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**IDENTIFYING ASSETS TO INCREASE
MARITIME BORDER SECURITY**

by

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IDENTIFYING ASSETS TO INCREASE MARITIME BORDER SECURITY

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ABSTRACT

As increased border security measures are adopted along the United States' southern land border, researchers believe that an increase in illicit maritime traffic can be expected. As the primary maritime security agency, the U.S. Coast Guard (USCG) is suffering from a lack of interdiction assets and resources and admits it is already only capable of responding to one-third of all known maritime smuggling events. Based on current data regarding drug interdictions within the maritime domain and the expectation that smuggling events will increase, can the number of successful interdictions be increased through greater interoperability and cooperation between the U.S. Navy (USN) and USCG? This thesis discusses the mission of both the USN and USCG and analyzes the role that Joint Interagency Task Force South (JIATF South) plays in coordinating counter-narcotics efforts. The research for this thesis suggests that JIATF South is successfully coordinating responsibilities among all involved agencies to maintain complete awareness of maritime drug smuggling, but that it now lacks the necessary assets to improve on the number of successful interdictions each year. The USN is aiming to surpass the previous goal of a 355-ship fleet by developing unmanned surface vehicles, which could prove to be the asset JIATF South needs.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACTUV	ASW Continuous Trail Unmanned Vessel
APR	annual performance report
ASCM	anti-ship cruise missile
ASW	Anti-submarine Warfare
CBP	Customs and Border Protection
CONOPS	concept of operations
DARPA	Defense Advanced Research Projects Agency
DEA	Drug Enforcement Agency
DHS	Department of Homeland Security
DOD	Department of Defense
DTO	drug trafficking organization
HSPD	Homeland Security Presidential Directive
ICE	Immigration and Customs Enforcement
IRGCN	Islamic Revolutionary Guard Corps—Navy
ISR	intelligence, surveillance, and reconnaissance
JIATF	Joint Interagency Task Force
LEDET	law enforcement detachment
LSC	large surface combatant
LUSV	Large Unmanned Surface Vehicle
MOTR	Maritime Operational Threat Response
MSC	Military Sealift Command
MSPCC	Maritime Security Policy Coordinating Committee
MUSV	Medium Unmanned Surface Vehicle
NORTHCOM	Northern Command
PLAN	People's Liberation Army Navy
SCO	Strategic Capabilities Office
SSC	small surface combatant
SURFDEVRON	Surface Development Squadron
TACLET	tactical law enforcement team
TALONS	Towed Airborne Lift of Naval Systems

TCO	transnational criminal organization
USV	unmanned surface vehicle
WHTZ	Western Hemisphere transit zone
WMD	weapons of mass destruction

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I. INTRODUCTION

The U.S. Coast Guard is currently overwhelmed with regard to securing the maritime border. The security of the maritime border is primarily tasked to the Coast Guard and U.S. Customs and Border Protection (CBP). Leaders of both these organizations have said they currently lack sufficient assets, which suggests that any increase in threats or missions will require additional assets and resources. For example, in a 2015 hearing held by the U.S. Senate Committee on Homeland Security and Governmental Affairs, Rear Admiral Peter J. Brown, U.S. Coast Guard, stated that 90 percent of interdictions completed by the Coast Guard in 2014 were cued by intelligence, but its surface and aviation fleet assets only allowed them to respond to one-third of all actionable intelligence.¹ This testimony illustrates that the Coast Guard is already at a disadvantage to act on all credible threats within the maritime domain.

A. PROBLEM STATEMENT

Due to the multiple missions tasked to the Coast Guard and the vast amount of maritime area it is responsible for securing, the Coast Guard lacks the assets required to secure the maritime borders properly. The Coast Guard's performance with regard to undocumented migrant and illegal drug interdictions indicates its current lack of effectiveness.

By reviewing the Coast Guard's available annual performance reports (APRs) from the past three years (2017–2019), it is clear that the Coast Guard has made progress

¹ *Securing the Border: Understanding Threats and Strategies for the Maritime Border: Testimony before the Senate Homeland Security and Governmental Affairs Committee*, 114th Cong. 1 (2015) (statement of Rear Admiral Peter J. Brown, USCG Assistant Commandant for Response Policy), <https://www.dhs.gov/news/2015/07/15/written-testimony-uscg-senate-committee-homeland-security-and-governmental-affairs>.

interdicting undocumented migrants and illegal drugs.² However, regardless of the progress made, the Coast Guard continues to fail to meet its own goals in both mission areas. The Coast Guard's stated goal is to leverage its capabilities and those of partner nations to interdict 75 percent of all known undocumented migrants attempting to enter the United States by maritime routes.³ Within this goal, the Coast Guard aims to be the organization responsible for over 50 percent of all migrants interdicted; these goals have been constant since 2017.⁴ For drug interdictions, the Coast Guard only sets goals with regard to the amount of cocaine to be seized and has steadily increased its goal: greater than 100 tons in 2017, 200 tons in 2018, and 240 tons in 2019.⁵ The Coast Guard also sets a goal to remove an overall percentage of all cocaine from non-commercial vessels within the maritime transit zone. This goal has decreased from greater than 11.5 percent in 2017 to greater than 10 percent for both 2018 and 2019, none of which have been met.⁶ The two most important goals in terms of organizational success are the percent of undocumented migrants interdicted by the Coast Guard and the percentage of cocaine removed.

The Coast Guard's 2019 annual performance report shows that the total number of migrants attempting to enter the United States via maritime routes has steadily increased from 4,760 in 2017 to 7,093 in 2019. In 2017 and 2019, the overall effectiveness of all involved agencies and partner nations in interdicting migrants did not drastically change, but 2018 was an exception.⁷ In 2018, based on the total number of migrants attempting to

² United States Coast Guard, *United States Coast Guard Annual Performance Report: Fiscal Year 2017* (Washington, DC: United States Coast Guard, 2018), <https://www.uscg.mil/Portals/0/documents/budget/FY%202018%20USCG%20APR%20Signed%206-12-19.pdf>; United States Coast Guard, *United States Coast Guard Annual Performance Report: Fiscal Year 2018* (Washington, DC: United States Coast Guard, 2018), <https://www.uscg.mil/Portals/0/documents/budget/FY%202018%20USCG%20APR%20Signed%206-12-19.pdf>; United States Coast Guard, *United States Coast Guard Annual Performance Report: Fiscal Year 2019* (Washington, DC: United States Coast Guard, 2020), <https://www.uscg.mil/Portals/0/documents/budget/FY19-USCG-APR.pdf?ver=2020-05-20-113137-970>.

³ United States Coast Guard, *USCG APR 2019*, 32.

⁴ United States Coast Guard, 32.

⁵ United States Coast Guard, *USCG APR 2017*, 14; United States Coast Guard, *USCG APR 2018*, 33; United States Coast Guard, *USCG APR 2019*, 33.

⁶ United States Coast Guard, *USCG APR 2017*, 14; United States Coast Guard, *USCG APR 2018*, 33; United States Coast Guard, *USCG APR 2019*, 33.

⁷ United States Coast Guard, *USCG APR 2019*, 32.

enter the United States versus the total number successfully interdicted, the Coast Guard and its partners were only able to interdict 72, approximately 10 percent less than 2017 and 2019. The 2018 report attributed this decrease in migrant interdictions to “shifting flows within the maritime domain and shifting resources due to more intensified drug trafficking flows in the Eastern Pacific.” The 2018 APR also states that the flow of maritime migrants in southern California increased by 300 percent that year.⁸ A significant decrease occurred in the percent of interdictions performed by the Coast Guard, which was down to approximately 34 percent in 2018 and 2019 from 53 percent in 2017.⁹ The reports attribute the increase in total interdictions and decrease in Coast Guard interdictions to developments in international partnerships.¹⁰ While the failure of the Coast Guard to meet its interdiction goals does not spell defeat since overall interdictions increased, the 2018 information demonstrates that the Coast Guard does not have the capacity to adapt quickly to changes in maritime smuggling routes.

With regard to drug interdictions, the amount of cocaine seized has slightly decreased since 2017, while the percentage of cocaine removed has remained stagnant.¹¹ The 2018 APR indicates that the Coast Guard reached a 10-year high of tonnage of cocaine removed per each interdiction event, but this number only amounted to 7.3 percent of all cocaine removed.¹² Similarly, in 2019, the Coast Guard recorded the second highest amount of cocaine removed per event, yet removed less cocaine than 2018 overall, and recorded a higher percentage of removal, which still remained under its 10 percent goal.¹³ While the reports do not directly indicate the total number of interdiction events completed, the 2018 and 2019 reports both indicate a decrease in interdictions. Both reports attribute the decrease in interdictions to an expansion of the trafficking area utilized by criminal

⁸ United States Coast Guard, *USCG APR 2018*, 32.

⁹ United States Coast Guard, *USCG APR 2019*, 32.

¹⁰ United States Coast Guard, *USCG APR 2018*, 32; United States Coast Guard, *USCG APR 2019*, 32.

¹¹ United States Coast Guard, *USCG APR 2019*, 33.

¹² United States Coast Guard, *USCG APR 2018*, 34.

¹³ United States Coast Guard, *USCG APR 2019*, 33–34.

organizations, which places a greater necessity on long-range air and maritime assets.¹⁴ This data suggests that the Coast Guard is able to identify, detect, and interdict the vessels carrying the most cocaine, but it lacks the required assets and capabilities to complete the number of interdictions necessary to meet its goals.

A solution to the Coast Guard's need for additional assets could be found through greater coordination with, and support from, the U.S. Navy's growing aviation and surface fleets. The Navy currently has the capability to assist the Coast Guard with its mission and as the fleet continues to grow to the goal of 355 ships, the capacity to conduct these missions will increase as well.¹⁵ In 2019, the Navy's *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for FY 2020* indicates that approximately half of the fleet will be made up of large surface combatants (LSCs), traditionally cruiser and destroyer size ships, and small surface combatants (SSCs), made up of frigates and littoral combat ships.¹⁶ These classes of ships have similar capabilities to the ships within the Coast Guard fleet and are well suited for maritime interdiction operations. Another possible solution is to deploy alternative platforms, such as unmanned and autonomous vessels in lieu of traditional warships to support maritime border security. As the root of the problem appears to be a lack of Coast Guard assets to handle maritime border security, autonomous vessels could act as a force multiplier.

The research questions this thesis explores are: What is the most effective method of providing the Coast Guard with the assets required to secure the maritime borders? Is it through greater cooperation and coordination between the Coast Guard and Navy, the deployment of unmanned or autonomous vessels, or a combination of the two?

¹⁴ United States Coast Guard, *USCG APR 2018*, 33–34; United States Coast Guard, *USCG APR 2019*, 33–34.

¹⁵ National Defense Authorization Act for Fiscal Year 2018, Pub. L. No. 115–91, § 1025, 131 Stat. 1542 (2017), <https://www.congress.gov/115/plaws/publ91/PLAW-115publ91.pdf>.

¹⁶ Deputy Chief of Naval Operations, *Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2020* (Washington, DC: Office of the Chief of Naval Operations, 2019), https://www.navy.mil/strategic/PB20_Shipbuilding_Plan.pdf.

B. BACKGROUND

Transnational criminal organizations (TCOs) and drug trafficking organizations (DTOs) are those responsible for the delivery of illegal narcotics to the United States. The United States has been combatting the trafficking of narcotics since President Nixon declared the War on Drugs in 1971.¹⁷ In 1981, as Colombian cartels were gaining strength and the United States was making negligible progress regarding the “War on Drugs,” Congress amended the 1878 Posse Comitatus Act to allow the Department of Defense (DOD) to provide support to federal, state, and local law enforcement agencies.¹⁸ Following this change, the Coast Guard established its tactical law enforcement teams (TACLET) and law enforcement detachments (LEDETs).¹⁹ Section 279 was added to Title 10 U.S. Code to enable the U.S. Navy to support the Coast Guard in law enforcement missions.²⁰ Section 279 states, “The Secretary of Defense and Secretary of Homeland Security shall provide that there be assigned on board every appropriate surface naval vessel at sea in a drug-interdiction area members of the Coast Guard who are trained in law enforcement and have powers of the Coast Guard under title 14, including the power to make arrests and to carry out searches and seizures.”²¹ Following this new collaborative effort between the services, the 1989 National Defense Authorization Act directed the DOD “to serve as the lead agency for the detection and monitoring of aerial and maritime transit of illegal drugs into the United States,” and the Coast Guard was designated as the lead agency for interdiction and arrest of drug traffickers.²²

¹⁷ “A Brief History of the Drug War,” Drug Policy Alliance, accessed February 28, 2021, <https://drugpolicy.org/issues/brief-history-drug-war>.

