

REPORT DOCUMENTATION PAGE					<i>Form Approved</i> OMB No. 0704-0188													
The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.																		
1. REPORT DATE (DD-MM-YYYY) 03/30/2019		2. REPORT TYPE Master's of Military Studies			3. DATES COVERED (From - To) JUL 2018 - APR 2019													
4. TITLE AND SUBTITLE Sustaining American Maritime Resilience: Marine Transportation System Recovery				5a. CONTRACT NUMBER N/A														
				5b. GRANT NUMBER N/A														
				5c. PROGRAM ELEMENT NUMBER N/A														
6. AUTHOR(S) Bergan, Bradley P., Lieutenant Commander, USCG				5d. PROJECT NUMBER N/A														
				5e. TASK NUMBER N/A														
				5f. WORK UNIT NUMBER N/A														
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) USMC Command and Staff College Marine Corps University 2076 South Street Quantico, VA 22134-5068					8. PERFORMING ORGANIZATION REPORT NUMBER N/A													
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)					10. SPONSOR/MONITOR'S ACRONYM(S) Jonathan Phillips, PhD Dean of Academics, USMC CSC													
					11. SPONSOR/MONITOR'S REPORT NUMBER(S) N/A													
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited.																		
13. SUPPLEMENTARY NOTES																		
14. ABSTRACT The US Coast Guard has participated in MTS recovery long before legislative formalization of those roles through the Maritime Transportation Security Act of 2002 and Security and Accountability for Every Port Act of 2006. Consolidation of maritime agencies and services into the modern-era US Coast Guard, and evolution of key legislative acts and executive branch directives during the 20th century indirectly related to MTSR, have positioned the Coast Guard to meet 21st century MTSR challenges. However, increasing frequency and intensity of events adversely affecting the nation's MTS have strained the current MTSR regime, creating an urgent need for program review and improvement.																		
15. SUBJECT TERMS Coast Guard; CBP; NOAA; USACE; Natural Disasters; Marine Transportation System, MTS; Marine Transportation System Recovery, MTSR; Incident Command System, ICS; National Incident Management System, NIMS; Incident Response; Recovery; Resiliency; Resilience; Maritime; Interagency.																		
16. SECURITY CLASSIFICATION OF: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 2px;">a. REPORT</td> <td style="width: 33%; padding: 2px;">b. ABSTRACT</td> <td style="width: 33%; padding: 2px;">c. THIS PAGE</td> </tr> <tr> <td style="text-align: center; padding: 2px;">Unclass</td> <td style="text-align: center; padding: 2px;">Unclass</td> <td style="text-align: center; padding: 2px;">Unclass</td> </tr> </table>			a. REPORT	b. ABSTRACT	c. THIS PAGE	Unclass	Unclass	Unclass	17. LIMITATION OF ABSTRACT UU		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;">18. NUMBER OF PAGES</td> <td style="width: 50%; padding: 2px;">19a. NAME OF RESPONSIBLE PERSON</td> </tr> <tr> <td style="text-align: center; padding: 2px;">47</td> <td style="padding: 2px;">USMC Command and Staff College</td> </tr> <tr> <td colspan="2" style="padding: 2px;"> 19b. TELEPHONE NUMBER (Include area code) (703) 784-3330 (Admin Office) </td> </tr> </table>		18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON	47	USMC Command and Staff College	19b. TELEPHONE NUMBER (Include area code) (703) 784-3330 (Admin Office)	
a. REPORT	b. ABSTRACT	c. THIS PAGE																
Unclass	Unclass	Unclass																
18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON																	
47	USMC Command and Staff College																	
19b. TELEPHONE NUMBER (Include area code) (703) 784-3330 (Admin Office)																		

*United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068*

MASTER OF MILITARY STUDIES

TITLE:

**Sustaining American Maritime Resilience:
Marine Transportation System Recovery**

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

AUTHOR:

**Bradley Patrick Bergan
Lieutenant Commander, US Coast Guard**

AY 2018-19

Mentor and Oral Defense Committee Member:

Approved:

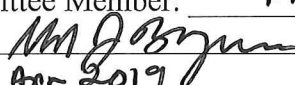
Date:

 Jonathan F. Phillips, Ph.D.
23 April 2019

Oral Defense Committee Member:

Approved:

Date:

Michael J. Byrne
 Lt Col
24 Apr 2019

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

QUOTATION FROM, ABSTRACTION FROM, OR REPRODUCTION OF ALL OR ANY PART OF THIS DOCUMENT IS PERMITTED PROVIDED PROPER ACKNOWLEDGEMENT IS MADE.

Executive Summary

Title: Sustaining American Maritime Resilience: Marine Transportation System Recovery

Author: Lieutenant Commander Bradley Patrick Bergan, US Coast Guard

Thesis: Coast Guard efforts to increase MTS resiliency pre-incident and facilitate rapid recovery post-incident have been successful in past years, but the increasing frequency and intensity of events adversely affecting the nation's MTS have strained the current MTSR regime, creating an urgent need for program review and improvement.

Discussion: The US Coast Guard has participated in MTS recovery (MTSR) long before legislative formalization of those roles through the *Maritime Transportation Security Act (MTSA) of 2002* and *Security and Accountability for Every Port (SAFE Port) Act of 2006*. Consolidation of various maritime agencies and services into the modern-era US Coast Guard, and evolution of key legislative acts and executive branch directives during the 20th century indirectly related to MTSR, have positioned the Coast Guard to meet 21st century MTSR challenges. To carry out legislative and executive branch MTSR mandates, the Coast Guard has adapted the *National Incident Management System (NIMS)*, *Incident Command System (ICS)*, and *National Planning Frameworks* to the complexity of the maritime domain. The use of MTSR Units (MTSRUs) within the Planning Section of Incident Commands, as well as recent creation of the Coast Guard Incident Management Assist Team (IMAT) as a deployable unit that can deliver on demand training, exercise, and real-world event support, have furthered Coast Guard compliance with national mandates. Agreements with other government agencies (OGAs) who also have MTS roles and responsibilities have enabled a whole-of-government approach to MTSR and positioned Coast Guard Incident Commanders (ICs) to leverage unique interagency assets and capabilities to facilitate rapid MTSR and reconstitution of port areas. Web-based technologies have enabled responders to track MTSR progress to inform recovery planning and prioritization, while also delivering the capability to quickly disseminate information to key government decision-makers, industry stakeholders, and the maritime public. Taken together, these actions have resulted in the Coast Guard meeting various requirements pertinent to conducting MTSR. However, recent increases in the occurrence and intensity of events adversely affecting the MTS have revealed areas where MTSR planning, prioritization, and coordination must be improved and evolved.

Conclusion: To improve and evolve the Coast Guard's MTSR program, the following areas must be addressed: (1) correct program management fragmentation within the Coast Guard Headquarters organization, (2) strengthen interagency collaboration and cooperation, and (3) increase data-sharing and integrity standards across information technology systems used to track MTS and MTSR status.

