operations.
- Understand the impact that mining/countermining operations has on obtain/deny sea control.
- Comprehend the combined arms requirement in conducting offensive and defensive mining/countermine operations.

C. Background:

Mine warfare (MIW) is an important tool for the operational commander. The physical and psychological impact that mines can have on naval operations and maritime trade should not be underestimated. Properly deployed and maintained mine fields can contribute to establishing and maintaining sea control, denying the enemy access to the littorals and open seas, and protecting critical lines of operation and communication.

Employing mines, is a double edged sword for the naval component commander, and can deny the use of waterways by the force employing them. For the naval component commander, mined waters present time/space/force challenges for acquiring freedom of action on the seas. The threat of mines may require adjustments in plans and timelines, or require the execution of branch plans. Mine countermeasures (MCM) operations remain a tedious and time consuming evolution. Consideration of the operational functions, especially intelligence, protection, and movement and maneuver are essential in executing MCM

operations. As MCM assets are primarily slow moving surface ships, MCM operations may require establishing local air superiority and sea control as prerequisites for success. Setting these conditions normally requires a joint/combined effort of naval, air, and ground forces.

The point of contact for this session is, Commander Jeff Stebbins, USN, C-410.

D. Discussion Topics:

Why use sea mines? What are the main tactical advantages and disadvantages of their employment?

What characteristics of the physical environment affect the employment of mines and the conduct of mine countermeasures?

What is the difference between offensive and defensive mining?

What is the difference between offensive and defensive MCM? What differentiates passive and active defensive MCM?

How is mine warfare used for obtaining and maintaining control of the surface and subsurface, or denying that control to an enemy?

What are the unique implications in space, time, and force that must be considered when conducting mine warfare?

Why is MIW an example of naval combined arms?

E. Products:

None.

F. Required Reading:

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)**

Vego, Milan. *Fundamentals of Naval Mining*. Newport, RI: Naval War College, June 2016. **(NWC 1216)**. Read: 12-29.

_____. *Fundamentals of Naval Mine Countermeasures*. Newport, RI: Naval War College, July 2016. **(NWC 1213)**.

G. Supplementary Reading:

- Bernitt, Thomas R. and Sam J. Tangredi. "Mine Warfare and Globalization: Low-Tech Warfare in a High-Tech World." In Tangredi, ed. *Globalization and Maritime Power*. Washington, D.C.: National Defense University, 2002.
- Chilstrom, John S. "Mines Away! The Significance of U.S. Army Air Forces Minelaying in World War II." Research paper, Maxwell AFB, AL: Air University, May 1992.
- Goulda, Michael E. "The Dardanelles Campaign: A Historical Analogy for Littoral Mine Warfare." *Naval War College Review* 51, no. 3 (Summer 1998): 82-96.
- Luckow, Ulrich. "Victory over Ignorance and Fear: The U.S. Mine Laying Attack on North Vietnam" *Naval War College Review* 35 (Jan-Feb 1982).
- Polmar, Norman. "The New Approach to Mine Warfare." *U.S. Naval Institute Proceedings* July 2015: 86-87.
- ThinkDefence. "Opening the Port of Umm Qasr, Iraq 2003." <http://www.thinkdefence.co.uk/ship-to-shore-logistics/opening-the-port-at-umm-qasr-iraq-2003>. (NWC 1214).
- Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. 3d ed. London: Frank Cass, 2013.
- U.S. Office of the Chairman of the Joint Chiefs of Staff. *Barriers, Obstacles, and Mine Warfare for Joint Operations*. Joint Publication (JP) 3-15, Washington, D.C.: CJCS, 06 September 2016. Read: IV-1 to IV-14.

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MARITIME TRADE WARFARE (Seminar)

In the military, over 90 percent of our DOD requirements travel by the sea. It's quite important to us. We are a nation that relies on the maritime industry as a critical component of our country's economy as well as our national security...It is American ships and American seafarers who have always come through for us in times of peace, war or national emergency

—Vice Admiral William Brown,
Deputy Commander, USTRANSCOM, 2014

A. Focus:

This session will focus on the objectives, methods, and tenets employed in attacking an enemy's maritime trade and defense and protection of friendly maritime trade ("maritime trade warfare") at the operational and theater-strategic levels of war. Both the theory and practice of maritime trade warfare will be examined, with particular attention given to its direct, indirect, and secondary effects, and considerations for the Joint Force Maritime Component Commander 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 transport to sustaining wartime economies will also be explored.

B. Objectives:

- Understand the importance of the theory and practice of maritime trade warfare at the operational level of war.
- Comprehend the objectives, methods, tenets and challenges of attacking an enemy's maritime trade and in defending and protecting friendly maritime trade.
- Understand the elements of maritime trade and the direct and indirect effects of maritime trade warfare on an enemy's ability to project combat power and sustain its war-fighting capacity.
- Comprehend that maritime trade warfare is inherently a joint, interagency action.
- Determine whether maritime trade warfare is a likely strategy in the twenty-first century.

C. Background:

In the era prior to the advent of aircraft, a principal task of any navy was to attack enemy shipping at sea while, at the same time, defend and protect 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 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 economic and business related interdependency, and/or because his own trade would suffer considerable losses. However, experience shows that in any significant long-term 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, long-term conventional war at sea, both the stronger and the weaker side can be expected to conduct extensive maritime trade warfare. 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; a classic attack on a nation’s economy. 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 are 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, while “protection” refers to organizational, technical, and other measures aimed at ensuring the safety of one’s maritime trade without the use of weapons. If one’s forces are relatively limited, focus should be on the selected elements of one’s maritime trade in conducting defense and protection. 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.

The point of contact for this session is Rear Admiral Christopher McMahan, USMS, C-411.

D. Discussion Topics:

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?

E. Products:

None.

F. Required Reading:

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)

Vego, Milan. *Maritime Trade Warfare*. Newport, RI: Naval War College, July 2015. Read: 1-21, 32-34, 48-50. (NWC 1135).

G. Supplementary Reading:

Aldershot, U.K.: Ashgate, The Navy Records Society, 1997. James, Jonathan T. "Countering Naval Guerrilla Warfare: Are Convoys Obsolete?" Fort Leavenworth, KS.: School of Advanced Military Studies, U.S. Command and General Staff College, 1991.

- Corbett, Julian S. *Some Principles of Maritime Strategy*. Project Gutenberg E-book. **(NWC 4011)**.
- Goulter, Christina, J. M. *A Forgotten Offensive: Royal Air Force Coastal Command's Anti-shipping Campaign, 1940–1945*. London: Frank Cass, 1995.
- Grove, Eric, J. *The Defeat of the Enemy Attack on Shipping 1939–1945*. A revised edition of the Naval Staff History Volumes 1A (Text and Appendices) and 1B (Plans and Tables).
- Kemp, Paul. *The Russian Convoys, 1941–1945*. Poole, Dorset, U.K.: Arms and Armour Press, 1987.
- Lewis, Archibald. R. *The Northern Seas: Shipping and Commerce in Northern Europe A.D. 300–1100*. Princeton, N.J.: Princeton University Press, 1958.
- Mahan, Alfred Thayer. *The Influence of Sea Power Upon History, 1660–1783*. New York: Dover, 1987, reprint of 1890 edition.
- Navias, Martin S., and E. R. Hooton. *Tanker Wars: The Assault on Merchant Shipping during the Iran-Iraq Conflict, 1980–1988*. London: I. B. Tauris Publishers, 1996.
- Poirer, Michael T. “Results of the German and American Submarine Campaigns of World War II.” U.S. Navy, Office of the Chief of Naval Operations, Submarine Warfare Division, 1999. **(NWC 3175)**.
- Schoefield, B. B. *The Russian Convoys*. Philadelphia, Pa: Dufour Editions, 1964.
- Till, Geoffrey. “A Changing Focus for the Protection of Shipping” in *The Strategic Importance of Seaborne Trade and Shipping: A Common Interest of Asia Pacific*, ed. Forbes, Andrew. Canberra, Australia: Sea Power Centre – Australia, 2002. **(NWC 4032)**.
- Tracy, Nicholas. *Attack on Maritime Trade*. Toronto: University of Toronto Press, 1991.

TABLE TOP EXERCISE #3: THE NAVAL BATTLES FOR GUADALCANAL (Exercise)

My God, what are we going to do about this?

—Vice Admiral Robert L Ghormley
Nouméa, September 1942

A. Focus:

This tabletop exercise, a natural segue from the prior analysis of operational design, is designed to assist students in comprehending, through the historical naval battles for Guadalcanal, how both the U.S. and Japanese commanders attempted to leverage combined arms in their struggle for sea control. The exercise uses selected combat actions from the five night surface naval battles around Guadalcanal (the Battle of Savo Island, The Battle of Cape Esperance, the First Naval Battle of Guadalcanal, the Second Naval Battle of Guadalcanal, and the Battle of Tassafaronga Point). The battles' operating conditions, exportable to the modern operating environment, should serve as an intellectual line of departure in developing future operational ideas for naval combat.

B. Objectives:

- Comprehend how the key elements of operational design apply to the design of major naval operations.
- Using the Guadalcanal case study, analyze and critique the Japanese and U.S. commander's operational designs and use of combined arms.
- Understand the organization of naval forces based on threat, objective, and environment.
- Reinforce an understanding of naval capabilities in a combined arms arena.

C. Background:

At the outset of the Second World War in the Pacific, most battles were fought according to the manner the Japanese desired. They held the initiative and had the advantage of better trained, organized and focused forces. The Allies had to react to the Japanese attacks and were typically outfought and defeated as the Japanese seized outposts across Southeast Asia and the Central Pacific. Japanese defeats at the Battles of Coral Sea and Midway affected their ability to maintain the initiative in the war. With the loss of five Imperial Japanese Navy aircraft carriers in these battles, they no longer held the force advantage to assure victory in any operation. The latter stage of the Pacific War, from the Battle of Tarawa in November 1943 to the end of the war saw both the strength and quality of U.S. naval forces expand to such a level that the Japanese Navy was unable to compete.

While Japanese ground forces could inflict significant casualties on American ground forces attacking their defenses on a coral atoll, at sea and in the air, U.S. forces dominated the conflict. The U.S. war economy out produced the Japanese to the extent that the Japanese could not keep up regardless of their fearless devotion to the Emperor's cause. During this segment of the war the U.S. Navy could fight the way of war it desired, using the industrial output of the American factories to destroy the Japanese on, over, and below the sea.

It is only in the 'middle' portion of the war, from after Midway to roughly the beginning of 1944, where neither side was fighting the type of war they envisioned. This required both sides had to make do as best they could. The U.S. Navy at Guadalcanal, the first U.S. offensive operation of the war, was past the nadir of its wartime performance, but not by much. The Japanese, still shrugging off the shock of the Midway defeat, were not far from their zenith. The Imperial Japanese Navy was a combat force with experienced tactical commanders, well trained crews and, in several areas, better armed ships than their U.S. opponent in 1942. Over the course of the six-month battle, both sides' fortunes ebbed and flowed and the side that made the best use of the resources at hand took the lead.

The naval battles of Guadalcanal resulted in alarming losses to the U.S. Navy surface force. Many of the naval battles during the six-month struggle for the island were fought not at the weapons optimum ranges envisioned by either side, but at close quarters in highly restricted seas. The casualties suffered by the U.S. Navy included over 4,900 killed and nearly 3,000 wounded. In fact, the number of U.S. sailors killed in the battles off Guadalcanal exceeded the number of Marines and soldiers killed in ground fighting (1,769 killed). Losses to the Japanese at sea were also significant. In many ways, this is the story of the prewar navies fighting it out for sea control in the Solomon Islands. This might also suggest that a peacetime navy requires significant time to develop the tactics, techniques and mindset to excel at warfare, a time that future navies and their sailors may not have.

The purpose of this third table-top exercise is to critically analyze the naval battles through the lens of operational art and naval warfare theory. To avoid making this exercise one of hindsight, students should avoid focusing on what happened and instead analyze the leadership decisions within an operational art framework to answer why those decisions were made. This exercise will include moderator led discussion and student group work. Seminar teams will analyze each of the naval battles providing commentary on U.S. and Japanese leadership decisions using an operational art framework. Looking forward, seminar teams will discuss if the lessons learned in blood and treasure at Guadalcanal remain relevant in a modern naval battle.

The point of contact for this session is Professor Steve Forand, C-407.

D. Discussion Topics:

Describe the general components of an operational design for a major naval operation.

Does the operational design for major naval operations differ from design of major operations in the land domain? If so, how?

Analyze and critique the Japanese and U.S. balance of operational factors and functions. From the Japanese Commanders' viewpoint, what were their challenges with respect to Time, Space, and Force? From the U.S. Commanders' viewpoint?

Were there any opportunities for either side to better utilize combined arms during the struggle for Guadalcanal?

It has been said that the U.S. Navy was a learning organization during the early years of World War II. What adjustments did the U.S. Navy make after each battle? Were they successful in their implementation?

What did the Imperial Japanese Navy learn from their experiences in fighting the U.S. fleet in the waters off Guadalcanal? How did this influence their decision to evacuate Guadalcanal?

E. Products:

Student teams will prepare and brief an assigned battle, answering assigned questions.

F. Required Reading:

Forand, Stephen L. *The Prelude to Guadalcanal*. Newport, RI, Naval War College (NWC 4175).

Hornfischer, James D. *Neptune's Inferno: The U.S. Navy at Guadalcanal*. New York; Bantam 2012. Read: Chapters 4, 5, 6, 7. (Issued).

President, United States Naval War College to Commander in Chief, U.S. Fleet. "Comments on the Battle of Guadalcanal, November 11-15, 1942." Newport, RI: Naval War College, 5 June 1943. (NWC 1167).

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

Vego, Milan, *Operational Warfare at Sea*. Newport, RI: Naval War College, 2012. Review: Chapters 6 and 7. (Issued).

G. Supplementary Reading:

Cook, Charles. *The Battle of Cape Esperance*, Annapolis, MD: Naval Institute Press, 1992.

Crenshaw, Russell Sydnor. *South Pacific Destroyer: The Battle for the Solomons from Savo Island to Vella Gulf*. Annapolis, MD: Naval Institute Press, 1998.

_____. *The Battle of Tassafaronga*, Baltimore, MD: Nautical and Aviation Publishing Company of America, 1995.

Grace, James W. *The Naval Battle of Guadalcanal*, Naval Institute Press, Annapolis 1999.

Hara, Tameichi. *Japanese Destroyer Captain*. New York: Ballantine Books, 1961.

Newcomb, Richard F. *The Battle of Savo Island*, Holt, Rinehart and Winston, New York 1981.

