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# Cost-Benefit Analysis of Navy Station Search and Rescue (SAR)

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Monterey, California: Naval Postgraduate School

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## NPS NRP Executive Summary

Cost-Benefit Analysis of Navy Station Search and Rescue (SAR)  
Report Date: 10/15/19 Project Number (IREF ID): NPS-19-N190-A  
Naval Postgraduate School Graduate School of Defense Management



NAVAL RESEARCH PROGRAM  
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MONTEREY, CALIFORNIA

### Cost-Benefit Analysis of Navy Station Search and Rescue (SAR)

Executive Summary Type: Final Report

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# EXECUTIVE SUMMARY

### Project Summary

Search and rescue (SAR) is a key component in maintaining the necessary safety coverage of flights at the Naval Air Stations (NAS) located at Whidbey Island, WA, Key West, FL, Fallon, NV, Patuxent River, MD, and Lemoore, CA. The United States Navy (USN) currently employs the MH-60S multi-mission helicopter at all SAR locations. Due to projected inventory shortfalls in the near future and increasing demand on this aircraft for other operations, it is imperative to examine feasible alternatives for meeting NAS SAR capability requirements. These alternatives may also contribute to reducing operational demand for the MH-60S aircraft. In this study, we conducted an in-depth cost-benefit analysis on whether use of a multi-mission combat helicopter to conduct station SAR is the most cost-effective method when compared with outsourcing SAR components. Our analysis considered the location-specific costs associated with operating a SAR unit (fleet inventory, personnel, maintenance, fuel costs, and operational demand) while weighing the tradeoffs associated with outsourcing. Based on our cost benefit analysis, we formulated tailored recommendations to each NAS. While our recommendations would generate cost savings where only the MH-60S is available, our research found that, when funds are available, using civilian-off-the-shelf (COTS) aircraft would dramatically reduce operational demand on the MH-60S.

**Keywords:** *Search and Rescue Operations, SAR, Cost Benefit Analysis, Cost Effectiveness Analysis, Navy Aviation, Analysis of Alternatives, MH-60S Helicopter, Commercial Outsourcing*

### Background

Naval Air Station SAR units use MH-60S multi-mission helicopters operated by highly trained flight crews as first responders for aviators and personnel stationed at Naval Air Stations. Increasing operational demand due to Littoral Combat Ship Surface Warfare and Mine Countermeasures Mission Package deployments is expected to stress MH-60S capacity in the early 2020s, when MH-60S total requirement will exceed total overall aircraft inventory. To inform the Program Objective Memorandum for 2022, we conducted a cost benefit analysis to identify whether use of a multi-mission combat helicopter to conduct station SAR is the most cost effective method to deliver those services, particularly when balanced with an increasing fleet demand for capabilities provided by the MH-60S aircraft. We considered the distinct requirements for station SAR services at Whidbey Island, WA, Key West, FL, Fallon, NV, Patuxent River, MD, and Lemoore, CA. We expected our findings to vary by NAS based upon differences in platforms supported, range geometry, environmental factors, operating parameters, and local policies.

### Findings and Conclusions

We used a cost benefit analysis approach, as in Collins and Williamson (2013), to systematically examine the specific operational constraints and costs associated with delivering required current and future NAS SAR capability. We engaged three groups of students (see Christensen & Sciberras, 2019; Miller, Rollenhagen & Everhart, forthcoming; Blankenship & Mann, forthcoming), who conducted site visits to

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each NAS location to conduct identification and understanding interviews, and to collect data on aircraft inventory, manpower and local commercial outsourcing availability.

As we anticipated, the cost savings outsourcing recommendations for delivering SAR vary by NAS location. We estimated the cost savings associated with alternative outsourcing scenarios specific to each NAS SAR and considered the immediate and long-term tradeoffs associated with outsourcing. Based on our analysis, we formulated tailored recommendations to each NAS to generate cost savings. While our recommendations generate cost savings for delivering SAR relying solely on the MH-60S, our research suggested that when funds are available, using civilian-off-the-shelf (COTS) aircraft would dramatically reduce operational demand on the MH-60S. Our findings and recommendations highlight the importance of site-specific factors in delivering SAR capability.

### Recommendations for Further Research

Further research can identify the most efficient implementation plan for replacing the multi-use MH-60S aircraft with COTS aircraft procurement, should funds be allocated towards a fully contracted SAR. Furthermore, the cost benefit analysis models developed in this study can be used to support a large array of resource allocation decisions for commands in the Navy, or DoD.

### References

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### Acronyms

COTS	civilian-off-the-shelf
NAS	Naval Air Station
SAR	search and rescue