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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

DEFENSE ANALYSIS CAPSTONE REPORT

OPERATIONALIZING THE EDUCATION BASE

by

Benjamin E. Eddlemon

December 2022

Thesis Advisor: Second Reader: Leo J. Blanken Cecilia Panella

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13. ABSTRACT (maximum 200 words) Naval Special Warfare (NSW), in accordance with strategic level guidance issued over the last few years, is shifting its focus from the counter-terrorism missions of the last two decades to preparing to respond to threats posed by developed nation-states such as China and Russia. It will be important to identify and fill any critical gaps in operational capability that would prevent NSW from achieving anticipated objectives against said adversaries. One particularly valuable—yet underutilized—asset that should be leveraged to accomplish this goal is the personnel that NSW sends to Naval Postgraduate School (NPS) as students. They are in a unique position to conduct in-depth analysis to better understand, characterize, and identify solutions to current and anticipated real-world operational problems. Establishing official and sustainable mechanisms for coordination between NSW and its students at NPS is a task of principal importance for ensuring that both organizations are maximizing the school's utility. This capstone project provides deliverables intended to enact and codify mechanisms for coordination between NSW, NPS, and the National Security Innovation Base.					
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OPERATIONALIZING THE EDUCATION BASE

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Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN APPLIED DESIGN FOR INNOVATION

from the

NAVAL POSTGRADUATE SCHOOL December 2022

Approved by: Leo J. Blanken Advisor

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ABSTRACT

Naval Special Warfare (NSW), in accordance with strategic-level guidance issued over the last few years, is shifting its focus from the counter-terrorism missions of the last two decades to preparing to respond to threats posed by developed nation-states such as China and Russia. It will be important to identify and fill any critical gaps in operational capability that would prevent NSW from achieving anticipated objectives against said adversaries.

One particularly valuable—yet underutilized—asset that should be leveraged to accomplish this goal is the personnel that NSW sends to Naval Postgraduate School (NPS) as students. They are in a unique position to conduct in-depth analysis to better understand, characterize, and identify solutions to current and anticipated real-world operational problems.

Establishing official and sustainable mechanisms for coordination between NSW and its students at NPS is a task of principal importance for ensuring that both organizations are maximizing the school's utility. This capstone project provides deliverables intended to enact and codify mechanisms for coordination between NSW, NPS, and the National Security Innovation Base.

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LIST OF ACRONYMS AND ABBREVIATIONS

AD4I	Applied Design for Innovation	
DA	Defense Analysis	
ITACS	Information Technology and Communication Services	
NDS	National Defense Strategy	
NPS	Naval Postgraduate School	
NSIB	National Security Innovation Base	
NSS	National Security Strategy	
NSW	Naval Special Warfare	
OPNAV	Office of the Chief of Naval Operations	
SOCOM	Special Operations Command	
SOP	Standard Operating Procedure	
SIPR	Secret Internet Protocol Router	
VTC	Video Tele-Conference	
WARCOM	Naval Special Warfare Command	

EXECUTIVE SUMMARY

Naval Special Warfare (NSW), in accordance with strategic level guidance issued over the last few years, is shifting its focus from the counter-terrorism missions of the last two decades to preparing a response for threats posed by developed nation-states such as China and Russia. Conducting an appraisal of how modern technologies will affect the battlefield and determining how to operate effectively against adversaries that possess them will be an integral part of that process. Beyond that, it will be important to fill any critical gaps in operational capability that would prevent NSW from achieving anticipated objectives against said adversaries.

One particularly valuable—yet underutilized—asset that should be leveraged to accomplish these goals is the personnel that NSW sends to Naval Postgraduate School (NPS) as students. They are in a unique position to conduct in-depth analysis to better understand, characterize, and identify solutions to current and anticipated real-world operational problems.

Establishing official and sustainable mechanisms for coordination between NSW and its students at NPS is a task of principal importance for ensuring that both organizations are maximizing the school's utility. The goal of this capstone project is to assist in synchronizing efforts between NPS and the NSW enterprise. The supplemental materials included with this report support the codification and enactment of mechanisms for coordination between NSW, NPS, and the National Security Innovation Base (NSIB).