TABLETOP EXERCISE #4: THE FALKLANDS / MALVINAS CONFLICT (Lecture and Exercise)

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*

A. Focus:

This session serves as a synthesis event for the components of operational art and maritime warfare theory discussed in preceding sessions and serves as a collective preparation for the upcoming examination. The emphasis is placed on the decisions and actions of operational-level commanders on both sides of the conflict and how they could have been different with a better understanding of operational art. There will also be a closer look at some specific naval actions, using a Table Top Exercise to understand and consolidate some of the earlier warfare theory sessions.

B. Objectives:

- Synthesize and apply 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.
- Apply concepts from international and maritime operational law in order to evaluate the legal issues in a historical case study.
- Analyze the operational lessons valid for the employment of modern, multinational and joint forces.
- Analyze and apply concepts of maritime warfare theory in order to evaluate specific tactical actions.

C. Background:

This case study is conducted over four sessions, starting with a presentation of the historical/strategic background to the conflict by the JMO Royal Navy exchange officer. A 60-minute film drawing out key elements should be viewed via BlackBoard prior to the commencement of this session. Students will have seminar time available to study the case materials and develop student-led discussions of the assigned questions. The final session is devoted to student-led discussions of the case study.

This session is designed to reinforce the aspects of operational art and maritime warfare theory studied and discussed in preceding sessions. Historical examples provide an excellent opportunity for illustrating the complexities of planning, preparing, conducting, and sustaining major operations and the reasons why particular military actions either succeeded or failed. This particular case is used because it is rich with examples of the application, lack of application, misapplication, or inability to apply the concepts associated with operational art. As the major synthesis event for this portion of the syllabus, the motivations, planning, and actions of both sides in the conflict will be examined in some detail. Seminar moderators will assign specific responsibilities for student discussion of the case.

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

D. Discussion Topics:

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 would you have done differently?

How well did each side apply the aspects of maritime law?

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

What key aspects of maritime warfare theory can be critiqued and how are they relevant today?

E. Products:

To synthesize operational art concepts, students will use an analytical framework in order to discuss and answer moderator assigned questions.

F. Required Reading:

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).

G. Supplementary Reading:

Selected extracts from *Conflicto Malvinas, Official Report of the Argentine Army*, Vol. II. Clapp, Michael. *Amphibious Assault Falkland Islands: The Battle of San Carlos Water*. Annapolis, MD: Naval Institute Press, 1996.

Freedman, Lawrence. *The Official History of the Falklands Campaign—Vol 2*. London: Routledge, Taylor & Francis Group, 2005.

Freedman, Lawrence, and Virginia Gamba-Stonehouse. *Signals of War: The Falklands Conflict of 1982*. Princeton, NJ: Princeton University Press, 1991.

Hastings, Max, and Simon Jenkins. *The Battle for the Falklands*. New York: Norton, 1983.

Middlebrook, Martin. *Task Force: The Falklands War, 1982*. Rev. ed. London: Penguin, 1987.

Scheina, Robert L. “The Malvinas Crisis, March–April 1982” and “The Malvinas War, May–June 1982.” Chapters 14 and 15 in *Latin America: A Naval History 1810–1987*. Annapolis, MD: Naval Institute Press, 1987.

Summers, Harry G., Jr. “Strategic Lessons Learned: The Falkland Islands Campaign.” *The Art of War Quarterly*, (Sept. 1983): 91-112.

Thompson, Julian. “Amphibious Logistics—Falklands 1982.” Extract from Chapter 8 in *The Lifeblood of War: Logistics in Armed Conflicts*. London: Brassey's, 1994.

_____. *No Picnic: 3 Commando Brigade in the South Atlantic: 1982*. New York: Hippocrene, 1985.

Woodward, Sandy. *One Hundred Days—The Memoirs of the Falklands Battle Group Commander*. Annapolis, MD: Naval Institute Press, 1992.

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OPERATIONAL LAW—USE OF FORCE (Lecture)

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

A. Focus:

This lecture begins the operational law portion of the Joint Maritime Operations curriculum. 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 impacting military planning and operations. When planning and conducting military operations, commanders and their subordinates must comply with the international law that governs (1) the location of hostilities/extraterritoriality, (2) the legal basis for nations to use force and (3) levels of lethality. This lecture is discussing both the *jus ad bellum* (a nations' right to use force—or go to war) and the *jus in bello* (the law of armed conflict/law of war during land, air, and naval warfare). Additionally, this lecture touches on legal issues arising from the modern uses of force across the different domains and operating environments militaries face today. During the *jus in bello* portion of the lecture, we will examine the concept of Rules of Engagement (ROE).

B. Objectives:

- Comprehend the effect of international law on the planning and execution of military operations.
- Understand the basic principles of the law of armed conflict/law of war for land, air, and naval warfare.
- Analyze emerging legal issues surrounding the law of armed conflict/law of war at the operational and high tactical levels of war.

C. Background:

This lecture and the OPLAW material that follows in the next two sessions (Maritime Law lecture, and the Tanker Wars sessions) touches on legal issues arising from the modern use of force against state and non-state actors. This is important because the Department of Defense mandates under (DoDD 2311.1E) that all “Members of the DoD Components comply with the law of war during all armed conflicts, however, such conflicts are

characterized, and in all other military operations, especially those holding the potential for use of force.”

As such, independent or coalition U.S. military use of force whether by military or civilian leadership is governed by international and domestic law. The application of international law – generally referred to as the *Law of War* or *Law of Armed Conflict (LOAC)* stands on the general foundational principles of *military necessity, humanity, proportionality, distinction, and honor*. This lecture will explain details of the principles and their impact on both planning and execution, how they apply across the ROMO in the maritime, air, and land operating environments/domains; and across the different phases of military operations.

The point of contact for this session is Captain Robert A. Sanders, LP.D, JAG Corps, USN, C-424.

D. Discussion Topics:

Why do nations care about international law when deciding whether or not to use force? What motivates them to comply with its provisions?

Describe the role of the UN Security Council (UNSC) regarding the use of force against a nation or non-state actors.

What are the requirements to be a lawful combatant; to be a non-combatant/civilian? What is an unlawful (or unprivileged) combatant?

To what extent does the law of armed conflict/law of war apply across the spectrum of conflict or the potential warfare domains?

Are criminals, unlawful combatants, or violent extremist organizations (VEOs) subject to the same or different treatment by military forces across the spectrum of conflict?

How has the law of armed conflict/law of war changed, if at all, during the conflicts in Iraq and Afghanistan? Is it different for combating ISIL/ISIS and similar groups?

What is Positive Identification (PID) and what ramifications does the requirement for PID have on U.S. and coalition forces?

Who in the chain of command should have/does have the authority to determine hostile intent? Who has the authority to take lethal measures when faced with hostile intent?

E. Products:

None.

F. Required Reading:

McNeal, Gregory S. "The bin Laden Aftermath: Why Obama Chose SEALs, not Drones," Foreign Policy (May 5, 2011), available at http://afpak.foreignpolicy.com/posts/2011/05/05/the_bin_laden_aftermath_why_obama_chose_seals_not_drones. (NWC 3160).

Sanders, Robert. "ILC OPLAW Lecture and Seminar Primer." January, 2018. (NWC 1137).

Schmitt, Michael N. "Extraterritorial Lethal Targeting: Deconstructing the Logic of International Law," Volume 52, Columbia Journal of Transnational Law. Read: 77- 112. (NWC 1206).

United Nations. *The Charter of the United Nations*. June 26, 1945. Scan (Relevant articles: 1–2, 23 [1963 text], 24–25, 27 [1963 text], 33–34, 36–43, 45–46, 48–49, 51–53). (Contained within the *Law of War Documentary Supplement*, v-vi; 1-8). (NWC 1008A).

United States Congress, Joint Resolution, *Authorization for Use of Military Force* [AUMF] Public Law. 107-40 [S.J. RES. 23], September 18, 2001. (NWC 1198).

U.S. Department of the Navy. *The Commander's Handbook on the Law of Naval Operations*. Naval Warfare Publication 1-14M, August 2017. Scan: Chapter 5 and Chapters, 8–12. (Issued).

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Legal Support to Military Operations*. Joint Publication (JP) 1-04. Washington, D.C.: CJCS, 2 Aug 2016. Scan Executive Summary.

White House Fact Sheet: *U.S. Policy Standards and Procedures for the Use of Force in Counterterrorism Operations outside the United States and Areas of Active Hostilities*, May 23, 2013. (NWC 1085).

G. Supplementary Reading:

OPLAW Overview

General Counsel, U.S. Department of Defense. *DoD Law of Warfare Manual*. June 12, 2015. Table of Contents. (NWC 1208).

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Koh, Harold Hongju. State Department Legal Advisor. “The Obama Administration and International Law” Annual Meeting American Society of International Law (ASIL), (March 25, 2010), Read: Subsection III. B., “The Law of 9/11”
<http://www.state.gov/s/l/releases/remarks/139119.htm>.

_____. “Statement Regarding Use of Force in Libya” Annual Meeting ASIL, (March 26, 2011), http://www.asil.org/am11/pdfs/haroldkoh/2011_Libya_Harold_Koh_ASIL_Remarks.pdf.

War Powers Resolution of 1973, 50 U. S.C. §§1541-1548.

Protection and Treatment of Combatants/Non-combatants

Diplomatic Conference for the Establishment of International Conventions for the Protection of Victims of War. *Convention Relative to the Protection of Civilian Persons in Time of War*, August 12, 1949, Articles 13-26 and 47-88. (Contained within the *Law of War Documentary Supplement* 238-240 and 244-251).

_____. *Convention Relative to the Treatment of Prisoners of War*, August 12, 1949, Articles 1-42. (Contained within the *Law of War Documentary Supplement* 199-208), 111.

United States Congress, Joint Resolution. *Affirmation of Authority of the Armed Forces of the United States to Detain Covered Persons Pursuant to the [AUMF]*, NDAA FY2012, Public Law. 112-81, § 1021, December 31, 2011.

Torture

Definition - 18 U.S. Code Chapter 113C; Application constraints and restraints - Human Intelligence Collector Operations FM 2-22.3 (FM 34-52),
<https://www.state.gov/documents/organization/150085.pdf>.

Rules of Engagement (ROE)

Department of Defense DOD Directive 2311.01E, DOD Law of War Program, May 9, 2006, Incorporating Change 1, November 15, 2010, Certified Current as of February 22, 2011, <http://www.dtic.mil/whs/directives/corres/pdf/231101e.pdf> (NWC 1185).

International Committee of the Red Cross (ICRC). Direct Participation in Hostilities: Questions and Answers, (June 2, 2009), available at <http://www.icrc.org/eng/resources/documents/faq/direct-participation-ihl-faq-020609.htm>. (NWC 3072).

U.S. Naval War College. “CJCS Standing Rules of Engagement and Rules for the Use of Force.” Extracts from CJCS Instruction 3121.01B. **(NWC 1062A)**.

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Dunlap, Major General (Ret) Charles J., Jr. “Lawfare Today . . . and Tomorrow,” in *International Law and the Changing Character of War* 87, Naval War College. (2011).

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https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=6284&context=faculty_scholarship

Hsu, Kimberly and Craig Murray. The U. S.-China Economic and Security Review Commission, “*China and International Law in Cyberspace*”, 6 May 2014.

<http://www.uscc.gov/Research/china-and-international-law-cyberspace>.

Koh, Harold Hongju. “International Law in Cyberspace” USCYBERCOM Inter-Agency Legal Conference, Ft. George G. Meade, MD (September 18, 2012).

<http://www.state.gov/s/l/releases/remarks/197924.htm>

Schmitt, Michael, “Regulating Autonomous Weapons Might be Smarter Than Banning Them,” *JUST SECURITY* (August 2015).

<https://www.justsecurity.org/25333/regulating-autonomous-weapons-smarter-banning/>

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MARITIME OPERATIONAL LAW (Lecture)

The sea, in contrast 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

A. Focus:

This lecture focuses on the law of the sea and the law affecting military operations in the maritime environment. When planning and conducting military operations, commanders and their subordinates must comply with the international law that governs (1) the legal basis for nations to use force and lethality and (2) the law that governs the conduct of hostilities extraterritorially. We now add an aquatic tributary flowing from these two streams into the maritime environment of conflict, non-conflict, and grey zone activities.

In this lecture, the general features of the maritime environment, or what is called *The Maritime Domain* will be discussed from an operational law perspective. There are differences in the permissible non-conflict and conflict uses of the sea, and legal classifications or regimes of the ocean and airspace directly affect maritime operations. Law of the Sea considerations determine the degree of control a coastal nation may exercise over the conduct and activities of foreign merchant ships, warships, and aircraft operating in the maritime domain. This lecture discusses not only constraints that maritime operational law might have on military operations but also, how the operational commander can use the law, or what some now call *lawfare*, to achieve success in both conflict and non-conflict missions. Finally, the concepts of maritime *jus in bello* will be addressed.

B. Objectives:

- Value the maritime operational considerations resulting from the sovereign right of nations to limit the entry and movement of foreign forces within their territorial seas.
- Analyze the operational challenges in asserting freedom of navigation and protection of commerce on the maritime commons.
- Analyze emerging legal issues surrounding freedom of navigation in disputed maritime areas such as the Arctic, the Arabian Gulf, and the South China Sea.

C. Background:

For the operational planner, “Factor Space” is heavily influenced by international law governing the establishment of land, sea, and air “boundaries.” These boundaries directly impact a military forces’ freedom of movement. For example, in the pre-hostilities phase of

an operation (e.g., shaping and deterrent phases), military forces typically respect the sovereignty rights of a nation's land territory, national waters, and national airspace.

During the hostilities phase of an operation, when the Law of Armed Conflict/Law of War 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 forces freedom of movement within land, sea, and air boundaries of such neighboring/neutral states must be factored into operational planning.

Freedom of movement in international waters and airspace is fundamental to implementing U.S. national and military strategies. The legal basis for these navigational freedoms is international law as reflected in the United Nations Convention on the Law of the Sea (UNCLOS); and U.S. Executive Branch regulations and policy. This freedom of movement 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. During this lecture and associated readings the rights of all nations in international waters and international airspace, as well as the limited rights of coastal nations to exercise jurisdiction over some portions of the sea and airspace adjacent to their coastline will be discussed.

The point of contact for this session is Captain Robert A. Sanders, LP.D, JAG Corps, USN, C-424.

D. Discussion Topics:

What sovereign rights does a nation have regarding its land territory, territorial sea, and national airspace, and how does this affect the movement or operation of foreign military forces in these zones?

What are the distinctions between innocent passage, transit passage, archipelagic sea-lane passage, and high seas freedoms of navigation? How, if at all, are military planning and operations affected by the various legal regimes of oceans and airspace?

How can operational planners use the concepts of belligerent control of the immediate area of operations, maritime / air warning zones, and blockade to assist mission accomplishment?

To what extent may the military operations of a belligerent nation be conducted within the land territory, national airspace and national waters of a neutral or non-belligerent nation?

E. Products:

None.

