



CONTEMPORARY AND EMERGING WARFARE

SYLLABUS

AY 24

**JOINT PROFESSIONAL MILITARY EDUCATION
PHASE I INTERMEDIATE LEVEL COURSE**

**UNITED STATES AIR FORCE
AIR COMMAND AND STAFF COLLEGE**
Twenty-First Century Leaders for Twenty-First Century Challenges

Current as of 30 November 2023

**AIR COMMAND AND STAFF COLLEGE
MAXWELL AFB, AL**

FOREWORD

This syllabus for the Contemporary and Emerging Warfare course for the Air Command and Staff College, January - March 2024, provides both an overview of the course narrative and objectives, as well as a detailed description of each lesson to assist students in their reading and preparation for lecture and seminar. Included herein is information about the course's methods of evaluation, the schedule, and the fulfillment of joint professional military education core goals.

Contemporary and Emerging Warfare merges lessons learned from contemporary conflicts with emerging technologies and threats to prepare for future conflicts. This challenge will require innovative ways of thinking, operating, and assessing the adversary.

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CONTEMPORARY AND EMERGING WARFARE COURSE OVERVIEW

COURSE DESCRIPTION

The Contemporary and Emerging Warfare (CW) course examines military capabilities, limitations, threats, and technology in contemporary and emerging conflicts. Additionally, it studies joint doctrine and adversary trends in strategic competition. This course is designed to expose students to lessons learned in contemporary conflicts and the ability to apply them to future ones. Students will study current and emerging threats across the great power competition continuum and how our joint doctrine and capabilities can enable strategic solutions for integrated deterrence and future wars. The operating environment is dynamic, and our joint force must understand the interdependencies of each service to combat the emerging threats within great power competition. This course will introduce joint all-domain operations in the contested environment, providing insight into the operational conditions expected for the United States military and its allies, and explore security challenges as outlined in the 2022 National Defense Strategy, with a specific focus on China, Russia, North Korea, and Iran, across various domains.

The diplomatic, informational, military, and economic instruments of power are more complex than ever and will continue to evolve. ACSC students must comprehend the operational and strategic level thinking required of staff officers and those in command during future conflicts. This course begins by studying a contemporary conflict, Operation Inherent Resolve (OIR). It then transitions to emerging threats and technology and their relevance to integrated deterrence and strategic competition. Next, the course will examine adversaries' capabilities, doctrine, and current operations. The last phase introduces joint operations, capabilities, and functions across all domains. Students will apply the joint functions across all domains in an INDOPACOM scenario, enabling them to solve problems critically using joint operations and strategic guidance in a complex and contested operational environment.

COURSE OBJECTIVES

1. Examine the capabilities and limitations of military power in contemporary and emerging conflicts
2. Articulate how the modern joint force operates in all domains
3. Link friendly and adversary capabilities, theories of war, and methods of force employment in contemporary and emerging warfare
4. Apply creative thinking and problem-solving methods about airpower and joint operations in the 21st-century operational warfighting environment

COURSE METHODS OF EVALUATION

1. CW-900 (E): EXECUTIVE SUMMARY TALKING PAPER

Deliverable: Students will compose a talking paper to demonstrate executive writing and senior leader communication. The assignment will focus on providing talking points to a combatant commander in preparation for a 30-minute phone call with another combatant commander regarding emerging threats to their respective AORs. This paper will be 1-page in length and follow Tongue and Quill (T&Q) formatting. This paper will be worth 20% of the course grade and is due electronically in Canvas by 1700 on 12 January 2024.

Prompt: You are an Action Officer (AO) in the TRANSCOM Commander's Action Group (CAG). You are tasked to prepare talking points for the commander for a 30-minute phone discussion with the NORTHCOM/NORAD Commander. The discussion is aimed at finding common ground regarding threats from emerging technology affecting both NORTHCOM/NORAD's homeland defense mission and TRANSCOM's ability to project and sustain combat power from the CONUS.

Additional Instructions:

1. **Type of Assignment:** Graded, take-home, written talking paper.
2. **Time Allotted:** From issuance on 4 Jan (Day 1) to 12 Jan (Day 3) by 1700.
3. **Resources:** You must use evidence from course content and may use other materials provided in the ACSC curriculum along with personal experience.
4. **Length:** 1 page.
5. **Style:** Formatting will be in accordance with the Tongue and Quill "Talking Paper" and an example template will be provided to the students.
6. **Endnotes:** All essays must give credit for using others' ideas, thoughts, and concepts in the endnotes. Citations are required for both direct quotations and paraphrasing of material. Endnotes come at the end of the essay and do not count against the page limit. Please see AU-1: Air University: Style and Author Guide, Second Edition for guidance on formatting endnotes. No bibliography is required.
7. **Collaboration:** Students must follow ACSC guidelines on collaboration.
8. **Turn-in Procedures:** Submit online through Canvas. Your CW instructor may provide additional guidance.
9. **Questions:** Refer any questions about the above guidelines to your CW instructor.

2. CW-901 (E): POSITION PAPER

Deliverable: Students will write a position paper based on the studies of U.S. adversaries and their threat to U.S. national security. This paper will be three pages in length and follow Tongue and Quill formatting. The paper is worth 25% of the course grade and is due electronically in Canvas by 1700 on 2 February 2024.

Prompt: What is the most significant adversary military threat to US National Security in the next five years?

Additional Instructions:

1. **Type of Assignment:** Graded, take-home, written position paper.
2. **Time Allotted:** From issuance on 4 Jan (Day 1) to 2 Feb (Day 8) by 1700.
3. **Resources:** You may use any course content and other materials provided in the ACSC curriculum. Students can use outside materials.
4. **Length:** 3 pages.
5. **Style:** Formatting will be in accordance with the Tongue and Quill “Position Paper”.
6. **Endnotes:** All essays must give credit for using others’ ideas, thoughts, and concepts in the endnotes. Citations are required for both direct quotations and paraphrasing of material. Endnotes come at the end of the essay and do not count against the page limit. Please see AU-1: Air University: Style and Author Guide, Second Edition for guidance on formatting endnotes. No bibliography is required.
7. **Collaboration:** Students must follow ACSC guidelines on collaboration.
8. **Title page:** Include a title page with the following information: Title: Subtitle given to the essay; Student Name; Seminar Number; Assignment Title (e.g., CW-901); and Date.
9. **Turn-in Procedures:** Submit online through Canvas. Your CW instructor may provide additional guidance.
10. **Questions:** Refer any questions about the above guidelines to your CW instructor.

3. CW-902 (E): MANEUVER BRIEF

Deliverable: Starting on Day 15, students will lead their planning team (Red/Blue) during seminar to collaboratively create a scheme of maneuver narrative, a list of critical tasks and priorities, and identify major multi-domain considerations. A briefing template with expected briefing items will be provided. Students will brief their team's plan at the end of each seminar and answer questions from the instructor.

This briefing will evaluate the team's ability to solve operational problems in formulating a scheme of maneuver, as well as assess each student's individual understanding of the group-developed solution. Additionally, it will assess each student's grasp of the capabilities and limitations of the joint force within the context of the specific day's domain/environment. This briefing should be approximately 15 minutes in length. The brief is worth 15% of the course grade. Students will be assigned their day to brief on Day 1 (Info, Air, Land, Maritime, Space, Cyber/EMS, or Sync Day).

Additional Instructions:

1. **Type of Assignment:** In-class presentation.
2. **Time Allotted:** 10-15 minutes.
3. **Resources:** Domain planning products.
4. **Style:** Use professional formal standards written in accordance with the Tongue and Quill. A briefing template will be provided.
5. **Questions:** Refer any questions about the above guidelines to your CW instructor.

4. CW-903 (E): FINAL PAPER (OPORD)

Deliverable: Your team is the joint planning group for the Red/Blue Task Force in the Pacific AOR. This deliverable requires your team to complete the OPORD paragraph 3, Execution section. Teams will focus the writing on compiling the domain maneuver (days 15-21) and joint functions examined throughout phase 3 of the CW course. This assignment will include a commander's intent, concept of operations, and a scheme of maneuver, and will assess students' understanding of the scenario exercise. This assignment is worth 20% of the course grade and is due electronically on Canvas at 1700 on 6 March 2024.

Additional Instructions:

1. **Type of Assignment:** Group-based, graded, take-home, written assignment.
2. **Time Allotted:** From issuance on 20 Feb to 6 Mar by 1700.
3. **Resources:** You may use any course content and other materials provided in the CW Domain exercise scenario or ACSC curriculum. Students can use outside materials.
4. **Length:** None specified.
5. **Style:** Use professional formal standards written in accordance with JP 5-0 Joint Planning. A template with completed sections 1 and 2 will be provided. The paper should follow the structure of the template and follow Joint Publication standards using Times New Roman – 12pt for all text and include page numbers.
6. **Collaboration:** This is a group assignment.
7. **Turn-in Procedures:** Submit online through Canvas. Your CW instructor may provide additional guidance.
8. **Questions:** Refer any questions about the above guidelines to your CW instructor.

5. CW-904 (C): CLASS EXERCISES AND CONTRIBUTION

Students are expected to attend lectures and seminars, individually read the assigned pages, participate in class exercises, and contribute to seminars. It includes group participation in the maneuver exercises (days 15-21). This contribution is worth 20% of the course grade.