¹⁸ Legislative Attorney, *The Posse Comitatus Act and Related Matters: The Use of the Military to Execute Civilian Law*, CRS Report No. R42659 (Washington, DC: Congressional Research Service, 2018), 42, https://www.everycrsreport.com/files/20181106_R42659_a9b336fa9e37e2302a210433da31f27bd3287cdd.pdf.

¹⁹ “History,” Coast Guard Tactical Law Enforcement Association, accessed May 25, 2020, <http://www.cgtle.org/history>.

²⁰ Assignment of Coast Guard Personnel to Naval Vessels for Law Enforcement Purposes, Pub. L. No. 99–570, § 279, 10 USC Chapter 15 (1986).

²¹ Assignment of Coast Guard Personnel to Naval Vessels for Law Enforcement Purposes.

²² Evan Munsing and Christopher J. Lamb, *Joint Interagency Task Force–South: The Best Known, Least Understood Interagency Success* (Washington, DC: National Defense University Press, 2011), 10, <https://ndupress.ndu.edu/portals/68/documents/stratperspective/inss/strategic-perspectives-5.pdf>.

After being designated as the lead agency for detection and monitoring of drug trafficking, the DOD created Task Force–4, which later became the Joint Interagency Task Force (JIATF) South.²³ JIATF South has been heralded as a model for joint agency success and cooperation.²⁴ Currently, JIATF South is made up of 16 different U.S. agencies to include the DOD, the Drug Enforcement Agency (DEA), and CBP, as well as 20 different partner nations.²⁵ When celebrating its 20-year anniversary in 2009, JIATF South was responsible for interdicting 40 percent of cocaine globally and had seized a total of \$190 billion dollars in narcotics.²⁶

C. LITERATURE REVIEW

This literature review first examines past and present maritime security strategies and focuses on how U.S. national security strategy documents have described the relationship between the Navy and Coast Guard, as well as suggestions scholars had previously made regarding this relationship. It then offers an analysis of one of the nation’s most significant maritime border security efforts, the JIATF South, followed by discussing the effects border security has had on TCOs and DTOs. It concludes with discussion about the current status and potential use of autonomous vehicles as a force multiplier.

1. National Maritime Security Strategies

From the time the Soviet Union collapsed in 1991 to the September 11 attacks, the United States faced very few direct threats to its national security. In this time period, the majority of military operations carried out were initiated due to human rights violations or safety of U.S. personnel overseas.²⁷ Due to this general sense of security, the Navy and

²³ Munsing and Lamb, 12–22.

²⁴ Munsing and Lamb, 1.

²⁵ Geraldine Cook, “JIATF South: The Strength of Relationships,” *Diálogo: Digital Military Magazine*, September 9, 2019, <https://dialogo-americas.com/articles/jiatf-south-the-strength-of-relationships/>.

²⁶ Munsing and Lamb, *Joint Interagency Task Force-South*, 3.

²⁷ Richard F. Grimmett, *Instances of Use of United States Armed Forces Abroad, 1798–2001*, CRS Report No. RL30172 (Washington, DC: Congressional Research Service, 2002), https://www.everycrsreport.com/files/20020205_RL30172_650d4a8991cbdbc28b3da18574fea5853ada22c0.pdf.

U.S. government as a whole was slow to implement new strategies to counter the emergence of new threats that developed into 9/11.

In the aftermath of the 9/11 attacks, President Bush's administration began developing what would become the Department of Homeland Security (DHS) through various forms of legislation. While DHS was still in its infancy, homeland security presidential directives (HSPD) began to be issued to establish policy-making guidelines, including guidelines concerning maritime strategy and security.²⁸

In 2004, President Bush signed the "Maritime Security Policy," HSPD-13, which was the first of these directives with specific focus on maritime security.²⁹ This document directed "the coordination of U.S. Government maritime security programs and initiatives to achieve a comprehensive and cohesive national effort involving appropriate Federal, State, local, and private sector entities."³⁰ It established the Maritime Security Policy Coordinating Committee (MSPCC), and called on the Secretaries of Defense and Homeland Security to create a joint national strategy for maritime security.³¹ The objective of this HSPD was to bring all agencies that have a role in maritime security together to increase awareness and capabilities collectively within the maritime domain. The president also called for the United States to be capable of fully deploying all operational assets to prevent the terrorists and criminals alike from using the maritime domain to harm American citizens, assets, or interests.³²

The *National Strategy for Maritime Security* was created in 2005 and contained eight supporting plans, such as the National Plan to Achieve Maritime Domain Awareness and the Maritime Operational Threat Response Plan, which are both geared specifically

²⁸ Harold C. Relyea, *Presidential Directives: Background and Overview*, Order Code 98-611 GOV (Washington, DC: Congressional Research Service, 2008), <https://fas.org/sgp/crs/misc/98-611.pdf>.

²⁹ George W. Bush, *National Security Presidential Directive NSPD-41/Homeland Security Presidential Directive HSPD-13* (Washington, DC: White House, 2004), <https://fas.org/irp/offdocs/nspd/nspd41.pdf>.

³⁰ Bush, 1.

³¹ Bush, 1.

³² Bush, 2.

toward maritime defense of the homeland.³³ While this document acknowledges the difficulties of preventing illegal seaborne immigration it also states, “as security in our ports of entry, at land-border crossings, and at airports continues to tighten, criminals and terrorists will likely consider our relatively undefended coastlines to be less risky alternatives for unlawful entry into the United States.”³⁴ Throughout the remainder of the strategy, very little attention is given to the immigration problem or drug trafficking; instead, the focus is on stopping the proliferation of weapons of mass destruction (WMD). Illegal immigration and drug trafficking each have their own paragraph within the strategy dedicated to the vulnerabilities that these issues cause while WMD is mentioned 19 times throughout the document. The strategy states “WMD issues are of the greatest concern since the maritime domain is the likely venue by which a WMD will be brought into the United States.”³⁵ Although the strategy mentions and recognizes that a vessel is the most likely means of delivering a WMD to the United States, little discussion has resulted as to how interdiction efforts will be increased.

While the overarching national strategy does not specifically discuss the efforts to increase interdictions, the combination of the National Plan to Achieve Maritime Domain Awareness and the Maritime Operational Threat Response (MOTR) Plan illustrate how DHS can become more successful in carrying out interdictions. The plan for maritime domain awareness is focused on establishing a robust information-sharing environment between all stakeholders to support operational decision making.³⁶ The MOTR Plan is a classified document, which provides protocols for a response to maritime threats by all branches of government.³⁷ According to LCDR Craig Allen Jr, the plan does not delineate

³³ Department of Defense, *The National Strategy for Maritime Security* (Washington, DC: Department of Defense, 2005), <https://www.hsdl.org/?view&did=456414>.

³⁴ Department of Defense, 6.

³⁵ Department of Defense, 4.

³⁶ Department of Defense, *National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security* (Washington, DC: Department of Defense, 2005), https://www.dhs.gov/sites/default/files/publications/HSPD_MDAPlan_0.pdf.

³⁷ Craig Allen Jr., “Border Control behind the Scenes: Maritime Operational Threat Response Plan,” Center for International Maritime Security, August 19, 2014, <https://cimsec.org/border-control-behind-scenes-maritime-operational-threat-response-plan/>.

a clear command and control relationship relying on all involved agencies to come together and cooperate to achieve a common goal.³⁸

In 2007, following the strategies and plans developed by DHS, the joint maritime strategy between the Navy, Marine Corps, and Coast Guard was revised for the first time since 1986. The new strategy was titled, “A Cooperative Strategy for 21st Century Seapower.”³⁹ This strategy was primarily drafted to introduce the new challenges being encountered as technology continued to advance and the world became more interconnected.⁴⁰ A revision was completed in 2015, and while the title was not changed, the revised strategy breaks down the functions and operations of the nation’s sea going services by region of the world, as well as their role in supporting national security.

Within the western hemisphere section of the new strategy, no discussion has been conducted of the Coast Guard and Navy working together to combat TCOs. The strategy does mention a new aircraft the Coast Guard is introducing to its fleet and states that the Navy will maintain Naval Station Guantanamo Bay, “to promote joint and combined military operations and to enhance interagency efforts to develop regional security and cooperation.”⁴¹ The report does go into detail with regard to the ship platforms that will be utilized to aid in a humanitarian crisis and later states, “other ships and aircraft will provide periodic presence for recurring military-to-military engagements, theater security cooperation exercises, and other missions.”⁴² While “other missions” include missions to combat drug trafficking and illegal immigration, it is not the explicit language someone

³⁸ Allen.

³⁹ Su Hao, “The U.S. Maritime Strategy’s New Thinking: Reviewing the ‘Cooperative Strategy for 21st Century Seapower,’” *Naval War College Review* 61, no. 4 (2008): 68–72.

⁴⁰ United States Marine Corps, United States Department of the Navy, and United States Coast Guard, *A Cooperative Strategy for 21st Century Seapower* (Washington, DC: United States Marine Corps, United States Department of the Navy, United States Coast Guard, 2007), <https://www.hsdl.org/?view&did=479900>.

⁴¹ United States Marine Corps, United States Department of the Navy, and United States Coast Guard, *A Cooperative Strategy for 21st Century Seapower. [Revision]* (Washington, DC: United States Marine Corps, United States Department of the Navy, United States Coast Guard, 2015), <https://www.navy.mil/local/maritime/150227-CS21R-Final.pdf>.

⁴² United States Marine Corps, United States Department of the Navy, and United States Coast Guard, 18.

would expect to read based on the various other maritime strategies calling for deploying all operational assets.

2. Analysis of the Coast Guard and Navy Relationship

Prior to 9/11, the Coast Guard and Navy recognized the necessity of cooperation between their respective services and acknowledged that their strengths and roles were vastly different. In an effort to complement each other, they produced a joint statement titled *National Fleet* where they identified each service's contribution to the national security and defense of the United States.⁴³ Colin Gray criticized this document and called it a "treaty" between the services not to interfere with the missions either service carries out. He also argued that the *Navy Strategic Planning Guidance with Long Range Planning Objectives*, of 2000 did not complement the joint policy previously released.⁴⁴

Gray's argument for how the services should operate contradicts the Coast Guard and Navy's joint policy. He claimed the Navy needed to focus on warfighting and leave "coast guarding to the Coast Guard."⁴⁵ Gray explained that each service has the necessary skills and assets for very different missions and believes that to reduce the high operational tempo of the Navy's peacetime fleet, the Coast Guard should pick up the naval operations that do not correlate to naval warfare. Gray argued that new frigate sized general purpose warships are required to recapitalize the national fleet. He stated that if the Navy cannot afford to operate these frigate-sized vessels, then they should be the Coast Guard's sole responsibility to integrate properly with the Navy when conducting homeland defense missions.⁴⁶

⁴³ Bruce Stubbs and Scott C. Truver, *America's Coast Guard: Safeguarding U.S. Maritime Safety and Security in the 21st Century* (Los Angeles: University of California Press, 2000), 131, <https://www.hsdl.org/?view&did=442390>.

⁴⁴ Colin S. Gray, "The Coast Guard and the Navy: It's Time for a 'National Fleet,'" *Naval War College Review* 54, no. 3 (2020): 115.

⁴⁵ Gray, 114.

⁴⁶ Gray, 115.

Charles Hamilton and Patrick Stillman identify processes undertaken by the Coast Guard and Navy to increase the Coast Guard's readiness to support the Navy.⁴⁷ For example, following 9/11, the Coast Guard decided to postpone the decommissioning of 13 coastal patrol ships and utilize them for port and coastal area security missions. Hamilton and Stillman also identify a memorandum of agreement between the services in 2002 to support the procurement of the national security cutter and offshore patrol cutter for the Coast Guard and the littoral combat ship for the Navy. The memorandum was viewed as a method to recapitalize the fleet by promoting interoperability and increasing capabilities for the 21st century. Hamilton and Stillman argue that a national fleet consisting of new cutters, littoral combat ships, and other deepwater assets capable of seamless integration is a force multiplier in all maritime missions that cannot be ignored.⁴⁸

The discussion of providing assets to the Navy and Coast Guard for maritime security and counterterrorism operations is not new. Douglas Daniels, for example, published an article discussing the exact topic in the *University of Miami Law Review*.⁴⁹ Daniels discusses the difficulty of ensuring the appropriate service responds to the threats within its purview. He acknowledges that maritime threats to the homeland exist throughout the maritime domain and can be identified before entering the traditional operating area of the Coast Guard. He argues that for suspected maritime terrorists, regardless of location, the Coast Guard should complete the interdiction since the extent of the threat is unknown and the Coast Guard can act as a law enforcement agency, or if the situation permits, as an armed service. He continues to state that if a threat is so grave the mission should be deemed homeland defense, then permit the DOD to neutralize the threat via the most efficient means. He also suggests that the flexibility of the Coast Guard to act as a law enforcement agency or armed service allows for apprehended individuals to be treated as enemy prisoners of war.⁵⁰

⁴⁷ Charles S. Hamilton II and Patrick M. Stillman, "Charting New Seas: Navy-Coast Guard Cooperation," *Joint Force Quarterly*, no. 35 (2004): 50–57.