The first supplemental attachment, "Bucklew Group Standard Operating Procedures" (SOP), is focused on NPS/NSW synchronization at the institutional level. Established in 2021, the Bucklew Group is "Naval Special Warfare's contribution to the Naval Warfare Studies Institute (NWSI) at the Naval Postgraduate School, deliberately designed to drive analysis to action against NSW's priority challenges."¹ The Bucklew

¹ Justin Davis, "Research Center Establishment or Renewal Application" (application for research center establishment, Naval Postgraduate School, 2021), 2; Naval Postgraduate School, "Phil H. Bucklew Research Center & Group" (white paper, Naval Postgraduate School, n.d.), 1.

Group is composed of NPS students and faculty. One of its primary functions is to provide a student mentee to act as an NPS liaison for the commanding officer of each O-6 level command in NSW.

The SOP codifies the functions of the group and normalizes the coordination efforts of students and NSW staff at NPS with the NSW chain of command. It also provides context concerning how the group aligns within the NWSI construct at NPS and consolidates perfunctory administrative information concerning governing authorities, funding, and individual responsibilities for reference by group leadership and members. Additionally, the SOP supports the adoption of the AD4I curriculum by incorporating two of Fiack and Riglick's recommendations: The SOP addresses the potential for utilization tours that appropriately leverage the skills students gain in the program.² It also works to "synchronize NPS innovation efforts"³ by outlining how the Bucklew Group collaborates across campus and throughout the NSIB as a member of the NWSI. This instantiates the Bucklew Group as a hub of communication and innovation not just for students at NPS but also for the greater NSW ecosystem.

The second supplemental attachment is the Bucklew Research Group Charter, which is offered for adoption as the foundational document for establishing the Bucklew Group and codifying its mission. The charter can be used as-is or modified per the wishes of NSW and NPS leadership.

The third supplemental attachment is a Maritime SOF course syllabus. For the last several quarters, the NSW chair at NPS has facilitated a DA4500—Special Topics in Low Intensity Conflict class focused on maintaining student awareness of matters relevant to the NSW community. Certain members of the Defense Analysis (DA) faculty have expressed the opinion that this should become an official DA course offering, to consistently serve the needs of the NSW community at NPS. This syllabus was written in

² Daniel Fiack and Phillip Riglick, "Applied Design for Innovation" (master's thesis, Naval Postgraduate School, 2019), 32.

³ Fiack and Riglick, 33.

response to that demand and stands as a template for the department, should it choose to make this DA4500 segment a permanent course offering in the future.

The final supplement, the NSW AD4I Student Guide, addresses synchronization at the individual student level. The guide outlines sources, such as the Naval Research Program, that students can reference to find project ideas that are relevant to NSW. It also describes NSW-specific acquisition processes and outlines steps students can take to ensure successful capstone prototypes are considered for purchase and fielding by NSW. Beyond this, the guidebook seeks to streamline capstone efforts by providing an overview of organizations throughout the NSIB that may be relevant to the student's research in addition to information concerning how to interface with those entities.

In addition to the supplemental material, there are two other principal efforts that were undertaken as part of this capstone project. While there are no written deliverables associated with either, they are worth mentioning for the sake of continuity. First, as one of two acting NSW chairs, the author worked with faculty members coordinating with WARCOM N5 to officially establish the AD4I curriculum at the Office of the Chief of Naval Operations' (OPNAV) N7 office. The WARCOM Commander has accepted Major Area Sponsorship of the curriculum and the N5, with support from Defense Analysis (DA) faculty and the NSW Chair, has spearheaded efforts to attain the final endorsement from OPNAV N7.

Second, with help from another recently graduated NPS student, the author coordinated efforts between WARCOM N6 and the NPS Information Technology and Communications Services (ITACS) department to get Special Operations Command (SOCOM) Secret Internet Protocol Router (SIPR) computers installed in the STBL. The benefit of having these machines on campus is that any student who comes to NPS from a SOCOM command will still have access to all of the emails and files from their SOCOM SIPR accounts, the SOCOM portal, and the ability to make phone calls or participate in Video Tele-Conferences (VTCs) through Cisco Jabber.

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I. OPERATIONALIZING THE EDUCATION BASE

Naval Special Warfare (NSW), in accordance with strategic level guidance issued over the last few years, is shifting its focus from the counter-terrorism missions of the last two decades to preparing a response to threats posed by developed nation-states such as China and Russia. Conducting an appraisal of how modern technologies will affect the battlefield and determining how to operate effectively against adversaries that possess them will be an integral part of that process. Additionally, it will be important to identify and fill any critical gaps in operational capability that would prevent NSW from achieving anticipated objectives against said adversaries.