COURSE ADMINISTRATION

All readings in this course are electronic files posted on Microsoft Teams and Canvas indicated as “[EL]” (electronic) or “[PODCAST]”. Students can access the syllabus, lecture videos, electronic readings, and other supplemental materials online through Microsoft Teams and Canvas.

Please refer any questions to:

- Dr. Jared “Axis” Donnelly, Course Director, jared.donnelly@au.af.edu, Office 189
- Lt Col. Jeremiah “Happy” Gilmore, Deputy Course Director, jeremiah.gilmore.1@au.af.edu, Office 118
- Lt Col Jon “DASH” Yates, Deputy Course Director, jonathan.m.yates.mil@au.af.edu, Office 189
- Lt Col Michael “Deano” Dean, CW Exercise Director, michael.dean.7@au.af.edu, Office 190
- Major Frank “P’Nut” Ladson, franklin.ladson.1@au.af.edu, Office 187

CONTEMPORARY AND EMERGING WARFARE SCHEDULE OF MEETINGS

DAY 1: OIR AND THE PIVOT TO STRATEGIC COMPETITION

DATE: 4-5 January 2024

LESSON OBJECTIVES

1. Discuss the features of the U.S. application and the challenges of airpower in OIR.
2. Discuss the performance of Russian airpower in OIR and implications for strategic competition.
3. Identify emerging challenges for small wars from the experiences in OIR.

LESSON OVERVIEW

CW 500 (L): Course Overview (Dr. Jared Donnelly)

Overview: Introduction to the Contemporary and Emerging Warfare Course.

CONTACT HOURS: 15-min lecture

CW 501 (L): OIR's Strategic Competition Dimensions (Lt Col Brian Hellesto)

Overview: This lecture will discuss the operational and strategic challenges encountered during OIR, and it will also examine how the lessons from OIR have developed into operational concepts that are currently being used and may need to be used in future conflicts. The ability to operate jointly within a major coalition conflict presented many challenges and opportunities.

CONTACT HOURS: 45-min lecture

CW 502 (S): OIR Lessons for Future Wars

Overview: This seminar examines OIR's lessons and insights for strategic competition, comparing its airpower utilization with other conflicts, and addressing challenges faced. Readings encompass diverse OIR aspects, from urban combat in Mosul to contested airspaces over Iraq and Syria, yielding insights into joint operations. Leveraging students' OIR experiences, discussions aim to enhance critical thinking for future conflicts as the U.S. shifts toward great power competition.

CONTACT HOURS: 2-hour seminar

REQUIRED READINGS

1. Ralph Shield, "Russia's Air War Win in Syria," *Airpower in the Age of Primacy*, 229-254. [EL]
2. Becca Wasser, et al, *The Air War Against the Islamic State* (Santa Monica, CA: RAND Corporation), 293-308. [EL]
3. John Spencer and Jason Geroux, "Urban Warfare Project Case Study #2 – Mosul," *Modern War Institute*, 15 September 2021. [EL]
4. Stacie L. Pettyjohn and Becca Wasser, "From Forever Wars to Great-Power Wars: Lessons Learned from OIR," *War on the Rocks*, 20 August 2021. [EL]
5. James P. Micciche, "Assessment Role of Small Wars In Evolving Paradigm of GPC in Multipolar World," *Small Wars Journal*, 17 June 2019. [EL]

RECOMMENDED MATERIAL

1. Joseph Trevithick, "How a Secretive Special Operation Task Force is Taking the Fight to ISIS," *The Warzone*, 3 July 2020. [EL]

2. Jebb and Moellering, “The Merits—and Pitfalls—of Fighting “By, With, And Through” A Partner Force, *Irregular Warfare Podcast*, MWI, 2 February 2023. 43 min, 28 sec.
[PODCAST]

DAY 2: EMERGING TECHNOLOGY

DATE: 8-9 January 2024

LESSON OBJECTIVES

1. Understand emerging technologies that could change the character of warfare.
2. Discuss how emerging technologies could inform operational concepts.
3. Explore the influence of emerging technologies on airpower employment.

LESSON OVERVIEW

CW 503 (L): Emerging Technology (Dr. P.J. Springer)

Overview: This lecture delves into transformative technologies that have the potential to reshape the character of warfare. It will focus on the development of robotic military systems, advanced artificial intelligence and autonomous systems, quantum computing, hypersonic weapons, and directed energy.

CONTACT HOURS: 1.0-hour lecture

CW 504 (S): The Increasing Complexity of War

Overview: This seminar will focus on key emerging technologies and threats, and their potential effects on warfare. Concepts such as artificial intelligence, lethal autonomous weapons systems, and quantum computing, etc., are becoming more common, and it is crucial to understand their potential application and consequences in warfare. Discussions in seminar should generate critical thinking on these complex areas.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. Lewis, James A., and Georgia Wood. *Quantum Technology: Applications and Implications*, CSIS Report. May 2023 [EL]
2. *Department of Defense Directed Energy Weapons: Background and Issues for Congress*, Congressional Research Service. September 2022 [EL]
3. *Emerging Military Technologies: Background and Issues for Congress*, Congressional Research Service. April 2022 [EL]
4. Paul Scharre, "The Risks and Rewards of Artificial Intelligence," *Military Matters*, 8 Aug 2023 43 min, 08 sec. [PODCAST]
5. General's VanHerck, Glen D., and Jacqueline D. Van Ovost, "Fighting to Get to the Fight", *Military Times*. 31 May 2022. [EL]

RECOMMENDED MATERIAL

1. Joe Altepeter, "The Quantum Mechanic," *Voices From DARPA*, 18 August 2023. 22 min, 29 sec. [PODCAST]
2. Dmitri Alperovitch, "Why Quantum Computing May be Overhyped but AI Isn't," *Geopolitics Decanted*, 18 October 2023. 56 min, 02 sec. [PODCAST]

DAY 3: EMERGING TECHNOLOGY AND FUTURE THREATS

DATE: 11-12 January 2024

LESSON OBJECTIVES

1. Explain the implications of technology on current and future threats.
2. Discuss how partners and adversaries view emerging technologies.
3. Explore the evolving challenges to airpower presented by adversaries.

LESSON OVERVIEW

CW 505 (L): Emerging Technology and Future Threats (Dr. Josh Sipper)

Overview: This lecture will discuss the role of emerging technologies in recent conflicts and discuss possible roles for those technologies in future wars. It will focus upon the creation of robotic military systems and advanced artificial intelligence. In particular, it will examine the development and deployment of these technologies across domains, by various international actors as well as the U.S., and analyze the advantages and disadvantages of their utilization.

CONTACT HOURS: 1.0-hour lecture

CW 506 (S): Modernization as an Arms Race

Overview: This seminar will be a continuation of concepts from “Day 2: Emerging Technology.” Understand how adversaries such as China, Russia, North Korea, and Iran view these emerging technologies, and how each nation values pursuing them to strengthen their respective governments and militaries. Further, understand how each nation is positioned, relative to the United States, to harness these emerging technologies. Understand how these emerging technologies affect international security and shape a need for international cooperation.

CONTACT HOURS: 2.0-hour seminar

CW-900 PAPER DUE IN CANVAS ON 12 JANUARY BY 1700

REQUIRED READINGS

1. Schaus, John, and Carolina G. Ramos, *Emerging Threats and the U.S.-Australia Alliance*, CSIS Report, April 2022. [EL]
2. Office of the Director of National Intelligence, *Future of the Battlefield*, (Global Trends April 2021). [EL]
3. CCP State Council, *New Generation of Artificial Intelligence Development Plan*, The Foundation for Law and International Affairs, July 2017. [EL]
4. Allen, Gregory C., *Across Drones AI and Space Commercial Tech is Flexing Military Muscle in Ukraine*, CSIS Report, May 2022. [EL]
5. Alperovitch, Demitri, *How China Plans to Win the Chip War*, Geopolitics Decanted Podcast, 24 April 2023. 39 min, 25 sec. [PODCAST]

RECOMMENDED MATERIAL

1. Allen, Gregory C., *Choking Off China’s Access to the Future of AI*, CSIS Report, October 2022. [EL]
2. Sipper, Joshua, *The Cyber Quantum Realm*, chapter in *The Cyber Meta-reality: Beyond the Metaverse*, Lexington Books, Lanham, MD, 2022. [EL]

DAY 4: INTEGRATED DETERRENCE IN THE CONTEMPORARY AND EMERGING ENVIRONMENT

DATE: 18-19 January 2024

LESSON OBJECTIVES

1. Identify the role of nuclear weapons in contemporary warfare.
2. Explain how integrated deterrence fits into strategic competition.

LESSON OVERVIEW

CW 507 (L): Nuclear Weapons in the Contemporary and Emerging Environment (Dr. Todd Robinson)

Overview: This lecture will discuss the role of nuclear weapons in recent conflicts and present possible roles for nuclear weapons in future wars. It will examine the United States Nuclear Triad and how U.S. policy plans to prevent future nuclear wars, nuclear proliferation, and nuclear terrorism. It will touch on emerging nuclear warfare scenarios that skirt historic policy on the use of nuclear weapons such as tactical nuclear weapons. Finally, this lecture will present modern day theories on the ability of nuclear weapons to maintain deterrence in the future and how this affects the U.S. nuclear stockpile, modernization programs, and current budget policy.