⁴⁸ Hamilton and Stillman, 50–57.

⁴⁹ Douglas Daniels, "How to Allocate Responsibilities between the Navy and Coast Guard in Maritime Counterterrorism Operations," *University of Miami Law Review* 61, no. 2 (January 2007): 467–508.

⁵⁰ Daniels, 467-508.

While Daniels clearly states that the Coast Guard is the service best suited for interdicting suspected maritime terrorists, he attempts to create a method of designating whether a particular interdiction should fall under Coast Guard or Navy responsibility.⁵¹ He believes that it is not possible to create a boundary to identify clearly the area of responsibility of each service. Instead, he offers that the decision should be based upon who the target of the suspected attack is. Through this observation, it remains possible for the DOD to continue its missions of interdicting maritime terrorists abroad and to combat proliferation of weapons allowing for a robust layered defense toward maritime terrorism. However, he does agree that under specific circumstances, whichever asset is closest to the threat should respond. Finally, Daniels states that if the Coast Guard is expected to be the first responder to maritime terrorist threats, the DOD, DHS, Coast Guard, and Northern Command (NORTHCOM) need to work together to establish proper plans and exercise those to ensure all agencies involved are able to respond effectively.⁵²

While these authors agree that each service has its own unique roles in maritime security, no agreement has been made among scholars and experts regarding how to move forward. Retired Coast Guard officers calling for the Coast Guard to be moved permanently to the DOD have written multiple articles in the United States Naval Institute's magazine, *Proceedings*. Most of these arguments result from the support structure that the Coast Guard is exposed to while operating under DHS.⁵³ The belief is that if the Coast Guard was to operate under the DOD full time, the Coast Guard could more effectively carry out the acquisition of new ships and technology, utilize the DOD supply logistics, and take advantage of the research and development infrastructure within the DOD.⁵⁴

⁵¹ Daniels, 502.

⁵² Daniels, 505.

⁵³ Jim Dolbow and Jim Howe, "Shift the Coast Guard to DoD," *Proceedings*, February 2017, <https://www.usni.org/magazines/proceedings/2017/february/shift-coast-guard-dod>.

⁵⁴ Dolbow and Howe; Gregory J. Sanial, "The Coast Guard Belongs with DoD," *U.S. Naval Institute*, September 2019, <https://www.usni.org/magazines/proceedings/2019/september/coast-guard-belongs-dod>.

3. Joint Interagency Task Force South

While JIATF South is highly successful in interdicting narcotics, it does not report much success in stopping seaborne illegal immigration. Even though its counter narcotics numbers are impressive, the *Independent Auditor's Report on the FY 2019 DOD Performance Summary Report for the Funds Obligated for National Drug Control Program Activities* shows that its ability to respond to drug movement events that meet the interagency criteria has decreased since 2016.⁵⁵ The 2019 report shows that JIATF South was only able to respond to 20 percent of these events. However, its success percentage is based on the events detected that lead to seizure or disruption, which was a 72 percent success rate while the target for the year was 80 percent. The report claims JIATF South was unable to meet its goal due to reduced availability of law enforcement air and maritime assets. The report also suggested that drug traffickers are finding success operating outside of the range of JIATF South air and maritime assets.⁵⁶

The National Drug Control Strategy highlights the reasons why JIATF South is a necessary organization. The strategy states that since nearly all illicit drugs are manufactured and produced in other nations, DTOs and TCOs represent a threat to the health, safety, and security to American communities and citizens while also causing a destabilizing effect within our partner nation's borders.⁵⁷ The ability of JIATF South to bring U.S. law enforcement agencies together while working with partner nations through which the illicit trafficking begins or travels strengthens all the nations involved and brings legitimacy to those nations with reduced capabilities. JIATF South gives credit to whichever agency makes the actual seizures or arrests. Since CBP knows that its assets will

⁵⁵ Inspector General, *Independent Auditor's Report on the FY 2019 DoD Performance Summary Report for the Funds Obligated for National Drug Control Program Activities*, DODIG-2020-057 (Washington, DC: Department of Defense, 2020), <https://media.defense.gov/2020/Feb/03/2002242875/-1/-1/1/DODIG-2020-057-.PDF>.

⁵⁶ Inspector General, 5–7.

⁵⁷ Office of National Drug Control Policy, *National Drug Control Strategy* (Washington, DC: White House, 2020), 17, <https://www.whitehouse.gov/wp-content/uploads/2020/02/2020-NDCS.pdf>.

be used effectively and will receive credit for the operations, it dedicates 80 percent of its operational air assets to JIATF South.⁵⁸

The partnerships with other nations are necessary components for success since Navy and Coast Guard vessels cannot easily enter all nations' territorial waters to pursue suspected traffickers or to carry out law enforcement activities.⁵⁹ Through these partnerships, JIATF South forces are able to continue to monitor suspect vessels and have that information relayed to partner nation law enforcement to intervene successfully. This same operational concept also relates to partnering navies, such as the French Navy, which is authorized to perform law enforcement functions from which the U.S. military is barred.⁶⁰

4. Transnational Criminal Organizations/Drug Trafficking Organizations and Border Security

As law enforcement agencies became more effective, transnational criminal and drug trafficking organizations shift tactics to maintain a relative level of success. For example, in the early 1990s, the majority of drugs arriving in the United States came using non-commercial aircraft, but as capabilities to detect these aircraft and pinpoint their location of debarkation increased, law enforcement authorities were able to force these organizations mostly to abandon aircraft as a viable means of transportation.⁶¹

This same concept has become evident in drug smuggling across the United States' southern land border as well. As CBP has increased its success in interdicting the movement of drugs and people between ports of entry, these DTOs have resorted to creating underground tunnels beginning in Mexico and terminating in both California and Arizona.⁶² They also attempt to hide their drugs among legitimate cargo within vehicles

⁵⁸ Munsing and Lamb, *Joint Interagency Task Force-South*, 72.

⁵⁹ Munsing and Lamb, 71.

⁶⁰ Munsing and Lamb, 71.

⁶¹ "How Do Cartels Get Drugs into the U.S.?" BBC News, December 3, 2015, <https://www.bbc.com/news/world-us-canada-34934574>.

⁶² BBC News.

that attempt to enter the United States legally through ports of entry.⁶³ The general opinion of law enforcement and government officials is that as advancements are made in interdicting these drug shipments, the agencies involved are not stopping the flow but displacing it. This concept is known as the “balloon effect,” which is seen when squeezing a balloon; the air is restricted in some areas but finds other areas to burst out.⁶⁴

The balloon effect can also be seen with the trafficking of drugs and people. As CBP became better at interdicting individuals at the legal ports of entry, the focus of illegal border crossing shifted to the land area between the ports of entry.⁶⁵ Moreover, when drug trafficking by air became more difficult, traffickers moved to sea routes instead.⁶⁶ So far, the bulk of maritime human trafficking occurs through the United States’ southeast coast, since the majority of these immigrants are from the Caribbean and the Coast Guard is seeing a trend that suggests that maritime migration is increasing.⁶⁷ In 2018, for example, the number of migrants interdicted in the waters off the southwest coast increased by five times the amount interdicted in 2016 and 2017 combined.⁶⁸

5. Unmanned Surface Vehicles

Peter Winstead conducted a cost benefit analysis of developing and integrating unmanned surface vehicles (USVs) in the U.S. Navy fleet to perform missile defense and intelligence, surveillance, and reconnaissance (ISR) missions. This analysis shows that the

⁶³ BBC News.

⁶⁴ Kenneth D. Madsen, “Local Impacts of the Balloon Effect of Border Law Enforcement,” *Geopolitics* 12, no. 2 (May 2007): 282–83, <https://doi.org/10.1080/14650040601168990>.

⁶⁵ Christopher B. Fontana, “The United States Border Wall: A Maritime Perspective” (master’s thesis, Naval Postgraduate School, 2019), 39–41, https://calhoun.nps.edu/bitstream/handle/10945/62777/19Jun_Fontana_Christopher.pdf?sequence=1&isAllowed=y.

⁶⁶ BBC News, “How Do Cartels Get Drugs into the U.S.?”

⁶⁷ United States Coast Guard, *USCG APR 2017*, 11; United States Coast Guard, *USCG APR 2018*, 22; United States Coast Guard, *USCG APR 2019*, 32.

⁶⁸ Dan Lamothe, “Coast Guard, Working without Pay in a Government Shutdown, Sees a Surge in West Coast Migrant Intercepts,” *Washington Post*, January 14, 2019, <https://www.washingtonpost.com/national-security/2019/01/14/coast-guard-working-without-pay-government-shutdown-sees-surge-west-coast-migrant-intercepts/>.

implementation of USVs was both cost effective and provided increased capability.⁶⁹ His research demonstrates that the ISR USV platform provided approximately a six percent increase in success of destroying enemy vessels in the examined maritime battle simulation. Following the results of the simulation, the cost effectiveness of a \$500 million investment goes much further in the procurement of 10 USVs compared to a single littoral combat ship, which alone exceeds the investment amount. His findings show that employing 10 USVs compared to a single LCS is a force multiplier requiring the enemy to detect and track 10 relatively small radar cross sections compared to one of the LCS, which reduces the potential number lives lost in combat.⁷⁰

While unmanned vehicles are certainly capable of improving the capabilities of conventional military forces, Evan Karlik hypothesizes that “proliferating autonomous systems in contested waters could spark accidental clashes.”⁷¹ Karlik references when Iran shot down a U.S. military unmanned aerial vehicle in 2019 and when the Chinese Navy captured a U.S. unmanned undersea vehicle in 2016.⁷² He believes that weak responses by the U.S. government could embolden these nations to continue to interfere, capture, or destroy unmanned vessels as they become more prevalent in the battle space.⁷³

D. RESEARCH DESIGN

This research focused on the current effectiveness of the organizations tasked with maintaining U.S. maritime border security. This thesis primarily relied upon reports generated by the Congressional Research Service, Government Accountability Office, and the Coast Guard and Navy themselves. Congressional hearings were also reviewed to

⁶⁹ Peter J. Winstead, “Implementation of Unmanned Surface Vehicles in the Distributed Maritime Operations Concept” (master’s thesis, Naval Postgraduate School, 2018), https://calhoun.nps.edu/bitstream/handle/10945/61301/18Dec_Winstead_Peter.pdf?sequence=1&isAllowed=y.

⁷⁰ Winstead, 132–33.

⁷¹ Evan Karlik, “U.S.-China Tensions—Unmanned Military Craft Raise Risk of War,” *Nikkei Asia*, June 28, 2019, <https://asia.nikkei.com/Opinion/US-China-tensions-unmanned-military-craft-raise-risk-of-war>.

⁷² Karlik; Nasser Karimi and Jon Gambrell, “Iran Shoots down U.S. Surveillance Drone, Heightening Tensions,” *AP NEWS*, June 20, 2019, <https://apnews.com/article/e4316eb989d5499c9828350de8524963>.

⁷³ Karlik, “U.S.-China Tensions.”

understand congressional concerns, as well as the challenges identified by leaders of these organizations. The issues and shortfalls discovered lead to a review of available information regarding USVs under development by the U.S. Navy to assess their viability.

E. THESIS OVERVIEW

This thesis is organized into four chapters. Following this introduction, Chapter II discusses the maritime border security missions of the U.S. Navy, U.S. Coast Guard, and JIATF South and identifies the shortfalls and disadvantages. The third chapter discusses current research and development efforts of unmanned surface vehicles. The final chapter reviews the findings from Chapters II and III and provides recommendations to improve U.S. maritime border security.

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II. UNITED STATES MARITIME BORDER SECURITY

Maritime security is currently a shared responsibility between the DOD and DHS. The DOD utilizes the Navy and Marine Corps as its primary forces for securing the international maritime domain. DHS primarily tasks this mission to the Coast Guard, CBP, and Immigration and Customs Enforcement (ICE).⁷⁴ While the DOD focuses on international maritime operations to ensure the free flow of commerce and maintaining America's strategic influence, DHS focuses on protecting the United States' homeland and its citizens from attack and enforcement of applicable U.S. regulations and laws.⁷⁵

The 2005 *National Strategy for Maritime Security* identifies five threat areas: nation-state threats, terrorist threats, transnational criminal and piracy threats, environmental destruction, and illegal seaborne immigration.⁷⁶ This chapter focuses on the role of the Navy, Coast Guard, and JIATF South in combating these threats. This chapter then identifies how the DOD and DHS currently integrate to accomplish maritime security and the associated shortfalls.