One particularly valuable—yet underutilized—asset that should be leveraged to accomplish these goals is the personnel that NSW sends to Naval Postgraduate School (NPS) as students. This demographic is in a unique position to conduct in-depth analysis to better understand, characterize, and identify solutions to current and anticipated realworld operational problems. Beyond this, these students have direct access to a variety of institutions and organizations throughout the National Security Innovation Base (NSIB) that they can leverage to develop and mature those solutions; be they doctrinal, technological, etc.

Establishing official and sustainable mechanisms for coordination between NSW and its students at NPS is a task of principal importance for ensuring that both organizations are maximizing the school's utility. This capstone project provides deliverables intended to enact and codify mechanisms for coordination between NSW, NPS, and the NSIB.

A. BACKGROUND

One of the major purposes achieved by the 2017 National Security Strategy (NSS) was to cause the DOD to shift its focus back to "great power competition," which the United States had erroneously begun to think of as a "phenomenon of an earlier century."¹

¹ White House, *National Security Strategy of the United States of America* (Washington, DC: White House, 2017), 27, https://trumpwhitehouse.archives.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf.

The NSS goes on to state the imperative that in order to retain a competitive edge against its adversaries, the DOD needs to re-energize its ability to produce "innovative capabilities" that will be necessary to compete against its adversaries on the modern battlefield.² President Biden's Interim National Security Strategic Guidance, published in March 2021, maintained this position, containing the commitment to "double down" on innovative efforts in order to achieve the United States' national strategic objectives.³

Pursuant to the overarching guidance provided in the NSS, the 2018 National Defense Strategy (NDS) calls for the DOD to streamline its capability development processes in order to "reduce costs, technological obsolescence, and acquisition risk."⁴ The NDS expands on this directive by mandating the use of prototyping and experimentation in determining requirements in addition to expanding the role of warfighters in this process.⁵

In alignment with the above documents, the Chief of Naval Operations has directed the creation of, "an integrated naval education enterprise to meet warfighting capability objectives and promote behaviors of continuous learning, continuous adaptation, inclusion of diverse ideas and mission command."⁶ This directive will require a major shift in focus for the military education community, which the NDS states has "lost focus on lethality and ingenuity."⁷ Moving forward, the Joint Chiefs of Staff have established the following set of "end states" intended to refocus military education on warfighting:

² White House, 28.

³ White House, *Interim National Security Strategic Guidance* (Washington, DC: White House, 2021), 17, https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf.

⁴ Department of Defense, *Summary of the 2018 National Defense Strategy* (Washington, DC: Department of Defense, 2018), 11, https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

⁵ Department of Defense, 11.

⁶ Arthur Clark, "Operationalizing the Education Base" [Unpublished Draft] (white paper, WARCOM N5, 2021), 7–8.

⁷ James Lacey, "Finally Getting Serious About Professional Military Education," *War on the Rocks*, May 18, 2020, https://warontherocks.com/2020/05/finally-getting-serious-about-professional-military-education/.

- Discern the military dimensions of a challenge and recommend viable military options within the overarching frameworks of globally integrated operations.
- Anticipate and lead rapid adaptation and innovation during a dynamic period of acceleration in the rate of change in warfare under the conditions of great-power competition and disruptive technology.
- Conduct joint warfighting, at the operational to strategic levels, as alldomain, globally integrated warfare.
- Build strategically minded warfighters or applied strategists who can execute and adapt strategy through campaigns and operations.⁸

The Naval Special Warfare Command (WARCOM) N5 office, in compliance with this cumulative guidance and in recognition of the inherent value of doing so, has taken up an effort to "operationalize the education base." The N5 defines this concept as, "utilizing the full breadth of the Blue Network [NSW personnel currently involved in academic programs] to achieve an extended "virtual staff" of seasoned officer and enlisted operators and technicians with expanded educated depth while maximizing the intellectual capital of the enterprise to focus on naval and joint force "wicked problems," while retaining the academic freedom to fail fast and fail often in a forgiving, non-operational environment."⁹ Key leadership within the N5 believes that leveraging its personnel in this way will be a key component of achieving mission success in current and future operating environments.¹⁰

Meanwhile, in the NPS President's 2022 Intent, Vice Admiral Rondeau says that her second priority is to:

Actively promote NPS research potential and a portfolio that connects outcomes to relevant warfighting challenges. Increase basic and applied research directly aligned to classified and unclassified problems. Expand experimentation and accelerate the integration of emerging technologies into defense applications. Increase capacity to respond to emergent warfighter analytic requirements.¹¹

⁸ Lacey.