Illustrations

	Page
Figure 1. Description of CBP/USCG Joint Protocols for Expeditious Recovery of Trade	19
Figure 2. CBP-USCG Joint Protocols for the Expeditious Recovery of Trade Priorities	19
Figure 3. IMH Mobile Application Available for Download from Online App Stores	22
Figure 4. Three Purposes for CART	24
Figure 5. EEI Groups and Subsets	24
Figure 6. Sample Homeport Port Status Page for Hampton Roads COTP Zone.....	25
Figure 7. Sample MSIB Linked to Homeport – Key West Port Directory Page	26

Table of Contents

	Page
DISCLAIMER	i
EXECUTIVE SUMMARY	ii
LIST OF ILLUSTRATIONS	iii
ACKNOWLEDGEMENTS	v
PREFACE: SETTING THE CONTEXT	6
INTRODUCTION	9
HISTORICAL FOUNDATIONS OF MTSR	10
FORMALIZING MTS RECOVERY IN THE 21 ST CENTURY	13
MARITIME TRANSPORTATION SECURITY ACT	13
SECURITY AND ACCOUNTABILITY FOR EVERY PORT ACT	14
IMPLEMENTING MTSR LEGISLATION AND MANDATES	16
NATIONAL INCIDENT MANAGEMENT SYSTEM	16
INTERAGENCY COORDINATION, COLLABORATION, AND AGREEMENTS	18
CUSTOMS AND BORDER PROTECTION	18
US ARMY CORPS OF ENGINEERS	20
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	20
COAST GUARD COMMANDANT POLICIES AND JOB-AIDS	21
INCIDENT MANAGEMENT HANDBOOK	21
MTSR PLANNING AND OPERATIONS INSTRUCTION	23
COMMON ASSESSMENT AND REPORTING TOOL	23
COAST GUARD HOMEPORT	25
INCIDENT MANAGEMENT ASSIST TEAM	26
IMPROVING MTSR FOR FUTURE INCIDENT RESPONSE	27
MTSR PROGRAM MANAGEMENT FRAGMENTATION	28
STRENGTHEN INTERAGENCY COLLABORATION AND COOPERATION	30
INFORMATION-SHARING BETWEEN MTSR DATABASES	31
CONCLUSIONS	32
BIBLIOGRAPHY	40

Acknowledgements

Completion of this Master of Military Studies (MMS) essay could not have been possible without the support of the Marine Corps University Command and Staff College faculty and staff. Specifically, Dr. Jonathan Phillips, Dean of Academics, and LtCol Michael Byrne, USMC, were exceptional advisors throughout the course of my research and writing of this paper, offering critical perspectives that greatly contributed to the depth of my research efforts. Additionally, my military and civilian faculty advisors from Conference Group 8, LtCol Brad Pennella, USMC, Dr. Jill Goldenziel, Security Studies, and Dr. Matthew Flynn, War Studies, offered valuable insights while instructing the CSC curriculum. Insights gained from their instruction throughout the academic year are represented throughout this paper. Last, but far from least, I am sincerely grateful for the love and support of my wife, Sara, and daughters Caroline and Rosalie, who have endured three military moves in the past four years. They have ceaselessly encouraged me to pursue my professional and academic pursuits this past year and throughout my career.

Preface:

Setting the Context – Applying MTS Recovery to the Real-World

The marine transportation system (MTS), which is comprised of thousands of miles of coastal waters, inland rivers, hundreds of ports and harbors, and host to millions of vessels and operators, is critical to both the strength and sovereignty of the United States (US).¹ MTS transit routes include “ocean, coastal, and inland waterways” that connect to US “harbors and seaports [to facilitate] ... \$4.6 trillion” in annual economic throughput.² MTS closures resulting from transportation security incidents (TSIs), marine casualties, environmental disasters, or other MTS disruptions can cost the American economy billions of dollars per day.³ Additionally, these disruptions can affect not only economic security but also national defense should access to strategic ports, waterways, or terminals become limited or movement of critical cargoes and commodities restricted.⁴ A healthy and functioning MTS is vital to our nation’s economic and defense security, as it empowers both commercial maritime industry and the naval services to freely maneuver at sea. Rear Admiral John Nadeau, US Coast Guard Assistant Commandant for Prevention Policy, recently described the MTS as “the lifeblood of our economy ... the source of our national power and security, and ... the most environmentally sound means to meet the transportation needs of our nation.”⁵ The frequency and intensity of naturally occurring and human-induced disasters adversely affecting the nation’s MTS reveals a critical need for the Coast Guard to continue pursuits towards strengthening and evolving MTS recovery (MTSR). This paper offers readers a synopsis of the Coast Guard’s historic role in MTSR, why it is important for the organization to engage in such activities, and program improvement opportunities to increase the effectiveness and functioning of the Coast Guard’s MTSR regime.

The 2017-2018 hurricane seasons resulted in five major tropical systems making landfall on the US mainland or territories.⁶ Responses to these disasters highlight the Coast Guard’s role

in safeguarding American ports and waterways comprising the MTS while simultaneously affording ample opportunity to review and evaluate the extent to which statutory, regulatory, and policy MTSR mandates are being met.⁷ The criticality of the MTS to national security has been well-documented through the evolution of US laws, regulations, executive directives, and national strategies and planning frameworks. The Coast Guard, namely through forerunner agencies, has been involved in MTS and MTSR operations for more than two centuries, but it was not until the 21st century that these roles were formalized in legislation. Formalization occurred following two seminal events in US history, including the September 11, 2001 (9/11) terrorist attacks and Hurricane Katrina in 2005. The former led to Congress passing the *Maritime Transportation Security Act (MTSA) of 2002*, and the latter the brought about the *Security and Accountability for Every (SAFE) Port Act of 2006*. The Coast Guard, along with interagency partners and industry stakeholders, have historically been able to recover and reconstitute the MTS in the wake of incidents such as these, but further steps to comply with legislative acts and executive branch direction must be taken in response to the increased frequency and intensity of events. These steps include a need to: (1) correct program management fragmentation within the Coast Guard Headquarters organization, (2) strengthen interagency collaboration and cooperation, and (3) increase data-sharing and integrity standards across information technology systems used to track MTS and MTSR status.

After more than a decade of working within the Coast Guard's MTSR program, both at the local incident and national program levels, I have witnessed positive aspects of the Coast Guard's MTSR regime, as well as areas that must be improved if the Coast Guard is going to remain "Always Ready," or *Semper Paratus*, to meet MTSR mandates that are critical to national security. This paper considers the long legacy of the Coast Guard's role in MTSR, long before

MTSR roles were formalized in 21st century legislation, as well as articulates many ways in which the Coast Guard has been improving the conduct of MTSR. However, as this paper also highlights, continuous improvement of the MTSR program must not stall, especially considering the increasing frequency and intensity of naturally occurring and human-induced events adversely affecting the MTS.

This paper draws numerous conclusions on how the Coast Guard's MTSR regime can improve by relying on a combination of analysis of primary and secondary sources published by the federal government and academia, as well as personal experiences gained engaging in MTSR operations in response to real-world events. These experiences were specifically gained during the Coast Guard's response to the Deepwater Horizon Oil Spill in 2010 while serving as a member of the MTSR Unit (MTSRU) in Mobile, Alabama, as an MTSR program management officer in the Office of Port and Facility Compliance (CG-FAC) at Coast Guard Headquarters from 2010-2013, during which time CG-FAC personnel, including myself, augmented the Coast Guard's National Command Center (NCC) by carrying out national-level MTSR functions following Super Storm Sandy in 2012, and, most recently, as the MTSRU Supervisor and Port Reconstitution Branch Leader during Hurricane IRMA operations in the Florida Keys in 2017.

