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A Novel Approach for Supporting the U.S. Coast Guard's "Evergreen" Strategic Foresight Program

Executive Summary

KEY FINDINGS

- **Lessons from prior Evergreen activities can illuminate what has historically been valuable and what could be improved in the future.** Generally speaking, Evergreen participants value the experience of considering the implications of longer-range future scenarios for Coast Guard operations. Because of the perpetual urgency of immediate operational needs, Evergreen scenarios and foresight activities have historically been limited in their ability to foster deliberation about long-term issues. Products and findings from Evergreen activities have not historically been directly used in some Coast Guard decisionmaking because of differences in planning time horizons. In many circumstances, this has also made it challenging to trace Evergreen's effects.
- **The purpose, inputs, and outputs of Coast Guard planning (as part of Planning, Programming, Budgeting, and Execution) and the service's strategic library can shape Evergreen scenarios.** Identifying potential needs for continued or additional decision support from Evergreen analyses helps focus scenario content. The lack of a robust bridge between slow-burning or emerging future problems and decision points in the near term represents both a challenge and an opportunity for Evergreen and speaks to the need for scenarios that enable discussion of trade-offs relevant in the near term even if the motivating problems might be longer range. Strategies cover some stressors and shocks less densely than others, which can form important scenario inputs to stress-test current plans.

The U.S. Coast Guard has an important opportunity to lead in the use of foresight methods for security-related strategic planning. The Evergreen Program, managed since 1998 by the Office of Emerging Policy (DCO-X), provides a mechanism for officers, enlisted, and civilians in different areas to explore future worlds and contingencies that will test the Coast Guard. This process explores how decisions made now will affect prevention and response under challenging, new conditions. The Homeland Security Operational Analysis Center (HSOAC) was asked by DCO-X to assess Evergreen successes and areas for improvement.

Evergreen has proven valuable in at least two important ways. First,

some difficult futures explored using foresight have become relevant in the near term. For example, Evergreen scenario-based analysis highlighted key challenges in terrorism response shortly before 9/11 and, more recently, have spurred an Arctic strategy update to help drive planning in an evolving region. Second, Evergreen activities have provided leaders, planners, and operators a chance to anticipate and learn from problems and opportunities in a simulated environment.

Evergreen approaches to strategic foresight activities must evolve with Coast Guard needs and the increasingly complex suite of global trends and changes. A key finding from past foresight activities is that these did not always tee up relevant debates or clearly support decisions. HSOAC drew from literature on resilience planning and decisionmaking under deep uncertainty to adapt an Evergreen scenario development approach that limits these issues. The approach follows three basic methodological steps:

1. Frame and focus scenarios and subsequent analyses using a decision for context.
2. Compile information about global trends and specific contingencies affecting the operating environment.

3. Develop scenario families (representing intersections of key trends), layer them together to create distinct futures, and add contingencies to simulate resource-intensive events.

Using this approach results in decision-relevant multidimensional scenario narratives that can be supplemented with quantitative data as available. Examples in the report focus on workforce changes, technology needs, and resources. An appendix displays example scenarios used in Evergreen workshops during fiscal years 2019 and 2020, which expand on the material in the main body of the report. The broader scenario framing within a specific set of trends and contingencies preserves a sense of which were selected for analysis (why) and which were not (why not) that allows for better interpretation of foresight results.

Foresight can be a valuable tool for Coast Guard strategic planning and training. A structured, updated approach to designing scenarios will help make Evergreen results more relevant and compelling to decisionmakers.

The Coast Guard’s Strategic Framework



Source: U.S. Coast Guard, *Coast Guard Strategic Plan: 2018–2022*, Washington, D.C., November 2018b, p. 8. As of June 16, 2019: https://www.uscg.mil/Portals/0/seniorleadership/alwaysready/USCG_Strategic%20Plan__LoResReaderSpreads_20181115_vFinal.pdf?ver=2018-11-14-150015-323

A Summary of Example Evergreen Scenarios

The scenarios that the authors developed are novel in the context of Coast Guard decision analysis in several ways. First, the authors deliberately scoped the scenarios to specific topics of interest to Coast Guard decision-makers. In this sense, the scenarios are outputs of, rather than inputs to, a strategic foresight process. Second, the

authors' concept of scenario families maps Coast Guard strategic choices along key axes of change that are most relevant for decisionmaking. Third, the authors designed narratives for shocks that can be layered on top of complex future worlds constructed from the scenario families.