A. UNITED STATES NAVY MARITIME SECURITY MISSION

The United States' Navy's approach to maritime security focuses on the projection of power to maintain the maritime domain's capability to further U.S. interests and deny the same to its adversaries. The Navy accomplishes this mission mainly through its aircraft carriers and surface ships maintaining a presence in strategic waters, nuclear-powered submarines completing the Navy's responsibility within the nuclear triad, and sailors building and developing partnerships with allied nations through port visits and

⁷⁴ *Securing the Border: Understanding Threats and Strategies for the Maritime Border: Hearing Before United States Senate Committee on Homeland Security and Governmental Affairs, Senate, 114th Cong. 1* (2015), <https://www.hsdl.org/?view&did=787381>.

⁷⁵ "Mission," U.S. Navy, accessed January 16, 2021, <https://www.navy.mil/About/Mission/>; "Secure U.S. Borders and Approaches," Department of Homeland Security, July 5, 2019, <https://www.dhs.gov/secure-us-borders-and-approaches>.

⁷⁶ Department of Defense, *The National Strategy for Maritime Security*.

humanitarian aid missions.⁷⁷ These approaches primarily focus on nation-state threats and terrorist threats. While the Navy also focuses on the remaining threats, they are typically pursued as secondary missions or through work with its international partnerships and alliances.

The U.S. Navy and the DOD have historically been used as diplomacy tools. Naval diplomacy involves the use of a nation's naval forces to further its political objectives by influencing foreign policymakers.⁷⁸ The Navy focuses on projecting power to maintain U.S. international influence through cooperative diplomacy vice coercive diplomacy. Cooperative naval diplomacy is "the established method of influencing decisions and behavior of foreign governments and peoples through dialogue and other measures short of war or violence."⁷⁹ The primary concept of cooperative naval diplomacy is that a country's naval forces are deployed in a way to be viewed as non-threatening, so that both friendly and potentially hostile nations accept the force's movements and presence. This form of diplomacy is often achieved through joint multinational exercises and maintaining a forward naval presence in specific geographic areas.

The U.S. military is arguably the largest proponent of maintaining a forward presence to pursue the United States' political objectives. The U.S. Navy, for example, maintains forward-deployed naval bases in Japan, Spain, and Bahrain, each specifically located to promote the projection of power toward a peer or near-peer competitor. These forward-deployed forces serve two purposes, first, as a deterring force against the nation's adversaries, and second, as a force for strengthening alliances and promoting security cooperation.⁸⁰ Maintaining these combat-ready forces in the United States' strongest allies' vicinity marks a clear commitment to the allies' well-being and success. These forces have historically played critical roles in assisting partner nations responding to and

⁷⁷ Jonathan Masters, "Sea Power: The U.S. Navy and Foreign Policy," Council on Foreign Relations, August 19, 2019, <https://www.cfr.org/background/sea-power-us-navy-and-foreign-policy>.

⁷⁸ Milan Vego, "Naval Support of Foreign Diplomacy" (master's thesis, Joint Military Operations Department, Naval War College, 2016), 4.

⁷⁹ Frederick H. Hartmann, *The New Age of American Foreign Policy* (New York: Macmillan, 1970), 6.

⁸⁰ Vego, "Naval Support of Foreign Diplomacy," 5.

recovering from natural disasters, such as assisting Japan in 2011 following the earthquake and tsunami, which led to thousands of deaths, and nuclear disaster at the Fukushima power plant.⁸¹ During this time, the U.S. Navy provided humanitarian assistance and disaster relief efforts by using 15 warships and eight Military Sealift Command (MSC) vessels over 30 days. Over half of the ships involved in relief efforts arrived on station and began operations within 48 hours.⁸²

While humanitarian assistance and disaster relief operations are intended to support allied nations and promote partnerships, they also manage to demonstrate the naval force's mobility and readiness.⁸³ These operations allow the U.S. Navy to operate with its allies outside of a highly planned and coordinated joint exercise. These situations demonstrate the capabilities and cooperation within the civil-military relationship at the international level and create a favorable view of the United States.⁸⁴

Coercive diplomacy, often called gunboat diplomacy in the naval sense, is another method of naval diplomacy. Coercive naval diplomacy is "the use or threat of limited naval force aimed at securing one's advantage or averting loss."⁸⁵ Coercive diplomacy relies on the naval force and its adversary to be co-located at the decisive point to ensure the greatest impact. Three common coercive diplomacy methods exist: show of force, operational deployment, and naval demonstration. Show of force is the demonstration of naval combat capabilities and the willingness to use force. In today's world, it is often achieved through testing or a demonstration of new weapon capabilities.⁸⁶

⁸¹ Alexander Kaczur, Jayson Aurelio, and Edelio Joloya, "An Analysis of United States Naval Participation in Operation Tomodachi: Humanitarian and Disaster Relief in the Tsunami-Stricken Japanese Mainland" (MBA professional report, Naval Postgraduate School, 2012), 5, https://calhoun.nps.edu/bitstream/handle/10945/7366/12Jun_Kaczur_Joloya_Aurelio_MBA.pdf?sequence=1&isAllowed=y.

⁸² Kaczur, Aurelio, and Joloya, 12–14.

⁸³ Vego, "Naval Support of Foreign Diplomacy," 5–8.

⁸⁴ Vego, 5–6.

⁸⁵ Vego, 10.

⁸⁶ Vego, 11–12.

Operational deployments can be ordered as a preventative measure or in reaction to a crisis.⁸⁷ In the example of U.S. involvement in the Indo-Pakistani war of 1974, a carrier strike group's deployment served to be both preventative and reactive. When the war broke out, the Navy only had a few available assets located in the Arabian Gulf. A carrier strike group was formed and designated as Task Force 74. Task Force 74 entered the Indian Ocean on 10 December 1971 to force the Indian navy to monitor its movements; consequently, seven days later, the task force departed the Bay of Bengal following a cease-fire between India and Pakistan.⁸⁸

Naval demonstrations serve two purposes, first, to illustrate that a nation has an interest in the outcome of a specific conflict, and second, to represent the willingness of a nation to commit additional forces or to become involved in the conflict.⁸⁹ The United States' reaction to the Cuban Missile Crisis serves as a unique example of a naval demonstration. After the United States observed the establishment of Soviet medium and intermediate range ballistic missiles in Cuba, President Kennedy faced the difficult task of convincing the Soviet leader Nikita Khrushchev to remove these offensive weapons. U.S. policymakers ultimately decided to use the Navy to establish a "quarantine" of Cuba. The quarantine went into effect on 23 October 1962, and U.S. naval vessels were ordered to search any ships suspected of carrying offensive weapons to Cuba. The crisis ended five days later when the Soviet Union vowed to dismantle all offensive weapons in Cuba as long as the United States removed its missiles from Turkey and Europe and promised never to invade Cuba.⁹⁰

Cooperative and coercive diplomacy is intended to counter the nation-state threat identified in the *National Strategy for Maritime Security*. However, through these actions, the United States will further its political objectives and ideally increase its favorability with its allies and potential adversaries.⁹¹ Through naval diplomacy, a cooperative

⁸⁷ Vego, 22.

⁸⁸ Vego, 22.

⁸⁹ Vego, 22–23.

⁹⁰ Vego, 22–32.

⁹¹ Vego, 6.

maritime security strategy can be adopted, which will combat the terrorist threat to the United States and its interests.

While the U.S. Navy does not explicitly focus on maritime border security, assets and resources are allocated to the mission to support JIATF South efforts. The DOD is the lead agency for detecting and monitoring maritime trafficking of illegal narcotics to the United States. The DOD commits ships from the Navy, as well as aircraft from both the Navy and Air Force.⁹² To comply with the Posse Comitatus Act, the military supports interdictions while conducting maritime operations in international waters. Coast Guard personnel assigned to a LEDET that embarks on the vessel accomplishes the actual interdictions and boardings.⁹³ Thus, the U.S. Navy can assist law enforcement agencies and avoid acting as a law enforcement agency itself.

B. UNITED STATES COAST GUARD MARITIME AND BORDER SECURITY MISSION

The Coast Guard has a significantly different mission than the Navy; and although it is a U.S. military service, it operates under DHS rather than under the DOD. Of the five threats identified in the *National Strategy for Maritime Security*, the Coast Guard actively combats four of them: terrorist threats, transnational criminal and piracy threats, environmental destruction, and illegal seaborne immigration.⁹⁴ The *Homeland Security Act of 2002* identifies the Coast Guard's 11 mission areas and organizes them into homeland security missions and non-homeland security missions.⁹⁵ The five identified homeland security missions are the security of ports, waterways, and coastal areas; drug interdiction; migrant interdiction; defense readiness; and other law enforcement roles. The

⁹² “Countering Transnational Organized Crime,” U.S. Southern Command, accessed February 23, 2021, <https://www.southcom.mil/Lines-of-Effort/Counter-Threats/Countering-Transnational-Organized-Crime/>.

⁹³ “Operation Martillo,” U.S. Southern Command, accessed February 23, 2021, <https://www.southcom.mil/Media/Special-Coverage/Operation-Martillo/>.

⁹⁴ “About U.S. Coast Guard Missions,” United States Coast Guard, accessed February 23, 2021, <https://www.uscg.mil/About/Missions/>.

⁹⁵ Homeland Security Act of 2002, Pub. L. No. 107–296, § 116 Stat. 2135 (2002), https://www.dhs.gov/sites/default/files/publications/hr_5005_enr.pdf.

Coast Guard also combats environmental degradation through its non-homeland security missions of safeguarding living marine resources and marine environmental protection.⁹⁶ These *Homeland Security Act* missions directly correlate to the identified threat areas of the *National Maritime Security Strategy*.

The Coast Guard has a unique function; during peacetime, it serves as a law enforcement and maritime security agency within DHS, but during wartime, it can be moved to the DOD, if Congress or the president sees fit.⁹⁷ While the Coast Guard maintains units deployed internationally, similar to the Navy for building partnerships, the Coast Guard's primary role is conducting operations near the United States. This section focuses on the Coast Guard's missions that support maritime security in the United States' vicinity, specifically regarding operations within the Western Hemisphere transit zone (WHTZ).

Americans best know the Coast Guard as the service that interdicts drug traffickers and seaborne illegal immigrants. Through interdiction of these suspicious vessels, the Coast Guard is also combating terrorism by ensuring that illicit cargo, such as weapons of mass destruction, and terrorists themselves do not reach the United States' shores undetected. These missions are completed using the various assets the Coast Guard has and the intelligence generated by the Coast Guard and received from other agencies.

This area, known as the WHTZ, is a seven million square-mile area encompassing the Caribbean Sea, the Gulf of Mexico, and the eastern Pacific Ocean. The Coast Guard is the lead agency for apprehending drug traffickers within the maritime domain.⁹⁸ Like the Navy, the Coast Guard uses partnerships with other nations within the area as a force multiplier to increase mission effectiveness. The United States currently has bilateral agreements with 43 foreign nations to improve maritime counterdrug missions.

⁹⁶ Homeland Security Act of 2002.

⁹⁷ Coast Guard, 14 U.S.C § 103 (1949), <https://www.govinfo.gov/content/pkg/USCODE-2011-title14/html/USCODE-2011-title14.htm>.

⁹⁸ *Western Hemisphere Drug Interdictions: Why Maintaining Coast Guard Operations Matter: Hearing before the Subcommittee on Coast Guard and Maritime Transportation of the Committee on Transportation and Infrastructure, House of Representatives*, 116th Cong. 1 (2019), <https://www.govinfo.gov/content/pkg/CHRG-116hhrg39475/pdf/CHRG-116hhrg39475.pdf>.

Specifically, within the transit zone, 14 nations, including Canada, Colombia, Costa Rica, El Salvador, France, Guatemala, Honduras, the Netherlands, Nicaragua, Panama, Spain, and the United Kingdom, have partnerships to increase mission accomplishment.⁹⁹

International partnerships with other transit zone stakeholders are crucial to combating the narcotics flow to the United States. For example, in 2018, 66 percent of all Coast Guard interdictions involved a bilateral or operational procedures agreement.¹⁰⁰ Typically, when vessels carrying narcotics depart their port of origin, they are not headed directly for the United States, but instead toward areas within Central America where the bulk shipments are broken down into smaller packages to be transported to the United States.¹⁰¹ Partnerships with the nations where the bulk shipments begin and terminate, allows the Coast Guard to pursue detected vessels into that nation's territorial waters. Additionally, the partnerships expedite intelligence flow regarding potential suspect vessels and improve interoperability between all stakeholders. Intercepting the bulk shipments before they can be broken down is the most efficient means of removing narcotics from circulation.

