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Organizational Assessment of a Future Surface Force Development Squadron (SURFDEVRON)

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NPS NRP Executive Summary
Organizational Assessment of a Future Surface Force Development Squadron
Report Date: 10/11/19 Project Number (IREF ID): NPS-19-N169-A
Naval Postgraduate School Graduate School of Operations and Information Sciences

NAVAL RESEARCH PROGRAM
NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

ORGANIZATIONAL ASSESSMENT OF A FUTURE SURFACE FORCE DEVELOPMENT SQUADRON

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EXECUTIVE SUMMARY

Project Summary
To address a faster paced, more complex, and increasingly competitive security environment, the Surface Force needs new or improved capabilities to attack, deceive, and defend against adversary ships, aircraft, missiles, submarines, cyber, and electronic attacks. Additionally, it requires more agile acquisition practices, enabling a rapid and iterative approach to improving performance. To deliver these capabilities, the Navy intends to establish a Surface Development Squadron (SURFDEVRON) as an interface between the research community (e.g., Office of Naval Research, Defense Advanced Research Projects Agency) and the fleet. This interface is necessary in order to coordinate the at-sea testing of advanced technologies and their associated tactics, techniques, and procedures, accelerate the integration of new technologies onto manned and unmanned afloat platforms, and manage the cultural change required to integrate unmanned systems into the surface force. The SURFDEVRON intends to be the Surface Force's tactical development authority for all manned-unmanned teaming efforts, to include advancement and integration of autonomous systems. This will not only increase the speed-to-fleet of new technologies to address capability gaps, but will also buy down risk for Future Surface Combatants. The purpose of this research is to assess the plans for SURFDEVRON organization, and interactions with processes important in Surface Force test and evaluation, and experimentation.

Keywords: *Naval Surface Forces Experimentation, field experimentation, organization design, unmanned systems development, Surface Development Squadron, SURFDEVRON, Trident Warrior, surface combatants*

Background
The concept of a development organization to meet surface fleet needs has existed in different forms for decades. However, now there is a greater need to embrace this concept, given the advent of new technologies, operational concepts and unmanned systems. At the outset of this project, there were questions about the organizational construct of the SURFDEVRON. To be successful, this enterprise needs all platforms acting together as a means to test, which brings in administrative and operational control issues. In addition, there are myriad processes and systems associated with modifying or adding new technologies to warships. In the past, processes such as Shipmain and computer/network approvals have been very difficult hurdles to overcome in fleet experimentation. For example, large-scale surface-ship experimentation venues such as Trident Warrior could take up to 18 months, and involve the work of dozens of subject matter experts and administrative personnel. The SURFDEVRON seeks to support experimentation but at a much faster pace, resulting in many aspects of managing, testing, and experimentating aligning more efficiently with the purpose of this organization. It should also be noted that for approximately half of this research effort's allotted time, the decision to create the SURFDEVRON had yet to be approved. On approval, the initial staff moved quickly to begin defining the organization and its roles.

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As additional background, other communities of the Naval service are engaged in similar development activities. For example, the Submarine Development Squadron and the Air Testing facilities at China Lake and Patuxent River have garnered community support, and conduct extensive testing of new materiel and process (Concept of Operations) research and testing.

Findings and Conclusions

The overall study had three broad questions/goals:

1. What other development groups are performing similar roles and how are they successful?
2. Provide qualitative/quantitative analysis of SURFDEVRON homeport options based on existing infrastructure, facilities, port services, etc.
3. Determine organizational values and principles that will create a culture of innovation, experimentation, and initiative.

This research provided input to the discussion regarding the organization and roles specific to SURFDEVRON experimentation, and to that end, recommendations have been incorporated into the organization. The research did not make recommendations related to homeporting, a decision reached along with overall SURFDEVRON approval. In addition, a student thesis was completed using a total-ownership cost model focused on personnel requirements.

In terms of research question two, qualitative and quantitative analysis of SURFDEVRON homeport options revealed the following: difficulty with a surface development squadron are many and include a lack of standardization across the fleet, a lack of opportunity to detail a ship for significant periods of time during increasing demands for surface assets (even within ship classes), unclear objectives, little means to determine how an experimentation requirement will help close a warfighting gap, and a lack of formal organizational intention dedicated to experimentation. The closest organizational example for fleet experimentation is the Trident Warrior series, which is discussed at some length in the final report.

As this is a multi-year effort with research ongoing into 2020, research regarding questions one and three above will be addressed in next year's report.

Recommendations for Further Research

As a follow on project, we are developing a "Practical Guide to Planning, Executing and Analyzing Experiments for the Surface Warrior" give that current instructions and resources about fleet experimentation are written at a much higher level than a fleet action officer can implement. This research is being supported separately by SURFDEVRON.

Acronyms

Surface Development Squadron	SURFDEVRON