F. Required Reading:

Guangqian, Major General (Ret) Peng, People's Liberation Army, "China's Maritime Rights and Interests," in *Military Activities in the EEZ, A U. S.-China Dialogue on Security and International Law in the Maritime Commons*, Vol. 7 Naval War College, China Maritime Studies Institute (December 2010), 15-22. **(NWC 1150)**.

Pedrozo, Raul "Pete," "The Bull in the China Shop and Rising Tensions in the Asia Pacific Region. *Naval War College, International Law Studies*, 90 66. (2014). **(NWC 1205)**.

Sanders, Robert, *The South China Sea Dispute Background & Arbitration Case*
Read: pp 1-10 **(NWC 1103)**

U.S. Department of Defense, General Counsel. *DoD Law of Warfare Manual*, 2015. Scan Chapter XIII, Naval Warfare. **(NWC 1208)**.

U.S. Department of the Navy. *The Commander's Handbook on the Law of Naval Operations*. Naval Warfare Publication (NWP) 1-14M, August, 2017.
Scan Chapters 1-5. **(Issued)**.

G. Supplementary Reading:

Garamone, George. "[CJCS General] Dempsey Urges Ratification of Law of the Sea Convention." Armed Forces Press Service. May 9, 2012.
Available at: <http://www.defense.gov/news/newsarticle.aspx?id=116265>.

Kraska, James and Brian Wilson, "Combating Pirates of the Gulf of Aden: The Djibouti Code and the Somali Coast Guard," *Ocean & Coastal Management* (2009).

Migdalovitz, Carol, "Israel's Blockade of Gaza, the *Mavi Marmara* Incident, and Its Aftermath," Congressional Research Service, (June 23, 2010).

United Nations. *United Nations Convention on the Law of the Sea*. Third United Nations Conference on the Law of the Sea. 1983. Articles 1-25, 29-54, 86-111 and 121.

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OPERATIONAL LAW CASE STUDY (Seminar)

You will usually find that the enemy has three courses open to him, and of these, he will adopt the fourth.

— Field Marshal Helmuth von Moltke, the Elder

A. Focus:

This seminar provides the opportunity to apply operational law from the courses prior OPLAW sessions and readings to a real-world maritime conflict and to discuss how operational commanders derive authorities for action and force employment within the context of specific military operations.

B. Objectives:

- Analyze the Law of the Sea and Laws of Armed Conflict/Law of War as pillars upholding and restraints binding a Commander's development of an operational idea into an operational design that is executed across the range of military operations.
- Apply the CJCS SROE and *The Commander's Handbook on the Law of Naval Operations* in a factual context involving the employment of military forces.
- Evaluate the evolution of the operational authorities for employment of force during the Iran-Iraq Tanker Wars (1980-1988).

C. Background:

See JMO Sessions 31 and 32.

The point of contact for this session is Captain Robert A. Sanders, LP.D; JAGC, USN, C-424.

D. Discussion Topics:

Students will work individually to prepare short answers to assigned scenario questions and then lead a seminar discussion on their assigned questions.

E. Products:

An in-seminar discussion using a real-world case study and selected questions intended to synthesize the concepts of operational law.

F. Required Reading:

U.S. Department of the Navy. *The Commander's Handbook on the Law of Naval Operations*. Naval Warfare Publication (NWP) 1-14M, August, 2017. Review. **(Issued)**.

U.S. Naval War College. "CJCS Standing Rules of Engagement and Rules for the Use of Force." Newport, RI: Extracts from CJCS 3121.01B. Review as required. **(NWC 1062A)**.

Walker, George K. Selected Readings from *The Tanker War, 1980–88, Law and Policy*. U.S. Naval War College International Law Studies, Volume 74 (2000), Edited by CDR Dan Crouch. **(NWC 3004B)**.

G. Supplementary Reading:

BBC video, "Shooting down of Iran Air 655"

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>

Cordesman, Anthony H. "Iran, Oil, and the Strait of Hormuz," Center for Strategic and International Studies (CSIS) (March 26, 2007), available at <http://csis.org/publication/iran-oil-and-strait-hormuz> (accessed November 27, 2017).

Council on Foreign Relations. *Crisis Guide: Iran*, CFR Website, http://www.cfr.org/interactives/CG_Iran/embed.html (accessed November 27, 2017).

Grunawalt, Richard J. "USS Vincennes (CG 49) and the shoot-down of Iranian Airbus Flt 655," NWC Internal Memorandum. (1992).

Islamic Republic of Iran Mission to the UN. "Address by H.E. Dr. Mahmoud Ahmadinejad President of the Islamic Republic of Iran before the United Nations General Assembly. (September 23, 2011), available at <http://www.un.org/webcast/ga/60/statements/iran050917eng.pdf> (accessed November 27, 2017)

O'Neil, William and Caitlin Talmadge. "Costs and Difficulties of Blocking the Strait of Hormuz." *International Security* 33, no. 3. (Winter 2008/09): 190–198.

Talmadge, Caitlin. "Closing Time: Assessing the Iranian Threat to the Strait of Hormuz," *International Security* 33, No. 1. (Summer 2008): 82–117.

The President. *Remarks by President Obama in Address to the United Nations General Assembly* (September 21, 2011), <http://www.whitehouse.gov/the-press-office/2011/09/21/remarks-president-obama-address-united-nations-general-assembly>.

U.S. Department of Defense, General Counsel, *DoD Law of Warfare Manual*, 12 June 2015. Chapter XIII-Naval Warfare. **(NWC 1208)**.

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EXAMINATION #1 (Individual Effort)

*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

A. 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.

B. 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.

C. 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 Thursday, 5 April 2018 (0830-1145) for student preparation as a group. (Students are strongly encouraged to prepare as a seminar; however, once the exam is issued, it is an individual effort). The examination will be issued at 1145 on Thursday, 5 April 2018 and is due to the moderators not later than 1200 on Friday, 6 April 2018. Grading criteria for the examination may be found in the front matter of this Syllabus.

The point of contact for this session is Commander Mike Loomis, C-421

D. Discussion Topics:

See examination question sheet.

E. Products:

A written response to assigned questions that demonstrates student mastery of the various concepts studied thus far. This effort should not exceed 10 double spaced typed pages in Times New Roman font 12 point with one inch margins top, bottom, and right, and one and a quarter inches left. (Use the mirrored option under page layout in Microsoft Word.)

F. Required Reading:

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.

G. Supplementary Reading:

None.

THE JOINT TASK FORCE (JTF) AND COMMAND AND CONTROL (C2) (Seminar)

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, USA

A. 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 overview to the functions and responsibilities of subordinate service and functional component commanders.

B. Objectives:

- Comprehend the functions and responsibilities of service and functional component commands of a Joint Task Force.
- Comprehend joint force command relationships (COCOM, OPCON, TACON, and Support) and the authorities that each include.
- Comprehend the key headquarters functions of the JTF and the staff organization and processes that support these functions.
- Comprehend how the establishment of boards, bureaus, centers, cells, and working groups (B2C2WG) enhance cross-sectional collaboration on a joint force staff.

C. Background:

Operational Art stressed the effective employment of a diverse force, ideally 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.

The point of contact for this session is Captain James P. McGrath, USN, C-411.

D. Discussion Topics:

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. Why?

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 affected C2 across the ROMO? If so, how?

Today's JFC faces a number of C2 challenges in multi-national and/or interagency organizations across the ROMO, some of which are cultural, doctrinal, readiness, intelligence sharing, equipment/communications compatibility, objectives, ROE, and logistics, to name a few. How can these challenges be mitigated by C2?

E. Products:

None.

F. Required Reading:

Deployable Training Division, "Insights and Best Practices Focus Paper: JTF C2 and Organization." Suffolk, VA: Joint Staff J7, April 2017. Read: 1-5, 10-14. **(NWC 6055)**

U.S. Naval War College, Joint Military Operations Department. *A Borneo Case Study for Expeditionary Warfare*. Newport, RI: Naval War College, January, 2018. Read: vii (Introduction), 1 (Exercise Scenario), 61-65 (PACOM Warning Order). Scan: 56-61 (Task Organization). **(NWC 6036K). (Issued).**

_____. *Forces/ Capabilities Handbook*. Newport, RI: Naval War College, 2018. Read: 193-198 (Operational Command and Control). Scan: 207-211. **(NWC 3153R). (Issued).**

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, 30 July 2012. Read: II-1 thru II-18, III-1 thru III-6.

G. Supplementary Reading:

Berry, Charles T. "Understanding OPCON." *Joint Force Quarterly*, No. 57 (2d Quarter 2010): 63-65.

Builder, Carl H., Steven C. Banks, and Richard Nordin. *Command Concepts: A Theory Derived from the Practice of Command and Control*. Santa Monica, CA: RAND, 1999.

Carter, Walter E. "The Joint Enabling Capabilities Command: A Rarity within the Conventional Force." *Joint Force Quarterly*, no. 64 (January 2012): 18-23.

Dempsey, Martin E., "Mission Command White Paper," Washington, D.C.: Chairman of the Joint Chiefs of Staff, 03 April 2012.

Deployable Training Division, "Insights and Best Practices Focus Paper: Forming a JTF HQ." Suffolk, VA: Joint Staff J7, September 2015.

Parrington, James, and Mike Findlay. "Mission Command: Addressing Challenges and Sharing Insights." *Joint Force Quarterly*, no. 71 (4th Quarter 2013): 103-107. **(NWC 2185).**

Quartataro, Joe, Michael Rovenolt, and Randy White. "Libya's Operation Odyssey Dawn: Command and Control." *PRISM Security Studies Journal* 3, no 2. (March 2012). Read. **(NWC 4159).**

Sweeney, Patrick C. "A Primer for the Joint Enabling Capabilities Command (JECC)." Newport, RI: Naval War College, 10 December 2013. **(NWC 2003C)**.

U.S. Navy. Office of the Chief of Naval Operations. *Maritime Operations at the Operational Level of War*. Navy Warfare Publication (NWP) 3-32, Oct 2008 with Change 1 ed. Washington, D.C.: CNO, August 2010.

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, 7 August 2013.

Wade, Norman M. *The Joint Forces Operations & Doctrine SMARTBOOK: Guide to Joint, Multinational & Interagency Operations*. 3rd ed. Lakeland, FL: The Lightning Press.

THE JOINT FORCE MARITIME COMPONENT COMMANDER (Seminar)

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

A. 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 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.

B. 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 roles and missions of the Navy, Marine Corps, and Coast Guard as well as the capabilities of other services that contribute to JMO and support the JFMCC.
- Comprehend broad doctrinal service 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 CWC.

C. 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 homeland 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 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 focus is on operational tasks and activities rather than 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 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, the OTC and CWC 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. 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.

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

D. Discussion Topics:

Describe the roles and responsibilities of the JFMCC. What criteria drive the organization of the JFMCC in facilitating C2?

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

How might the Marine Corps and Coast Guard team, along with other services, support maritime operations in coordination with the JFMCC?

Describe the CWC concept. How does the CWC seek to minimize seams between various functional areas?

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

E. Products:

Draft Appendix 1 (Command Relationships Diagram) to Annex J (Command Relationships).

F. Required Reading:

McManus, Mark. "United States Navy Command and Control Organization." Newport, RI: U.S. Naval War College, Joint Military Operations Department, October 2011. Read: 1-13. **(NWC 5050)**.

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, 7 August 2013. Read: II-1 to II-13. Scan IV-1 to IV-19.

U.S. Naval War College, Joint Military Operations Department. *A Borneo Case Study for Expeditionary Warfare*. Newport, RI: Naval War College, January, 2018. Read: 67-85, 93. **(NWC 6036K). (Issued)**.

_____. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, 2018. Read: 79-83 (U.S. Marine Corps), 146-152 (U.S. Coast Guard). Scan: 2-32 (U.S. Navy), 83-94 (U.S. Marine Corps), 153-164 (U.S. Coast Guard), and Appendix C. **(NWC 3153R). (Issued)**.

U.S. Navy. Office of the Chief of Naval Operations. *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. Scan: 7-1 to 7-24.

_____. *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.

Willard, Robert F. "Rediscover the Art of Command & Control." *U.S. Naval Institute Proceedings* 128, no. 10 (2002): 52-54. Read. **(NWC 4168)**.

G. Supplementary Reading:

_____. *Operational Warfare at Sea: Theory and Practice*. New York, NY: Routledge, 2009.

THE JOINT FORCE AIR COMPONENT COMMANDER (Seminar)

In the last war, air-power forfeited much of its effect from being kept in separate packets like the parts of an army, with a consequent dispersion of effort and frittering of effect.

— B.H. Liddell Hart
Thoughts on War

A. Focus:

This session provides an overview of the Command and Control (C2) of joint air operations with emphasis on the responsibilities of a joint force air component command (JFACC) when the Joint Force Commander (JFC) employs air forces in support of operational objectives. When contemplating C2 options for joint air operations within the operational area, the JFC will normally assign JFACC responsibilities to the component commander having the preponderance of forces and the ability to effectively plan, task, and control joint air operations. However, several factors are also considered: mission, nature, and duration of the operation, as well as type and availability of forces.

B. Objectives:

- Comprehend the responsibilities and C2/organizational options of the JFACC.
- Comprehend the roles and missions of the U.S. Air Force, as well as the capabilities of all services contributing to the Joint Force Air Component Command.
- Comprehend broad doctrinal service concepts guiding the employment of air forces at the high-tactical and operational levels of war.

C. Background:

The JFC's air component should be organized for coordinated action through unity of command using the air capabilities of the joint force. Centralized control and decentralized execution are key C2 considerations when organizing for joint air operations. While JFCs have full authority, within establishing directives, to assign missions, redirect efforts, and direct coordination among subordinate commanders, they should allow Service tactical and operational groupings to generally function as they were designed. The intent is to meet the needs of the JFC while maintaining the tactical and operational integrity of the Service organizations.

A JFC has three basic organizational options for C2 of joint air operations: designate a JFACC, designate a Service component commander, or retain C2. In each case, effectively

and efficiently organizing the staff, C2 systems, and subordinate forces that will plan, execute, and assess joint air operations is key.

When designated, the JFACC is the commander within a combatant command, subordinate unified command, or Joint Task Force (JTF) responsible for tasking joint air forces, planning and coordinating joint air operations, or accomplishing such operational missions as may be assigned. The JFACC is given the authority necessary to accomplish missions and tasks assigned by the establishing commander.

The point of contact for this session Colonel Adrian Schuettke, USAF, C-412.

D. Discussion Topics:

What unique challenges/opportunities exist when employing forces in the air domain? How are the factors of T/S/F, and operational functions, affected by air operations?

What are the responsibilities of the Joint Force Air Component Commander? How do these relate to the responsibilities of the Area Air Defense Commander, and the Airspace Control Authority?

How should the Air Component be organized, given the Air Force's typical preponderance of air assets and its employment of the Air Operations Centers (AOC), but also given the significant air arms of the other services, and the importance of the air domain to all of them?