Sustaining American Maritime Resilience: Marine Transportation System Recovery

The US Coast Guard has been designated the principal federal agency through legislative acts and executive branch mandates to plan for and coordinate response and recovery operations for incidents affecting the nation's MTS.⁸ In support of this effort, the Coast Guard sustains “a persistent maritime presence” on and around US waterways by implementing various programs and planning frameworks to comply with MTS recovery (MTSR) legal and policy mandates.⁹ Coast Guard efforts to increase MTS resiliency pre-incident and facilitate rapid recovery post-incident have been successful in past years, but the increasing frequency and intensity of events adversely affecting the nation's MTS have strained the current MTSR regime, creating an urgent need for program review and improvement. Examining the Coast Guard's historical role in safeguarding the MTS; evolution of MTSR-related legislation and executive branch orders, strategies, policies, and planning frameworks; and Coast Guard service-specific MTSR policies and guidance, as well as operations in response to real-world events, reveals an MTSR program that has been successful in the historical sense.

However, this examination also draws attention to a program craving program improvement through reorganization and modernization to remain relevant and effective in the future. Several improvement measures to pursue include steps to: (1) correct program management fragmentation within the Coast Guard Headquarters organization, (2) strengthen interagency collaboration and cooperation, and (3) increase data-sharing and integrity standards across information technology systems used to track MTS and MTSR status. By addressing these issues, Coast Guard MTSR program managers can position the organization, federal government, and nation to effectively respond to and recover from events adversely affecting the MTS well into the future.

Historical Foundations of MTS Recovery

The Coast Guard has been a lead federal agency and military service charged with overseeing safety, security, and recovery of the nation's MTS long before role formalization through 21st century legislative acts, regulations, strategies, and policy directives. The Coast Guard that America sees today traces its roots to the founding of the Revenue Marine in 1790, more commonly referred to as the Revenue Cutter Service (RCS). The service evolved through various mergers, including combining with the US Life-Saving Service (USLSS) in 1915 to form the modern-day US Coast Guard.¹⁰ This was followed by a merger with the US Lighthouse Service in 1939, and a temporary union with the Bureau of Marine Inspection and Navigation in 1942, which became permanent in 1946.¹¹

Mission areas of each of these services centered on sustaining a healthy and resilient MTS. The RCS was tasked at the time of founding to protect US economic interests by enforcing trade and customs laws along the MTS that were vital to funding a then fledgling US economy.¹² During this time the RCS was also America's sole maritime armed service capable of projecting US sovereign interests along the MTS and on high seas, until Congress created the US Navy in 1798.¹³ The USLSS engaged in search and rescue efforts to protect the lives of mariners who kept the flow of commerce moving to and from the nation.¹⁴ The US Lighthouse Service (USLHS) maintained navigational systems throughout the MTS, including lighthouses, lightships, buoys, markers, and ranges.¹⁵ Lastly, the Bureau of Marine Inspection and Navigation oversaw construction, documentation, and operation of commercial ships to ensure vessels and merchant mariners met minimum safety standards to operate on the MTS.¹⁶ Consolidating these agencies into the Coast Guard ensured a single maritime service possessed the knowledge, resources, and capabilities to serve as the "nation's maritime first responder, ...

[capable of fulfilling missions paramount to] the safety, security and stewardship of the nation's waters by protecting those on the sea, protecting the nation against threats delivered by sea, and protecting the sea itself."¹⁷ These services, unified under the Coast Guard, were better positioned to coordinate efforts to promote and protect the health, resiliency, and functionality of the MTS.

By 1946 all forerunner services comprising the US Coast Guard had merged, creating an all-encompassing military, law enforcement, regulatory, and humanitarian "service dedicated to saving life at sea and enforcing the nation's maritime laws."¹⁸ In addition to consolidation of these services during the 20th century, this period was also marked by the passage of laws, regulations, and executive directives aimed at protecting US maritime interests. Specifically, the *Espionage Act of 1917*, *Magnuson Act of 1950*, and *Port and Waterways Safety Act of 1972*, among others, demonstrate evolving legislative actions aimed at safeguarding the MTS.

The *Espionage Act of 1917* was the first US law to delegate the Coast Guard oversight of port security, including the ability to direct and restrict vessel movements and anchoring through Coast Guard Captain of the Port (COTP) authority.¹⁹ The Act was passed in June 1917 following "an explosion that took place on Black Tom Island, New Jersey, across the Hudson River from Manhattan, on July 31st, 1916."²⁰ The explosion, attributed to German saboteurs, occurred at a terminal that was preparing munitions for shipment overseas in support of World War I allies.²¹ Though not captured in the terminology of the times, establishment of COTP authority under the *Espionage Act* was in response to a transportation security incident, or TSI. The acronym, TSI, became a term of art in legislative language following 9/11 and passage of the *MTSA in 2002*.²²

The next major legislative act increasing Coast Guard oversight and authorities to engage in activities to prevent incidents and disasters along the MTS was the *Magnuson Act of 1950*,

passed by the 81st Congress on August 9, 1950.²³ In support of this act, President Harry Truman issued *Executive Order 10173* in October 1953 to promulgate regulations needed to implement the Act.²⁴ The act expanded Coast Guard authorities for protecting vessels, ports, and waterways in times of both war and peace through the detention of persons aboard vessels or at waterfront facilities, conducting unannounced searches, requiring security guards to be present aboard vessels or at facilities.²⁵ The *Espionage Act*, invoked during World Wars I and II, applied only during wartime, whereas the *Magnuson Act* expanded these functions to peacetime. Passage of these two acts, which focused largely on security, paved the way for additional legislation to be passed in succeeding decades from an all hazards perspective for protecting the nation's MTS.

The *Port and Waterways Safety Act (PWSA)* of 1972 built on the security focus of the *Espionage Act* and *Magnuson Act* by establishing Coast Guard authority to implement vessel traffic separation schemes and establish and enforce safety zones.²⁶ These zones could be established “around vessels or facilities to mitigate risk, or ... created specifically for planned events like powerboat races or air shows to ensure public safety. They can also be established during port emergencies like oil spills or storms to manage waterways traffic.”²⁷ Authorities exercised through the *PWSA* enable the Coast Guard to issue orders to any vessel or waterfront facility representative should “the vessel's [or facility's] history of accidents, pollution incidents, or serious repair problems ... [create] reason to believe that the vessel [or facility] may be unsafe or pose a threat to the marine environment.”²⁸ Through the *PWSA* “the American people have granted [COTPs] ... an astonishing degree of authority over maritime operations,” while at the same time positioning the service to protect, mitigate, and recover the MTS from a wide array of safety, security, and environmental threats.²⁹

In addition to the three legislative acts discussed above, there have been other legislative acts passed that have helped establish the foundation of the Coast Guard's MTSR program prior to formalization in the 21st century. These include the *Port and Tanker Safety Act* and *Federal Water Pollution Control Act*. The former instituted vessel navigation safety requirements articulated through 33 *Code of Federal Regulations (CFR), Part 164* and the latter established Federal on Scene Coordinator (FOSC) authorities.³⁰ FOSC duties were notably visible to the public during efforts to reconstitute the MTS in the Gulf of Mexico following the Deepwater Horizon Oil Spill in 2010.³¹ These legislative acts, along with others previously discussed, paved the way for MTSR formalization as a Coast Guard led function in the 21st century.