⁹ Clark, "Operationalizing the Education Base [Unpublished Draft]," 9–10.

¹⁰ Clark, 11.

¹¹ Ann Rondeau, "NPS President's 2022 Intent" (official memorandum, Naval Postgraduate School, 2022), 2. (emphasis mine)

Vice Admiral Rondeau also acknowledges the military experience of its students as a unique strength that NPS possesses. As outlined above, WARCOM also recognizes this as a strength. Thus, while WARCOM is seeking to leverage the personnel that it sends to academic programs against current operational problems, NPS is also working to align its efforts against the same problems. The potential to develop a strong, mutually beneficial relationship is self-evident.

B. THE APPLIED DESIGN FOR INNOVATION CURRICULUM

A recent development that provides a viable solution for both NPS and NSW in meeting their respective goals is the development and implementation of the Applied Design for Innovation Curriculum (AD4I)—NPS curriculum #697—at NPS. Two NPS students, Daniel Fiack and Philip Riglick, conceived of the 697 curriculum as a way to close the innovation education gap and meet the growing demand for increased innovative capability across the DOD. Their thesis, Applied Design for Innovation, was published in 2019 and the curriculum was subsequently established at NPS. Fiack and Riglick's vision for 697 was to teach students innovation through, "hands-on, real-world problemsolving."¹² The entire curriculum is built around a student-led capstone project which is, "designed to tackle real-world problems, while simultaneously producing long-term ROI by cultivating a workforce that understands how to implement innovative solutions spanning DOD doctrine, organizations, technology, and strategy."13 The "real-world" problems the students are tackling are meant to be ones provided by a sponsor.¹⁴ Additionally, if the solution to a given problem turns out to be the development of a new piece of gear or equipment, the student can coordinate with organizations from across the military innovation ecosystem to create and test a prototype of said solution.¹⁵

¹² Fiack and Riglick, "Applied Design for Innovation," 13.

¹³ Fiack and Riglick, 17.

¹⁴ Fiack and Riglick, 25.

¹⁵ Adam Wieser, "Teaching Innovation: Designing a Curriculum to Change the Military" (master's thesis, Naval Postgraduate School, 2020), 24, https://nps.primo.exlibrisgroup.com/discovery/fulldisplay? docid=alma991005661280703791&context=L&vid=01NPS_INST:01NPS&lang=en&search_scope=MyIn st_and_CI&adaptor=Local%20Search%20Engine&tab=Everything&query=any,contains,teaching%20inno vation&offset=0.

C. CAPSTONE PROJECT GOALS

The goal of this capstone project is to assist in synchronizing efforts between NPS and the NSW enterprise. The supplemental materials included with this report support the realization of the overlapping visions of NSW and NPS. They contain practical guidance and recommendations that serve to codify lines of communication between the two organizations and streamline efforts at the organizational and individual levels. Simultaneously, they seek to facilitate the full adoption of the Applied Design for Innovation curriculum by addressing a number of the recommendations that Fiack and Riglick offer in their thesis.

In addition to the supplemental material, there are two other principal efforts that were undertaken as part of this capstone project. While there are no written deliverables associated with either, they are worth mentioning for the sake of continuity. First, as one of two acting NSW Chairs, the author worked with faculty members coordinating with WARCOM N5 to officially establish the AD4I curriculum at the Office of the Chief of Naval Operations' (OPNAV) N7 office. The WARCOM Commander has accepted Major Area Sponsorship of the curriculum and the N5, with support from Defense Analysis (DA) faculty and the NSW Chair, has spearheaded efforts to attain the final endorsement from OPNAV N7.

Second, with help from a another recently graduated NPS student, the author coordinated efforts between WARCOM N6 and the NPS Information Technology and Communications Services (ITACS) department to get Special Operations Command (SOCOM) Secret Internet Protocol Router (SIPR) computers installed in the STBL. The benefit of having these machines on campus is that any student that comes to NPS from a SOCOM command will still have access to all of the emails and files from their SOCOM SIPR accounts, the SOCOM portal, and the ability to make phone calls or participate in Video Tele-Conferences (VTCs) through Cisco Jabber.