What is a "Theater-JFACC" and how does centralized command of air assets in a theater contribute toward achieving Joint Force objectives? Does this centralized command cause any problems to the Joint Force, and how might these problems be avoided?

What are the core missions of the U.S. Air Force? What critical capabilities does the Air Force contribute to the Joint Force? What does the Air Force do that the other services do not?

What air capabilities exist in the other services, and how might they typically be integrated into the Air Component? What friction points exist between service employment and Joint employment of airpower?

E. Products:

None

F. Required 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. Naval War College, Joint Military Operations Department. *A Borneo Case Study for Expeditionary Warfare*. Newport, RI: Naval War College, January, 2018.
Review: 70-76, 80-83. **(NWC 6036K). (Issued).**

_____. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, 2018.
Read: 95-97 (Core Missions). Scan: 118-145 (Platforms, Sensors, and Weapons).
(NWC 3153R). (Issued).

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, February 10, 2014. Read: II-1 to II-24, and E-2.

_____. *Countering Air and Missile Threats*. Joint Publication (JP) 3-01, Washington D.C.: CJCS, April 2017. Review Chapters 4, 5.

G. Supplementary Reading:

Haun, Phil and Colin Jackson. “Breaker of Armies.” *International Security* Vol 40, No. 3 Winter 2015/16. 139-178.

Office of the Chairman of the Joint Chiefs of Staff. *Joint Operational Access Concept (JOAC)*. Washington, D.C.: CJCS. January 2012. Read: 17-27 “Operational Access Precepts.”

U.S. Air Force. Air Force Doctrine Annex 3-0, *Operations and Planning*. Air Force Doctrine Center, Maxwell AFB, AL. 5 August 2015.

_____. *Air Force Doctrine Volume 1 – Basic Doctrine* Air Force Doctrine Center, Maxwell AFB, AL. 27 February 2015.

Welsh III, Mark A. General. “Global Vigilance, Global Reach, Global Power for America,” *Air & Space Power Journal*, April 2014.

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THE JOINT FORCE LAND COMPONENT COMMANDER (Seminar)

We can make the land component command arrangement work. There will be no more occasions in the Central Command's area of operations where Marines...fight one ground war and the Army fights a different ground war. There will be one ground war and a single land component commander

-Marine General Anthony C. Zinni, USCENTCOM, 2003

A. Focus:

This session provides an overview of the Command and Control (C2) of joint land operations with emphasis on the responsibilities of a joint force land component command (JFLCC) when the Joint Force Commander (JFC) employs Army and Marine Corps forces in support of operational objectives. The designation of a JFLCC normally occurs when forces of significant size and capability of more than one Service component participate in a land operation and the JFC determines that doing this will achieve unity of command and effort among land forces.

B. Objectives:

- Comprehend the responsibilities and C2/organizational options of the JFLCC.
- Comprehend the roles and missions of the U.S. Army and U.S. Marine Corps, as well as the capabilities of all services contributing to the JFLCC.
- Comprehend broad doctrinal service concepts guiding the employment of land forces at the high-tactical and operational levels of war.

C. Background:

Land operations are conducted within a complex operational environment. Considerations with civilians, local and regional governance, valuable infrastructure, avenues of approach, freedom of vehicular movement, and communications functionality vary considerably among land environments, creating challenges for the JFC. In addition, urban or emerging subterranean environments require special consideration for the conduct of joint land operations. As a result, joint land operations require effective and efficient C2 structures to achieve success.

C2 of joint land operations is fundamental to warfare. Having a land component commander (LCC) is not new to the Armed Forces of the United States. The Allies in World War II successfully employed separate joint or multinational LCC headquarters in several

theaters. These land component commands ensured proper coordination with other components and freed the multinational force commander to focus on overall strategy.

Today, land control operations continue to be executed by both joint and combined forces, with increasing integration with maritime and air forces, to control vital land areas. Such actions are conducted to establish local military superiority in land operational areas in a manner conceptually similar to maritime superiority.

The points of contact for this session are Colonel Matt Tackett, USA, C-429 and Lieutenant Colonel Matt Dreier, USMC, C-403.

D. Discussion Topics:

How does a JFC task organize land forces under a JFLCC? What factors must be considered when determining C2 structure for land forces?

What theater capabilities do U.S. Army forces provide the joint force?

What unique employment considerations must the JFC address when employing the Marine Air Ground Task Force (MAGTF)?

How do differences in USA and USMC capabilities affect employment considerations for a future Land Force?

E. Products:

None.

F. Required Reading:

Bonin, John. "Unified and Joint Land Operations: Doctrine for Landpower." *The Land Warfare Papers*, No. 102, August 2014. Read. **(NWC 6056)**

Dupuy, T.N. *Understanding War: History and Theory of Combat*. Paragon House Publisher, 1987. Read: 1-8. **(NWC 6058)**.

Hughes, Wayne P. Jr. *Fleet Tactics and Coastal Combat, 2nd ed.*, Annapolis, MD: Naval Institute Press 2000. Review: 172-173. **(Issued)**.

U.S. Naval War College, Joint Military Operations Department. *A Borneo Case Study for Expeditionary Warfare*. Newport, RI: Naval War College, January, 2018. Review: 71, 74-76, 80-83. **(NWC 6036K)**. **(Issued)**.

_____. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, 2018. Read: 95-97 (Core Missions). Scan: 118-145 (Platforms, Sensors, and Weapons). **(NWC 3153R)**. **(Issued)**.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Command and Control for Joint Land Operations*. Joint Publication (JP) 3-31. Washington, D.C.: CJCS, February 24, 2014. Read: I-1 to I-10, II-1 to II-13.
Scan: ix – xiv (Executive Summary), Appendix B.

G. Supplementary Reading:

U.S. Army. *The Army*, Army Doctrine Publication (ADP) 1. Washington, D.C.: Headquarters, Department of the Army, September 2012.

_____. *Unified Land Operations*, Army Doctrine Publication (ADP) 3-0. Washington, D.C.: Headquarters, Department of the Army, October 2011.

_____. U.S. Army Operating Concept. Washington, D.C.: Headquarters Department of the Army, October 2014.

United States Marine Corps. 36th Commandant's Planning Guidance. Washington, D.C.: Headquarters, U.S. Marine Corps, 23 January 2015.

_____. 37th Commandant FRAGO 01-2016 of 19 January 2016.

_____. Marine Corps Operating Concept. How an Expeditionary Force Operates in the 21st Century. Washington, D.C.: Headquarters, U.S. Marine Corps, September 2016.

_____. *Warfighting*. Marine Corps Doctrinal Publication (MCDP) 1. Washington, D.C.: Headquarters, U.S. Marine Corps, 1997.

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THE JOINT FORCE SPECIAL OPERATIONS COMPONENT COMMANDER (Seminar)

The great value of SOF is that they are “specialized generalists,” local level integrators that link between the tactical, operational and strategic levels of action in ways that may enhance the autonomy of the military. SOF are therefore hybrid forms of organizational response to environmental pressures: to reduce risk, to manage the links between the armed forces and external environments and to integrate specialties.

—Eitan Shamir and Eyal Ben-Ari
The Rise of Special Operations Forces

A. Focus:

This session provides an overview of Special Operations Forces (SOF) with emphasis on Command and Control (C2) of these forces and the responsibilities of a joint special operations component command (JFSOCC). As designated by the Joint Force Commander (JFC), the JFSOCC controls all SOF in the Joint Operations Area (JOA) and will generally be the commander with the preponderance of SOF and the requisite C2. In addition to C2, this lesson highlights the organization and employment of SOF forces at the high-tactical and operational levels of war while studying the roles, missions, core competencies, operational concepts, and considerations for employing SOF in a joint environment.

B. Objectives:

- Comprehend the responsibilities and C2/organizational options of the JFSOCC.
- Comprehend the roles and missions of SOF, as well as the capabilities of all services contributing to the Joint Force Special Operations Component Command.
- Comprehend broad doctrinal concepts guiding the employment of SOF at the high-tactical and operational levels of war.

C. Background:

The JFSOCC is the commander within a unified command, subordinate unified command, or JTF responsible to the establishing commander for making recommendations on the proper employment of assigned, attached, and/or made available for tasking SOF and assets, including planning and coordinating special operations, or accomplishing such operational missions as may be assigned. The JFSOCC acts as the senior SOF representative in the operation or within the theater. The JFSOCC supports the JFC with unique and effective SOF capability while ensuring the SOF components are organized for optimum

contribution to the JTF. The JFSOCC provides a Conventional Force/SOF synchronizing process with the JTF through the joint forces land component commander, if designated. SOF is inherently organized as a joint force, providing a timely capability to coordinate across multiple services with communications connectivity that provides accurate and timely information to the JFSOCC. The JFSOCC capability to assist with C2 functions is critical during the initial phases of crisis response.

SOF are small, specially organized units manned by people carefully selected and trained to operate under physically demanding and psychologically stressful conditions. SOF accomplish missions using modified equipment and unconventional applications of tactics against strategic and operational objectives in hostile, denied, or politically sensitive environments to achieve objectives. SOF may be used to employ military capabilities for which there is no broad conventional force requirement. Since the establishment of the U.S. Special Operations Command (USSOCOM) in 1987, SOF have been under the combatant command of one unified commander and have been trained and equipped to conduct unilateral, joint and combined special operations across the Range of Military Operations. SOF supports the geographic combatant commanders, U.S. ambassadors and their country teams, and other government agencies as the environment, authorities and the objective requires. Each military service has established a major command to serve as the service component of USSOCOM (USASOC, MARSOC, NAVSPECWARCOM, and AFSOC).

The point of contact for this session is Professor Joe McGraw, C-431.

D. Discussion Topics:

Describe the role of the JFSOCC. How is it organized? How is the C2 constructed? How does it relate, coordinate, and synchronize with the rest of the JTF and components?

Describe the difference between ‘surgical strike’ operations and ‘special warfare’ operations. How do these concepts differ, and what does it mean to the JFSOCC Commander? How do the service components provide the resources for both types of operations to the JFSOCC?

What capabilities does the JFSOCC provide to the JFC? How does the JFSOCC balance requirements from the operational commander (JFC) and national decision makers? What are some limitations of the JFSOCC?

U.S. Special Operations Command propounds five ‘SOF Truths’:

- Humans are more important than hardware.
- Quality is better than quantity.
- Special Operations Forces cannot be mass produced.
- Competent Special Operations Forces cannot be created after emergencies occur.
- Most Special Operations require non-SOF assistance.

Discuss the relevance and applicability of these ‘truths,’ particularly the fifth ‘SOF Truth’.

E. Products:

None.

F. Required Reading:

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. Read: 4-11. (NWC 1127).

U.S. Naval War College, Joint Military Operations Department. *A Borneo Case Study for Expeditionary Warfare.* Newport, RI: Naval War College, January, 2018. Review: 76, 80-83. (NWC 6036K). (Issued).

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. Read: II-1 to II-18, III-1 to III-25.

G. Supplementary Reading:

Robinson, Linda, “*The Future of U.S. Special Operations Forces,*” Council on Foreign Relations, April 2013.

U.S. Naval War College, Joint Military Operations Department. *Forces/Capabilities Handbook.* Newport, RI: Naval War College, 2018. (NWC 3153R). (Issued).

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OPERATIONAL INTELLIGENCE FOR THE MARITIME COMMANDER (Seminar)

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

A. 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. In particular, this seminar 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).

B. 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.

C. 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 some 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.

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

D. Discussion Topics:

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?

E. Products:

Students will be assigned to teams in a moderator memo to analyze optimum and sub-optimum incorporation of intelligence into planning and operations in several historical case studies. Students will answer questions posed in the memo as they apply to their specific case study and lead seminar discussion based on their findings and analysis.

F. Required Reading:

Jacoby, L. E. "Operational Intelligence: Lessons from the Cold War." *United States Naval Institute, Proceedings* 125, no. 9 (Sep 1999): 102-104. (NWC 4139).

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 Chapter 3, 5 – 35. Scan Chapter 4, 5 and Annex J.

_____. *Intelligence Support to Naval Operations*. Naval Warfare Publication (NWP) 2-01. Norfolk, VA: Department of the Navy, April 2017. Scan Chapter IV.

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.

. *Joint Task Force Headquarters*. Joint Publication (JP) 3-33. Washington, D.C.: CJCS, July 30, 2012. Scan Chapter VI.

Moderator will assign the below readings by team:

Flynn, Michael T. “Fixing Intel: A Blueprint for Making Intelligence Relevant in Afghanistan.” Washington, D.C.: Center for New American Study. January 2010. (NWC 2081).

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): 379-409. (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).

G. Supplementary Reading:

Hooker, Gregory. *Shaping the Plan for Operation Iraqi Freedom: The Role of Military Assessments*. Washington, D.C.: The Washington Institute for Near East Policy, 2005.

Ilardi, Gaetano Joe. “al Qaeda’s Operational Intelligence – A Key Prerequisite to Action.” *Studies in Conflict and Terrorism*, 31 (2008): 1072-1102. (NWC 2078).

Jones, Garrett. “Working with the CIA.” *Parameters* (Winter 2001–02): 228–39.

Layton, RADM Edwin T. *“And I Was There”: Pearl Harbor and Midway – Breaking the Secrets*. Annapolis, MD: Naval Institute Press, 2006.

Mansoor, Colonel Peter R. and Major Mark S. Ulrich. “Linking Doctrine to Action: A New COIN Center-of-Gravity Analysis.” *Military Review* (September-October 2007): 21-27.

Metz, Thomas F. “OIF II: Intelligence Leads Successful Counterinsurgency Operations.” *Military Intelligence Professional Bulletin* 31, no. 3 (Jul-Sep 2005): 10-15.

U.S. Office of the Chairman, Joint Chiefs of Staff. *Joint and National Intelligence Support to Military Operations*. Joint Publication (JP) 2-01. Washington, D.C.: CJCS, January 5, 2012.

_____. *Joint Intelligence Preparation of the Operational Environment*. Joint Publication (JP) 2-01.3. Washington, D.C.: CJCS, May 21, 2014.

Vego, Milan. "Operational Intelligence." *Joint Operational Warfare: Theory and Practice*. 2006. Newport, RI: Naval War College, reprint 2009.

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INFORMATION OPERATIONS AND CYBERSPACE OPERATIONS (Seminar)

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, 1965
British Army

A. Focus:

The focus of this session is to develop an understanding of how *Information and Cyberspace* may be used in the pursuit of military objectives and political ends in contemporary conflict. Broadly speaking, all operations are ultimately ‘influence’ operations. In other words, short of unconditional surrender military operations are undertaken to influence an adversary to make a decision favorable to larger U.S. objectives. As such, the integrated employment of information-related capabilities (IRCs) and cyberspace operations (CO) is central to achieving the commander’s objectives at every level of warfare. This session is intended as a foundation for understanding how information operations (IO) and CO can be leveraged to achieve success across the spectrum of operations.