The Coast Guard carries out its mission to intercept seaborne immigrants in the same manner that it conducts its counter-narcotics missions. Using maritime patrol aircraft and surface vessels, the Coast Guard can detect and intercept vessels suspected of human trafficking. These missions are often carried out to prevent migrants from reaching the United States' shores and due to the safety of life at sea since many illegal immigration attempts are made in vessels that are not seaworthy.¹⁰²

⁹⁹ H.R.

¹⁰⁰ H.R., 11.

¹⁰¹ H.R., vi.

¹⁰² *Overview of Coast Guard Drug and Migrant Interdiction: Hearing before the Subcommittee on Coast Guard and Maritime Transportation of the Committee on Transportation and Infrastructure, House of Representatives*, 111th Cong. 1 (2009), <https://www.govinfo.gov/content/pkg/CHRG-111hhr48204/html/CHRG-111hhr48204.htm>.

The Coast Guard carried out two major peacetime humanitarian assistance operations in the early 1990s following events in Haiti and Cuba.¹⁰³ The first was Operation Able Manner. Following a military coup in Haiti, Haitians began to flee Haiti. At the peak of Operation Able Manner, the Coast Guard committed 17 cutters, nine aircraft, and the Navy had committed five of its ships.¹⁰⁴ Over the busiest four days, the Coast Guard and Navy rescued 9,697 Haitians; throughout 1994, over 20,000 Haitians were rescued.¹⁰⁵ The Coast Guard later carried out a similar mission named Operation Able Vigil, which aimed to aid fleeing Cubans in the Straits of Florida.¹⁰⁶ This operation involved 29 Coast Guard Cutters, six aircraft, and nine U.S. Navy ships. Throughout Operation Able Vigil, over 30,000 Cubans were interdicted.¹⁰⁷

The Coast Guard's migrant interdiction mission is centered on nations located in the Caribbean Sea, primarily Haiti, Cuba, and the Dominican Republic.¹⁰⁸ In 2019, over 7,000 migrants attempted to enter the United States via maritime routes.¹⁰⁹ Of those 7,000, 6,107 were successfully interdicted, with the Coast Guard being responsible for 2,441 migrants interdicted. The year 2019 saw a 73 percent increase in detected migrants attempting to enter the United States via maritime routes. While most detected migrants were interdicted, the Coast Guard could not achieve its goal of interdicting 50 percent of detected migrants. The Coast Guard attributes this failure to the lack of assets and increased agreements with the countries being fled.¹¹⁰

¹⁰³ Margaret Jordan, "1994—Alien Interdiction: The Flow Becomes a Flood," *Coast Guard Aviation History* (blog), <https://cgaviationhistory.org/1994-alien-interdiction-the-flow-becomes-a-flood/>.

¹⁰⁴ Jordan.

¹⁰⁵ Jack Dorsey, "Coast Guard's Busiest Period: 9,697 Haitians Saved in 4 Days," *The Virginian Pilot*, July 9, 1994, <https://scholar.lib.vt.edu/VA-news/VA-Pilot/issues/1994/vp940709/07090186.htm>.

¹⁰⁶ Jordan, "1994—Alien Interdiction."

¹⁰⁷ Jordan.

¹⁰⁸ United States Coast Guard, *USCG APR 2017*, 11; United States Coast Guard, *USCG APR 2018*, 22; United States Coast Guard, *USCG APR 2019*, 32.

¹⁰⁹ United States Coast Guard, *USCG APR 2019*, 32.

¹¹⁰ United States Coast Guard, 31–33.

The number of migrants attempting to enter the United States each year through maritime means has seen large fluctuations over the past six years. The number peaked at 10,629 in 2014, while its lowest was 4,670 in 2017.¹¹¹ The flow of migrants depends heavily on foreign relations with the countries from which the individuals are attempting to emigrate. For example, the low number reported in 2017 is due to normalized relations between the United States and Cuba, which led to a 71 percent reduction in Cuban migrant flow.¹¹² It is difficult to say if the Coast Guard's maritime immigration interdictions serve as a deterrent for human traffickers due to the difficulty in prosecuting them successfully. As mentioned in a 2009 congressional hearing on the Coast Guard's drug and migrant interdiction efforts, Representative Howard Coble stated that to convict a human trafficker on felony charges, prosecutors must be able to prove that the smuggler has made a profit, forced migrants to attempt the voyage, or confirm a migrant was seriously injured during the journey.¹¹³ Without a significant deterrent beyond being returned to their native countries, human trafficking will likely continue to occur.

C. JOINT INTERAGENCY TASK FORCE SOUTH MISSION

While the Coast Guard is the lead agency for interdiction and apprehension of drug traffickers within the transit zone, JIATF South is the agency tasked with coordinating all detection and monitoring activities.¹¹⁴ All agencies with a role in maritime security come together under JIATF South to achieve it. JIATF South is a subordinate of U.S. Southern Command and led by a Rear Admiral of the U.S. Coast Guard. The agency comprises representatives from the DOD, CBP, Department of Justice, Department of State, ICE, DHS, and DEA. The Department of State negotiated a bilateral agreement with 43 foreign nations to aid in the coordination of detection, monitoring, and apprehension missions.

¹¹¹ United States Coast Guard, *Annual Performance Report Fiscal Year 2019* (Washington, DC: United States Coast Guard, 2019).

¹¹² United States Coast Guard, *USCG 2017 APR*.

¹¹³ H.R., *Overview of Coast Guard Drug and Migrant Interdiction*.

¹¹⁴ H.R., *Western Hemisphere Drug Interdictions*, vii.

Through this agreement, Central and South American countries station liaison officers at JIATF South for interoperability and cooperation.¹¹⁵

JIATF South describes the interdiction process as beginning with the collection of actionable intelligence.¹¹⁶ This intelligence is then used to reduce the patrol area of the operation unit and decrease response time. Next, an available maritime patrol aircraft from the DOD, Coast Guard, CBP, or allied nation is tasked with detecting and monitoring suspect vessels. Once the suspect vessel is detected, the vessel is handed off to a surface asset to complete interdiction and apprehension. Finally, the U.S. Justice Department is responsible for coordinating the disposition of the crew, contraband, and vessel with the flag state of the vessel for prosecution.¹¹⁷ JIATF South currently leads 14 countries in a counter-drug operation titled Operation Martillo (Hammer), which began in 2012 and has resulted in the seizure of 693 metric tons of cocaine, \$25 million in bulk cash, detainment of 581 vessels and aircraft, and the arrest of 1,863 detainees.¹¹⁸

D. DOD AND DHS INTEGRATION

As stated in the previous section, the JIATF South is responsible for combining the available assets from the DOD and DHS together to increase maritime security in the WHTZ.¹¹⁹ JIATF South is extremely capable of carrying out the level of coordination required to bring these agencies together, which has led to JIATF South being considered the “gold standard” in interagency organizations.¹²⁰ When the current JIATF South was established in 1999, although called JIATF East, by merging with JIATF East and South, the task force was able to create a better intelligence picture since JIATF South’s previous mission was to conduct counterdrug operations in the countries where the drugs originated

¹¹⁵ H.R., vii.

¹¹⁶ H.R., vii.

¹¹⁷ H.R., vii.

¹¹⁸ “Operation Martillo Still Hammering Away at Illicit Trafficking,” U.S. Southern Command, March 30, 2016, <https://www.southcom.mil/MEDIA/NEWS-ARTICLES/Article/985770/operation-martillo-still-hammering-away-at-illicit-trafficking/>.

¹¹⁹ H.R., *Western Hemisphere Drug Interdictions*, vii.

¹²⁰ Munsing and Lamb, *Joint Interagency Task Force-South*, 1.

and provide its intelligence to JIATF East for interdiction.¹²¹ Once the two organizations became one, relaying the information was not delayed, and the JIATF was capable of pre-positioning interdiction assets. Due to higher priority tasking of assets within the DOD, JIATF South experienced a 68 percent and 62 percent decline in flight hours and ship days, respectively, between 1992 and 1999.¹²² Thanks to the lack of assets, JIATF South recognized that it could no longer rely on defense in depth to detect smugglers and would instead need to rely on generating and disseminating quality intelligence. JIATF South reportedly changed its tactics from using many interdiction assets and 15 to 20 percent intelligence to relying on intelligence for over 80 percent of interdiction operations and using less interdiction assets.¹²³

JIATF South generates more actionable intelligence than it is able to act on as illustrated in Figure 1. In a 2019 hearing before the Subcommittee on Coast Guard and Maritime Transportation, the Coast Guard claimed that it is only capable of detecting and targeting 20 percent of all known drug movements and successfully interdicting six percent of those movements.¹²⁴ While many factors explain why JIATF South cannot meet the goals established in the national strategy, such as smugglers changing tactics, modes of transportation, and routes within the transit zone, SOUTHCOM and Coast Guard leadership have both cited insufficient inventory of vessels and aircraft as the largest factor.¹²⁵

¹²¹ Munsing and Lamb, 22.

¹²² Jess Ford, *Drug Control: U.S. Efforts in Latin America and the Caribbean*, GAO/NSIAD-00-90R (Washington, DC: Government Accountability Office, 2000), 8, <https://www.legistorm.com/showFile/L2xzX3Njb3JIL2dhby9w-%20ZGYvMjAwMC8y/fu30738.pdf>.

¹²³ Munsing and Lamb, *Joint Interagency Task Force-South*, 24.

¹²⁴ H.R., *Western Hemisphere Drug Interdictions*, 38.

¹²⁵ H.R., 4.

Fiscal year	Total maritime smuggling events	Targeted smuggling events ^b	Detected smuggling events	Seized or disrupted smuggling events ^a	Percentage of detected events handed-off to interdiction and apprehension resources (%) ^c	Department of Defense target (%)
2014	1,397	383	171	135	79	None
2015	2,218	526	246	192	78	90
2016	4,575	1,186	451	322	71	80
2017	4,251	1,071	410	309	75	80
2018	3,854	793	357	245	69	80

Figure 1. JIATF South Interdiction Continuum Measures.¹²⁶

The Coast Guard is the workhorse of JIATF South operations. In fiscal year 2018, the Coast Guard provided 17 percent of patrol aircraft, 74 percent of ships, and all LEDET support to JIATF South.¹²⁷ The Coast Guard acknowledges that it is the primary source of interdiction assets, but an aging fleet of cutters is making the mission difficult. The Coast Guard’s workhorse is its medium endurance cutter, many of which are over 50 years old. The Coast Guard uses the “Reliance,” “Famous,” and “Alex Haley” class of medium endurance cutters. The “Alex Haley” class consists of a single vessel built in 1979 and converted from a salvage ship to a cutter in 1997. From 1964 to 1997, 16 “Reliance” class cutters were built.¹²⁸ Between 1986 and 1987, 14 of these cutters underwent an overhaul, but budget cuts caused two vessels of the class to be decommissioned. In 2005, the Coast Guard began to put these ships through a mission effectiveness project. The project was intended to ensure these ships could continue to carry out their mission until replaced by the offshore patrol cutter and the project was completed in 2014. The “Famous” class of cutters has a similar history, although slightly younger when entering service in 1983 and

¹²⁶ Source: Government Accountability Office, *Drug Control: Certain DOD and DHS Joint Task Forces Should Enhance Their Performance Measures to Better Assess Counterdrug Activities*, GAO-19-441 (Washington, DC: Government Accountability Office, 2019), 20, <https://www.gao.gov/assets/710/700187.pdf>.

¹²⁷ H.R., *Western Hemisphere Drug Interdictions*, 9.

¹²⁸ “Reliance Class Cutter,” Military.com Network, accessed January 25, 2021, <https://www.military.com/equipment/reliance-class-cutter>.

going through the same mission effectiveness project as the “Reliance” class cutters to extend their life cycle until replaced by the offshore patrol cutter.¹²⁹

The Coast Guard is currently recapitalizing its fleet, and it is actively building national security cutters, offshore patrol cutters, and fast response patrol cutters.¹³⁰ The national security cutter is the most capable platform; the first ship was commissioned in 2008, and since then, eight national security cutters have been completed, and three more are currently under construction.¹³¹ The Coast Guard is in the process of procuring 25 offshore patrol cutters, 58 Fast response cutters, and at least 11 National Security Cutters. While these numbers sound significant, these vessels are being procured to replace a total of 90 high-endurance, medium-endurance, and patrol craft. The Coast Guard’s studies have found that the vessels in procurement will only equate to 61 percent of the cutters needed to accomplish the Coast Guard’s missions.¹³²

Completion of the JIATF South mission is heavily reliant on the upgraded technology onboard the “National Security Cutters.” The Coast Guard analyzed 18 months of interdictions and attributed the increased level of success to its ability to conduct organic intelligence using tactical cryptology afloat.¹³³ Tactical cryptology afloat allows a vessel to detect and obtain a fix based on electromagnetic emitters on specific signals of interest that can be attributed to suspect ships.¹³⁴ The tactical cryptology afloat is a capability installed on most U.S. Navy vessels and demonstrates another area where the Navy can possibly provide additional assets to close the gap that the Coast Guard has identified.