CONTACT HOURS: 1.0-hour lecture

CW 508 (S): Integrated Deterrence

Overview: This lesson will discuss integrated deterrence concepts around the globe. Examining the National Defense Strategy will drive discussions on contemporary deterrence in great power competition. Understanding deterrence across all domains is essential to framing integrated deterrence, not just nuclear postures. Additionally, emerging technologies and the synergetic use of all instruments of power will be key considerations for integrated deterrence.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. Reny, Stephen, "Nuclear-Armed Hypersonic Weapons and Nuclear Deterrence", *Strategic Studies Quarterly*, December 2020, 47-68. [EL]
2. Pettyjohn, Stacie L. and Becca Wasser, *No I in Team: Integrated Deterrence with Allies and Partners*, CSIS Report, December 2022. [EL]
3. Hersman, Rebecca et al, *U.S. Nuclear Warhead Modernization and "New" Nuclear Weapons*, CSIS Report, December 2020, 1-8. [EL]
4. Department of Defense, *2022 Nuclear Posture Review*, 1-25. [EL]

RECOMMENDED MATERIAL

1. Tellis, Ashley J. *Striking Asymmetries: Nuclear Transitions in Southern Asia*, 247-256. [EL]
2. Kathleen McInnis, "Can Integrated Deterrence Work?," *Hopkins Podcast on Foreign Affairs*, 30 Nov 2022. 32 min, 32 sec. [PODCAST]

DAY 5: MODERN RUSSIAN DOCTRINE AND THEORIES OF WAR

DATE: 22-23 January 2024

LESSON OBJECTIVES

1. Contrast the performance of the Russian military in Georgia with its performance in Syria and Crimea.
2. Describe the trends, capabilities, and priorities of recent Russian military reforms.
3. Analyze continuity and change in the Russian way of war.

LESSON OVERVIEW

CW 509 (L): Modern Russian Military Doctrine and Theories of War (Dr. Andy Akin)

Overview: This lecture will provide students with an understanding of the sources of Russian military doctrine. It will review the Russian way of war as depicted in its 2014 National Military Doctrine, its 2015 National Security Strategy, and its 2020 Principles of Nuclear Deterrence Strategy. Also, it will provide students with an understanding of how Russia intends to use the military instrument of power across the spectrum of conflict. Finally, the lecture will describe the theory of victory through the lens of the Russian Federation.

CONTACT HOURS: 1.0-hour lecture

CW 510 (S): Modern Russian Military: Georgia to Syria

Overview: This lesson will discuss Russia's military modernization along with its strategic operations throughout conflicts from Georgia to Syria. It will focus on limitations and recent advancements in capabilities, organization, and doctrine that evolved from Russia's experience in the Russo-Georgia War, which have created dilemmas for their adversaries. The Russian deployment to Syria demonstrated an expeditionary capability Russia was willing to use for strategic footholds. The lesson will explore Russia's military thought and potential causes for an evolution in military theories. Key questions to consider are: How did Russian operations in Syria differ from previous methods? How did these events change the way other states perceived Russia? To what extent have Russian military operations influenced the global balance of power? In what ways has Russian military thought been shaped by key theorists?

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. Lavrov, Anton, *Russian Military Reforms from Georgia to Syria*, CSI Report, November 2018, 2-26. [EL]
2. Clark, Mason, *The Russian Military's Lessons Learned in Syria*, Military Learning and the Future of War Series. Institute for the Study of War, January 2021, 8-10 and 24-32. [EL]
3. Kofman, Michael et al, *Russian Military Strategy: Core Tenets and Operational Concepts*, CNA, August 2021, 43-84. [EL]
4. Bartles, Maj Charles K., "Recommendation for Intel Staff Concerning Russian Next Gen Warfare," *Military Intelligence*, October-December 2017. [EL]
5. Thomas, Timothy L. *Russian Military Thought: Concepts and Elements*, August 2019, 6-1– 6-9 and 9-1–9-13. [EL]

RECOMMENDED MATERIAL

1. Thomas, Timothy, *Russian Combat Capabilities for 2020: Three Developments to Track*, The MITRE Corp, December 2019, Conclusion on each part. **[EL]**
2. Defense Intelligence Agency, *Russia Military Power*, 2017. **[EL]**
3. Kjellen, Jonas, *Russian Electronic Warfare: The Role of Electronic Warfare in the Russian Armed Forces*, FOI Report, September 2018, 63-81. **[EL]**

DAY 6: RUSSIA IN UKRAINE

DATE: 25-26 January 2024

LESSON OBJECTIVES

1. Summarize the conduct of the war in Ukraine and its implications for contemporary and emerging warfare.
2. Identify ways that technology changed warfare in the war in Ukraine.
3. Discuss the application of airpower in the war in Ukraine.

LESSON OVERVIEW

CW 511 (L): Russia in Ukraine

Overview: This lecture will examine the current war between Ukraine and Russia along with the connections back to Russia's military doctrine. The lecture will discuss Russia's operational concepts and how their historical development has driven some of the concepts they are using today. Challenges, vulnerabilities, and strengths will be examined to enable students to critically think about current and future conflicts both in the physical domains and across the electromagnetic spectrum. Nations around the globe are closely watching the conflict in Ukraine and this seminar will dive deeper into the critical components everyone must be aware of in contemporary and emerging warfare.

CONTACT HOURS: 1.0-hour lecture

CW 512 (S): Modern Russian Military: Ukraine

Overview: This seminar will build upon the previous day's lesson and examine how Russia's military evolution has shaped the invasion of Ukraine. From Russia's strategic and operational objectives to their scheme of maneuver and other uses of the joint functions, students will discuss and analyze these concepts. Additionally, students will examine Russia's acquisition of modern technology and how it has impacted its ability to operate in the Ukraine conflict. Has it been used effectively or even at all? Lastly, Ukraine's resiliency and the global unified effort will be discussed. As the conflict continues to unfold, this seminar may bring in readings and articles released during the time of this course.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. Freedman, Lawrence, "Why War Fails," *Foreign Affairs*, July 2022. [EL]
2. Zabrodskiy, Mykhaylo, et al, *Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine*, RUSI Report, February-July 2022, 1-65. [EL]
3. Jones, Seth, *Ukrainian Innovation in a War of Attrition*, CSIS Report, February 2023. [EL]
4. Kofman, Michael, and Rob Lee, "Not Built for Purpose: The Russian Military's Ill-Fated Force Design," *War on the Rocks*, 2 June 2022. [EL]
5. Lee, Rob and Philip Wasielewski, *Russia's War in Ukraine: Critical Vulnerabilities to Russia's Military Operations and Systems*, FRPI.org, June 2023. [EL]
6. Jones, Seth, *Seizing the Initiative in Ukraine: Waging War in a Defense Dominant World*, CSIS Report, October 2023. [EL]

RECOMMENDED MATERIAL

1. Evans and Kofman, "Adaptation at the Front and the Big Picture in Ukraine", *War On the Rocks*, 21 Nov 2023. 40 min, 47 sec. [PODCAST]

DAY 7: MODERN CHINESE DOCTRINE AND THEORIES OF WAR

DATE: 29-30 January 2024

LESSON OBJECTIVES

1. Discuss the implications of the PLA's Joint Doctrine.
2. Identify priorities of Chinese military modernization.

LESSON OVERVIEW

CW 513 (L): Chinese Doctrine and Theories of War (Dr. Jared McKinney)

Overview: Overview: This lecture will provide students with an understanding of the sources of Chinese military doctrine and insight into the Chinese way of war as understood from its most recent strategic directives and campaign plans. Also, it will provide students with an understanding of how China intends to use the military instrument of power across the spectrum of conflict and the most likely scenarios for conflict. Finally, the lecture will describe the theory of victory through the lens of the ruling Chinese Communist Party.

CONTACT HOURS: 1.0-hour film

CW 514 (S): Modern Chinese Military: Informatized Local Wars and Active Defense

Overview: This seminar will discuss China's doctrine and military reforms over the past 20 years as the Chinese strategic vision has evolved, beginning in 1993 with strategic directives and major PLA reforms. China's focus on the information age and integrated joint operations will be addressed along with how it compares with the United States. These concepts will help students understand China's strategic direction, priorities, and warfighting focus. Active defense and the modernization of their technology and capabilities will also be discussed along with their preparations for conflict.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. M. Taylor Fravel, *Active Defense*, 1-8, 182-187, 217-235.
2. Easton, Ian, "Hostile Harbors: Taiwan's Ports and PLA Invasion Plans", *Project 2049 Institute*, 22 July 2021. [EL]
3. Burke, Edmund J., et al, *People's Liberation Army Operational Concepts*, RAND Report, 2020. [EL]
4. Video lecture: Chinese Aerospace Studies Institute, *Competition with China: China's Military Strategy*, 2021. 20 min, 47 sec. [EL] <https://youtu.be/5UhpIsmXDK8>

RECOMMENDED MATERIAL

1. Mastro, Oriana, "The Taiwan Temptation," *Foreign Affairs*, July 2021. [EL]
2. "How China Fights", *The Convergence: Army Mad Scientist Podcast*, 9 Dec 2021. 38 min, 33 sec. [PODCAST]

DAY 8: RECENT CHINESE OPERATIONS AND CAPABILITIES

DATE: 1-2 February 2024

LESSON OBJECTIVES

1. Explain how well recent military operations fit China's strategy for the region.
2. Identify Chinese military capabilities and discuss how the Chinese are shaping their force.