B. Objectives:

- Comprehend the principles, strengths, and limitations of integrating information operations and cyberspace operations into service and joint planning.
- Comprehend how IO and CO are used to inform, persuade, and influence decision makers across the spectrum of conflict.
- Comprehend the relationships between lethal and non-lethal fires in developing IO and CO objectives and tasks that support the Joint Force Commander’s mission and objectives.
- Examine the use of cyber warfare in the pursuit of military objectives and political ends.
- Comprehend the ability of CO to achieve mass destruction and effects.

C. Background:

The Information Environment (IE) and its contemporary subset cyberspace are often used to inform, persuade, and influence decision makers across the spectrum of conflict. What moves through cyberspace is information in the form of code (software) that is displayed as content on graphic user interfaces of the electronics we use daily. Effectively using IO and

CO in support of objectives and ends will be crucial enablers in future conflict; many of our current and potential adversaries clearly understand this maxim.

Hence, in the summer of 2017, U.S. joint doctrine added information as a seventh joint function. Joint doctrine suggests that JFCs should integrate friendly information into their plans while leveraging the inherent informational aspects of all military activities to achieve their objectives. The confluence of information connectivity, content, and cognition combine to form the IE, which is a term of art in U.S. joint doctrine.

Joint Publication 3-13, *Information Operations*, defines IO as “the integrated employment, during military operations, of information related capabilities 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.” Joint Publication 3-12R, *Cyberspace Operations*, defines cyberspace as a global domain within the information environment (IE), consisting of the interdependent network of information technology infrastructures and resident data, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.

Joint Publication 1, *Doctrine for the Armed Forces*, describes the relationship between information and decision-making. It outlines how information as a joint function encompasses the management and application of information, and its deliberate integration with other joint functions can influence relevant-actor perceptions, behavior, action or inaction, and support human and automated decision-making (machines). Understanding *Information* as an element of national and military power; and how it is moved, prioritized, analyzed and synthesized to support decision makers has been vital to warfare throughout history. In the information age, the IE and cyberspace domain are inextricably linked.

Cyberspace (much like the sea) is a domain in which humans maneuver in and through to achieve objectives in the physical spaces. What has changed in the information age is the speed at which information moves around the world—particularly its range and depth of penetration into society, and the continuous invention and adaptation of electronics, software, and content for human and automated use. The speed, range, and depth of the movement of information are made possible by the largely man-made domain of cyberspace.

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, and entertainment) is rapidly accelerating. For example, global activity in cyberspace in the early twenty-first century include approximately 2.5 billion internet users (or 33 percent of people on Earth), six billion mobile cellular subscriptions, and more than 1 billion Facebook™ users. The U.S. Department of Defense (DoD) alone operates over 15,000 networks and more than seven million edge devices (electronic computing devices that provide entry points to move code and content around the internet).

Code and content are clearly reshaping the operating environment as we continue to intertwine cyberspace with nearly all aspects of life. Understanding how they move through cyberspace and are used as force to inform, persuade, and influence decision-makers and to make electronics act independent of the owner’s intent will be fundamental to success in twenty-first century conflict.

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

D. Discussion Topics:

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?

In what ways can one control the cyberspace? What impact does that control have on contemporary operations? Can cyber control be disputed or denied? If so, provide some examples.

What lessons for future operations can be drawn from both the Libyan government and the opposition forces use of cyber technologies and information-related capabilities in the 2011 revolution?

How could potential adversaries use cyber warfare against the United States or our allies?

E. Products:

None.

F. Required Reading:

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. Read. (NWC 2137).

_____. "War in the Information Age: A Primer for Information Operations and Cyberspace Operations in 21st Century Warfare" Newport: Naval War College, January 2016. Read. (NWC 2021D).

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).

Reilly, Robert R. "Information Operations: Successes and Failures." Westminster Institute, 2013. (NWC 2163).

Scott-Railton, John. "Revolutionary Risks: Cyber Technology and Threats in the 2011 Libyan Revolution." CIWAG case study series 2013, eds. Richard Crowell, Marc Genest, and Andrea Dew. Newport, RI: U.S. Naval War College, Center on Irregular Warfare and Armed Groups, 2013. (NWC 3176A).

U.S. Naval War College, Joint Military Operations Department. *A Borneo Case Study for Expeditionary Warfare*. Newport, RI: Naval War College, January, 2018. (NWC 6036K). (Issued). Read: Appendix G: Cyberspace Operations

U.S. Office of the Chairman, Joint Chiefs of Staff. *Adaptive Planning and Execution (APEX) Planning Formats and Guidance*. CJCSM 3130.03. Washington, D.C.: 18 October 2012. Scan Appendix 3 to Annex C. Read: Appendix 16 to Annex C.

_____. *Cyberspace Operations*. Joint Publication (JP) 3-12R, Washington, D.C.: CJCS, 2013. Scan Executive Summary. Read: Chapter 4.

_____. *Information Operations*. Joint Publication (JP) 3-13, Washington, D.C.: CJCS, Incorporating Change 1 of November 20, 2014. Scan Executive Summary, Chapters 1, and 2. Read: Chapter 4.

U.S. Office of the Secretary of Defense. *Department of Defense Strategy for Operations in the Information Environment*. Washington, D.C.: June 2016. Read: 1-7; Scan remainder of the document.

G. Supplementary Reading:

Crowell, Richard M. “Analyzing Hybrid Warfare.” Newport RI: Naval War College, November 2014. (NWC 3084C).

_____. “Hung on the Old Bridge like Slaughtered Sheep.” Newport RI: Naval War College, August 2009. (NWC 2074).

Darley, William M. “Clausewitz’s Theory of War and Information Operations.” *Joint Force Quarterly*. No. 40 (1st Quarter 2006): 73–79.

Deibert, Ronald. *Black Code: Inside the Battle for Cyberspace*. Toronto: McClelland & Stewart, 2013.

Olson, Parmy. *We are Anonymous: Inside the Hacker World of LulzSec, Anonymous, and the Global Cyber Insurgency*. New York: Little, Brown and Company, 2012.

Schmitt, Michael N. Ed. “The Tallinn Manual on the International Law Applicable to Cyber Warfare.” Cambridge: Cambridge University Press, 2013.

U.S. Army. “Bullets & Blogs – New Media and the Warfighter.” Center for Strategic Leadership, U.S. Army War College and The SecDev Group, 2009.

Wald, Charles. "New Thinking at EUCOM the Phase Zero Campaign." *Joint Force Quarterly* No. 43 (4th Quarter 2006): 72–75.

Warner, Michael. "Cybersecurity: A Pre-history." *Intelligence and National Security*, 27:5, 2012.

Woods, Kevin M. *Iraqi Perspectives Project: A View of Operation Iraqi Freedom from Saddam's Senior Leadership*. Suffolk, VA: Joint Center for Operational Analysis. United States Joint Forces Command, 2006.

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NAVAL OPERATIONAL LOGISTICS (Seminar)

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

A. Focus:

This session provides an overview of Logistics – a key component of Sustainment - with emphasis on naval logistics of the Navy and Marine Corps. The session's focus is planning and coordinating logistics in support of the Navy Component Commander (NCC) or Joint Force Maritime Component Commander (JFMCC) while connecting strategic-level organizations and resources with the tactical user in order to sustain the fleet and/or force across the range of military operations. Additionally, this session will introduce how planning for operational contract support (OCS) across joint functions can expand capabilities and compensate for limitations of joint forces to conduct the full range of military operations.

B. Objectives:

- Comprehend and describe the relationship among the elements of strategic, operational, and tactical logistics, and understand the implications of operational factors on naval logistics in support of maritime operations.
- Comprehend and describe naval logistics capabilities, command, and control thereof within the overall Logistics Support Model.
- Identify and analyze specific logistics issues that must be addressed when developing a logistics staff estimate and how to apply them in the planning process for a deployment and maritime operation.
- Evaluate and assess the operational concept of logistics support to achieve operational objectives.
- Comprehend the OCS capabilities, options, and considerations of the joint force and the relationships that facilitate requirements determination, oversight, freedom of action, and commander's intent.

C. Background:

According to NWP 4-0 *Naval Logistics*, logistics is planning and executing the movement and support of forces. Additionally, NWP 4-0 defines sustainment as the provision of personnel, logistics, and other support required to maintain operations until successful accomplishment of the mission. Naval logistics consists of seven core capabilities: supply, maintenance operations, transportation, health service support, operational engineering, other logistics services, and operational contract support; these capabilities should be thought of as critical requirements for readiness, operational reach, endurance, and sustainment of naval forces.

Naval logistics is interconnected and overlapping across all three levels of war. Each service department is responsible for their logistics; however, logistics support is commonly accomplished through a combination of service departments, various DoD organizations, agencies, and contracted support at the strategic, operational, and tactical levels. Although logistics is a service responsibility, geographic combatant commanders retain Directive Authority for Logistics (DAFL) for situations where operational imperatives drive the need to direct service components to support other services by cross-leveling resources, lift assets or other critical capabilities in support of operational requirements.

Naval logistics at the operational level is primarily concerned with deployment, basing, readiness, and sustainment support to operating forces - namely numbered fleets and Marine Air Ground Task Forces (MAGTFs). Naval logistics has unique considerations distinguishing its execution from that of support to ground maneuver forces or air forces operating from expeditionary bases. The Navy's logistics architecture is designed to support forces maneuvering at sea, over the shore, and ashore.

From the strategic level, the Navy leverages DOD, the services, other government agencies and the private sector as sources of logistics that are provided through a Fleet Global Logistics Network. The Fleet Global Logistics Network consists of Naval Advanced Logistics Support Sites (NALSS), Naval Forward Logistics Sites (NFLS) and a Combat Logistics Force to provide shore based and underway replenishment down to the "last nautical mile" to fleets and Marine Corps forces. Effective naval logistics requires access to partner nation bases, ports, and facilities; assured communications; mobile capabilities; and an appreciation for many factors, including time, space, and force, when developing a fleet concept of logistics support.

Operational level, naval logistics may also involve coordination with coalition naval commands supporting multinational operations. Although coalition logistics and sustainment are each individual nation's responsibility, naval component command planners will often develop and utilize acquisition and cross-service agreements through diplomatic channels as a source of multinational logistics support.

Operational Contract Support is one of the seven core Naval logistics capabilities, and according to the *Command and Staff Guide to Operational Contract Support* is the process of synchronizing and integrating contracted specialties in support of Combatant Command directed operations. OCS can be a force multiplier, enhancing forces' combat power or employed in lieu of forces when there are mission-specific, force structure or manning restrictions. However, there are inherent challenges and risks with contract support that must

be identified and mitigated. Finally, OCS is “commander’s business” - the responsibility for planning, procuring, and managing OCS belongs to the commander and his/her staff.

Point of contact for this session is Lieutenant Colonel Troy Rittenhouse, USA, C-404.

D. Discussion Topics:

Are logistics and sustainment the same/different? When should logistics be considered during the planning process and why?

What are the naval logistics capabilities? What organizations exist to resource NCC and JFMCC requirements across the three levels of war?

What are the NCC or JFMCC options for commanding and controlling naval logistics?

What critical logistics issues must be properly addressed when planning maritime operations and why? How does the “logistics staff estimate” serve as a tool to facilitate critical logistics planning? How do the principles of naval logistics assist logistics planners?

How do commanders plan, procure, and manage contracted support to meet operational missions? What risks does the operational force assume by relying on contracted capabilities and how can these risks be mitigated?

What were some of the naval logistics challenges at Leyte and do those same challenges exist today; if so, which and how do we overcome them?

E. Products:

None.

F. Required Reading:

CANF SWPA OPLAN 13-44, MUSKETEER KING II, Annex K Logistics, Base Development and Medical Plans, accessed November 19, 2016. Read. <https://www.ibiblio.org/hyperwar/USN/rep/Leyte/OpPlan/13-44-K.html>. (NWC 4169).

Gannon, James. U.S. Naval War College, Joint Military Operations Department. “Naval Logistics Primer.” Newport, RI: Naval War College, January 2018. (NWC 1218).

Morison, Samuel E. *Leyte, June 1944-January 1945: History of the United States Naval Operations in World War II, Volume 12*, Annapolis, MD: Naval Institute Press, 1958. Read: 74-85. (Issued).

U.S. Department of Defense. *Command and Staff Guide to Operational Contract Support*, Version 1.0. Washington, D.C.: DOD, 25 October 2016. (NWC 2174).

U.S. Office of the Chief of Naval Operations. *Naval Planning, Logistics*, NTTP 5-01.4, Navy Warfare Publication; Norfolk, VA: Department of the Navy, April 2015. Read: Chapter 1.

G. Supplementary Reading:

Akin, Mark W. and George L. Topic. "Transforming Joint Operational-Level Logistics," *Joint Force Quarterly*, Issue 47 (4th quarter 2007).

Crevelde, Martin Van. *Supplying War: Logistics from Wallenstein to Patton*. Cambridge, United Kingdom: Cambridge University Press, 1997.

Eccles, Henry E. *Operational Naval Logistics*. Newport, RI: Naval War College Press, 1950.

Mordente, Patrick, Paul Needham, Theodore Ogren, "Logistics for the 21st Century – Deployment Distribution Center, Quick Fix or Long-Term Solution?" *Air Force Journal of Logistics* 3 No. 4 and 31 No. 1 (Winter 2006/Spring 2007).

Morgan, John. "War Feeding War? The Impact of Logistics on the Napoleonic Occupation of Catalonia." *Journal of Military History* No. 73 (January 2009): 83-116.

O'Hanlon, Michael E., *The Science of War, Defense Budgeting, Military Technology, Logistics and Combat Outcomes*. Princeton, NJ: Princeton University Press, 2009.

Peterson, Mike W. "Rapid Port Opening Elements - SDDC's newest units are logistics first responders," *TRANSLOG, The Journal of Surface and Deployment Distribution*, (Fall 2009).

U.S. Army Command and General Staff College. "Operational Logistics Planning." Fort Leavenworth, KS: March 2009.

U.S. Office of the Chief of Naval Operations. *Naval Logistics*, NWP 4-0M/MCWP 4-2, Navy Warfare Publication; Norfolk, VA: Department of the Navy, July 2011.

_____. *Sustainment at Sea*, NWP 4-01.2, Navy Warfare Publication; Newport, RI: Department of the Navy, April 2007.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Operational Contract Support*. Joint Publication (JP) 4-10. Washington, D.C.: CJCS, 16 July 2014.

_____. *Doctrine for Logistic Support of Joint Operations*. Joint Publication (JP) 4-0. Washington, D.C.: CJCS, 16 October 2013.

_____. *Joint Doctrine for the Defense Transportation System*. Joint Publication (JP) 4-01, Washington, D.C.: CJCS, 19 March 2003.