Formalizing MTS Recovery in the 21st Century

Two events in 21st century American history greatly contributed to the evolution and formalization of MTSR as a core Coast Guard responsibility, including the 9/11 terrorist attacks and Hurricane Katrina. Both these modern-era crises served as an impetus for key acts passed by Congress. These acts include the *MTSA of 2002* and *SAFE Port Act of 2006*. Both events led to whole-of-government reforms in how the nation prepares for, responds to, and recovers from disasters, whether those disasters are human-induced, as with acts of terror or sabotage, or naturally-occurring phenomena like hurricanes, earthquakes, or tsunamis.

Maritime Transportation Security Act

The *MTSA* was approved by the 107th Congress on November 25, 2002 following the 9/11 terror attacks. The *Act* amended the *1936 Merchant Marine Act* by incorporating vessel and waterfront facility security requirements to prevent TSIs in the maritime domain.³² Congress passed the *MTSA* after concluding that US "ports are often very open and exposed and are susceptible to large scale acts of terrorism that could cause a large loss of life or economic

disruption.”³³ The *MTSA*, and implementing regulations in 33 *CFR, Subchapter H*, provide avenues for federal agencies and industry stakeholders to take to safeguard ports, waterways, critical infrastructure and key resources.”³⁴ Specifically, the *MTSA* and supporting regulations led to creation of the *National Maritime Transportation Security Plan*, COTP zone specific *Area Maritime Security Plans (AMSPs)*, Area Maritime Security Committees (AMSCs), and maritime security (MARSEC) levels that establish port security force protection postures be set depending on threats posed to the MTS.³⁵ A primary goal of the *MTSA* was to prevent terrorist attacks or other TSIs to the MTS, with secondary goals to ensure the ability to rapidly recover should such incidents occur. This led to the *MTSA* and associated regulations requiring an *MTS Recovery Annex* to be incorporated within every *AMSP* across the country.³⁶ Overall, the *MTSA* renewed national efforts to safeguard port and waterfront critical infrastructure and key resources, vessels that provide transportation services to passengers and cargoes, and persons who work in and around the maritime domain. The *MTS Recovery Annexes* adopted by port-specific *AMSPs* ensure port stakeholders can rapidly recover and reconstitute the MTS should a TSI occur.

Security and Accountability for Every Port Act

The *SAFE Port Act* was passed by the 109th Congress on October 13, 2006 to enhance the federal government’s ability to respond to and recover from events much broader than the TSIs discussed in the *MTSA*, including other transportation disruptions that can adversely affect the nation’s MTS. While the *MTSA* was passed by the 107th Congress following the 9/11 terrorist attacks, the major driving force behind the *SAFE Port Act* was Hurricane Katrina, a natural disaster that brought to light how non-terrorist events can pose safety and security risks to the MTS. The *SAFE Port Act* contains several key requirements that further formalized the MTSR program under the Coast Guard’s purview. In many respects, the *SAFE Port Act* served as a

legislative update to the *MTSA* by expanding and linking efforts to recover the MTS from “all hazards and all threats.”³⁷ The *SAFE Port Act* expanded the scope of the *MTSA* by including requirements to amend *AMSPs* to incorporate salvage response plans (e.g. removing sunken vessels to reopen navigable waterways), establishing annual Area Maritime Security Training and Exercise Program (*AMSTEP*) requirements for government agencies and marine industry to participate in to build *MTSR* competencies across the public and private sectors, and implementation of the Port Security Grant (*PSG*) Funding Program that can be used by MTS stakeholders to purchase *MTSR*-related equipment (e.g. fire and police boats).³⁸

The *SAFE Port Act* led to the publishing of numerous national strategies, plans, and frameworks including the “National Response Plan, the National Maritime Transportation Security Plan, the National Strategy for Maritime Security, and the 8 supporting plans of the [latter] Strategy” to facilitate harmonization of *MTSR* across executive departments and agencies.³⁹ Section 201 of the *SAFE Port Act* also included a mandate for establishing joint “protocols for the expeditious resumption of the flow of trade” between agencies, such as the US Coast Guard and Customs and Border Protection (*CBP*), to streamline response to transportation disruptions, including *TSIs*, at the national level by prioritizing steps to be taken to reestablish commerce and trade across the nation’s MTS post incident.⁴⁰ The *SAFE Port Act* paved the way for key executive branch policy directives pertaining to *MTSR*, including new *Presidential Policy Directives (PPDs)*, *Executive Orders (EOs)*, *Homeland Security Presidential Policy Directives (HSPDs)*, and Maritime Security Policy Coordinating Committee (*MSPCC*) strategies, as well as roll-out of the *National Incident Management System (NIMS)* and *National Preparedness System (NPS)* with five planning frameworks (Prevention, Protection, Mitigation, Response, and Recovery).⁴¹ The *SAFE Port Act* spurred a whole-of-government response to

refine existing processes and procedures stemming from the *MTSA* and to develop new ones to recover the MTS from tragic events such as Hurricane Katrina.⁴² The 9/11 terror attacks and Hurricane Katrina were two very different types of disasters that adversely affected the nation's MTS, but both spurred Congressional actions to formalize the Coast Guard's role in MTSR in a way that had never been done before.

Implementing MTSR Legislation and Mandates

Many programs were applied by the Department of Homeland Security (DHS) and Coast Guard to meet legislative and executive branch mandates. Notable efforts included implementation of *NIMS*, development of joint-agency agreements to support shared-MTSR interests, and issuance of Coast Guard Commandant Publications and Instructions (*COMDTPUBs and COMDTINSTs*). These planning and policy documents have accomplished the following: (1) increased public-private partnerships through AMSC MTS subcommittees; (2) established Marine Transportation System Recovery Units (MTSRUs) composed of Coast Guard, other government agencies (OGAs), and marine industry to inform incident response through planning and prioritization; (3) spurred development of information technology systems to track MTSR status; and (4) led to creation of a fast-response support entity, the Coast Guard Incident Management Assist Team (CG-IMAT), which offers training and real-world incident command staff augmentation during incident responses.⁴³ Each of these initiatives have moved the Coast Guard closer to meeting the intent of the *MTSA* and *Safe Port Act*.

National Incident Management System – NIMS.

The *NIMS* was first published and implemented in 2004 following issuance of *Homeland Security Presidential Directive (HSPD) – 5*, which directed the federal government, through Secretary of Homeland Security and Homeland Security Council (HSC), to “develop ... and

administer a National Incident Management System ... to provide a consistent nationwide approach for federal, State, and local governments to prepare for, respond to, and recover from domestic incidents, regardless of cause, size or complexity.”⁴⁴ The most recent iteration of *NIMS* was released in October 2017 and describes the holistic purpose of the system as follows:

A systematic, proactive approach to guide all levels of government, NGOs, and the private sector to work together to prevent, protect against, mitigate, respond to, and recover from the effects of incidents. *NIMS* provides stakeholders across the whole community with the shared vocabulary, systems, and processes to successfully deliver the capabilities described in the National Preparedness System. *NIMS* provides a consistent foundation for dealing with all incidents, ranging from daily occurrences to incidents requiring a coordinated Federal response.⁴⁵

The Coast Guard’s role in implementing the *NIMS* and the *Incident Command System (ICS)*, the command structure for responses under *NIMS*, is described as follows: the “Coast Guard uses *NIMS* guidance extensively and ... efforts have helped to extend the audience for *NIMS* by institutionalizing the use of *ICS* for incidents involving spills and security operations.”⁴⁶