Scenario Family	Stressor-Based Scenario	Example Shock
<p>Workforce: Each scenario represents a type of Coast Guard workforce future realized by 2040 given possible market competitiveness of careers and specialization of Coast Guard mission requirements.</p>	<ul style="list-style-type: none"> • Captain's Got a New Gig: Focus moves from specialization to a successful recruitment strategy with reliance on a temporary and part-time workforce. • Up or Overboard: Missions are more specialized, and the service successfully recruits and develops skilled service members. • Try Switching to Aux: The Coast Guard has problems competing in the labor market to meet the capacity for a generalist workforce. • Silicon Sloop Slump: The Coast Guard prefers a highly trained and experienced workforce, eroding the personnel pipeline. 	<ul style="list-style-type: none"> • Putting All Our Magnets in One Basket: A geomagnetic storm coupled with a cyberattack requires a response; there is a lapse in navigation capability; a fuel shortage ensues. • Quarantine Quagmire: Disease outbreaks and wildfires occur; port security needs increase at home and abroad.
<p>Asset: Each scenario represents a sort of future emphasis placed on Coast Guard assets by 2040, given the pace of climate change impacts and rate of technology adoption.</p>	<ul style="list-style-type: none"> • Sensing a Pattern: Artificial intelligence and automation technologies aid mission execution in a world with limited climate disruptions. • Shocks and Struts: Rapid technological change fosters unanticipated advances that help meet needs in a rapidly changing climate; climate change threatens supply chains. • Humdrum Doldrums: The rate of technological change and the pace of climate effects are low. • Things Go to 11: High impacts from climate change produce challenges; technological change and adoption levels are low. 	<ul style="list-style-type: none"> • Oil and Water Don't Mix: A vessel spills oil in Arctic waters as hurricanes batter the Gulf of Mexico and the United States contends with an emerging security issue. • Al Sur de la Frontera: An earthquake devastates Mexico, leading to humanitarian and immigration crises and a lapse in security.



The Homeland Security Act of 2002 authorizes the Secretary of the Department of Homeland Security (DHS), acting through the Under Secretary for Science and Technology, to establish one or more federally funded research and development centers (FFRDCs) to provide independent analysis of homeland security issues. The RAND Corporation operates the Homeland Security Operational Analysis Center (HSOAC) as an FFRDC for DHS under contract HSHQDC-16-D-00007.

The HSOAC FFRDC provides the government with independent and objective analyses and advice in core areas important to the Department in support of policy development, decisionmaking, alternative approaches, and new ideas on issues of significance. The HSOAC FFRDC also works with and supports other federal, state, local, tribal, and public- and private-sector organizations that make up the homeland security enterprise. The HSOAC FFRDC's research is undertaken by mutual consent with DHS and is organized as a set of discrete tasks.

The information presented in this report does not necessarily reflect official DHS opinion or policy.

For more information on this publication, visit www.rand.org/t/RR3147.

About This Report

This report documents support by Homeland Security Operational Analysis Center (HSOAC) to the U.S. Coast Guard's Evergreen strategic foresight activity. The objective was to help develop scenarios that postured Evergreen to better bridge the gap between future challenges and near-term plans, which typically focus on the urgent needs of the present. HSOAC analysts reviewed prior Evergreen activities, examined Coast Guard strategy-making and planning processes, adapted an approach for developing scenarios, and narrated a set of exemplar global planning scenarios. Although the scenario development process and resulting example scenarios focused on a Coast Guard planning context, the approach and considerations described in this report might be useful to other organizations with long-range planning needs.

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