D. CONCLUSION

The deliverables offered by this capstone project are intended to provide practical support to the overall goal of synergizing the efforts of NPS, NSW, and the greater NSIB.

The products included as supplemental material are intended for the use of NSW students, staff, and faculty. Their accuracy will be temporary and for this reason they are regarded by the author as "living documents" that should be updated accordingly as the landscape of the NSIB changes, better methods are developed, or business practices change. The author will be turning copies of the original documents over to the NSW Chair and DA faculty for use at their discretion.

SUPPLEMENTAL 1. BUCKLEW GROUP STANDARD OPERATING PROCEDURES

The Bucklew Group Standard Operating Procedures (SOP) is focused on NPS/ NSW synchronization at the institutional level. Established in 2021, the Bucklew Group is "Naval Special Warfare's contribution to the Naval Warfare Studies Institute (NWSI) at the Naval Postgraduate School, deliberately designed to drive analysis to action against NSW's priority challenges."¹⁶ The Bucklew Group is comprised of NPS students and faculty. One of its primary functions is to provide a student mentee to act as an NPS liaison for the Commanding Officer of each O-6 level command in NSW.

The SOP codifies the functions of the group and normalizes the coordination efforts of students and NSW staff at NPS with the NSW chain of command. It also provides context concerning how the group aligns within the NWSI construct at NPS and consolidates perfunctory administrative information concerning governing authorities, funding, and individual responsibilities for reference by group leadership and members. Additionally, the SOP supports the adoption of the AD4I curriculum by incorporating two of Fiack and Riglick's recommendations: The SOP addresses the potential for utilization tours that appropriately leverage the skills students gain in the program.¹⁷ It also works to, "synchronize NPS innovation efforts"¹⁸ by outlining how the Bucklew Group collaborates across campus and throughout the NSIB as a member of the NWSI. This instantiates the Bucklew Group as a hub of communication and innovation not just for students at NPS, but also for the greater NSW ecosystem.

If you are interested in obtaining a copy of the supplemental, please contact the NPS library.

¹⁶ Davis, "Research Center Establishment or Renewal Application," 2; Naval Postgraduate School, "Phil H. Bucklew Research Center & Group," 1.

¹⁷ Fiack and Riglick, "Applied Design for Innovation," 32.

¹⁸ Fiack and Riglick, 33.

SUPPLEMENTAL 2. BUCKLEW RESEARCH GROUP CHARTER

Since no such document exists, The Naval Special Warfare Phil H. Bucklew Research Group Charter is offered for adoption as the foundational document for establishing the Bucklew Group and codifying its mission. The charter can be used as-is or modified per the wishes of NSW and NPS leadership.

If you are interested in obtaining a copy of the supplemental, please contact the NPS library.

SUPPLEMENTAL 3. MARITIME SOF (BUCKLEW GROUP) COURSE SYLLABUS

For the last several quarters the NSW Chair at NPS has facilitated a DA4500— Special Topics in Low Intensity Conflict class focused on maintaining student currency on matters relevant to the NSW community. Certain members of the DA faculty have expressed the opinion that this should become an official Defense Analysis course offering to consistently serve the needs of the NSW community as NPS. This syllabus was written in response to that demand and stands as a template for the department should it choose to make this DA4500 segment a permanent course offering in the future.

If you are interested in obtaining a copy of the supplemental, please contact the NPS library.

SUPPLEMENTAL 4. THE NSW STUDENT GUIDE TO AD4I

The NSW AD4I Student Guide addresses synchronization at the individual student level. The guide outlines sources, such as the Naval Research Program, that students can reference to find project ideas that are relevant to NSW. It also describes NSW specific acquisition processes and outlines steps students can take to ensure successful capstone prototypes are considered for purchase and fielding by NSW. Beyond this, the guidebook seeks to streamline capstone efforts by providing an overview of organizations throughout the NSIB that may be relevant to the student's research in addition to information concerning how to interface with those entities. One final item to note is that the guide addresses Fiack and Riglick's concerns that academic expectations need to be set and clear guidance provided regarding the execution of students' capstone projects.¹⁹

If you are interested in obtaining a copy of the supplemental, please contact the NPS library.

¹⁹ Fiack and Riglick, 31.

LIST OF REFERENCES

- Clark, Arthur. "Operationalizing the Education Base [Unpublished Draft]." White paper, WARCOM N5, 2021.
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