¹²⁹ “The Cutters, Boats, and Aircraft of the U.S. Coast Guard,” United States Coast Guard, 2015, https://www.uscg.mil/Portals/0/documents/CG_Cutters-Boats-Aircraft_2015-2016_edition.pdf?ver=2018-06-14-092150-230.

¹³⁰ Ronald O’Rourke, *Coast Guard Cutter Procurement: Background and Issues for Congress*, CRS Report No. R42567 (Washington, DC: Congressional Research Service, 2020), 56, <https://crsreports.congress.gov/product/pdf/R/R42567/132>.

¹³¹ O’Rourke.

¹³² O’Rourke, 23.

¹³³ United States Coast Guard, *USCG 2019 APR*.

¹³⁴ PMW-120, *Information Operations: Capabilities* (Washington, DC: PMW-120, 2017), https://www.public.navy.mil/navwar/PEOC4IandSpace/Documents/TearSheets/PMW120_IOTearsheet_DistA.pdf.

E. CONCLUSION

This chapter illustrates that JIATF South is performing to the best of its abilities to bring agencies together in achieving maritime border security and efficiently managing each agency's resources. While JIATF South continues to demonstrate why it is a prime example of how an interagency task force should operate, it still requires additional assets to improve maritime border security and increase its impact on the flow of illegal drugs to the United States. By leveraging the assets and capabilities within the U.S. Navy to supplement Coast Guard assets in the homeland security mission set, more maritime patrol aircraft and surface assets need to be made available for tasking. Additionally, leveraging new technology in unmanned systems JIATF South could detect suspect vessels earlier, track longer, and further narrow down the necessary patrol areas for surface assets.

III. UNMANNED SURFACE VEHICLES

The U.S. Navy is currently pursuing a variety of USVs as a force multiplier to counter the overall rapid build-up of China's People's Liberation Army Navy (PLAN).¹³⁵ Providing this technology to JIATF South for use in the WHTZ would increase the assets available, which the SOUTHCOM Commander and Coast Guard Deputy Commander for Operations have stated are necessary to increase detection and interdiction.¹³⁶ The Navy has begun the process of procuring two unmanned vehicles: the Large Unmanned Surface Vehicle (LUSV) and the Medium Unmanned Surface Vehicle (MUSV). In addition to these large unmanned vehicles, the Navy is also pursuing smaller USVs and undersea vehicles, as well as various unmanned aerial vehicles.¹³⁷

This chapter discusses USVs under development by the Navy, particularly the large and medium unmanned vehicles. Also discussed are the current plans for integrating unmanned technology into the fleet and the challenges associated with USVs.

A. UNMANNED SURFACE VEHICLES IN DEVELOPMENT

The Navy is investing in the research and development of unmanned vehicles while pursuing a more distributed fleet architecture.¹³⁸ The new fleet architecture paves the way for exceeding the previous 355-ship goal by reducing the portion of the fleet currently dominated by larger ships, such as aircraft carriers, cruisers, destroyers, and amphibious ships, and increasing the number of smaller ships like frigates and corvettes.¹³⁹ Creating this fleet architecture allows the Navy to go beyond the previous goal of a 355-ship Navy.

¹³⁵ Ronald O'Rourke, *Navy Large Unmanned Surface and Undersea Vehicles: Background and Issues for Congress, Version 30*, CRS Report No. R45757 (Washington, DC: Congressional Research Service, 2020), 1, <https://crsreports.congress.gov/product/pdf/R/R45757>.

¹³⁶ H.R., *Western Hemisphere Drug Interdictions*.

¹³⁷ O'Rourke, *Navy Large Unmanned Surface and Undersea Vehicles, Version 30*, 1.

¹³⁸ O'Rourke.

¹³⁹ O'Rourke, 2–3.

Unmanned or optionally manned vessels represent a new tier of surface vessels to achieve the distributed fleet architecture.¹⁴⁰

Navy and DOD leaders have determined that the distributed fleet architecture is operationally necessary, technically feasible, and affordable.¹⁴¹ Navy expert Ronald O'Rourke writes, "Navy and Marine Corps officials have suggested that shifting to a more distributed force architecture will support the implementation of the Navy and Marine Corps new overarching operational concept, called distributed maritime operations and a supporting Marine Corps' concept of expeditionary advanced base operations."¹⁴² The concept of distributed maritime operations, while a newer term, is not a new concept and is an expansion of the network centric warfare concept. The primary role of network centric warfare was to "provide increased combat power by networking sensors, decision makers, and shooters to achieve shared awareness."¹⁴³ The development of network centric warfare is enabling the Navy to pursue unmanned vehicles for fleet operations.

The distributed maritime operations idea began during the Cold War with the realization of significant anti-ship cruise missile (ASCM) capabilities.¹⁴⁴ In countering the ASCM threat, the Navy made a shift from guns to missiles and developed the first tactical data links. These data links allowed each connected unit to share its radar picture and build a greater level of awareness than was previously accomplished via radio communication. The Navy and DOD has continued to improve tactical data links to the point that ships and aircraft can now share raw sensor data to allow any platform to perform targeting and weapon engagement based on another platforms combat system.¹⁴⁵

¹⁴⁰ Megan Eckstein, "Esper: Unmanned Vessels Will Allow the Navy to Reach 355-Ship Fleet," USNI News, September 18, 2020, <https://news.usni.org/2020/09/18/esper-unmanned-vessels-will-allow-the-navy-to-reach-355-ship-fleet>.

¹⁴¹ O'Rourke, *Navy Large Unmanned Surface and Undersea Vehicles, Version 30*, 4–5.

¹⁴² O'Rourke.

¹⁴³ Director, Force Transformation Office, Office of the Secretary of Defense, *Network Centric Warfare: Creating a Decisive Warfighting Advantage* (Washington, DC: Department of Defense, 2003).

¹⁴⁴ Kevin Eyer and Steve McJessy, "Operationalizing Distributed Maritime Operations," Center for International Maritime Security, March 5, 2019, <http://cimsec.org/operationalizing-distributed-maritime-operations/39831>.

¹⁴⁵ Eyer and McJessy.

The distributed maritime operations term first appeared in *A Design for Maintaining Maritime Superiority* published in 2018 by then Chief of Naval Operations Admiral John Richardson. Admiral Richardson’s design focused on four lines of effort, two of which focus on distributed maritime operations.¹⁴⁶ The first of the two lines of effort, “strengthen naval power at and from the sea,” tasks the Navy with continuing the distributed maritime operations concept and its key supporting concepts so that its effectiveness can be analyzed during large-scale exercises.¹⁴⁷ The second line of effort then tasks the fleet with building an operational architecture that will include “a tactical grid to connect distributed nodes, data storage, processing power, and technology stacks at the nodes, an overarching data strategy, and analytic tools such as artificial intelligence/machine learning, and services that support fast, sound decisions.”¹⁴⁸

Figure 2 illustrates what the surface force architecture may look like once USVs become available. Currently, the LSC makes up the majority of the fleet, with a ratio of two to every one SSC.¹⁴⁹ With the fleet design restructured, LSCs would become the minority of vessels while MUSVs would be the majority. The illustration shows unmanned vessels carrying sensors and payloads, which could be weapons. This distribution, along with improvements in network centric warfare, can allow the large and small surface combatants, responsible for command and control, to remain outside of an enemy’s engagement range, which thus protects the Navy’s largest investment of ships and personnel.¹⁵⁰ This structure of distributed fleet architecture and distributed maritime operations could allow the United States to win a war of attrition in a complex naval war.

¹⁴⁶ Chief of Naval Operations, *A Design for Maintaining Maritime Superiority: Version 2.0* (Washington, DC: Chief of Naval Operations, 2018), 8, https://media.defense.gov/2020/May/18/2002301999/-1/-1/1/DESIGN_2.0.PDF.

¹⁴⁷ Chief of Naval Operations, 8.

¹⁴⁸ Chief of Naval Operations, 10.

¹⁴⁹ Ronald O’Rourke, *Navy Large Unmanned Surface and Undersea Vehicles: Background and Issues for Congress, Version 4*, CRS Report No. R45757 (Washington, DC: Congressional Research Service, 2019), 5, <https://crsreports.congress.gov/product/pdf/R/R45757/4>.

¹⁵⁰ O’Rourke, 5.

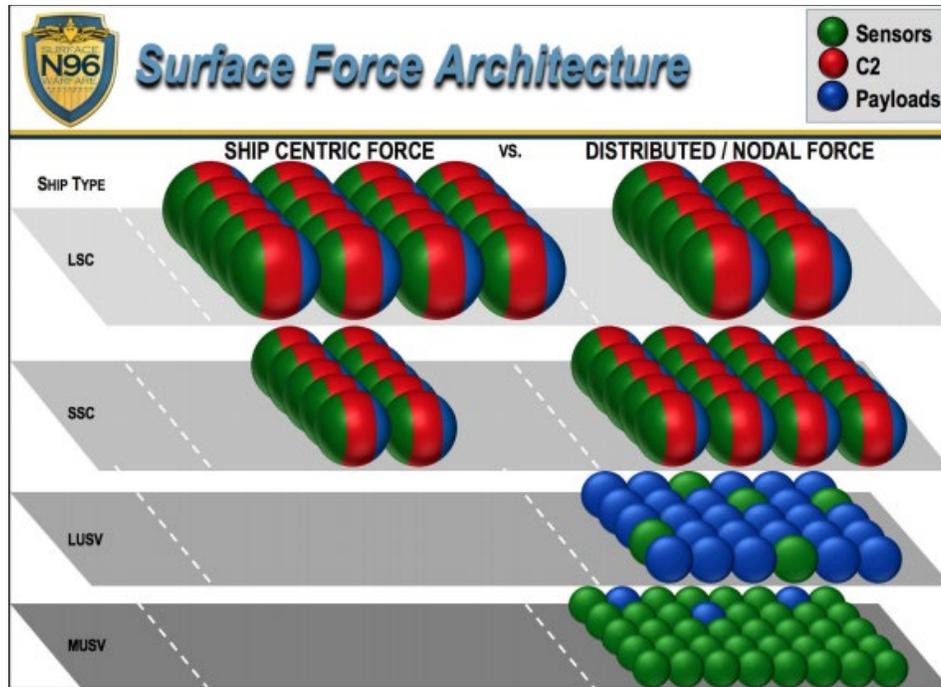


Figure 2. Proposed Surface Force Architecture.¹⁵¹

1. Large Unmanned Surface Vehicle

In 2017, the Navy began developing USVs under the Overlord program led by the Pentagon’s Strategic Capabilities Office. The office’s purpose is to find new capabilities that can be added to existing systems and weapons within the DOD.¹⁵² The intention of the Overlord Program was to convert existing vessels USVs over a three-year period before moving forward with a program to procure unmanned vessels of 200–300 foot length and a displacement of 1,000 to 2,000 tons.¹⁵³ This conversion was to be achieved over a three-year timeline that would ultimately result in a vehicle capable of sustaining a 90-day

¹⁵¹ Source: Rourke, 5.

¹⁵² David Larter, “A Classified Pentagon Maritime Drone Program Is about to Get Its Moment in the Sun,” Defense News, March 14, 2019, <https://www.defensenews.com/naval/2019/03/14/a-classified-pentagon-maritime-drone-program-is-about-to-get-its-moment-in-the-sun/>.