LESSON OVERVIEW

CW 515 (L): Recent Chinese Operations and Capabilities

Overview: This lecture will provide students an overview of the key, recent developments in the Chinese People's Liberation Army so that students can distinguish how the current Chinese military presents unique challenges to the U.S. and its partners and allies at both the operational and strategic levels. Using observations from Chinese developments as well as the CCP's own public communications, this lecture will give students insight into the current strategic challenge with China.

CONTACT HOURS: 1.0-hour lecture

CW 516 (S): China in the South China Sea, Taiwan, Djibouti, and Ladakh

Overview: This seminar focuses on China's recent and current operations both in their country and abroad. The RAND reading explores a case study on Chinese anti-piracy operations in the Gulf of Aden and their establishment of a military base in Djibouti. The other readings examine China's border conflict with India at Ladakh and some of the strategic implications within. Students will receive a better understanding of how China is using their military and should have discussions demonstrating critical thought on China's strategic operations in the South and East China Sea. Many different Chinese military concepts are presented that will be used in Phase 3 of the CW course.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. Tarapore, Arzan, "The Crisis after the Crisis: How Ladakh will Shape India's Competition with China," *Lowy Institute*, May 2021. [EL]
2. Heath, Timothy R., et al, *China's Military Interventions*, RAND Report, 2021, 117-165. [EL]
3. Burgess, Stephen, "Confronting China's Maritime Expansion in the South China Sea," *Journal of INDO-PACIFIC Affairs*, Fall 2020. [EL]
4. Cancian, Mark F., et al, *The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan*, CSIS Report, Jan 2023, 1-16, 106-141. [EL]

RECOMMENDED MATERIAL

1. Army Tactics Publication 7-100.3 - Chinese Tactics, 2021, 2-1—2-7. [EL]

DAY 9: NORTH KOREA DOCTRINE, THEORIES OF WAR, AND CAPABILITIES

DATE: 5-6 February 2024

LESSON OBJECTIVES

1. Explain the threat North Korea presents to U.S. national security.
2. Examine Joint All-Domain Command and Control in a practical application.

LESSON OVERVIEW

CW 517 (L): North Korea Threat Brief (Dr. Michael Kraig)

Overview: This lecture will focus on the gamut of threats North Korea poses to national security, including everything from nuclear and cyber capabilities to conventional capabilities and asymmetric warfare. The 2022 National Security Strategy mentions the United States will seek sustained diplomacy with North Korea along with continuing to progress in the denuclearization of the Korean Peninsula. For that reason, the isolated North Korean nation breeds more and more curiosity from outside countries, and everyone must be prepared for a wide array of situations.

CONTACT HOURS: 1.0-hour lecture

CW 518 (S): North Korea Threats to National Security

Overview: This seminar will examine North Korea's threats regionally and around the globe.

Students should be prepared to discuss the strategic objectives of North Korea as it relates to their nuclear arsenal. Are the national objectives of North Korea clear? How has their cybersecurity threat developed? Additionally, students will examine the joint all-domain command and control (JADC2) case study (ATTACKS and TOC-L) in the Korean context as an in-class exercise.

CONTACT HOURS: 2.0-hour seminar

CW-901 PAPER DUE IN CANVAS ON 6 FEBRUARY BY 1700

REQUIRED READINGS

1. JADC2 Case Study Korea. (Move to seminar exercise, print 3 readings per class (CUI file), white board work to instructor prompts (question bank).
2. *North Korea's Military Capabilities*, CFR.org, 28 June 2022. [EL]
3. Klingner, Bruce "North Korean Cyberattacks: a dangerous and evolving threat," *Asian Studies Center*, 2 September 2021. [EL]
4. *North Korea Military Power: A Growing Regional and Global Threat*, DIA Report 2021. [EL]

RECOMMENDED MATERIAL

1. Cha and Bermudez, "The North Korean Missile Threat: Expert Roundtable", *The Impossible State – North Korea*, 1 April 2022. 58 min, 39 sec. [PODCAST]

DAY 10: IRANIAN MILITARY THREAT and ISRAEL-HAMAS WAR

DATE: 8-9 February 2024

LESSON OBJECTIVES

3. Explain the threat Iran presents to U.S. national security.
4. Discuss the Israel-Hamas war and early lessons learned, urban warfare, and VEOs.

LESSON OVERVIEW

CW 519 (L): Israel-Hamas War Panel

Overview: This panel will provide an operational overview of the Israel-Hamas War and discuss emerging lessons, the complexities and challenges of urban warfare, and implications for the future use of airpower.

CONTACT HOURS: 1.0-hour lecture

CW 520 (S): Iranian Threats to National Security and Recent Events in the Theater

Overview: This seminar will examine Iran's threats regionally and around the globe. The events leading up to Iran's current posture and strategy will be discussed, focusing on the Iran-Iraq War through their acquisition of missile defense. Additionally, focus will be given to Iran's concept of deterrence. The role of Iranian proxy forces around the Middle East, tensions with Saudi Arabia, and Iran's threat to U.S. security strategy will be explored. Students will critically think about U.S. response options to Iran and the threats the state poses in the region. This seminar will also discuss the Israel-Hamas war, look at the complexity of the conflict, and explore implications for the future security environment.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. Ajili, Hadi, and Mahsa Rouhi, *Iran's Military Strategy*, IISS Report, 2018. [EL]
2. Cordesman, Anthony H., *The Iranian Missile Threat*, CSIS Report, 30 May 2019. [EL]
3. Watling, Jack, *Israel Confronts Hamas: For Military Planners, Gaza is Not Unusual*, RUSI, 16 Oct 2023. [EL]
4. **PLACEHOLDER FOR CURRENT EVENTS ARTICLE ON ISRAEL-HAMAS WAR**

RECOMMENDED MATERIAL

1. Jones, Seth G., et al., *The Iranian and Houthi War Against Saudi Arabia*, CSIS Report, December 2021. [EL]
2. Amble, John, "Combined Arms in Gaza", *Modern War Institute*, 18 Oct 2023. 39 min, 16 sec. [PODCAST]

DAY 11: LOGISTICS, SUSTAINMENT, AND MOBILITY IN A FUTURE FIGHT

DATE: 12 February 2024

LESSON OBJECTIVES

1. Understand the execution of and challenges facing the Joint Deployment and Distribution Enterprise (JDDE) in the emerging security environment.
2. Discuss how the DoD is challenged with balancing limited mobility capacity with global demand signals of varying strategic priority, and how this is marginally offset (with additional challenges) by commercial support.
3. Explore the challenges posed by the emerging security environment to critical support missions requiring organic lift capacity: Aeromedical Evacuation (AE) and Noncombatant Evacuation Operations (NEO).

LESSON OVERVIEW

CW 521 (L): Global Logistics, Sustainment, and Mobility (Lt Col Jonathan “DASH” Yates)

Overview: This lecture will build on the lessons learned in Airpower Strategy and Operations (AO) and shift the focus to current and future logistics challenges facing mobility forces. This lecture will examine real-world examples connecting the challenges of combat planning demand signals and the ability to feasibly support and sustain those plans. We will connect strategic guidance and prioritization to show how it affects high demand, low density (HD/LD) fleets and how those challenges are further exacerbated in the INDOPACOM AOR.

CONTACT HOURS: 1.0-hour lecture

CW 522 (S): Logistics and Sustainment in Doctrine and Concept

Overview: In the first part of the seminar, the emphasis will be on projecting and sustaining combat power through the execution of the Joint Deployment and Distribution Enterprise (JDDE) across air, land, and sea. The discussion will include the DoD’s reliance on commercial support and the importance of Access, Basing, and Overflight (ABO) provided by allies and partners for global logistics. The second part of the seminar will shift its focus to critical non-kinetic support missions. The planning and execution of AE and NEO missions necessitate extensive collaboration involving the DoD, commercial industry partners, government agencies, and allies and partners, and requires a thorough understanding of the complexities of planning these missions in a contested and resource-constrained environment. Given the evolving security landscape, new challenges will prompt a reevaluation of our approaches to prolonged global operations, supply chain security, and expectations for commercial support in peer conflicts.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. Priebe, Miranda, et al., “Distributed Operations in a Contested Environment”, 2019, 66-78. [EL]
2. Brathwaite, Kristin J.H., and Margarita Konaev, “The Real Key to Victory in Ukraine”, *Foreign Affairs*, June 2022. [EL]
3. Williamson, Sally, *Logistics Contractors and Strategic Logistics Advantage in U.S. Military Operations*, 4 June 2023. 1-6. [EL]
4. USTRANSCOM, "FY24 JDDE Challenges", 2024. [EL]
5. Department of State, *After Action Review on Afghanistan*, March 2022, 1-24. [EL]
6. Thomas, Brent, *Preparing for the Future of Combat Casualty Care*, RAND Report, 2021. 19-31, 33-47, & 105-131. [EL]

7. Trevino, Brig Gen Alice, et al, *Leveraging Our War-Fighting Capabilities*, ASPJ, 2019. [EL]
8. JP 4-10, Operational Contract Support, 4 March 2019, I-1 - I-11. [EL]

RECOMMENDED MATERIAL

1. Roberts, “Joann Robertson: Rethinking Logistics,” *Western Way of War*, 2 Dec 2021. 31 min, 32 sec. [PODCAST]
2. Fleming, Joslyn, et al, *Kicking the Tires? The People's Liberation Army's Approach to Maintenance Management*, RAND Corporation, 2023. [EL]
3. Shatzer, George R., et al, *PLA Logistics and Sustainment: PLA Conference 2022*, US Army War College Press, 2023. [EL]

DAY 12: COMMAND AND CONTROL

DATE: 15 February 2024

LESSON OBJECTIVES

1. Outline the principles of operational command and control and Joint command relationships in a homeland defense context.
2. Discuss how emerging technology and the Joint All-Domain Operations concept informs Joint All-Domain Command and Control and impacts the kill chain.
3. Discuss planning implications for the Chinese People's Liberation Army's approaches to Command and Control.