_____. *Joint Task Force Headquarters*, Joint Publication (JP) 3-33. Washington, D.C.: CJCS, 30 July 2012.

Wildenberg, Thomas. *Gray Steel and Black Oil: Fast Tankers and Replenishment at Sea in the U.S. Navy, 1912-1995*. Annapolis, MD: Naval Institute Press, 1996. (NWC 4172).

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JOINT DEPLOYMENT (Seminar)

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

A. Focus:

To effectively employ joint forces to meet assigned objectives, Combatant Commanders (CCDR), as well as their 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. Additionally, this session introduces the national deployment system (strategic 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.

B. Objectives:

- Comprehend how joint forces deploy to an area of operations.
- Understand the strengths and limitations of the elements of the mobility triad.
- Comprehend the steps of the deployment process.

C: Background:

The previous session focused on sustaining the force once deployed. This session explores how forces move from their home station to the area of operations to provide the commander combat potential (as well as re-deployment upon mission completion). Deployment encompasses the transportation of people, equipment, supplies, and other commodities by land, sea, and air, to enable military force projection. Deployment also includes efforts for scheduling the mobilization and movement of forces and material to support the higher joint task force commander's operational concept.

A brief explanation of the Global Force Management (GFM) system will precede a more detailed discussion of the different challenges the Joint Force Commander faces in deploying maritime, air and land forces. Operational and Contingency planning results in an operation plan (OPLAN) or operation order (OPORD) whose force movement is usually 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.

Navy ships with embarked forces, naval air squadrons, detachments, and MEUs are self-deploying. Non-embarked Marine Corps forces and naval expeditionary component command forces move to and from theater via strategic common-user pre-positioning, land, sea, and air transportation, commonly called the Strategic Mobility Triad, provided by USTRANSCOM. The Military Sealift Command, the naval component of TRANSCOM, 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. While the Joint Staff J3 serves as the DOD joint deployment process owner, USTRANSCOM serves as DOD's Mobility Joint Force Provider, Single Manager for Defense Transportation and Single Manager for Patient Movement. Actual movement is executed by USTRANSCOM's 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, contracting U.S. flag commercial carriers for sealift procurement and operations.

The point of contact for this session is Captain Jamie McGrath, USN, C-411.

D. Discussion Topics:

What are the challenges associated with deploying the joint force?

How can the unique deployment characteristics of these forces be used to the Joint Force Commander's advantage?

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?

E. Products:

None.

F. Required Reading:

Appleman, Roy E., James M. Burns, Russell A. Gugeler, and John Stevens. *United States Army in World War II: The War in the Pacific: Okinawa: The Last Battle*. Washington, D.C.: United States Army Center of Military History, 1948. Read: 36-43. **(NWC 6061)**.

U.S. Naval War College. A Primer for: *Guidance for Employment of the Force (GEF), Joint Strategic Capabilities Plan (JSCP), the Adaptive Planning and Execution (APEX) System, and Global Force Management (GFM)*: Newport, RI: Naval War College, 15 July 2017. Read: 16-21. **(NWC 2061G)**.

_____. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, 2018. “Operational Command and Control” Section. Read: 167-170, Scan 155-166. **(NWC 3153R). (Issued)**.

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, 31 January 2013. Read: Executive Summary, Chapter 5, Scan: Chapter 4.

G. Supplementary Reading:

O’Hanlon, Michael E. *The Science of War, Defense Budgeting, Military Technology, Logistics and Combat Outcomes*. Princeton, NJ: Princeton University Press, 2009.

Peterson, Mike W. “Rapid Port Opening Elements - SDDC’s newest units are logistics first responders,” *TRANSLOG, The Journal of Surface and Deployment Distribution*, (Fall 2009).

U.S. Office of the Chairman of the Joint Chiefs of Staff. *The Defense Transportation System*. Joint Publication (JP) 4-01, Washington, D.C.: CJCS, 18 July 2017.

_____. *Sealift Support to Joint Operations*, Joint Publication (JP) 4-01.2. Washington, D.C.: CJCS, 29 December 2015.

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TABLETOP EXERCISE #5
PRC-TAIWAN CASE STUDY (Seminar and Exercise)

I would say that he (Chinese CNO Wu) doesn't want to build a navy that's equivalent to the U.S. He wants to build a navy that surpasses the U. S.

—Admiral Gary Roughead (USN, Ret), 2009
Former U.S. Chief of Naval Operations.

A. Focus:

This tabletop exercise is a six-hour discussion and practical exercise designed to synthesize the material covered in the trimester thus far. The session will require students to revisit the unique considerations of naval capabilities/limitations and employment considerations relevant to a variety of warfare areas. A review of operational art, maritime warfare theory, and operational law will be required to successfully complete this exercise. The PRC-Taiwan Vignette provides a fictional future scenario for students to apply knowledge and understanding of naval force employment considerations and maritime command and control in a discussion of a major, joint maritime operation. The focus of this session is on the operational design of this maritime operation and is not a planning exercise; instead, the scenario provides a realistic backdrop to facilitate professional discussion on naval warfare.

B. Objectives:

- Apply knowledge of the naval capabilities, limitations, and employment considerations to operations in a high-intensity combat environment against a near-peer competitor.
- Reinforce knowledge of maritime force capabilities, roles, functions, employment considerations, and limitations.
- Design a major naval/joint operation.

C. 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 the following elements: ultimate operational (and sometimes limited strategic) and intermediate objectives; force requirements; balancing operational factors against the

ultimate objective; identification of critical factors and centers of gravity; initial positions and lines of operations; directions/axes; the operational idea; and operational sustainment.

The operational idea (or scheme) is the very essence of a design for a major naval/joint operation. The operational idea for a campaign should be developed first, because the strategic objective always dominates the operational objectives. The operational idea for a campaign provides a framework for the operational idea of each subordinate major operation. The operational commander should make sure the subordinate operational ideas in each phase of a maritime campaign are consistent with his own operational idea.

The operational idea for a major naval/joint operation is developed during the operational commander's estimate of the situation, and the idea should be further elaborated upon and refined during the planning process. A soundly conceived operational idea should include selected principles of war; a method for defeating the enemy; application of sources of power; the sectors of effort; main forces and supporting forces, the point of main attack (or defense); concentration in the sector of main effort; operational maneuver and fires; protection of the friendly center of gravity; anticipation of the point of culmination; deception; sequencing; synchronization; branches and sequels; phasing; tempo; momentum; and reserve.

It is critical to understand how maritime forces can be used to support and enable success of the other component commander's (land, air, SOF, and so forth) objectives, and ultimately a JTF mission. This fictional vignette is intended to generate discussion of capabilities, limitations, and operational design of a major naval operation. It is not desired that students expend time discussing the viability of the scenario presented, or the probability of American intervention in the portrayed crisis. Students need to simply accept the task of discussing potential operational designs or schemes and how maritime forces could be effectively employed in this situation.

The point of contact for this session is Commander Brad Donnelly, USN, C-405.

D. Discussion Topics:

Moderators will guide seminars through discussion. The seminar discussion will be from the point of view of the U.S. Naval Joint Force Maritime Component staff and centered on the following tasks and questions:

Employment considerations given threat, capabilities, environment, and mission.

Command and Control options.

What broad capabilities and options do U.S. Naval forces bring to a Joint Force Commander and how could these be integrated in to joint operations?

What vulnerabilities exist in U.S. forces that could be exploited by the adversary in exercising sea denial operations? How could 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 PRC surface, subsurface, and air threats?

E. Products:

The principle product of this tabletop exercise, exclusive of a professional discourse, are the main elements of operational design (including operational idea) for denying control of the surface / subsurface / air in the Taiwan Strait, including its approaches, and obtaining control of the surface / subsurface / air in the South China Sea and the Yellow Sea. Additionally, final products should include the integration of offensive and defensive cyber war capabilities in the struggle for sea control / denial, an operational idea for defense / protection of blue shipping in the South China Sea, and an operational idea for attack of Red maritime trade in the Sea areas adjacent to Mainland China. Moderators will issue specific taskings in seminar.

F. Required Reading:

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. Read: Chapter 2, 13-25 and Chapter 5, 41-46. **(NWC 5032A)**.

U.S. Naval War College, Joint Military Operations Department. *PRC-Taiwan Vignette*, 2018. Read. **(NWC 4027F)**.

_____. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, Joint Military Operations Department. 2018. Review. **(NWC 3153R)**. **(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, 2018. Review. **(NWC 2164B)**.

U.S. Navy, U.S. Marine Corps, U.S. Coast Guard. *A Cooperative Strategy for 21st Century Seapower*. Washington, D.C.: Headquarters, U.S. Navy, Marine Corps, and Coast Guard. March 2015. Review: 8-18. **(NWC 2134)**

Vego, Milan. "China's Naval Challenge." Proceedings 137, No. 4 (April 2007). **(NWC 4121)**.

G. Supplementary Reading:

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)**.

Navy Warfare Development Command. *Joint Force Maritime Component (C/JFMCC) Planning and Execution*, TACMEMO 3-32-06. Newport, RI: NWDC, November 2006.

Yuan, Jingdong. *Emerging Maritime Rivalry in the South China Sea. Territorial Disputes, Sea-Lane Security, and the Pursuit of Power*. Sydney: International Security Research Programme, University of Sydney, September 2012.

ORDERS AND ORDER DEVELOPMENT (Seminar)

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

A. Focus:

As you have discovered in previous seminars, planning is problem solving and orders development is the mechanism used to convey the planning group's intellectual labor to subordinate commands for execution. Orders development and orders writing is a common task that all commanders and staff officers should understand.

B. Objectives:

- Understand the orders development process, the contents of an operations plan / order, and the standard format used for operations plans / orders.
- Understand the importance of orders reconciliation / crosswalk.
- Gain an understanding of the orders development process sufficient to develop an operations order.

C. Background:

As College of Naval Command and Staff and Naval Staff College graduates, you will likely participate in the orders development process, perhaps tasked with writing a staff estimate, base plan, or a specified annex to an operations plan or order. To meet this task, you must be able to read a higher headquarter's order, develop a supporting order, and clearly communicate that order to subordinate units in a timely manner.

Soon we will conduct a series of practical planning exercises that conclude with orders briefs. You will use this seminar and associated reference readings to develop portions of operations orders to communicate the commander's intent, guidance, and decisions that are products from the planning process. Orders development communicates the commander's intent, guidance, and decisions in a clear, useful form understandable by those executing the order. The operations order is the means of transmitting this key and pertinent information concerning execution to all units in or attached to the issuing headquarters.

The order should only contain critical or new information, not routine matters normally found in Standard Operating Procedures (SOPs). The Chief of Staff (CoS), the J-5 (Plans) or the J-3 (Operations) officer, as appropriate, is normally responsible for orders development. Orders development also 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. The *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.

The point of contact for this session is Lieutenant Colonel Matt Dreier, USMC, C-403.

D. Discussion Topics:

How does the operational design generated as a result of the planning process become codified for action?

Describe the difference between an operations order and a Commander's Estimate.

How does a commander provide updates to an operations order once issued?

E. Products:

None.

F. Required Reading:

Depuy, William E., "Concepts of Operation: the Heart of Command, the Tool of Doctrine," Army 38, no. 8 (August 1988). Read: 26-40. **(NWC 4114)**.

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 to 6-9, and Annexes L-2 & L-4. **(Issued)**.

_____. *Universal Naval Task List (UNTL)*. OPNAVINST 3500.38B. Norfolk, VA: Department of the Navy, 30 January 2007. Scan.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Universal Joint Task Manual (UJTM)*. CJCSM 3500.04F. Washington, D.C.: CJCS, 1 June 2011. Scan.

_____. *Universal Joint Tasks*, Washington, D.C.: CJCS, 1 November 2015. http://www.dtic.mil/doctrine/training/ujtl_tasks.pdf. Scan.

G. Supplementary Reading:

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

Vego, Milan. *Plans and Orders*. Newport RI: Naval War College, September 2002.
(NWC 2159A)

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TABLETOP EXERCISE #6: AN 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

A. Focus:

During our studies of Joint Operational Warfare, Operation KING II, of the MUSKETEER Campaign Plan, provided the backdrop against which we studied the theory of warfare. In the previous session, *Orders and Orders Development*, you explored the Department of Defense processes and formats for orders. More importantly, you now understand that orders translate 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. This exercise builds on previous sessions and seeks to foster creative thought through the evaluation of an operations order (OPORD), the principal tool a commander uses to direct operations.

B. 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 OPORD.

C. Background:

As you saw in the previous session, 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(s) in accordance with the commander's intent. Effective orders will clearly articulate the commander's vision and intent, the commander's operational idea, and the associated operational design. They should:

- Clearly convey the commander’s intent and purpose.
- Be authoritative, 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.

The point of contact for this session is Commander Brad Donnelly, USN, C-405.

D. Discussion Topics:

Explain the commander’s intent. Does is effectively communicate the “personal vision of victory and the conditions and methods for obtaining it”? What would you change and why?

How well does Operational Idea (Vego) or Operational Approach (Joint Doctrine) describe the broad actions the force must take to achieve the military end state?

Does the Operations order 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?

E. Products:

A critical analysis of Operations Plan 13-44 Serial 00040-A with change one (the Iwo-Jima operations order).

F. Required Reading:

Commander, Fifth Fleet. Operations Plan 13-44 Serial 00040-A with change one dated 3 January 1945. (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. Review: 6-1 through 6-9 and Appendix L-1 thru L-3-19. (Issued).

G. Supplementary Reading:

U.S. Army. *The Operations Process*. Army Doctrine Publication (ADP) 5. Washington, D.C.: Headquarters, Department of the Army, May 2012.

U.S. Marine Corps. *Marine Corps Planning Process*. Marine Corps Warfighting Publication (MCWP) 5-10. Washington, D.C.: U.S. Marine Corps, 2016.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Adaptive Planning and Execution (APEX) Planning Formats and Guidance*. CJCSM 3130.03. Washington, D.C.: CJCS, 18 October 2012.

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**THE NAVY PLANNING PROCESS: THE STRUGGLE
FOR SEA CONTROL (Planning Exercise)**

He who commands the sea is at great liberty and may take as much or as little of the war as he will.

—Francis Bacon, 1561-1626

A. 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.

B. Objectives:

- Comprehend and employ the NPP in resolving an ill-structured problem.
- Gain an understanding and appreciation of the planning considerations associated with the employment of a naval force in a contested environment.
- Employ the concepts and principles of maritime command and control.
- Create an OPORD that captures the planning group's operational design.

C. Background:

In this exercise, students will expand their understanding of the planning through practical application. Students are assigned to a JFMCC staff Operations Planning Group (OPG) in receipt of a Warning Order. Your seminar will leverage its understanding of operational art, planning, naval warfare theory, and operational leadership to create an OPORD (and supporting materials) that capture your OPG's operational idea/design.

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

D. Discussion Topics:

How is Operational Art captured in the Navy Planning Process? Explain.