Specific cases where the Coast Guard has relied upon *NIMS* and *ICS* for MTSR have included the Deepwater Horizon Oil Spill⁴⁷ and Haitian Earthquake Response in 2010⁴⁸; Superstorm Sandy in 2012⁴⁹; and, most recently, Hurricanes Harvey, Irma, and Maria in 2017.⁵⁰

In addition to *NIMS* implementation under *HSPD-5*, *NIMS* was also instituted in order to support *HSPD-7* (Critical Infrastructure and Key Resources), *HSPD-8* (National Preparedness), *HSPD-13* (Maritime Security Policy), *Presidential Policy Directive (PPD) – 18* (National Strategy for Maritime Security), and *PPD-21* (Critical Infrastructure Security and Resilience).⁵¹ The *HSPDs* above were issued under the George W. Bush Administration and the later *PPDs* under the Barrack H. Obama Administration. Of note, *HSPD-13* created the Maritime Security Policy Coordinating Committee (MSPCC) that developed and issued the *National Strategy for Maritime Security*.⁵² Under this parent MSPCC strategy, eight subordinate and supplementary plans to implement the strategy, including the *Maritime Infrastructure Recovery Plan* and *Maritime Transportation System Security Plan*, were published to establish “procedures for

restoration of maritime transportation systems following an incident of national significance.”⁵³

Each of the eight *National Strategy for Maritime Security* plans, along with *NIMS* and other executive and agency level publications, positioned the Coast Guard to implement a holistic MTSR regime rooted in joint-agency coordination and collaboration.

Interagency Coordination, Collaboration, and Agreements

Implementation of national strategies, systems, and plans cannot be accomplished by any one department or agency, particularly in the maritime domain where there are countless public, private, and industry stakeholders who conduct operations throughout the MTS daily.

Recognizing this fact, the Coast Guard has entered into various interagency agreements to facilitate MTSR activities. Notably, formal interagency agreements have been established with CBP,⁵⁴ the US Army Corps of Engineers (USACE),⁵⁵ and National Oceanic and Atmospheric Association (NOAA)⁵⁶ respectively to provide MTSR programmatic and operational level support. Each agreement contributes to and augments the Coast Guard’s missions and capabilities, while also facilitating MTS-related missions of each partner agency.

Customs and Border Protection. CBP and the Coast Guard are both agencies under the DHS umbrella and play critical roles pertinent to the movement of vessels, people, and goods to and from America’s ports. Specifically, CBP “collects import duties, enforces trade laws, apprehends individuals attempting to enter the US illegally, and protects ecological, agricultural, and economic interests from harmful pests and diseases” to foster a healthy and resilient MTS.⁵⁷ These roles are vital in supporting Coast Guard efforts to return ports and waterways “to pre-incident volume and operations for the movement of vessels, goods, commodities, and passengers following an incident that has significantly disrupted the MTS.”⁵⁸ The *SAFE Port Act* calls for the Secretary of DHS to oversee subordinate agency implementation of protocols

following a transportation disruption or TSI in the maritime domain, and to incorporate a plan for agencies to “redeploy resources and personnel ... to reestablish the flow of trade.”⁵⁹ To facilitate MTSR interagency coordination at the national-level in this regard, CBP and the Coast Guard developed joint protocols for trade recovery. The protocols were developed to help inform national-level MTS coordination and decision-making, as shown in Figure 1:

Customs and Border Protection (CBP)/Coast Guard Joint Protocols for the Expeditious Recovery of Trade (February, 2008)	Developed to establish national-level processes by which the Coast Guard, CBP, and other federal agencies will: • Provide a forum for joint intergovernmental and private sector dialogues to identify and act on important issues to facilitate rapid MTS recovery and resumption of commerce. • Assist senior-level decision makers by providing a process to collect and disseminate information to understand the status of the national MTS and to facilitate joint decision making. • Assist senior-level decision makers by providing recommendations for national-level priorities for recovery of the MTS and trade resumption, including cargo/vessel priorities.
---	--

Figure 1: Description of CBP/USCG Joint Protocols for the Expeditious Recovery of Trade as conveyed in 2012 GAO Report.⁶⁰

Primary issues addressed through the protocols by CBP and the Coast Guard with OGAs and non-government marine industry stakeholders, who include national maritime carrier and trade groups, shoreside labor unions, and waterways operator associations, are described in Figure 2:

U.S. Customs & Border Protection (CBP)/U.S. Coast Guard Joint Protocols for the Expeditious Recovery of Trade	
Discussion Items during Conference Calls	
• Status of Incident/Event • Potential MTS Impacts • Identify Vessel/Cargo Movement priorities ○ National Response Supplies ○ National Recovery Supplies ○ National Defense Materials ○ Other National Priority Cargo ○ Local Response Supplies ○ Local Recovery Supplies ○ Local Fuels and Energy Cargo ○ Local Food Consumption ○ All Other Cargo • Develop National Recommendations	

Figure 2: CBP-USCG Joint Protocols for the Expeditious Recovery of Trade Priorities⁶¹

These joint protocols have been initiated for a variety of transportation disruptions, natural disasters, and TSIs, since first being conceived, including the H1NI “Swine Flu” Outbreak in 2009, Deepwater Horizon Oil Spill in 2010, and Superstorm Sandy in 2012 to establish national recovery priorities on issues such as vessel and crew quarantines, ships’ hull decontamination, and vessel and cargo diversions to ports less affected by ongoing MTS disruptions.⁶²

US Army Corps of Engineers. The USACE is the lead agency for maintaining charted water depths in federal waterways and channels.⁶³ As such, the Coast Guard heavily relies upon USACE personnel and resources to reopen ports and waterways critical to the movement and flow of maritime commerce. Assistance to MTSR activities is reinforced in memorandums of agreement (MOAs) and *NIMS Emergency Support Functions (ESFs)*.⁶⁴ Specific USACE efforts post-incident to support MTSR activities include sunken or partially sunken “vessel removal, significant marine debris removal, and hydrographic survey[s] to effect the rapid recovery and reconstitution of critical waterways, channels, and ports.”⁶⁵ These activities are complementary to and supportive of Coast Guard’s delegated functions to “oversee oil and hazardous substance pollution response operations associated with debris removal/salvage operations” and to conduct aids to navigation (ATON) repairs post-incident to reopen shipping channels.⁶⁶

National Oceanic and Atmospheric Administration. The Coast Guard works extensively with NOAA to conduct federal waterway assessments in support of debris identification to facilitate subsequent removal by USACE, or third party contractors if the debris is identified outside federally designated channels.⁶⁷ This relationship was formalized at the national level through the Interagency Marine Debris Coordinating Committee (IMDCC), which “was established in 2006 by the *Marine Debris Research, Prevention, and Reduction Act*. The committee submits biennial reports to Congress with updates on activities, achievements, and

recommendations.”⁶⁸ At operational, or incident, levels the relationship between NOAA and the Coast Guard is solidified within the ICS construct, where NOAA routinely provides liaison officers to serve within MTSRUs to help coordinate port and waterway debris identification through waterway surveying efforts.⁶⁹ While in these liaison capacities, NOAA personnel help determine recovery priorities by directing oceangoing NOAA survey ships, Navigation Response Teams (NRTs) that operate from agency small craft, and Mobile Integrated Survey Teams (MISTs) that rely on vessels of opportunity, such as Coast Guard small boats, to employ sonar systems to conduct undersea scanning to assess underwater conditions in navigable waterways.⁷⁰ During major disasters, NOAA offers force multiplier capabilities to surveying conducted by the USACE, leading to faster coordinated responses to recover the MTS post-incident.