LESSON OVERVIEW

CW 523 (L): Command and Control (Col Fields 505th)

Overview: This lecture will focus on the future of Command and Control (C2) in the Air Force from the perspective of the 505th Command and Control Wing. The lecturer will address how the Air Force is currently enhancing command and control for future operations.

CONTACT HOURS: 1.0-hour lecture

CW 524 (S): Command and Control in Doctrine and Concepts

Overview: This seminar will begin by revisiting current command and control definitions and processes from doctrine, which cover the levels of control and authorities. Air operations revolve around the Air Tasking Order (ATO); discussion should take place about experiences, limitations, and benefits of this process. Homeland defense command and control, command relationships, and challenges will be discussed, as defined by doctrine. JADC2 will be examined along with other examples of ways the U.S. military has implemented technological improvements to enable more effective joint operations. This seminar will explore and critically think about how current C2 doctrine and future concepts might be employed, specifically with great powers. Students will also participate in an in-class C2 exercise focusing on command relationships and homeland defense.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. Joint Publication 3-27, *Homeland Defense*, 10 April 2018, Chapter II. [EL]
2. Air Force Doctrine Publication 3-27, *Homeland Defense Operations*, 10-23. [EL]
3. Orsi, Doug and Bobby Mundell, "Will New Doctrine Fix Mission Command?", *War Room*, 2019. [EL]
4. Department of Defense, *Summary of the Joint All Domain Command and Control Strategy*, Mar 2022. [EL]
5. USAF, *Joint All Domain Command and Control Supporting Concept*, 8 Jul 2021. [EL]
6. Jackson, Kimberly, et al, *Command and Control in U.S. Naval Competition with China*, RAND Report, 2020. [EL]
7. Chinese Aerospace Studies Institute, *Competition with China: PLA Command and Control*, 34 min, 31 sec. <https://youtu.be/10sKx5uX5LQ>

RECOMMENDED MATERIAL

1. Joint Publication 3-0, *Joint Operations*, 18 Jun 2022, III-1 – III-15. [EL]
2. Joint Publication 3-30, *Joint Air Operations*, 25 July 2019, II-1 – II-28, III-19 – III-27. [EL]

DAY 13: JOINT ALL-DOMAIN OPERATIONS

DATE: 16 February 2024

LESSON OBJECTIVES

1. Describe Joint All Domain Operations (JADO) and JADO efforts across the Joint Force.
2. Discuss the various definitions of domain.
3. Discuss the Joint Functions, as defined by doctrine.

LESSON OVERVIEW

CW 525 (L): The Conceptual Foundations of Joint All Domain Operations (Dr. Jeff Reilly)

Overview: Dr. Reilly will provide an overview of the foundational concepts of joint all domain operations and will help students grasp the complexity and impact of maneuver in multiple domains beyond air, space, and cyberspace. Dr. Reilly will examine lessons learned from previous conflicts and provide context for future operations. Finally, Dr. Reilly will examine terms and definitions to reinforce students' understanding of simultaneous maneuvers and provide linkages to the Joint Planning Process.

CONTACT HOURS: 1.0-hour lecture

CW 526 (S): JADO Across the Joint Force

Overview: This seminar will discuss the concept of JADO in terms of definition, reasoning, and application of use. Discussions should revolve around the evolution of joint operations and how they have and should be conducted by incorporating the joint functions. Students should consider how the different military services are approaching JADO and critically examine their potential effectiveness. This lesson should highlight that maneuver through all domains and synchronizing effects requires highly robust command and control. Students will examine what constitutes a domain, how some domains extend across all services, and how authorities of command and control will be facilitated. How is the Air Force combatting this problem? Experiences from all students should be solicited to generate the highest level of critical thinking.

CONTACT HOURS: 2.0-hour seminar

REQUIRED READINGS

1. U.S. Army, *The U.S. Army in Multi-Domain Operations 2028 (TP525-3-1)*, 6 Dec 2018, 5-46. [EL]
2. Reilly, Jeffrey M., *Multidomain Operations*, ASPJ, Spring 2016. [EL]
3. Air Force Doctrine Publication 3-99, "DAF Role in JADO," 19 Nov 2021. [EL]
4. Joint Publication 3-0, *Joint Operations*, 2022, III-1 – III-54. [EL]
5. Donnelly, Jared and Jon Farley, "Defining the 'Domain' in Multi-Domain," *Over the Horizon*, 17 Sep 2018. [EL]
6. Jones, Seth G., *Project Overmatch: A Conversation with RADM Douglas Small, USN*, CSIS Report, 7 May 2021. [EL]

DAY 14: SCENARIO INTRODUCTION AND CAPABILITIES FAMILIARIZATION

DATE: 20 February 2024

LESSON OBJECTIVES

1. Discuss the scenario material and background narrative.
2. Review scenario products and OPORD assignment.
3. Understand the purpose of the CW planning exercise.

LESSON OVERVIEW

CW 527 (S): SCENARIO INTRODUCTION

Overview: At the start of the seminar, the instructor will play a video featuring a member of the CW course team. This video will cover essential details such as background information, the "road to war," and scenario products. Following the video, the class will examine the scenario products in the Teams folder, go over briefing assignments, discuss Paragraph 3 OPORD assignment, and engage in a general discussion about the planning exercise.

CONTACT HOURS: 3.0-hour seminar

REQUIRED READINGS

1. *Review* – Planning products for each Domain/Operating Environment Day in the CW Teams Folder
2. *Review* – JP-5-0 Joint Planning

DAY 15: INFORMATION OPS AND SCENARIO EXERCISE

DATE: 22 February 2024

LESSON OBJECTIVES

1. Explain the capabilities the U.S. presents in information operations.
2. Discuss how Russia uses information and how information has been used in the war in Ukraine.
3. Use the forces provided to build an information scheme of maneuver for the scenario.

LESSON OVERVIEW

CW 528 (S): Information Operations

Overview: Prior to this seminar, students will have watched a pre-recorded lecture that will focus on the key elements for maneuver in the informational environment. This lecture will discuss an overview of joint information operations and how to maneuver in the operational environment.

This seminar will begin the exercise that will continue through phase 3 of the course. This course day, the exercise will focus on capabilities and limitations of information operations. The sharing of information and its use to influence behavior is not a new concept. However, today's technological environment allows information to be disseminated more quickly and easily around the globe. Students should be able to critically discuss information as a joint function by examining examples from the readings and their own experiences. Students should be able to understand concepts like reflexive control, manipulation, and deception. By examining the conflict in Ukraine, potential conflicts in China, and operations being conducted by the United States, students should leave this seminar with a better understanding of the influence of information in today's globally integrated operations.

CONTACT HOURS: 3.0-hour seminar

REQUIRED READINGS

1. ACSC Presentation, *CW Info Domain*, Dec 2022. [Video link in CW Teams folder](#)
2. Department of Defense, *Joint Concept for Operating in the Information Environment (JCOIE)*, 25 July 2018, 1-17. [EL]

RECOMMENDED MATERIAL

1. Thomas, Timothy L., "Russia's Reflexive Control Theory and the Military," *Journal of Slavic Studies* 17, (2004), 237-256. [EL]
2. Joint Publication 3-0, *Joint Operations*, 18 June 2022, III-16 – III-27. [EL]
3. Patrikarakos, David, *War in 140 Characters: How Social Media Is Reshaping Conflict in the Twenty-First Century*, (New York: Basic Books, 2017), Chapters 8-9. [EL]
4. Singer, P.W., "How Ukraine Won the #LikeWar," *Politico*, 12 March 2022. [EL]
 - a. Video on the same topic: <https://www.youtube.com/watch?v=Uqy0whqRVhI>
5. Takagi, Koichiro "The Future of China's Cognitive Warfare," *War On The Rocks*, July 2022. [EL]

DAY 16: LAND DOMAIN AND SCENARIO EXERCISE

DATE: 23 February 2024

LESSON OBJECTIVES

1. Explain the capabilities the U.S. military presents in the land domain.
2. Discuss implications from the war in Ukraine on future operations in the land domain.
3. Apply the forces provided to build a land scheme of maneuver for the scenario.

LESSON OVERVIEW

CW 529 (S): Land Domain Exercise

Overview: Prior to this seminar, students will have watched a pre-recorded lecture that will focus on the key elements for maneuver in the land domain. This lecture will discuss the various force presentation models of the U.S. Army and the strengths and limitations of each. It will present the ways that the U.S. Army is employed in the joint force, and it will also discuss an overview of key terrain and sustainment. The first portion of this seminar will discuss the lecture and readings to grasp Army organization and how they doctrinally deploy and employ forces. Division deployment fundamentals and organic compositions will be emphasized, along with the joint function capability. Unified land operations and decisive action components should be discussed and a basic understanding of authorities and how they are used should be obtained. Students should go into the second portion of this seminar with a basic understanding of maneuver warfare with regards to access, maneuver, and effects in the land domain.

