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NSW Warfighting Concepts in Support of Joint Force Maritime Operations in a Contested Environment

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NPS NRP Executive Summary

Naval Warfighting Concepts in Support of the Joint Force

Period of Performance: 05/20/2021 – 05/20/2022

Report Date: 05/27/2022 | Project Number: NPS-21-N112-A

Naval Postgraduate School, Graduate School of Operational and Information Sciences (GSOIS)



NAVAL RESEARCH PROGRAM
NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIFORNIA

**NAVAL WARFIGHTING CONCEPTS IN SUPPORT OF THE
JOINT FORCE
EXECUTIVE SUMMARY**

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Project Summary

This study explored broad concepts that outline novel force package and force employment recommendations in Phase 0 that may later be employed to validate Naval Special Warfare (NSW) methodologies for Joint Warfighting Concepts. The focus of this research, and the associated student thesis, was on NSW's Deploy for Purpose (DfP) concept. A combined multi-disciplinary team of NPS students and faculty indirectly contributed to this research under the general aegis of the Littoral Operations Center, the Wayne P. Hughes Naval Warfare Studies Institute, and the Bucklew Group. Further, the NSW Topic Sponsor contributed periodic direction, input, and insight into modeling and simulation for this research and for the related student thesis.

Working iteratively, NPS NSW students and NSW personnel helped develop an unclassified, notional system dynamics model that was intended to demonstrate the potential value of a strategic planning decision support tool for NSW operations focused on strategic competition. The model, consisting of five interrelated modules, was used to evaluate the resourcing, policies, system structures, feedback relationships, and potential behavioral outcomes of NSW's future operating concepts intended to diminish or deter regional malign activities in the maritime domain of strategic competition over a five-year period. The first module represents the maritime mobility assets organic to NSW (and their associated Special Warfare Combatant-Craft Crewmember (SWCC)/Sea Air Land (SEAL) units). The second module represents the accession and professional development of NSW personnel (specifically SEAL platoons). The third module represents NSW operations in response to intelligence-driven threat identification and planning. The fourth module represents malign regional maritime activity and Intelligence Surveillance Reconnaissance contributions to the development of NSW operational planning. The fifth module illustrates the impact NSW operations may have on countering malign maritime activity and on regional influence that impacts the China/Taiwan power balance.

Keywords: *system dynamics model, decision support tool, Naval Special Warfare, NSW, Joint Warfighting Concepts, Deploy for Purpose, DfP, strategic competition, maritime mobility assets, NSW personnel, intelligence-driven threat identification, operational planning, malign maritime activity, China/Taiwan power balance*

Background

NSW has been tasked to develop new Joint Warfighting Concepts that are nested within larger concepts including but not limited to Littoral Operations in a Contested Environment, Expeditionary Advanced Base Operations, Distributed Maritime Operations, Joint Force 2030, and The USSOCOM The Operating Concept 2030. This research will help develop and propose warfighting concepts for NSW to enable and empower the Joint Force to more effectively conduct Phase 0 operations to deter or diminish malign maritime activity in an environment of strategic competition in preparation for crisis/conflict. Innovative Joint Warfighting Concepts for NSW must be integrated, interdependent and interoperable. This study explored the sustainable employment of novel force packages in Phase 0 focused on NSW's Deploy for



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Purpose (DfP) concept, to include the impact of effective messaging on adversarial decision-making that drives the level of malign maritime activity.

A *notional, unclassified* system dynamics model was created to demonstrate the potential value of a decision support tool to evaluate the resourcing, policies, system structures, feedback relationships, and potential behavioral outcomes of NSW's future operating concepts focused on strategic competition. This notional model contained five interrelated modules that simulate the capacity for NSW to conduct operations and their effects regionally. The simulated run of the model is five years. As a notional decision support tool, the "NSW DfP and Legacy Resource Distribution and DfP Ops Allocation" system dynamics system of systems model features an interactive user interface in which certain model variables may be changed by the user to evaluate the impact on the system of systems behavioral outcomes over the simulation run of the model.