Coast Guard Commandant Policies and Job-Aids

The Coast Guard has issued two key Commandant-level documents to support the *MTSA*, *SAFE Port Act*, and executive branch directives pertinent to MTSR, including *COMDTPUB 3120.1 7B (Incident Management Handbook - IMH)* and *COMDTINST 16000.28A (Marine Transportation System Recovery Planning and Operations)*.⁷¹

Incident Management Handbook. The *IMH* is the Coast Guard’s primary job-aid for conducting Coast Guard incident management operations from an “all hazards – all risks” approach.⁷² The *IMH* implements *NIMS* and tailors ICS to the to the maritime domain and broad array of Coast Guard statutory missions.⁷³ The *IMH* addresses how Coast Guard Incident Commanders (ICs) should organize responses to carry out recovery operations on and around the MTS. Specifically, with regards to MTSR, the *IMH* establishes a specialized ICS position, the Marine Transportation System Leader (MTSL), within the Planning Section to supervise the MTSRU and carry out the following functions:

The MTSL is responsible for planning infrastructure recovery for transportation security incidents (TSI) and other incidents that significantly impact the MTS. The MTSL will track and report on the status of the MTS, understand critical recovery pathways, recommend courses of action, and provide all MTS stakeholders with an avenue of input to the response organization. The MTSL prepares transportation data for the Situation Unit and daily situation briefs applying core Essential Elements of Information (EEIs).⁷⁴

Tailoring *NIMS* and ICS to create a Coast Guard specialist dedicated to overseeing and tracking MTS status highlights the critical importance of MTSR in relation to economic and national security.⁷⁵ The Coast Guard *IMH* ensures ICs, Planning Section Chiefs, and Operations Section Chiefs have the information needed to leverage the MTSL and MTSRU to ensure MTS incident management success. To further adapt the *IMH* to incident response in the maritime domain, the Coast Guard released a web application version of the *IMH*, *USCG IMH*, that is available for download to mobile devices from various online app stores.⁷⁶ The mobile application provides personnel on demand access to ICS forms, position specific job-aids (e.g. MTSL), and easy to navigate chapters segregated by hyperlinks:

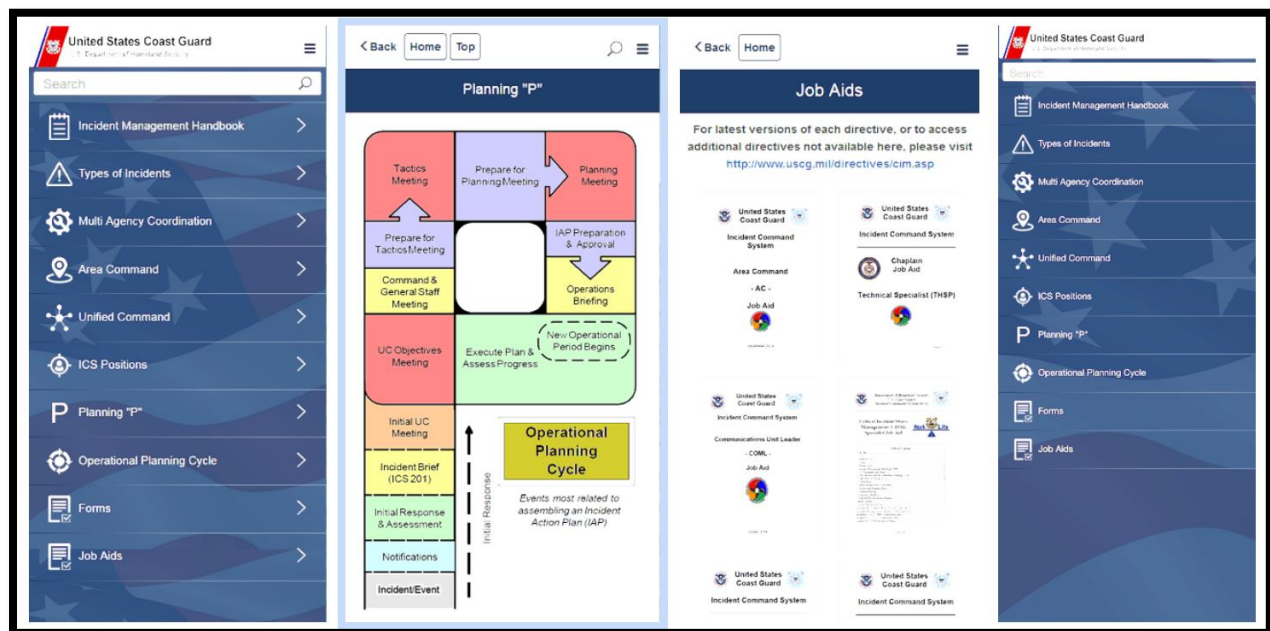


Figure 3: IMH mobile application available for download from online app stores.⁷⁷

The application enables access to the IMH when hard copies may be limited or not available and makes electronic searching for policy direction during an incident response less burdensome.

MTSR Planning and Operations Instruction. COMDTINST 16000.28a, MTSR Planning and Operations, delivers policy direction to MTSR personnel at all levels of the Coast Guard, including “Area, District and Sector Commanders, [and] Marine Safety Unit Commanding Officers ... [who] shall ensure the provisions of ... [the] Commandant Instruction are implemented.”⁷⁸ The instruction highlights MTSR activities commands must conduct, including:

(1) Coordinate and facilitate port recovery activities. (2) Track and Report the Status of the MTS. (3) Recommend Courses of Action to the Captain of the Port. (4) Resume safe, secure maritime commerce after a port disruption. (5) Provide a forum for all stakeholders.⁷⁹

A critical element of MTSR operations is to coordinate, facilitate, and engage stakeholders, including OGAs and maritime industry, to help reconstitute the MTS in support of economic and national security.⁸⁰ Coast Guard MTSR personnel cannot reconstitute the MTS alone and require support from OGAs and industry stakeholders who possess unique resources, equipment, capabilities, and technical expertise that the Coast Guard may not possess.⁸¹ This instruction also introduces readers to several information technology systems that facilitate MTSR reporting and prioritization, connects key decision makers at all levels of the command structure, and reduces administrative burdens during incident responses.⁸²

Common Assessment and Reporting Tool. Between 2006 and 2008, following MTSR experiences gained during real-world events where paper-based tracking and reporting systems were employed, the Coast Guard Atlantic Area developed a prototype system known as the Common Assessment and Reporting Tool (CART).⁸³ CART management was later transferred to the Coast Guard Headquarters Office of Port and Facility Compliance (CG-FAC) and evolved to become the “primary system for tracking, reporting, and documenting MTS Recovery status nationwide.”⁸⁴ Furthermore, in accordance with CG-FAC Policy Letter 13-01, the system “shall be used to communicate MTS Recovery status information for any transportation disruption affecting the MTS.”⁸⁵ CART “provides near real-time MTS information throughout the Coast