This seminar will build on the exercise from course day 15 and that will continue through phase 3 of the course. This course day, the exercise will focus on movement and maneuver in the land domain. Students will be given the commander's intent along with objectives to achieve. Students will focus on ground lines of communication (GLOCs), identify key terrain, and exercise the joint functions to accomplish the given objectives. At the conclusion of this day, students will have provided a land scheme of maneuver along with an explanation of how the joint functions facilitate it.

CONTACT HOURS: 3.0-hour seminar

REQUIRED READINGS

1. ACSC Presentation, *CW Land Domain*, Dec 2022. [Video link in CW Teams folder](#)
2. ACSC/DEW, *Joint Warfighting Capabilities Primer Academic Year 2023*, 17-49. [EL]
3. ADP 3-0, *Operations*, Jul 2019, 3-1 to 3-10 (para 3-1 to 3-54), 5-1 to 5-8. [EL]
4. MCDP 1, *Warfighting*, 72-77. [EL]

RECOMMENDED MATERIAL

1. Chinese Aerospace Studies Institute, *Competition with China: Overall PLA Rocket Force*, <https://youtu.be/XNV8ehxDrvM> [30 mins]
2. Joint Publication 3-0, *Joint Operations*, 18 Jun 2022, III-37 – III-40. [EL]

DAY 17: MARITIME DOMAIN AND SCENARIO EXERCISE

DATE: 26 February 2024

LESSON OBJECTIVES

1. Explain the capabilities the U.S. military presents in the maritime domain.
2. Understand capabilities and structure of the PLA Navy.
3. Use the forces provided to build a maritime scheme of maneuver for the scenario.

LESSON OVERVIEW

CW 530 (S): Maritime Domain

Overview: Prior to this seminar, students will have watched a pre-recorded lecture that will focus on the key elements for maneuver in the maritime domain. Students will be introduced to core mission areas for the purpose of building knowledge that can be used in developing a maritime scheme of maneuver. These core missions will be discussed in relation to the joint functions, along with how they are subject to different risk levels. Students should leave this lecture with a basic understanding of the different components of a maritime scheme of maneuver, so they are prepared to begin developing one in their seminar.

This seminar will build on the exercise from course day 16 and that will continue through phase 3 of the course. This course day, the exercise will focus on movement and maneuver in the maritime domain. Students will be given the commander's intent along with objectives to achieve. Focus on sea lines of communication (SLOCs) and key terrain should be identified along with how to exercise the Joint Functions to accomplish the given objectives. At the conclusion of this day, students will have provided a maritime scheme of maneuver along with an explanation of how the Joint Functions facilitate it. Discussion should center around understanding Naval and Marine Corps organization in the U.S. military and China's Peoples Liberation Army Navy and how they doctrinally operate. Students should leave this portion of the seminar with an understanding of the unique capabilities each of these services bring to the military and be ready to exercise these capabilities in the scenario exercise.

CONTACT HOURS: 3.0-hour seminar

REQUIRED READINGS

1. ACSC Presentation, *CW Maritime Domain*, Dec 2022. [Video link in CW Teams folder](#)
2. ACSC/DEW, *Joint Warfighting Capabilities Primer Academic Year 2023*, 68-97. [EL]
3. Chinese Aerospace Studies Institute, *Competition with China: PLA Navy*.
<https://youtu.be/fFInAZ5FwGs> [21 mins]

RECOMMENDED READINGS

1. MCDP, "Marine Corps Operations", (1-14-1-22, 2-1, 2-6-2-14, 2-18-2-24). [EL]
2. USMC, "Tentative Manual for EABO," Feb 2021, 1-1—1-6. [EL]
3. NWP 3-32, *Maritime Operations at the Operational Level of War*, Oct 2008. [EL]
4. Berger, Gen. David H., *Notes on Designing the Marine Corps of the Future*, USMC, 6 Dec 2019. [EL]

DAY 18: AIR DOMAIN AND SCENARIO EXERCISE

DATE: 29 February 2024

LESSON OBJECTIVES

1. Explain the capabilities the U.S. military presents in the air domain.
2. Understand the capabilities and structure of the PLA Air Force.
3. Use the forces provided to build an air scheme of maneuver for the scenario.

LESSON OVERVIEW

CW 531 (S): Air Domain Exercise

Overview: Prior to this seminar, students will have watched a pre-recorded lecture that will focus on an overview of capabilities possessed in the Air Domain. Core missions such as ISR, mobility, strategic attack, escort, and interdiction will be discussed along with how they can be developed into an air scheme of maneuver. These core missions will be discussed in relation to the joint functions along with how they are subject to different risk levels. Understanding these missions' vulnerabilities to threats in the INDOPACOM AOR is imperative to effectively plan how to best implement them. Students should leave this lecture with a basic understanding of the different components of an air scheme of maneuver, so they are prepared to begin developing one in their seminar.

This seminar will build on the exercise from course day 17 and that will continue through phase 3 of the course. This course day, the exercise will focus on movement and maneuver in the air domain. This seminar should focus on understanding how airpower can be employed including asymmetric options, air defense concepts, and how recent conflicts employed air power.

CONTACT HOURS: 3.0-hour seminar

REQUIRED READINGS

1. ACSC Presentation, *CW Air Domain*, Dec 2023. [Video link in CW Teams folder](#)
2. ACSC/DEW, *Joint Warfighting Capabilities Primer Academic Year 2023*, 50-67. [EL]
3. Chinese Aerospace Studies Institute, "PLA Aerospace Power," 2019, 1-32 and 66-78. [EL]
4. Chinese Aerospace Studies Institute, "Competition with China: PLA Air Force," (2022), <https://www.youtube.com/watch?v=61KDBeGQz9s>.

RECOMMENDED READINGS

1. AFDN 1-21, "Agile Combat Employment", 1 December 2021. [EL]
2. Piubeni and Gottrich, "Decision Superiority", *ASOR*, Summer 2022. [EL]
3. Priebe et al, "Distributed Operations in a Contested Environment," *RAND*, 2019. [EL]

DAY 19: CYBER/EMS DOMAIN AND SCENARIO EXERCISE

DATE: 1 March 2024

LESSON OBJECTIVES

1. Explain the capabilities the U.S. presents in the EMS.
2. Discuss EMS maneuver in the war in Ukraine.
3. Use the forces provided to build an EMS scheme of maneuver for the scenario.

LESSON OVERVIEW

CW 532 (S): Cyber/EMS Domain Exercise

Overview: Prior to this seminar, students will have watched a pre-recorded lecture that will focus on the key elements for maneuver across the electromagnetic spectrum (EMS), to include cyber operations. The EMS consists of multiple non-kinetic capabilities including electronic warfare, offensive and defensive cyber operations, and information warfare. The foundations of what constitutes the EMS will be discussed along with example mission sets and effects they bring to an operation. All other domains traverse and rely on the EMS in many ways. Students should leave this lecture with a fundamental understanding of the capabilities and limitations of this domain and how imperative it is to warfighting today and in the future. The world has become more reliant than ever on electronic information, intelligence, and weapons, and this seminar will enable students to effectively incorporate these concepts into an integrated, all-domain scheme of maneuver.

This seminar will build on the exercise from course day 18 and that will continue through phase 3 of the course. This course day, the exercise will focus on capabilities and limitations of the electromagnetic spectrum (EMS) and cyber, along with their synchronization with other domains. This seminar should cover fundamental definitions and concepts including the electromagnetic spectrum, electronic warfare, and cyber. Students should think critically about the implications of current and future conflict in these areas and the interdependencies demonstrated in the Ukraine conflict and a potential INDOPACOM conflict.

CONTACT HOURS: 3.0-hour seminar

REQUIRED READINGS

1. ACSC Presentation, *CW Cyber/EMS Domain*, Jan 2023. [Video link in CW Teams folder](#)
2. ACSC/DEW, *Joint Warfighting Capabilities Primer Academic Year 2022*, 111-120. [EL]
3. Department of Defense, *Electromagnetic Spectrum Superiority Strategy*, October 2020. [EL]

RECOMMENDED READINGS

1. Sanchez, Frank C., Weilun Lin, and Kent Korunka, "Applying Irregular Warfare Principles to Cyber Warfare," *JFQ*, 92, (1st Quarter 2019). [EL]
2. "Fancy Bear Malware Tracking Ukrainian Field Artillery," *Crowdstrike*, 23 March 2017. [EL]
3. Clay, Marcus, "To Rule the Invisible Battlefield," *War On The Rocks*, 22 January 2021. [EL]
4. Nakasone, Paul M. "A Cyber Force for Persistent Operations," *JFQ*, 92, (1st Quarter 2019). [EL]
5. Mueller et al, "Cyber Operations during the Russo-Ukrainian War," *CSIS*, July 2023. [EL]
6. Smith, Robert "Maneuver at Lightspeed: Electromagnetic Spectrum as a Domain," *Over The Horizon*, November 2018. [EL]

DAY 20: SPACE DOMAIN AND SCENARIO EXERCISE

DATE: 4 March 2024

LESSON OBJECTIVES

1. Explain the capabilities the U.S. presents in the space domain.
2. Discuss how China challenges the U.S. in Space.
3. Use the forces provided to build a space scheme of maneuver for the scenario.