¹⁵³ Office of the Secretary of Defense and Unmanned Maritime Systems, *Overlord Program: Phase I Demonstration Plan Unmanned Surface Vehicle (USV)* (Washington, DC: Office of the Secretary of Defense and Unmanned Maritime Systems, n.d.), 6, accessed January 30, 2021, https://www.defensedaily.com/wp-content/uploads/post_attachment/177279.pdf; O’Rourke, *Navy Large Unmanned Surface and Undersea Vehicles, Version 30*, 7.

autonomous underway period with payloads for Electronic Warfare, Anti-Surface Warfare, and Strike Warfare.¹⁵⁴ The plan is broken up into two phases. Phase one is a 12-month period with an end goal of a USV capable of autonomous navigation and mission execution. The final demonstration of phase one called for the vessel to complete eight demonstrations, such as navigating in open ocean, obstacle detection, navigating in low and high contact density environments, and in navigating in higher sea states in accordance with International Regulations for Preventing Collisions at Sea.¹⁵⁵

Phase one of this program was completed in September 2019 with phase two beginning in October of the same year. Phase two is using the same ships from phase one, but introduces more government furnished equipment to prove integration of command and control systems.¹⁵⁶ With a basic concept of the LUSV proven, the Navy is using additional money to procure another two prototypes in 2021 and then one more prototype in 2022. In 2023, the Navy will shift the LUSV to its own program of record and utilize the shipbuilding budget to procure a total of seven LUSVs through 2025.¹⁵⁷

Navy leadership feels it is essential to get the capabilities of the LUSV to the fleet as soon as possible; this urgency is driving their accelerated procurement strategy. The Navy's budget director, Rear Admiral Randy Crites said the Navy needs to determine details of command and control and the concept of operations quickly to get the test platforms online and determine how they work.¹⁵⁸ The LUSV development and implementation are the beginning of a paradigm shift within the Navy considering fleet assets. Director of Surface Warfare, Rear Admiral Ronald Boxall, has stated, "it is a shift in mindset that says instead of putting as much stuff on the ship for as much money as I have...you start saying: 'How small can my platform be to get everything I need to be on

¹⁵⁴ Office of the Secretary of Defense and Unmanned Maritime Systems, *Overlord Program*, 5.

¹⁵⁵ Office of the Secretary of Defense and Unmanned Maritime Systems, 21–23.

¹⁵⁶ Martin Manaranche, "Ghost Fleet Overlord Test Vessels Continue to Accelerate U.S. Navy's USV Programs," Naval News, June 6, 2020, <https://www.navalnews.com/naval-news/2020/06/ghost-fleet-overlord-test-vessels-continue-to-accelerate-u-s-navys-usv-programs/>.

¹⁵⁷ O'Rourke, *Navy Large Unmanned Surface and Undersea Vehicles, Version 30*.

¹⁵⁸ Larter, "A Classified Pentagon Maritime Drone Program Is about to Get Its Moment in the Sun."

it.”¹⁵⁹ This statement is in reference to the distributed fleet architecture that the Navy is now pursuing that illustrates capabilities in favor of a large number of small-specialized vessels.

2. Medium Unmanned Surface Vehicle

The MUSV is intended to be very similar in capabilities to the LUSV with the exception that it is being developed to serve as an ISR and electronic warfare platform. The target size of the MUSV is 45- to 150-foot long and approximately 500 tons.¹⁶⁰ The MUSV program is building on the work that Defense Advanced Research Projects Agency (DARPA) has already completed in designing and employing a capable MUSV design. DARPA built the prototype Sea Hunter, a 132-foot 140-ton vessel designed to conduct anti-submarine warfare missions by autonomously detecting and continuously trailing the suspected submarine; hence, the project name ASW Continuous Trail Unmanned Vessel (ACTUV).¹⁶¹

While the LUSV is being built to carry out multiple missions, the MUSV program is centered on offering a platform for various sensors. Following DARPA’s success, the Navy awarded a \$35-million contract to L3 Technologies for the development of an MUSV prototype with the option of purchasing up to eight follow-on vessels.¹⁶² The requirements for the prototype call for a “vessel that will function as a sensor and communications relay...able to carry a payload equivalent to a 40-foot shipping container, will operate on its own for at least 60 days before needing to return to port, and capable of refueling at sea.”¹⁶³ The Navy wants MUSVs to be low-cost, high-endurance, and reconfigurable so

¹⁵⁹ Larter.

¹⁶⁰ O’Rourke, *Navy Large Unmanned Surface and Undersea Vehicles, Version 30*, 13.

¹⁶¹ “ACTUV ‘Sea Hunter’ Prototype Transitions to Office of Naval Research for Further Development,” Defense Advanced Research Projects Agency, January 30, 2018, <https://www.darpa.mil/news-events/2018-01-30a>.

¹⁶² Megan Eckstein, “Top Stories 2020: U.S. Navy Acquisition,” USNI News, December 25, 2020, <https://news.usni.org/2020/12/25/top-stories-2020-u-s-navy-acquisition>.

¹⁶³ Sam LaGrone, “Navy to Contract New Class of Unmanned Surface Vehicle by Year’s End,” USNI News, March 6, 2019, <https://news.usni.org/2019/03/06/navy-contract-new-class-unmanned-surface-vehicle-years-end>.

that they can accept various payloads. These tenets will allow commanders to use these platforms aggressively and accept greater risk in their employment. Since they are low cost and unmanned, commanders are able to view them as expendable in carrying out higher risk missions.

3. Current USV Integration Efforts

In May 2019, the Navy created Surface Development Squadron One (SURFDEVRON). The squadron was established by repurposing the previous Zumwalt Squadron that was tasked with manning, training, and equipping the Zumwalt class destroyers as they were delivered to the Navy. The new squadron's mission is to test and experiment with new technology, namely weapons systems and unmanned vessels to determine the best way they can be integrated into the Fleet.¹⁶⁴ The new squadron will build up in three phases. The first phase consisted of the name and mission change. In phase two, FYs 2020 through 2023, the squadron will receive its third Zumwalt destroyer and the two Sea Hunter prototype USVs. In phase three, as the Navy begins to accept delivery of LUSVs and MUSVs, the squadron will be ready to integrate the unmanned vessels fully into exercises and deployments.¹⁶⁵

In 2021, the Navy plans to begin integrating the Sea Hunter prototypes into multiple fleet exercises. By the end of the year, SURFDEVRON should receive its second Sea Hunter prototype and both Overlord LUSV prototypes. In the fleet exercises, the command and control systems will be tested while they perform as part of surface action groups and begin to train sailors on the platforms.¹⁶⁶ Both the Overlord and Sea Hunter vessels have each completed autonomous multi-day transits previously, Sea Hunter from California to Hawaii and back, and Overlord from Alabama to the West Coast through the Panama

¹⁶⁴ Megan Eckstein, "Navy Stands up Surface Development Squadron for DDG-1000, Unmanned Experimentation," USNI News, May 22, 2019, <https://news.usni.org/2019/05/22/navy-stands-up-surface-development-squadron-for-ddg-1000-unmanned-experimentation>.

¹⁶⁵ Eckstein.

¹⁶⁶ Mallory Shelbourne, "Navy to Use Sea Hunter in Fleet Exercises as Unmanned Systems Experimentation Continues," USNI News, September 30, 2020, <https://news.usni.org/2020/09/30/navy-to-use-sea-hunter-in-fleet-exercises-as-unmanned-systems-experimentation-continues>.

Canal.¹⁶⁷ After the Overlord vessel completed its transit, it then spent 130 hours autonomously operating and participating in Exercise Dawn Blitz, which marked the first time an unmanned vessel integrated with Navy and Marine Corps forces. The vessel successfully avoided collisions, maintained its assigned station, and completed loiter and transit missions.¹⁶⁸ The goals for 2021 are to extend the length of transits to 30 days while incorporating additional testing into payloads and command and control.

B. CHALLENGES FACING UNMANNED SURFACE VEHICLES

While the Navy has been successful in USV testing to date, many challenges still lie ahead of the program. The first challenge is convincing Congress to adopt the Navy's accelerated acquisition strategy. In the Navy's FY 2020 budget review, Congress cited its concerns regarding the accelerated strategy for procurement of the LUSV, specifically concerning the request for procurement of two additional LUSV prototypes on top of the two previously procured by the Strategic Capabilities Office (SCO).¹⁶⁹ The Senate Armed Services Committee understood that the two LUSVs previously procured were still sufficient in completing testing under the SCO and stated concerns regarding the request for two more prototypes before fully evaluating the existing vessels and applying lessons learned. The committee concluded that further procurement of LUSVs should only occur after requirements are further defined and the results of SCO testing are incorporated into future designs based on the likelihood of the program exceeding the Major Defense Acquisition Program cost threshold. Ultimately, the Senate recommended reducing the proposed \$507 million down to \$134.5 million.¹⁷⁰ Later in the report, the committee again stated its concerns for acquisition of both the LUSV and MUSV and feared that the

¹⁶⁷ C. Todd Lopez, "DOD's Autonomous Vessel Sails through Transit Test, Participates in Exercise Dawn Blitz," Department of Defense, January 13, 2021, <https://www.defense.gov/Explore/News/Article/Article/2471165/dods-autonomous-vessel-sails-through-transit-test-participates-in-exercise-dawn/>; Megan Eckstein, "Sea Hunter Unmanned Ship Continues Autonomy Testing as NAVSEA Moves Forward with Draft RFP," USNI News, April 29, 2019, <https://news.usni.org/2019/04/29/sea-hunter-unmanned-ship-continues-autonomy-testing-as-navsea-moves-forward-with-draft-rfp>.

¹⁶⁸ Lopez.

¹⁶⁹ National Defense Authorization Act for Fiscal Year 2020, S. 1790 § (2019), 80, <https://www.congress.gov/116/crpt/srpt48/CRPT-116srpt48.pdf>.

¹⁷⁰ National Defense Authorization Act for Fiscal Year 2020, 80.

proposed plans could lead to receiving too many USVs before determining if the USV met operational needs. The committee then directed the Navy to submit acquisition roadmaps for both the LUSV and MUSV directed at addressing the specific concerns.

The second major issue in developing USVs is the lack of a coherent concept of operations (CONOPS). No overarching doctrine or naval instruction exists concerning the use of USVs and the manner in which they will operate with manned ships. As mentioned, the Navy did move forward with establishing SURFDEVRON ONE to provide a consolidated organization tasked with testing and experimentation to determine the best CONOPS. However, the Navy is continuing to award contracts for vessels and prototypes before the CONOPS are established.¹⁷¹ An October 2020 press release identified that SURFDEVRON ONE was still working on completing the CONOPS requested in January. The CONOPS are written in two parts, with the first covering how the Navy plans to “man, train, and equip” the USVs while the second discusses how the vessels will be employed.¹⁷² However, it does not address if it is likely that the current USV contracts will meet the standards required in the CONOPS being drafted.

The next concern regards the Navy’s planned distributed fleet architecture. While not a secret that the Chinese PLAN is rapidly growing, which led to the adopted concept, the Navy has not conducted any clear studies or analyses to determine that this approach is indeed the best one.¹⁷³ No plan currently exists as to how USVs will be supported overseas or while on a mission. The Navy spends a significant effort ensuring its ships are prepared for deployment and planning to support those ships for the duration of the mission, if that means port visits for supplies or underway replenishment. While the design specifications call for USVs to be capable of at sea refueling, critical questions still remain as to how that refueling will be performed. Captain Pete Small, the Navy’s unmanned maritime systems

¹⁷¹ O’Rourke, *Navy Large Unmanned Surface and Undersea Vehicles, Version 30*, 20.

¹⁷² Aidan Quigley, “Navy Finishing USV Conops ‘in Next Few Months,’” *Inside the Pentagon’s Inside the Navy* 33, no. 44 (November 2, 2020), ProQuest.

¹⁷³ Mike Yeo, “No Slowdown for China’s Navy Aspirations,” *Defense News*, January 23, 2018, <https://www.defensenews.com/naval/2018/01/23/no-slowdown-for-chinas-navy-aspirations/>.

program manager, is keenly aware of these issues.¹⁷⁴ Captain Small said in an interview that the missions USVs were expected to participate in would take place far from the shores of the United States, and it is not yet clear how the Navy intends to get the LUSV and MUSV on station. He notes that requirements and specifications need to be determined to identify if the LUSVs and MUSVs will be capable of feasibly completing a long open ocean transit; or if they will need to be heavy lifted into position. If so, the necessary vessels for transit need to be identified.¹⁷⁵

The final main concern regarding USVs is planning for miscalculation or escalation at sea, as well as preventing capture. Events regarding unmanned systems in 2019 proved that they could be easy targets after Iran shot down a U.S. Navy RQ-4A Global Hawk, which Iran stated violated Iranian airspace near the Strait of Hormuz.¹⁷⁶ While the first time Iranian forces deliberately targeted a U.S. asset, it was not the first altercation between the United States and Iran concerning sovereignty. In January 2016, two U.S. Navy riverine command boats transited through Iranian territorial waters. While near Farsi Island and within Iranian territorial waters, one of the vessels suffered an engineering casualty that required it to stop. By the time the crew was able to repair their vessel, the Iranian Revolutionary Guard Corps—Navy (IRGCN) had approached the vessels and ultimately captured both vessels and crews.¹⁷⁷

Evan Karlik hypothesizes that unmanned systems are perceived as relatively expendable and increase the danger of escalation by lowering the threshold for military action.¹⁷⁸ Karlik goes on to claim that if an adversary were to sink a U.S. destroyer, a declaration of war would certainly follow, while if an unmanned system or satellite were

¹⁷⁴ David Larter, “U.S. Navy Embraces Robot Ships, but Some Unresolved Issues Are Holding Them Back,” *Defense News*, June 1, 2020, <https://www.defensenews.com/naval/2020/06/01/us-navy-embraces-robot-ships-but-some-unresolved-issues-are-holding-them-back/>.