Guard chain of command; to other federal, state, and local government representatives; and to national, regional, and local level industry.”⁸⁶ Primary purposes for developing CART to assist in MTSR are summarized in Figure 4:

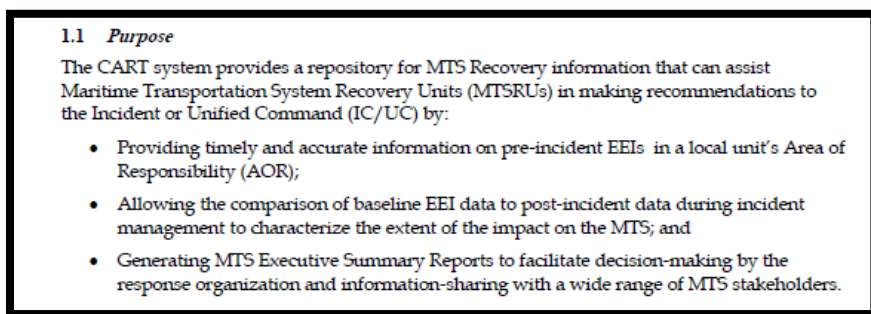


Figure 4: Three Purposes for CART⁸⁷

To carry out the purposes summarized in Figure 4, CART tracks MTSR status through essential elements of information (EEIs) grouped in five categories, including: Waterways and Navigation Systems, Port Area-Critical Infrastructure, Port Area-Vessels, Offshore Energy, and Monitoring Systems.⁸⁸ Individual EEIs are uploaded as baseline data pre-incident and availability statuses updated post-incident under the EEI instance subsets shown in Figure 5:



Figure 5: EEI Groups and Subsets⁸⁹

CART streamlined the MTSR process for responders by reducing administrative burdens that previously existed when MTSR activities were documented on paper-based job-aids.⁹⁰ The web-based platform allows relevant personnel at all levels of government and industry to access to near real-time MTSR status information needed to inform planning and prioritization efforts.⁹¹

Coast Guard Homeport. Homeport is another web-based platform that enables MTSR personnel to facilitate information-sharing vital to MTSR activities pre- and post-incident.⁹² Homeport was “established in 2005 to facilitate compliance with the requirements set forth in the Maritime Transportation Security Act” by enabling timely information distribution to the public on MTS safety and security matters.⁹³ The system promulgates notices to stakeholders on topics such as MARSEC levels, National Terrorism Advisory System releases, and individual port status updates for each of the 37 COTP zones around the nation.⁹⁴ A sample COTP port status excerpt from US Coast Guard Sector Hampton Roads Homeport page is provided in Figure 6:

 SECTOR HAMPTON ROADS (05-37070) 4000 COAST GUARD BOULEVARD PORTSMOUTH VA Primary Phone: (757) 638-6637 Emergency Phone: (757) 868-6641 Option 1 Fax Number: (757) 453-5641 Rescue 21 VHF DSC MMSI Number: 003606922	
National Response Center Number: 800-424-8802 - Contact the NRC for oil spills, hazmat releases, and America's Waterway Watch.	
Port Status Information	
Port	Port Status
BERKLEY	■ Open
CAPE CHARLES	■ Open
CAPE HENRY PILOT STATION	■ Open
CHEATHAM ANNEX	■ Open
CHESAPEAKE	■ Open
CHESAPEAKE BAY NORTH CHANNEL	■ Open
CHESAPEAKE ENTRANCE BUOY	■ Open
CHESAPEAKE LV	■ Open
CHINCOTEAGUE	■ Open
CLAREMONT	■ Open
Showing 1 to 10 of 28 entries	
Previous 1 2 3 Next	

Figure 6: Sample Homeport Port Status Page for Hampton Roads COTP zone.

Through Homeport, MTSR personnel are also provided a forum to release Marine Safety and Information Bulletins (MSIBs). MSIBs convey provide the details associated with the port status information provided in *Figure 6*, such as waterway restrictions and closures, safety and security zones, and regulated navigation areas.⁹⁵ An MSIB published to the Sector Key West Homeport page following Hurricane Irma in 2017 is shown in *Figure 7*:

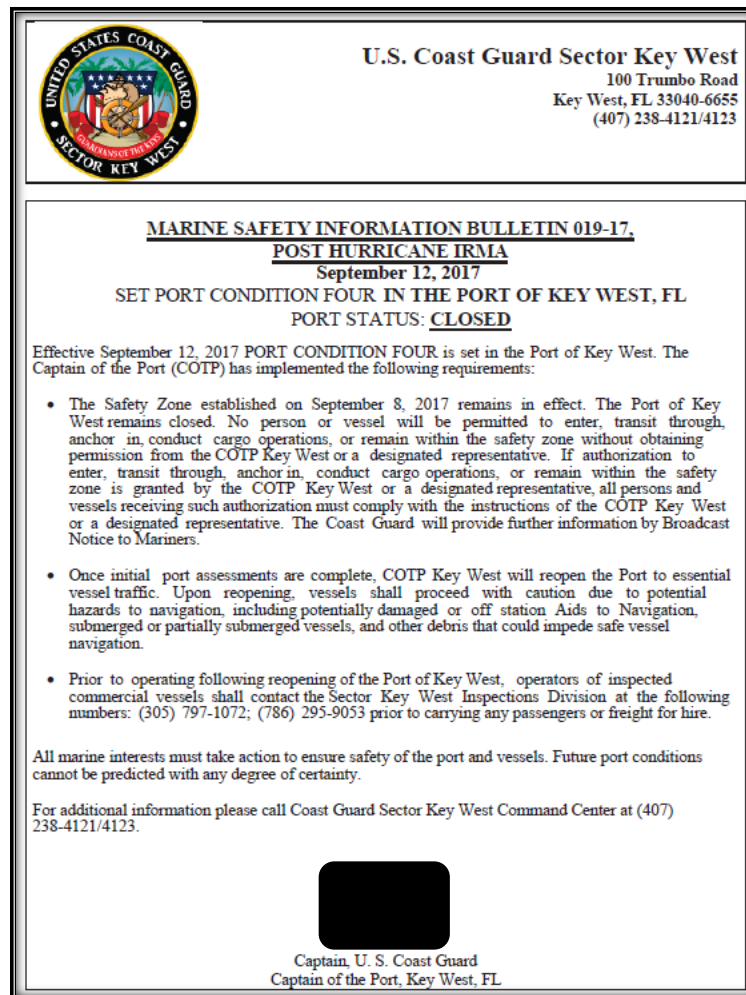


Figure 7: Sample MSIB linked to Homeport – Key West Port Directory Page.

Incident Management Assist Team. The Incident Management Assist Team (IMAT) is not a web-based platform like CART or Homeport, but rather, a personnel support resource available to ICs and responders for training and exercise support, as well as on-scene assistance and augmentation during real-world incident response.⁹⁶ The IMAT mission is to “deploy and

assist Coast Guard Incident Commanders responding to, recovering from, and mitigating the effects of all hazard incidents and events within the Maritime Environment” under *NIMS* and ICS.⁹⁷ The IMAT is staffed by approximately 40 active duty, reservist, and civilian personnel trained and qualified in most ICS leadership roles for incidents of all sizes and scopes.⁹⁸ The IMAT does not take control of incidents they respond to, but rather offers a level of quality assurance to ICs, FOSCs, or Federal Maritime Security Coordinators (FMSCs).⁹⁹ The IMAT has been used extensively since commissioning in 2013 and recently in support of Hurricanes Harvey, Irma, and Maria in 2017, where Coast Guard incident commands and MTSR personnel, augmented by IMAT support, prioritized “recovery assets, [to] accurately identify critical needs, ... [leading] to the rapid resumption of port activities.”¹⁰⁰ Continued use of the IMAT in incident response support roles will help ensure the Coast Guard remains postured to conduct MTSR for future TSIs and transportation disruptions.