LESSON OVERVIEW

CW 533 (S): Space Domain Exercise

Overview: Prior to this seminar, students will have watched a pre-recorded lecture that will focus on the key elements for maneuver in the space domain. This video will discuss an overview of capabilities possessed in the space domain and students will be introduced to core mission areas for the purpose of building knowledge that can be used in developing a space scheme of maneuver. These core missions will be discussed in relation to the Joint Functions and how they are subject to different levels of risk. Students should leave this lecture with a basic understanding of the different components of a space scheme of maneuver, so they are prepared to begin developing one during this seminar.

This seminar will build on the exercise from course day 19 and that will continue through phase 3 of the course. This course day, the exercise will focus on space control and capabilities from doctrine and how they connect to the joint functions. Students will examine these capabilities and functions for the United States, Russia, and China. The organization and utilization of space forces and assets will also be examined. Access, security, and threats will be discussed in the space domain from both a kinetic and non-kinetic perspective. Understanding our capabilities, limitations, vulnerabilities, and mitigations along with potential adversaries' will be critical in planning for a potential conflict. The reliance on capabilities such as satellite communications, position navigation and timing, and intelligence, surveillance, and reconnaissance provide significant vulnerabilities throughout all domains and this seminar will discuss how to move forward in an operational environment where these are in jeopardy.

CONTACT HOURS: 3.0-hour seminar

REQUIRED READINGS

1. ACSC Presentation, *CW Space Domain*, Dec 2022. [Video link in CW Teams folder](#)
2. Joint Publication 3-14, *Space Operations*, 26 October 2020, II-8 – III-9. [EL]
3. Defense Intelligence Agency, *Challenges to Space Security*, 2022, 2-29, 34-40. [EL]
4. Millner, David H., Stephen Maksim, and Marissa Huhmann, "BeiDou: China's GPS Challenger Takes Its Place on the World Stage," *JFQ*, 105 (2nd Quarter 2022). [EL]
5. ACSC/DEW, *Joint Warfighting Capabilities Primer Academic Year 2023*, 122-140. [EL]

DAY 21: DOMAIN SYNCHRONIZATION

DATE: 5 March 2024

LESSON OBJECTIVES

1. Analyze the domain schemes of maneuver and present a synchronization matrix for the scenario.

LESSON OVERVIEW

CW 534 (S): Domain Synchronization Exercise

Overview: This seminar will focus on synchronizing the layered effects through all domains of the scenario exercise. Up to this point, students will have developed domain schemes of maneuver considering the joint functions within that domain. While consideration had been given other domains during each stage of the exercise, the intricacies of planning their effects sequentially or simultaneously across all domains was not explored. This seminar will drive home the challenges, but more importantly, the opportunities joint all domain operations provide the force when properly planned and executed.

CONTACT HOURS: 3.0-hour seminar

CW-903 OPOD PAPERS DUE IN CANVAS ON 6 MARCH BY 1700

REQUIRED READINGS

NONE

APPENDIX: COURSE FACULTY

CW Course Director

Dr. Jared R. Donnelly is an Associate Professor of Military and Security Studies and the Course Director of the Contemporary and Emerging Warfare course at the United States Air Force's Air Command and Staff College. Dr. Donnelly received his Ph.D. from Texas A&M University and was previously on the faculty of the International Affairs Department at the George H.W. Bush School of Government and Public Service. Donnelly's research focuses on war and social change in Germany and Europe with a specific interest in the period since 1945. Additionally, he studies strategic design for future security environments and conducts research on decision-making in multi-domain operations.

CW Deputy Course Directors

Lt Col Jeremiah "Happy" Gilmore is an Instructor in the Department of Airpower at the U.S. Air Force's Air Command and Staff College (ACSC). Prior to this assignment, Lt Col Gilmore was a Staff Officer at Air Combat Command (ACC), where he worked on acquisition and capability development for several emerging Air Force Programs. He holds a master's in Military Operational Art and Science from Air University as well as a Master of Science in Administration from Central Michigan University. He earned a Bachelor of Science in Computer Science from the University of Georgia and received his commission from ROTC. Lt Col Gilmore is a Senior CSO with Instructor and Evaluator time in the RC-135S and T-1A.

Lt Col Jonathan "DASH" Yates is an Instructor in the Department of Airpower and a Distinguished Graduate of the Air Force's Air Command and Staff College (ACSC). Lt Col Yates is an Instructor Pilot in the KC-135 and a graduate of the U.S. Air Force Weapons School. Prior to this assignment, Lt Col Yates served on the staff at U.S. Transportation Command (USTRANSCOM) and was assigned as the Deputy Branch Chief of the J38 Global Air Refueling Branch and culminated as the Junior Executive Officer to the Commander of USTRANSCOM.

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Major Franklin Ladson is an Instructor in the Department of Airpower at the Air Force's Air Command and Staff College (ACSC). Prior to arriving at ACSC, he was the Chief of Cyber Effects Inspection Section at Headquarters Air Combat Command Inspector General, Joint Base Langley-

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Faculty (alphabetical)

Lt Col Todd “King” Arthur is the Deputy Department Chair of the Department of Airpower at the U.S. Air Force’s Air Command and Staff College (ACSC). Lt Col Arthur is a command pilot with over 5500 hours in the C-5 A/B/M, T-1A, T-6A, and E-11 aircraft. He served as an instructor pilot in all four airframes and flew combat missions in Operations IRAQI FREEDOM, ENDURING FREEDOM, and FREEDOM SENTINEL. He is a graduate of the U.S. Air Force Academy, ACSC, and commanded the 430 EECS. Lt Col Arthur received his Bachelor of Science from the United States Air Force Academy with a minor in Military Doctrine, Operations, and Strategy. He also holds a Master of Business Administration from Touro University with an emphasis in corporate finance. Lt Col Arthur also has a Master of Military Sciences from Air University. His last assignment was Commander, 430 EECS Prince Sultan Air Base, Saudi Arabia.

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White River Campaign in Arkansas in the spring-summer of 1862, and has numerous publications and conference presentations.

Lt Col Kevin Boss is an instructor in the Department of Airpower at the United States Air Force's Air Command and Staff College (ACSC). He entered the Air Force in 2004 and initially served as an Air Battle Manager before transitioning to the intelligence career field in 2013. Lt Col Boss has deployed in support of Operations ENDURING FREEDOM and ODYSSEY DAWN / UNIFIED PROTECTOR and served a tour in the 603d Air Operations Center. He holds an EdD in Aviation and Space Education from Oklahoma State University, holds MS degrees from Embry Riddle Aeronautical University and Southeastern Oklahoma State University, and is a graduate of ACSC (AY17). Lt Col Boss joined the ACSC faculty in July 2023 upon completion of tours as a Squadron Commander and Deputy Group Commander.

Lt Col John "Garick" Chamberlin, PhD, is an Assistant Professor of Military and Security Studies in the Department of Airpower at the United States Air Force's Air Command and Staff College (ACSC). He holds a PhD in History from Purdue University, an MA in National Security Affairs from Naval Postgraduate School, and a BS in Middle East Studies from Excelsior College (USNY). Garick has split his Air Force career roughly equally between intelligence and education assignments, having taught at the Defense Language Institute and the U.S. Air Force Academy, and commanded a Student Squadron at Squadron Officers School prior to his assignment to ACSC. In the Intelligence field, he was attached to the RC-135 both as an enlisted aviator and as an intelligence officer, and also served on the 3rd Air Force and U.S. Air Forces in Europe staffs and as the Chief of Wing Intelligence for the 22 ARW at McConnell AFB. Garick has over a dozen deployments to the Middle East, as well as one to Kosovo. His research focuses on the diplomatic and military history of the Early American Republic, primarily related to North African affairs.

Lt Col Paulo Costa is an Instructor in the Department of Airpower at the United States Air Force's Air Command and Staff College (ACSC). He teaches the Airpower Operations and Strategy and the Contemporary and Emerging Warfare courses. Prior to instructing at ACSC, he was a member of ACSC's AY21 class. Lt Col Paulo Costa is a senior cargo pilot from Brazilian Air Force with more than 3,200 flying hours in several EMBRAER aircraft, from the turbo-prop Tucano to regional jets. Before coming to the United States, he was the Commander of the Special Transport Group's 1st Squadron, the airlift unit responsible for transporting the President of the Federative Republic of Brazil. Lt Col Costa attended the Brazilian Air Force Academy, receiving his bachelor's degree in Aeronautical Science and Public Administration. He also holds a *Lato Sensu* specialization in Institutional Marketing, a Master of Business Administration, and a Master of Military Operational Art and Science.

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Lt Col Robert Lacy is an instructor in the Department of Airpower at the U.S. Air Force's Air Command and Staff College (ACSC). Lt Col Lacy is a Senior CSO having flown the EC-130H, MC-130H, and MC-130J. He holds a Master of Military Operational Art and Science from Air University as well as a Master of Natural Resource Development from Texas A&M University. He earned a Bachelor of Science in Geology from the University of Nebraska-Lincoln in 2006 and commissioned through ROTC. Prior to this assignment he was assigned to the 58th Special Operations Wing, AETC's schoolhouse for Special Operations and Personnel Recovery aviation.