¹⁷⁵ Larter.

¹⁷⁶ Karimi and Gambrell, “Iran Shoots Down U.S. Surveillance Drone, Heightening Tensions.”

¹⁷⁷ Commander Destroyer Squadron 50, *Report of the Investigation to Inquire into Incident in the Vicinity of Farsi Island Involving Two Riverine Command Boats (RCB 802 and RCB 805) on or about 12 January 2016* (Washington, DC: Department of the Navy, 2016), <https://www.hsdl.org/?abstract&did=793951>.

¹⁷⁸ Karlik, “U.S.-China Tensions.”

deliberately destroyed, the United States would not immediately escalate. The incidents described in the Strait of Hormuz support Karlik's hypothesis. When the unmanned aerial vehicle was destroyed, no immediate escalation resulted, and since the riverine crews were captured but ultimately released without harm, no further escalation occurred. The IRGCN was likely deterred from escalating the situation due to the presence of U.S. military personnel. However, if the IRGCN had encountered a USV, the situation may have turned out very differently. Unmanned systems operating significant distances from support vessels and near other nations' territorial waters could lead to similar scenarios due to engine casualties, and if support personnel were unable to intervene before an adversary, the technology that permits their operation and effectiveness could be compromised.¹⁷⁹

C. CONCLUSION

The research and development that has been accomplished on the LUSV and MUSV directly relates to the capabilities needed to bolster success in the WHTZ. These vessels have demonstrated the capability to carry the sensors necessary, as well as operate autonomously. The Navy has yet to decide how these vessels will be employed and the CONOPS is still in development, but employing these vessels in the transit zone may provide JIATF South with the assets it requires and allow the Navy to identify additional issues embedded in the platforms.

¹⁷⁹ Karlik.

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IV. CONCLUSION AND RECOMMENDATIONS

This thesis examined how the U.S. Coast Guard, U.S. Navy, and JIATF South work together to accomplish the maritime border security mission. The increased border security measures the Trump administration implemented along the United States' land border with Mexico advanced the likelihood of increased maritime smuggling events to circumvent the "border wall."¹⁸⁰ This thesis began by examining the five major threats to the United States' maritime security identified in *The National Strategy for Maritime Security*: nation-state threats, terrorist threats, transnational criminal and piracy threats, environmental destruction, and illegal seaborne immigration, and explained how the Navy and Coast Guard operate to counter these threats.¹⁸¹

The U.S. Navy is focused on operations that increase maritime security abroad while focusing on nation-state threats. While the Navy's actions and deployments will also combat the remaining threats, they are not typically pursued as primary missions. The Navy uses various levels of cooperative and coercive naval diplomacy to achieve its goals. It heavily relies on its presence near perceived threats to act as a deterrent toward taking actions the United States views as unfavorable.¹⁸²

The U.S. Coast Guard focuses on each of the remaining maritime security threats. The Coast Guard is designated as the lead agency for interdicting maritime drug traffickers and is the primary source of interdiction assets within the JIATF South's area of responsibility.¹⁸³ The Coast Guard struggles to keep up with the required operational tempo for its aging fleet and is in desperate need of an increased budget to procure new ships and maintain its existing fleet.¹⁸⁴

¹⁸⁰ Fontana, "The United States Border Wall," 58.

¹⁸¹ Department of Defense, *The National Strategy for Maritime Security*.

¹⁸² Vego, "Naval Support of Foreign Diplomacy," 4; Masters, "Sea Power."

¹⁸³ H.R., *Western Hemisphere Drug Interdictions*.

¹⁸⁴ O'Rourke, *Coast Guard Cutter Procurement*, 56.

JIATF South is designated as the lead agency for coordinating all detection and monitoring activities within the WHTZ.¹⁸⁵ JIATF South leverages its intelligence capabilities and partnerships with foreign nations to detect, monitor, and interdict vessels suspected of smuggling narcotics.¹⁸⁶ JIATF South has proven it is a competent agency with regard to maximizing the use of assets available for maritime border security missions as it has transitioned from relying on defense in depth of interdiction assets to relying on intelligence reports to allow repositioning of an interdiction asset.¹⁸⁷

A. FINDINGS

This thesis identified weaknesses in the cooperation and interoperability between the United States' Coast Guard and Navy. However, the research results determined that JIATF South is the agency tasked with amassing resources not just from the Coast Guard and Navy, but also from all agencies with a role in counter-narcotics operations to detect and interdict narcotics smugglers. Furthermore, the research determined that JIATF South continued to be effective in interdicting narcotics bound for the United States even when facing the problem of limited interdiction assets.

The issue that needs to be addressed to increase maritime border security is not how these agencies can improve interoperability and cooperation, but what assets, resources, and capabilities does JIATF South need to interdict all the smuggling events of which it is aware? This thesis explored a solution based on the U.S. Navy's pursuit of USVs to provide a large number of assets while reducing operating and procurement costs.

B. RECOMMENDATIONS

The primary method for improving JIATF South's operational effectiveness is to increase the number of assets it has available for detection, monitoring, and interdiction. USVs represent the most cost-effective method to improve this effectiveness, as long as the USVs developed possess a few standard capabilities. These capabilities are a surface

¹⁸⁵ H.R., *Western Hemisphere Drug Interdictions*.

¹⁸⁶ U.S. Southern Command, "Operation Martillo."

¹⁸⁷ Munsing and Lamb, *Joint Interagency Task Force-South*, 23–24.

search radar, the ability to continuously track and maintain a specified distance from a target, and the ability to relay its own position and the positional data of the target it is tracking.

The surface search radar capability is the most important of the required capabilities. With this capability, USVs can detect suspect smuggling vessels. The challenge with employing a surface search radar on platforms of the intended size of the LUSV and MUSV is that the height of the radar will be limited, which will result in a relatively small radar range. The MUSV has completed a test involving the Towed Airborne Lift of Naval Systems (TALONS), which permits the MUSV to carry a 150-pound payload of intelligence, surveillance, reconnaissance, and communications equipment to an altitude of 1,000 feet. During the test, the MUSV increased its surface search radar effective range by 500 percent, and the range of the attached radio tripled.¹⁸⁸

While participating in Exercise Dawn Blitz, the LUSV prototype has demonstrated the ability to autonomously maintain station and safely navigate.¹⁸⁹ A vessel's ability to maintain a designated station in relation to another vessel will be necessary for assisting JIATF South with its mission since these unmanned vessels will not have the capability to conduct complete interdiction operations. The USV's role in maritime security is to detect suspect vessels and maintain contact so that the interdiction team can intercept and complete the mission. USVs are not suitable as interdiction assets themselves since they have no ability to force a vessel to comply or carry out a boarding and inspection.

Finally, these vessels will need to be capable of sending and receiving data regarding target vessels. The Navy, Coast Guard, and many partner nations can share near-real-time data using various tactical data links. This capability will be necessary so that an USV can receive information regarding the location, course, and speed of a suspect vessel and maneuver to perform the intercept. Once the USV has detected the suspect vessel, the vessel's actual location, course, and speed can be broadcasted to JIATF South headquarters

¹⁸⁸ "ACTUV Unmanned Vessel Helps TALONS Take Flight in Successful Joint Test," Defense Advanced Research Projects Agency, October 24, 2016, <https://www.darpa.mil/news-events/2016-10-24>.

¹⁸⁹ Lopez, "DOD's Autonomous Vessel"; Eckstein, "Sea Hunter."

and all other assets in the operating area so that interdiction teams can prepare for completing the interdiction. This method would also allow JIATF South to determine if a suspect vessel might be within a partner nation's territorial waters before the interdiction team could stop the vessel. This way, JIATF South can begin coordinating with applicable law enforcement agencies to intercept suspected smugglers on their shores.

USVs should continue to be developed and funded via the Navy and SURFDEVRON ONE. Once SURFDEVRON ONE can determine the equipment, personnel, procedures, and policies regarding the employment of USVs, the squadron should establish a detachment of trained sailors and available USVs at JIATF South headquarters. By establishing a detachment within the JIATF South area of responsibility, USVs and the personnel necessary to operate and maintain them can be under the operational control of JIATF South. By operating in this environment, SURFDEVRON ONE can utilize USVs in real world scenarios to identify weaknesses and any maintenance issues that may arise. During this time, JIATF South can also assess the capabilities of USVs and determine how many would be necessary to detect the maximum number of suspected smuggling vessels. Once this number is determined, and USVs continue to be manufactured and delivered to the Navy, a permanent unit should be established within JIATF South for operating and maintaining the USVs.

USVs should continue to be a Navy asset, with the understanding that JIATF South will require the number necessary to accomplish their mission, and those vessels will not be available for other naval tasking. Thus, the Coast Guard will not become responsible for procuring their own USVs since the Coast Guard's budget is approximately six percent of the Navy's budget for fiscal year 2021.¹⁹⁰ The Navy already has the contracts in place for manufacturing the USVs, and the acquisitions process has already begun for both the MUSV and LUSV.¹⁹¹

¹⁹⁰ Deputy Assistant to the Secretary of the Navy, *Highlights of the Department of the Navy FY 2021 Budget* (Washington, DC: U.S. Navy, 2020), https://www.secnav.navy.mil/fmc/fmb/Documents/21pres/Highlights_book.pdf; "USCG Fact Sheet: Fiscal Year 2021 President's Budget," United States Coast Guard, February 10, 2020, https://www.uscg.mil/Portals/0/documents/budget/FY2021_Fact_Sheet.pdf?ver=2020-02-18-102402-127×tamp=1582039471374.

¹⁹¹ O'Rourke, *Navy Large Unmanned Surface and Undersea Vehicles, Version 30*, 1.

Operating USVs in the JIATF South area of responsibility provides unique situations, such as testing the vessel's seaworthiness in rough seas, as the region is impacted by several tropical storms and hurricanes each year. It is also a relatively safe environment free from adversaries in which further testing with other naval vessels and platforms can be conducted.

C. OPPORTUNITIES FOR FURTHER RESEARCH

While it is unlikely that the United States will ever achieve the ability to stop all narcotics traffickers, technological advancements should allow the United States and its partners to gain greater awareness of the problem at hand. Further research is needed to determine the impact these technologies, such as artificial intelligence and machine learning, may have on the maritime border security mission, specifically toward targeting suspect smuggling vessels. Is it possible that artificial intelligence will be used to analyze data based on where target vessels are first detected and their direction and speed to determine their point of origin? If achievable, it may be possible to determine a DTO's "pattern of life" that the United States and allied nations can possibly use to their advantage. As artificial intelligence and machine learning improve, further research can enable JIATF South to operate an extensive network of autonomous surface vehicles. This network could enable USVs to receive intelligence and automatically position themselves in the best position to detect and track target vessels. With these questions answered, JIATF South could become an incredibly lean and effective force that can make numerous assets from all involved agencies available for different tasking.

In addition to determining how new technologies may possibly improve JIATF South's performance, it is also necessary to determine new metrics for measuring success. Currently, the U.S. Coast Guard and JIATF South base their performance on the amount of cocaine and other narcotics interdicted, versus the total estimated amount transported for a given year. These numbers are often impressive, but also vary wildly from year to year. As Munsing and Lamb note, determining the damage done to DTOs is a better

measure of success.¹⁹² Suppose U.S. agencies could determine how these organizations are affected financially by the seizure of smuggling vessels and narcotics. Such an understanding could allow for increased targeting of the DTO's overall organization.

D. CONCLUSION

Due to the metrics JIATF South uses to measure success and its ability to interdict 10 percent or less of all known smuggling events in a given year, it is difficult to determine if JIATF South's actions have any lasting effect on DTOs and TCOs. The United States' Coast Guard and Navy currently cooperate and provide available resources to JIATF South, but it is simply not enough to make significant progress in drug interdictions. JIATF South needs the tools necessary to detect and interdict additional smuggling events, and USVs may be one of these tools.

¹⁹² Munsing and Lamb, *Joint Interagency Task Force-South*, 85.

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