The NPP is often portrayed as a rigid, serial, step by step process. Is it? Explain.

E. Product:

Students, through a moderator-led application of the NPP, will leverage all they have learned 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. The end product is an OPORD and other supporting material as directed. Specific OPORD deliverables include:

- 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 OPG will develop a JFMCC Synchronization Matrix and other materials as directed by the moderator.

F. Required Reading:

Specific reading guidance will be assigned by moderators.

U.S. Naval War College, Joint Military Operations Department *A Borneo Case Study for Expeditionary Warfare*. Newport, RI: Naval War College, January, 2018. Read. **(NWC 6036K). (Issued).**

_____. *Forces/Capabilities Handbook*. Newport, RI: Naval War College, 2018. Scan. **(NWC 3153R). (Issued).**

_____. “Operational Planning Team (OPT) Leader Guidebook.” Newport, RI: Naval War College, College of Maritime Operational Warfare, 20 January 2017. Scan.

_____. *Selected U.S. Navy and People's Liberation Army Navy (PLA(N)) Tactical Capability Handbook Slide Pack*. Newport, RI: Naval War College, Joint Military Operations Department, 2018. Review. **(NWC 2164B)**.

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. Scan.

G. Supplementary Reading:

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

_____. *Joint Forcible Entry Operations*. Joint Publication (JP) 3-18. Washington, D.C.: CJCS, 2017. 11 May 2017.

U.S. Air Force. *Operations and Planning*. Annex 3-0. McClelland AFB, AL: Department of the Air Force, 14 October 2011.

U.S. Army. *The Operations Process*. Army Doctrinal Publication (ADP) 5. Washington, D.C.: Headquarters, Department of the Army, May 17, 2012.

U.S. Marine Corps. *Marine Corps Planning Process*. Marine Corps Warfighting Publication (MCWP) 5-10. Washington, D.C.: Headquarters, United States Marine Corps, 2016.

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CRITIQUING SCHOLARLY WORK

To avoid criticism say nothing, do nothing, be nothing.

—Elbert Hubbard

A. Focus:

This session provides you an opportunity to critically examine the scholarly work of a peer. Using draft versions of the JMO Research Paper, this peer review exercise will be done outside of seminar by student pairs assigned by the moderator.

B. Objectives:

- Demonstrate critical thinking skills by critiquing scholarly work.
- Analyze an argument by identifying its thesis and supporting rationale.
- Evaluate a scholarly paper and provide constructive feedback.

C. Background:

Critiquing a fellow student's scholarly work is strikingly similar to the analysis you have already completed in JMO, such as your critique of the operational decisions made at Leyte Gulf. With written work, you should identify the author's argument along with its key elements (e.g., thesis and premises) and then apply value to them based on your understanding of the author's intent. Additionally, you will find that you 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, you will not only provide constructive feedback to your classmate but will also learn to be a better reader and writer.

Prior to this session you will receive a peer's draft JMO research paper. Using techniques presented thus far in JMO, as well as those included in the provided peer review worksheet, you 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, you will also assess the quality of the paper's presentation to provide the author a holistic review of his/her work.

Students will meet with the author outside of class time and provide specific feedback in a conversational format. This process requires the reviewer to carefully craft their critique 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.

The point of contact for this session is Colonel Chris Kidd, USA, C-405.

D. Discussion Topics: Not Applicable.

E. Products:

1. A critique of scholarly work with digital or handwritten comments (reviewer's preference).
2. A completed JMO Peer Review Worksheet (provided by and returned to the moderators).
 - a. Thesis, premises, and assumptions
 - b. Evidence and analysis
 - c. Alternative Arguments
 - d. Writing, structure, and presentation

F. Required Reading:

Kiersky, James H. and Nicholas J. Castle. *Thinking Critically: Techniques for Logical Reasoning*. West Publishing Co: New York. 1995. Review: 1-38. (NWC 4163).

G. Supplementary Reading:

APA Science Student Council. "A Graduate Student's Guide to Involvement in the Peer Review Process." (Accessed 1/18/2018)
<https://www.apa.org/research/publishing/peer-review.pdf>.

King, Charles. "How to Think." Georgetown University, School of Foreign Service and Department of Government. 1999.

Lamott, Anne. *Bird by bird: some instructions on writing and life*. New York: Pantheon Books. 1994.

Lunsford, Andrea A., and John J. Ruskiewicz. *Everything's an argument*. Boston: Bedford/St. Martin's. 2007.

Martin, Dorothea A. L. Habits of Mind-Evaluating and Constructing Arguments. World History Connected. <http://woldhistoryconnected.press.illinois.edu/index.html>.

Nelson, Thomas. "Critiquing Scholarship as Formal Review: The Role and Responsibilities of Readers for Academic Journals." *Issues in Teacher Education* 20, no. 1 (Spring 2011).

Palmer, Betsy and Claire Howell Major. "Using Reciprocal Peer Review to Help Graduate Students Develop Scholarly Writing Skills." *Journal of Faculty Development* 22, no. 3 (September 2008).

Purtil, Richard L. *Logical Thinking*. New York: Harpers & Row Publishers. 1972.

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TABLETOP EXERCISE #7: CRITIQUING THE OPERATIONS ORDER (Exercise)

My mental faculties remained in suspended animation while I obeyed the orders of higher ups. This is typical with everyone in the military.

—MajGen Smedley Butler USMC, 1933

A. 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. The operations order, once completed, becomes the principal means by which the commander expresses his or her decision, intent, and guidance. 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 again demonstrate critical thought by thoroughly critiquing another seminar's OPORD.

B. Objectives:

- Analyze a commander's operational idea, the articulation of decisions, and how a commander directs military operations through written operations 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 OPORD.

C. 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; however, 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, operations orders should be as clear, simple, and concise as the situation permits.

This session provides yet another opportunity for critical thought. You will analyze another seminar's OPORD to gain a better understanding of how an operations order communicates a commander's operational idea/design to subordinates—and brief your

fellow seminar on your conclusions. Another seminar will do the same for your seminar. 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 selected an order for execution.

The point of contact for this session is Colonel David Parr, USAF, C-408.

D. Discussion Topics:

Is the OPORD clear? Does it use simple, understandable English and proper military (doctrinal) terminology?

Is the OPORD concise and complete, stating all major tasks to subordinates clearly to include the task's purpose?

Is the affirmative form of expression used throughout to reinforce the authoritativeness of the OPORD?

Is the plan simple, eliminating all reasonable possibilities for misunderstanding?

Is the plan flexible? Does the OPORD instruct only as far as conditions can be reasonably foreseen?

Based on our understanding 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 the intelligent cooperation 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?

E. Products:

Seminars will provide candid, constructive feedback to the seminar whose order they have critiqued. Students, led by the moderator teams, will then combine the best aspects of each operations order for execution in the Final Exercise. It is essential that the combined order and supporting materials be reconciled to ensure they are internally valid.

F. Required Reading:

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, Scan Appendix L. **(Issued)**.

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 IV-62, Scan Appendix A. **(Issued)**.

G. Supplementary Reading:

Depuy, William E., "Concepts of Operation: the Heart of Command, the Tool of Doctrine," *Army* 38, no. 8 (August 1988).

U.S. Army. *The Operations Process*. Army Doctrine Publication (ADP) 5. Washington, D.C.: Headquarters, Department of the Army, May 2012.

U.S. Department of the Navy. *Navy Tactical Task List (NTTL)*. OPNAVINST 3500.38B/MCO 3500.26/USCG COMDTINST M3500.1B CH-1. 20 March 2008. Navy Doctrine Library System website 'Tactical Task' tab.
<https://ndls.nwdc.navy.mil/thinkmap/Thinkmap.aspx>

U.S. Marine Corps. *Marine Corps Planning Process*. Marine Corps Warfighting Publication (MCWP) 5-10. Washington, D.C., U.S. Marine Corps, 2016.

U.S. Office of the Chairman, Joint Chiefs of Staff. *Adaptive Planning and Execution (APEX) Planning Formats and Guidance*. CJCSM 3130.03. Washington, D.C.: October 18, 2012.

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NAVAL OPERATIONS OTHER THAN COMBAT (Lecture)

Naval forces must advance U.S. interests in a global security environment characterized by volatility, instability, complexity and interdependencies.

—A Cooperative Strategy for 21st Century Seapower, 2015

A. Focus:

The focus of this lecture is on the range of activities that navies conduct other than traditional naval combat in support of policy aims. The growing complexity and strategic importance of today's globalized maritime domain suggests the need for a firm understanding of the principles that underpin naval operations outside the context of naval combat.

B. Objectives:

- Examine the objectives and methods of naval operations other than combat.
- Comprehend the complexity of the global commons as a naval operating environment.
- Understand the difference between naval warfare theory and the principles that underpin naval operations other than combat.

C. Background:

Fighting navies do much more than just fight. They always have. Nelson's Royal Navy, for example, spent far more time protecting British trade than engaging in iconic pitched battles with Napoleon's fleet. This is even more the case for navies today. Actual naval combat has been a rarity since the Second World War and yet the navies of the world are seemingly busier than ever with everything from humanitarian relief to counter-piracy to sanction enforcement. One might wonder whether these "routine" activities are just opportunistic; something nations do with their navies just because they have them. Or perhaps these are just opportunities for training. While there is some of that, navies routinely make significant contributions toward the accomplishment of national policy aims in a variety of activities other than combat. Successfully achieving national policy aims, and avoiding unintentional adverse consequences, demands an understanding and appreciation of the fundamental differences between these activities and naval combat. Failure to appreciate the complexity of today's global commons as an operating environment is a recipe for failure.

While navies have always been useful in non-combat roles, the geo-politics of the world's oceans have changed since Nelson's day. This is perhaps most evident in the globalization of maritime commerce. Cheap, secure, free-flowing ocean trade is ever-more

vital to the global economy, yet maritime commerce today has essentially become supra-national; a global operating system outside any one nation's control or ability to protect. Nelson's Royal Navy had only to protect British shipping; today the entire interdependent system requires protection. Threats to the global system have evolved as well. The combination of the dispersion of disruptive technology and the fragility of the globally interconnected system mean that the system is vulnerable to disruption by sub-national groups and rogue states alike.

Secure maritime commerce, as important as it is, is only one of the policy aims routinely supported by the non-combat activities of today's navies. Naval forces also serve to maintain what theorist Geoffrey Till calls "good order at sea." Maintaining good order at sea involves pursuing such collective policy aims as suppressing trans-national crime and terrorism, supporting nuclear non-proliferation, protecting the environment, and regulating marine resource exploitation. Here naval forces are essentially guaranteeing the maritime component of the liberal, rules-based order that has largely prevailed since World War Two. While ostensibly of benefit to all nations, this rules-based order is routinely being challenged by certain nation-states and sub-national groups alike. Day to day naval operations are vital to protecting the system.

Not all non-combat naval activities pursue collective aims such as secure commerce or good order at sea. Navies also contribute to strictly nationalistic policy aims as well. Maritime homeland security and domestic maritime law enforcement are examples. Largely handled by the Coast Guard here the United States, these missions are roles for the navies of many nations.

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 other than combat have received comparatively scant attention from theorists, and much of the work that exists pre-dates the rise of the contemporary post-Cold War order. As a result, planners and operators don't have the benefit of anything as tangible and focused as Wayne Hughes' "Six Cornerstones" to rely on as guiding principles. Nonetheless, much of the Operational Art can be applied to non-combat activities; 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 non-combat 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.

The point of contact for this session is Professor Ivan Luke, C-431.

D. Discussion Topics:

Describe some of the tasks that make up the range of naval operations other than combat.

What are the objectives of the various naval operations other than combat? How do these tasks contribute to the furtherance of policy aims at sea?

What aspects of the global commons influence the ability of naval forces to achieve national

policy aims through non-combat activities? 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 other than combat?

E. Products:

None.

F. Required Reading:

Luke, Ivan T. "Legitimacy in the Use of Seapower" Newport, RI: U.S. Naval War College, Joint Military Operations Department, July 2015. (NWC 2133).

Vego, Milan. "On Naval Power." *Joint Force Quarterly*, (3d Quarter, 2008): 8-17. (NWC 4072).

G. Supplementary Reading:

Cable, James. *Gunboat Diplomacy, 1919-1991: Political Applications of Limited Naval Force*. New York: St. Martin's Press, 1994.

Eaglen, Mackenzie M., James Dolbow, Martin E. Andersen, and James J. Carafano. *Securing the High Seas: America's Global Maritime Constabulatory Power*. Heritage Special Report SR-20. Washington, D.C.: The Heritage Foundation, 2008.

Kraska, James. "Grasping 'The Influence of Law on Sea Power.'" *U.S. Naval War College Review* 62, no. 3 (Summer 2009): 73-83.

Luke, Ivan T. "Let's Get Serious About Peacetime Ops," *U.S. Naval Institute Proceedings* 139, no. 10 (October 2013): 54-48.

_____. "Naval Operations in Peacetime: Not Just Warfare Lite," *U.S. Naval War College Review* 66, no. 2 (Spring 2013): 11-26.

Rubel, Robert C. "Command of the Sea: An Old Concept Resurfaces in a New Form." *U.S. Naval War College Review* 65, no. 4 (Autumn 2012): 21-33.

Till, Geoffrey. "A Changing Focus for the Protection of Shipping" in *The Strategic Importance of Seaborne Trade and Shipping: A Common Interest of Asia Pacific*, ed. Andrew Forbes. Canberra, Australia: Sea Power Centre – Australia, 2002.

_____. *Seapower: A Guide for the Twenty-First Century*. 3d ed. London and New York: Routledge, 2013.

Truver, Scott C. "Mines and Underwater IEDs in U.S. Ports and Waterways: Context, Threats, Challenges, and Solutions," *Naval War College Review* 61, no. 1 (Winter 2008): 106-127.

Vego, Milan. "Employment of Naval Forces in Operations Short of War." Joint Military Operations Department, U.S. Naval War College, Newport, RI. December 2009.

NAVAL SUPPORT TO FOREIGN POLICY (Seminar)

A man-of-war is the best ambassador.

—Oliver Cromwell, September 1643

A. Focus:

This session will examine the use of naval forces in support of national foreign policy. The focus of the session is on the methods of naval diplomacy, the use of naval forces in conflict prevention and management, and advantages/disadvantages in the employment of naval forces as a tool of foreign policy.

B. Objectives:

- Understand the diplomatic value of naval power.
- Comprehend the similarities and differences between coercive forms of naval diplomacy and collaborative forms of naval diplomacy.
- Analyze the main methods in applying coercive and/or collaborative forms of naval diplomacy.

C. Background:

Navies have been used in support of foreign policy by major powers throughout history. Naval forces can be employed in support of a country's diplomatic initiatives in peacetime and time of crisis. Naval diplomacy is defined as the employment of naval forces to further foreign policy objectives by influencing foreign decision-makers' thoughts and actions. Naval diplomacy functions on a cooperative to coercive spectrum; supporting allies and deterring adversaries or compelling them to change policies. A single maritime force may simultaneously engage in more than one type of military/diplomatic activity.