Major Joel Mathews is an Air University Fellow and Instructor in the Department of Airpower at Air Command and Staff College, where he teaches courses on airpower and contemporary warfare. Before ACSC, he taught in the Department of History at the United States Air Force Academy, where he instructed courses in modern military history and the Vietnam War. A Tactical Air Control Party Officer and Joint Terminal Attack Controller Instructor by trade, Joel has served with the 3rd Infantry Division and 1st Cavalry Division and deployed to both the CENTCOM and EUCOM AORs. Maj Joel Mathews received a Bachelor of Science in History from the Air Force Academy, a Master of Arts in Military History from Texas Tech University, and a Master of Military Operational Art and Science from ACSC.

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Dr. Edwin H. Redman, Colonel, USAF (Retired) is Chair of the Department of Airpower at the U.S. Air Force's Air Command and Staff College (ACSC). Dr. Redman is a command pilot with tours in each of the Air Force's bomber aircraft. He served as an instructor pilot in the T-38, B-1 and B-2, and flew combat missions in Operation IRAQI FREEDOM in 2003 in the B-2. He is a graduate of the U.S. Air Force Academy, ACSC, and the School of Advanced Air and Space Studies (SAASS). Following SAASS, Dr. Redman attended Duke University, where he received his PhD in History. His last operational assignment was Deputy Commander, 509th Operations Group, Whiteman Air Force Base. He completed his active-duty service at Air University, holding several positions, including Director of Warfighting Education at the LeMay Center for Doctrine Development and Education, and Director of the Grand Strategy Seminar, Air War College. He retired from the Air Force in 2014 and joined Air University as a civilian professor in 2015.

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Lt Col Jeremy "HULK" Sherman is an instructor in the Department of Airpower at the Air Command and Staff College. Prior to this assignment, he served as the Commander, 10th Expeditionary Airborne Command and Control Squadron at Ramstein Air Base, Germany where he led the USAF's sole deployed E-8C Squadron in support of both USAFE and Allied Air Command. He has flown over 2,500 hours in both the E-8C JSTARS and E-3A NATO AWACS and served as an Instructor and Evaluator Combat Systems Officer in both Major Weapon Systems' Formal Training Units. His staff experience includes Chief of Direct Operations for Joint Improvised Threat Defeat Organization/Defense Threat Reduction Agency (JIDO/DTRA), Speechwriter to the AFCENT Commander, and Chief of Personnel Recovery for AFCENT. Lt Col Sherman's professional and military education include a graduate from Southern Illinois University with a Bachelor of Science Degree in Business Management, a Master of Science Degree in Aeronautical Science from Embry Riddle, Combat Aircrew Tactics Studies, Advanced Instrument School, Joint and Combined Warfighting School, Air Command and Staff College Class of 2018, and Air War College.

Dr. Joshua A. Sipper is an Assistant Professor at the Air Command and Staff College. He completed his Doctoral work at Trident University in September of 2012, earning a Ph.D. in Educational Leadership (emphasis, E-Learning Leadership). Dr. Sipper's previous degrees were obtained from Troy University (M.Ed. Education) and Faulkner University (B.S. English). Dr. Sipper is a veteran who served honorably in the U.S. Air Force in the intelligence career field and worked for Lockheed Martin in a similar capacity on the U-2 program. More recently, Dr. Sipper shifted his focus into the cyber realm for seven years as a Systems Engineer, Chief of Cyber Standardization and Evaluation, and Cyber Exercise Manager for General Dynamics at the Air Force's 26th Network Operations Squadron, followed by a nine-year stint as a civil servant in the Air Force cyber career field at the Curtis E. LeMay Center for Doctrine Development and Education. Just prior to his appointment at ACSC, Dr. Sipper was a Professor of Cyberwarfare Studies at the Air Force Cyber College where he designed several cyber courses including Cyber ISR, Cyber EW, and Cyber and Information Warfare Capabilities and Trends. He has numerous publications including his paper titled "The Cyber Microbiome and the Cyber Meta-reality" published at the IARIA Cyber 2020 conference for which he won a "Best Paper Award" and also has a book titled "The Cyber Meta-reality: Beyond the Metaverse, published by Rowman and Littlefield in 2022. Dr. Sipper's research interests include cyber operations, ISR, electromagnetic warfare, and cyber warfare.

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Dr. Paul J. Springer is a full professor of comparative military studies. He holds a PhD in military history from Texas A&M University. He is the author or editor of more than a dozen books, including *America's Captives: Treatment of POWs from the Revolutionary War to the War on Terror*; *Military Robots and Drones: A Reference Handbook*; *Transforming Civil War Prisons: Lincoln, Lieber, and the Laws of War*; *Cyber Warfare: A Reference Handbook*; and *Outsourcing War to Machines: The Military Robotics Revolution*. In addition, he has published hundreds of shorter pieces, on a variety of subjects including military history, terrorism, strategy, technology, and military robotics. Dr. Springer is a Senior Fellow of the Foreign Policy Research Institute, and the series editor for both the *History of Military Aviation* and *Transforming War* series, produced by the U.S. Naval Institute Press. Currently, he is completing three books, including a collective biography of the West Point Class of 1829; a military history textbook (co-authored with ACSC Professor S. Michael Pavelec); and an examination of the post-Civil War creation of higher education institutions in the South. Research Interest/Expertise includes: POW operations; military leadership and command; terrorism; strategy; military technology; artificial intelligence; cyber warfare; and U.S. military history.

Dr. John Terino is an Associate Professor of Military and Security Studies at the Air Command and Staff College. At ACSC, he teaches courses on Military Theory, Airpower, Contemporary Warfare, Joint Planning, Joint Air Planning, and an elective on the Air Force in Fact, Fiction, and Film. Prior to teaching at ACSC, he was a professor at the School of Advanced Air and Space Studies (SAASS). While at SAASS, he directed the school's course on Technology and Military Innovation, courses on Airpower History, and the institution's wargaming activities. Before coming to Air University, he taught for four years at the Air Force Academy in the Department of History. He retired from the Air Force in the grade of Lieutenant Colonel after serving for almost 23 years. He received his BA, MA, and PhD in the History and Sociology of Science from the University of Pennsylvania. He is currently researching a couple of book chapters and editing an airpower anthology book.

Dr. Heather P. Venable is an Associate Professor of Military and Security Studies in the Department of Airpower. She has taught Airpower I, Airpower II, and electives on close air support and the historical experience of combat. She also has served as the Airpower Two course director. As a visiting professor at the U.S. Naval Academy, she taught naval and Marine Corps history. She graduated with a B.A. in History from Texas A&M University and a M.A. in American History from the University of Hawai'i. She received her PhD in military history from Duke University. She also has attended the Space Operations Course as well as the Joint Firepower Course. She has written *How the Few Became the Proud: The Making of the Marine Corps' Mythos, 1874-1918* (Naval Institute Press, 2019). Previous published work includes "'There's Nothing that a Marine Can't Do': Publicity and the Marine Corps, 1905-1917" in *New Interpretations in Naval History: Selected Papers from the Sixteenth Naval History Symposium* and "The China Marines and the Crucible of the Warrior Mythos, 1900-1941" in *Crucibles: Selected Readings in U.S. Marine Corps History*. She is also a non-resident fellow at Marine Corps University's Krulak Center. Her professional service includes service as a managing editor for The Strategy Bridge. She also has contributed many articles about airpower and the current Air Force to other online publications including War on the Rocks and the Modern War Institute (feel free to reach out if you want guidance beginning online publishing at heather.venable@au.af.edu!). Her current research centers on intersections between theory and pre-war thinking and the application of airpower in combat.

Dr. Michael E. Weaver is an associate professor of history in the Department of Air Power. He joined the faculty of ACSC in 2002 after completing his doctorate at Temple University under the tutelage of Russell Weigley. Weaver's first book was *Guard Wars: The 28th Infantry Division in World War II* (Indiana University Press, 2010). His second, *The Air War in Vietnam* (Texas Tech University Press, 2022), was published in the fall of 2022. In *The Journal of Aeronautical History*, *Intelligence and National Security*, *Air Power History*, and *Diplomatic History* he has published articles on the Cuban Missile Crisis, air intelligence during World War II, aircraft capabilities, and air combat training during the Cold War. Weaver specializes in aviation history, the Cold War, and World War II.

Maj Justin "Tweek" Wohlford is an instructor in the Department of Air Power at the Air Command and Staff College (ACSC). He teaches the Airpower Strategy and Operations and the Contemporary and Emerging Warfare courses and the Science Fiction and Strategy elective. Prior to this assignment, he served as the Deputy Chief of Flight Safety, Air Combat Command (ACC) at Joint Base Langley-Eustis, VA. Maj Wohlford is a Senior Pilot with over 2,000 flight hours in the E-8C JSTARS, including over 850 combat hours flown in Operation ENDURING FREEDOM, Operation INHERENT RESOLVE, and Operation FREEDOM'S SENTINEL. Maj Wohlford received a Bachelor of Science in Aeronautical Engineering from the United States Air Force Academy. He also holds a Master of Arts in Military History from Norwich University and a Master of Military Operational Art and Science degree from ACSC.