The Personnel Module was intended to simulate the inflow of SEALs from recruitment, through Basic Underwater Demolition/SEAL training, to Professional Development, assignment to a platoon, Unit Level Training (with SWCCs), Task Group Integrated Training and assignment to either Legacy operations (e.g., counter terrorism, counter insurgency, counter proliferation, etc.) or DfP operations (those operations focused on strategic competition). The Mobility Assets Module was intended to simulate the operational lifecycle of four NSW vessels (i.e., mobility assets) that support both Legacy and DfP operations: Combatant Craft-Assault, Combatant Craft-Medium, Combatant Craft-Heavy, and Mk 8 SEAL Delivery Vehicle. The Threat Identification Module was an unclassified, notional model of malign maritime activity in the PACOM Area of Responsibility intended to simulate the process of identifying malign activities through Intelligence, Surveillance, and Reconnaissance assets to plan specific activities proposed for NSW DfP operations. The Operations With and Without Mobility Assets Module was intended to simulate the integration of NSW assets and personnel into DfP operations (based on feedback from the Threat Identification Module), if sufficient Group Personnel and Mobility Assets are available at the time. The Peoples Republic of China(PRC)/Taiwan Power Balance Module was intended to simulate PRC regional influence and Taiwan-assured sovereignty, primarily as a function of the ratio of US/PRC Regional Military Capability and the Military Capability of Taiwan.

Research included unclassified data provided by NSW, case studies, and interviews used in the student thesis.

Findings and Conclusions

In their thesis, LCDR Brown, USN and SOC Walls, USN provided a number of findings derived from the notional system dynamics model. They found that the model forces a deeper recognition that policies and actions may have unforeseen or non-predictable outcomes in many aspects of strategic planning due to the non-linear relationships that provide feedback within the NSW system of systems being considered. Because this is a notional and unclassified model, its primary value is in analyzing policy changes or



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resourcing distributions that affect trends of potential behavioral outcomes, rather than in analyzing specific numeric simulation outcomes.

One of the challenges facing NSW is the need to maintain a balance between legacy counter terrorism operations and innovating new tactics and strategies for strategic competition. The model allows decision makers to simulate force generation and to rapidly evaluate outcomes from various scenarios and policies.

As NSW gains experience with DfP operations, risk to force, risk to mission, and most importantly strategic political risk should decrease over time as a result of a broadening base of experienced NSW personnel through professional development (PRODEV) training. It would be expected that personnel returning from DfP deployments would share their knowledge with their units and in the schoolhouse, resulting in better training and increased effectiveness. Although the simulation was only run on notional data, Political/Operational Risk was reduced as a function of both the recycling of DfP-experienced operators into PRODEV and the periodic positive impact successful DfP operations had on the US/PRC Regional Military Capability ratio.

The DfP mission packages provide options for policy makers to flow forces into a theater when tensions increase, and then shift or return them when the threat from malign maritime activity is diminished. The simulation (which used Lowry Asia Power Index scores as a baseline) indicated that as the gap between China and US/Taiwan regional influence decreases, perceived instability in the region is reduced. Successful NSW operations to discourage malign maritime activities contributed to this outcome. The model also allowed decision makers to test and evaluate the effects that result from vertical or horizontal NSW personnel cuts. The Growth Rates of Defense budgets can be varied in the model to evaluate the effect on military strength ratios of the PRC, Taiwan, and the U.S. resulting from different levels of regional military spending.

One of the key observations drawn from the model is that it is difficult to determine the strategic impact tactical level operations could have in dampening malign maritime activities. The goal is not to stop individual malign activities, but rather, to impact the adversarial decision-making ultimately responsible for initiating the malign activities. This impact of an associated messaging campaign on the adversary's decision-making calculus was modeled through a "Signaling Effect" that could be switched on or off.

How will the Topic Sponsor implement your findings?

As a proof of concept for a resource allocation and strategy development decision support tool, the model was very well received by NSW Command and was successfully migrated onto the NSW SIPRnet domain for potential future refinement and population with classified data. It is foreseen that when populated by actual data, the model could be used as a decision support tool for resource allocation and operational planning.

Recommendations for Further Research



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The Topic Sponsor has expressed interest in supporting further NPS faculty and student thesis research through the Bucklew Group. The model has also been run for action officers in the Defense Advanced Research Project Agency and the Office of the Under Secretary of Defense Policy at their request. Similar modeling, or an expansion of the existing model, for Project Genghis and potentially for a variety of NSW and Joint Force applications, is being explored.

References

Walls, M. P., & Brown, B. T. (2021). *Set the sea on fire: Strategic sabotage and naval special warfare in maritime great power competition* [Master's thesis, Naval Postgraduate School].



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Acronyms

DfP	Deploy for Purpose
NSW	Naval Special Warfare
PRC	Peoples Republic of China
PRODEV	Professional Development
SEAL	Sea Air Land
SWCC	Special Warfare Combatant-Craft Crewmember