The point of contact for this session is Captain Frederick Mosenfelder, USN, C-412.

D. Discussion Topics:

Naval ships are specifically designed for naval warfare. Why is there value in employing naval power in a diplomatic role? Why are there disadvantages?

Compare coercive forms of naval diplomacy with collaborative forms of naval diplomacy.

What are the fundamental principles that underpin the employment of naval forces for diplomatic tasks?

E. Products:

None.

F. Required Reading:

Till, Geoffrey. *Seapower: A Guide for the Twenty-First Century*. 3d ed. New York: Routledge, 2013. Read: 221-251. **(Issued)**.

Vego, Milan. *Naval Support to Foreign Policy*. Newport, RI: U.S. Naval War College, Dec 2016. **(NWC 1132)**.

G. Supplementary Reading:

Alily, George. *Naval Diplomacy: A Critical Component of National Power*. Princeton, NJ: Sungai Books, 2001.

Booth, Ken. *Navies and Foreign Policy* London: Routledge, 2014.

Cable, James. *Gunboat Diplomacy, 1919-1991: Political Applications of Limited Force*. London: Palgrave MacMillan, 2nd ed., 1981.

Forbes, Andrew, ed. *Naval Diplomacy and Maritime Power Projection*. Proceedings of the Royal Australian Navy Sea Power Conference, 2013. Canberra: Sea Power Centre, 2014.

Hendrix, Henry J. *Theodore Roosevelt's Naval Diplomacy: The U.S. Navy and the Birth of the American Century*. Annapolis, MD: Naval Institute Press, 2009.

Holmes, James R. "Why Hold an International Fleet Review? Insights from Ken Booth" *Naval Diplomacy and Maritime Power Projection*. Proceedings of the Royal Australian Navy Sea Power Conference, 2013. Canberra: Sea Power Centre, 2016..4, Read: 53-65.

Le Mière, Christian. *Maritime Diplomacy in the 21st Century: Drivers and Challengers*. London: Routledge, Taylor & Francis Group, 2014.

Lerner, Michael B. *The Pueblo Incident: A Spy Ship and the Failure of American Foreign Policy*. Lawrence, KS: University of Kansas Press, 2002.

Mandel, Robert. "Effectiveness of Gunboat Diplomacy." *International Studies Quarterly*, Vol. 30, No. 1 (March 1986).

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*

A. Focus:

This session is intended to provide students an understanding of current military developments in the Western Pacific. This is a classified lecture, intended to stimulate U.S. students' thinking about challenges in potential contingencies, and implications for future warfare with near peer competitors.

B. Objectives:

- Evaluate the current threat environment through the lens of operational art and maritime warfare theory.
- Comprehend the relationships between platforms, sensors and 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 environment against the theoretical constructs and U.S. Joint / Service Doctrine presented in the course.

C. 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 United States' Navy 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 point of contact for this session is Professor Joe McGraw, C-431.

D. Discussion Topics:

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?

E. Products:

None.

F. Required Reading:

None.

G. Supplementary Reading:

Gunzinger, Mark and Bryan Clark. "Winning the Salvo Competition, Rebalancing America's Air and Missile Defenses." Washington, D.C.: Center for Strategic and Budgetary Assessments, 2016.

Heginbotham, Eric, et al. *The U. S.-China Military Scorecard: Forces Geography, and the Evolving Balance of Power 1996-2017*. Santa Monica: RAND, 2015.

U.S. Naval War College, Joint Military Operations Department. *A Borneo Case Study for Expeditionary Warfare*. Newport, RI: Naval War College, January, 2018. Scan. **(Issued)**. **(NWC 6036K)**.

_____. *Selected U.S. Navy and The Peoples Liberation Army (Navy) (PLA (N)) Tactical Capability Handbook Slide Pack*. Newport, RI: Naval War College, 2018. Scan. **(NWC 2164B)**.

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FUTURE NAVAL WARFARE (Seminar)

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

F. 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. Changes in the international security environment are influenced by the rise of China, and advances in the military capabilities of Russia and Iran, as they reassert their influence regionally and globally. Demographic shifts will continue to see growth around littoral regions of the globe. Over the past decade, advances in information technology, long range precision weapons, remotely piloted and autonomous platforms, and the proliferation of highly capable sensors among other technological advances by global competitors have eroded the U.S. technological edge in warfare. We will also examine trends in asymmetric means that potential adversaries may likely employ as part of their military approach towards achieving political objectives. This session and the (classified) lecture that follows are intended to offer considerations for reflection about naval warfare in the near future.

G. 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 potential changes needed and across the operational functions, particularly in command and 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.

H. 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.

There are numerous think tank reports, scholarly studies and joint concepts that describe emerging challenges in the operating environment. Some of the challenges are variations of themes from the Cold War, for example operating in a contested electromagnetic spectrum. As another example, most ground forces fighting in Iraq and Afghanistan for the past seventeen years were not concerned with emissions control, air or missile threats, or long range precision targeting and strikes by the enemy, however high end warfare will require joint forces to return to tactics, techniques and procedures to counter multiple threats. The U.S. Navy projected forces virtually unimpeded into the Balkans, Iraq, Afghanistan, and Libya and to other global contingencies with relative ease. Such will not be the case against a near peer competitor.

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. Given the history of warfare, are there parallels from previous eras that can inform our thinking and develop operational approaches for future challenges?

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

I. Discussion Topics:

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 effects of technological advances on the character of combat at sea.

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?

J. Products:

None.

F. Required Reading:

Krepinevich, Andrew F. *Maritime Competition in a Mature Precision-Strike Regime*. Washington, D.C.: Center for Strategic and Budgetary Assessments, 2014. Read: 63-80. **(NWC 2139)**

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)**

Rowden, Thomas, Peter Gumataotao, and Peter Fanta. "Distributed Lethality," *U.S. Naval Institute Proceedings*, Vol. 141, No.1, (January 2015). Read. **(NWC 2126)**

Vego, Milan. "The Operational Impact of New Naval Technologies." *Proceedings of the RAN Seapower Conference 2015*, edited by Andrew Forbes. Canberra, Australia: Seapower Center, 2017. Read: 77-95. (NWC 2138)

G. Supplementary Reading:

Erickson, Andrew S., Editor. *Chinese Naval Shipbuilding: An Ambitious and Uncertain Course (Studies in Chinese Maritime Development)*. Annapolis, MD: Naval Institute Press, 2016.

Freedman, Lawrence. *The Future of War, a History*. New York, N.Y: Hachette Book Group, 2017.

Gray, Colin S. *Another Bloody Century, Future Warfare*. London: Weidenfeld & Nicolson, 2006.

Gunzinger, Mark, and Bryan Clark. "Winning the Salvo Competition, Rebalancing America's Air and Missile Defenses." Washington, D.C.: Center for Strategic and Budgetary Assessments, 2016.

Heginbotham, Eric, et al. *The U. S.-China Military Scorecard: Forces Geography, and the Evolving Balance of Power 1996-2017*. Santa Monica: RAND, 2015.

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

Liang, Qiao, and Wang Xiangsui. *Unrestricted Warfare: China's Master Plan to Destroy America*. Peking: Natraj Publishers. 2007.

MITRE Corporation. *Navy Future Fleet Platform Architecture Study*. Document MTR160165, McLean, VA: MITRE, 1 July 2016.

Navy Project Team. *Report to Congress: Alternative Future Fleet Platform Architecture Study*. Headquarters, Department of the Navy, Washington, D.C.: 27 October 2016.

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.

Pournelle, Phillip E. CDR. "The Deadly Future of Littoral Sea Control." *U.S. Naval Institute Proceedings*, Vol 141, No.7, (July 2015).

U.S. Army. *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040*. Training and Doctrine Command, Fort Eustis, VA: December 2017.

U.S. Department of Defense. "Air Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges." Washington, D.C.: Department of Defense, May 2013.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Capstone Concept for Joint Operations: Joint Force 2020*. CJCS, Washington, D.C.: 10 September 2012.

_____. *Joint Operating Environment 2035: The Joint Force in a Contested and Disorderly World*. CJCS, Washington, D.C.: 14 July 2016.

_____. *Joint Operational Access Concept, Version 1.0*. Washington, D.C.: CJCS, 17 January 2012.

United States Marine Corps. *Expeditionary Force 21*. MCCDC, Quantico, VA: Government Printing Office 14 March 2014.

_____. *Marine Corps Operating Concepts: Assuring Littoral Access- Winning Small Wars (MOC)* 3d Edition, MCCDC, Quantico, VA: Government Printing Office, June 2010.

U.S. Navy, U.S. Marine Corps, U.S. Coast Guard. *A Cooperative Strategy for 21st Century Seapower*. Washington, D.C.: Headquarters, U.S. Navy, Marine Corps, and Coast Guard, March 2015.

Vego, Milan. *Operational Warfare at Sea, Theory and Practice*. London & New York: Routledge, 2009. Read: 220-231.

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UNCONVENTIONAL STATECRAFT (Seminar)

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-tactical 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

A. 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.

B. Objectives:

- Comprehend evolving trends in warfare and the implications of these 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.

C. Background:

Hybrid, asymmetric, unrestricted and irregular warfare are terms that are used to capture multiple and evolving patterns of modern conflict. For example, 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 a far greater access to successfully co-opt external military and diplomatic support in order 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’.

The point of contact for this session is Professor Joe McGraw, C-431.

D. Discussion Topics:

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 U.S. 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?

E. Products:

None.

F. Required Reading:

Boot, Max. "Chapter One: The Changing Character of Conflict." *Armed Conflict Survey*, Vol 1:1 (2015). Read: 11-20. (NWC 4183)

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)

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)

G. Supplementary Reading:

The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Against the United States. Washington, D.C.: GPO, July 2004.

Blanchard, Christopher M. *Al Qaeda: Statements and Evolving Ideology*. Washington, D.C.: Congressional Research Service, 2005.

Gray, Colin. "Irregular Warfare: One Nature, Many Characters." Maxwell AFB, AL: Air Force Symposium 2007: "Counterinsurgency." 24-26 April 2007.

_____. *Another Bloody Century, Future Warfare*. London: Weidenfeld & Nicolson, 2006.

Hoffman, Frank G. "Conflict in the 21st Century." Potomac Institute for Policy Studies, Arlington VA, December 2007.

Krause, Michael G. "Square Pegs for Round Holes: Current Approaches to Future Warfare and the Need to Adapt." Working Paper No. 132. Australia: Land Warfare Studies Centre, June 2007.

Liang, Qiao and Wang Xiangsui. *Unrestricted Warfare: China's Master Plan to Destroy America*. Peking: Natraj Publishers. 2007.

Mattis, James N. "Future Warfare: The Rise of Hybrid Wars." *U.S. Naval Institute Proceedings* 131 (November 2005): 18-19.

Maxwell, David S. "Do We Really Understand Unconventional Warfare?" *Small Wars Journal*, October 23, 2014. **(NWC 3204)**.

EXAMINATION TWO (Individual Effort)

In the absence of orders, go find something and kill it.

—General Erwin Rommel

A. 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 situation involving the use or contemplated use of military force. The scope of the examination is trimester-wide, meaning that any topic or combination of topics can be expected to be examined. As such, students must apply their understanding of the discrete sessions previously addressed in a holistic manner in creating a suitable answer to the presented question(s).

B. 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.

C. Background:

The examination questions will be issued on Wednesday, 23 May 2017 at 1145 and student responses are due to the moderators NLT Thursday, 24 May at 1200. Grading criteria for Joint Maritime Operations Course examinations may be found on page xxv of this syllabus.

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

D. Discussion Topics:

See examination question sheet.

E. Products:

A written examination that demonstrates student mastery of the subject matter presented in the Joint Maritime Operations course trimester thus far.

F. Required Reading:

The examination will be based on JMO course material presented to date.

G. Supplementary Reading:

None.

THE WAR AT SEA EXERCISE (Wargame)

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

A. Focus:

The final event in the JMO curriculum is a continuation of the sea control exercise. In this phase of the exercise, students will ‘fight’ their order against a thinking entity that knows their enemy’s capabilities and can deduce with fair accuracy their 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. While the challenges confronting the students in this exercise are realistic, the situations used to highlight these issues and the solutions the students select are strictly hypothetical. 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.

B. 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 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 through military briefs and written products associated with the Joint Planning Process (JPP)/the Navy Planning Process (NPP).

C. Background:

This War at Sea is the course’s final exercise. It is an opportunity for students to re-examine the ill-structured problems presented in the Borneo scenario and develop a creative operational approach that addresses the requirements levied on the Joint Force. The strategic environment constrains resources and political patience is fleeting. U.S. military dominance in each domain is not assured at all times. These constraints and limitations require critical

and creative thought that balance the competing objectives of the joint force and must result in a unified effort.

This scenario picks up from *The Struggle for Sea Control* planning exercise. Your Commander, the Joint Force Maritime Component Commander, has approved your operations order 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; it is D-Day. Adjudication of your operations order by the Wargaming Department will present new conditions that you will have to assess and readdress using the Joint Planning Process (JPP). You may be required to develop fragmentary orders or in some cases generate a new operations order (with selected annexes) in a time constrained environment. The role of cyber operations will be exercised by both sides; both offensively and defensively, meaning students may be operating for periods of time in a cyber-denied environment. Lastly, maritime operational law and the Law of Armed Conflict will impact combat actions for the U.S. Commander and staff.

The point of contact for this session is Professor Bill Hartig, C-428.

D. Discussion Topics:

How does an Operations Planning Team (OPT) adapt the planning process to solve an ill-structured problem?

Describe a method for analyzing combat reports in the absence of perfect knowledge.

Describe how an OPT anticipates future changes in the operating environment caused by military or other actions.

How does an OPT effectively leverage joint force capabilities when planning and executing operations?

How does a Joint Force best integrate elements of national power to accomplish operational objectives?

E. Products:

Products developed during the Final Planning Event may include 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.

F. Required Reading:

U.S. Naval War College, Joint Military Operations Department. *A Borneo Case Study for Expeditionary Warfare*. Newport, RI: Naval War College, January, 2018. Scan. **(NWC 6036K). (Issued)**.

_____. *Joint Operation Planning Process (JOPP) Workbook*. Newport, RI: Naval War College, 1 July 2013. **(NWC 4111J w/Chg 1)**. Scan as required. **(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, 2018. Scan. **(NWC 2164B)**.

U.S. Office of the Chairman of the Joint Chiefs of Staff. *Adaptive Planning and Execution (APEX) Planning Formats and Guidance*. CJCSM 3130.03. CJCS, Washington, D.C.: 18 October 2012. Scan. **(Issued)**.

G. Supplementary Reading:

None.

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