Improving MTSR for Future Incident Response

The Coast Guard has historically met the intent of the *MTSA* and *SAFE Port Act*, as well as executive branch mandates pertinent to MTSR activities.¹⁰¹ However, recent increases in the frequency and intensity of events adversely affecting the MTS in recent years have highlighted many areas where the Coast Guard needs to improve MTSR administration. These areas of improvement include the following: (1) correct program management fragmentation within the Coast Guard Headquarters organization, (2) strengthen interagency collaboration and cooperation, and (3) increase data-sharing and integrity standards across information technology systems used to track MTS and MTSR status. Resolving frictions to successful and efficient MTSR program administration within each of these areas will improve MTSR program

compliance with laws, regulations, and policy direction, while also positioning the program for greater incident response and recovery success during future operations.

MTSR Program Management Fragmentation. MTSR is not a standalone program that can be solely managed by one Coast Guard program office. Long-term success of the MTSR program cannot be sustained until greater coordination between CG-FAC, the primary Coast Guard Headquarters office responsible for MTSR management, and other Headquarters offices delegated MTSR related functions are harmonized.¹⁰² CG-FAC's primary role in managing the MTSR program was established based on the office's pre-*MTSA* and *SAFE Port Act* role in port and facility security.¹⁰³ Identification of TSIs in the *MTSA* as a threat to ports and waterfront facilities, key elements of the MTS, positioned CG-FAC as the natural fit to oversee a national-level MTSR program.

Expansion of MTSR, beyond addressing TSIs, to all hazards also led to expansion of the number of Coast Guard Headquarters offices with a stake in the MTSR program, including the Office of Incident Management and Preparedness (CG-5RI), Office of Waterways and Ocean Policy (CG-WWM), and Office of International and Domestic Port Assessments (CG-PSA), among others. Each of these offices oversee elements of MTS or MTSR program management that overlaps with CG-FAC MTSR program implementation. CG-5RI is the responsible office for "development of incident management and preparedness doctrine, policy, and guidelines for US Coast Guard missions."¹⁰⁴ Most notably, this fragmentation has revealed areas in which key incident and disaster response capabilities conducted by the CG-IMAT, and in accordance with the Coast Guard's *IMH*, fail to fully consider MTSR policy. The MTS Directorate, particularly CG-WWM, oversees policies and programs for the day to day, or steady state, functioning of the MTS through waterways management activities, including programs for ATON, bridges, and

marine event permitting.¹⁰⁵ CG-PSA is responsible for “execution of the Port Security Assessment Program, and ... [overseeing] use of the Maritime Security Risk Analysis Model (MSRAM)” by Coast Guard Port Security Specialists.¹⁰⁶ Additionally, CG-PSA also administers the Port Security Grant Program (PSGP) used by port authorities and maritime stakeholders to purchase resources needed for incident responses.¹⁰⁷ Specific areas where increased cross-program coordination at Coast Guard Headquarters could benefit the overall MTSR program include updating the *IMH* to more effectively capture MTSR during incident responses and billeting the Coast Guard IMAT with qualified MTSLs.

The Coast Guard issued *COMDTPUB 3120.1 7B*, also known as the US Coast Guard *IMH*, to align the service with *NIMS* and *ICS*. The *IMH* delineates actions taken under the *ICS* framework, including MTSR.¹⁰⁸ Though the *IMH* is a useful job-aid for MTSR personnel participating in incident responses related to TSIs and transportation disruptions in the maritime domain, the publication falls short in addressing both operational and planning consideration for MTSR by primarily citing MTSR as a function of the Planning Section, only slightly mentioning MTSR in the context of Operations Section responsibilities.¹⁰⁹ Any response affecting the MTS is going to have elements that need to be carried out by the Operations Section. The *IMH* chapter devoted to MTSR does advise that Operations Sections may conduct “MTS recovery operations ... [and] establish task-specific functional groups such as wreck identification, salvage response, decontamination, and vessel queue management” to support MTSR but fails to reflect any of these recommendations in the Operations Section chapter, as is done for MTSR and MTSRU duties in the Planning Section chapter.¹¹⁰ Updating the *IMH* to account for MTSR Operations Section duties is needed to set expectations that Operations Section Leaders will have oversight of MTSR duties and prevent these duties from being improperly placed under the

purview of the MTSRU in the Planning Section. The MTSRU is an information gathering unit that informs operations but should not oversee operations as an entity of the Planning Section during ICS responses.¹¹¹

The Incident Management Assist Team, or IMAT, is described as providing “personnel to deploy and assist Coast Guard Operational Commanders to protect against, respond to, recover from and mitigate the effects of all-hazard incidents and events to reduce the loss of life, property, and impact to the environment.”¹¹² The IMAT has active duty, reservist, and civilian personnel trained in most facets of ICS roles and responsibilities and has been providing this support since 2013.¹¹³ However, support to major incidents, such as hurricane responses in 2017 and 2018, have been done without any MTSL or MTSR personnel billeted to the IMAT.¹¹⁴ Though IMAT personnel typically have a working knowledge of MTSR operations based on years of *NIMS* and ICS experience, not having personnel billeted as MTSLs or MTSR specialists creates a support void in the IMAT when deploying to support ICs. This requires ICs to solely rely on in-house expertise or request supporting forces from other operational Coast Guard units. Creation of the Coast Guard IMAT, as an arm of the Coast Guard’s National Strike Force,¹¹⁵ was a great step towards increasing training and real-world assistance for *NIMS* and ICS responses, but collaboration among Coast Guard Headquarters, Atlantic Area, National Strike Force, and IMAT to establish MTSL billets within the IMAT is the next logical step to increase both IMAT and MTSR program capabilities and value to operational units leading MTSR efforts.

Strengthen Interagency Collaboration and Cooperation. In addition to correcting MTSR program fragmentation stemming from the Coast Guard Headquarters organization, namely updating the *IMH* and properly billeting the IMAT, the Coast Guard must also strengthen interagency collaboration and cooperation by renewing outdated agreements. Interagency

agreements among the Coast Guard, CBP, USACE, and NOAA exist, but some of these agreements are more than a decade old and in need of renewal.¹¹⁶ At a minimum, the Coast Guard should seek to renew existing protocols and interagency agreements that account for advances in MTS-related information and cyber technologies. However, it may also be prudent for the Coast Guard to consider entering into wider, more encompassing, joint-interagency agreements with MTSR stakeholders, rather than standalone agreements with each agency. Notionally, an MOA could be adopted to include the Coast Guard, CBP, USACE, NOAA, and Naval Sea Systems Command (NAVSEA) from the US Navy, the latter which possesses underwater surveying capabilities similar to the USACE and NOAA.¹¹⁷ This MOA would go beyond participation in existing membership forums, such as the Interagency Marine Debris Coordinating Committee and the National Maritime Security Advisory Committee, but these two committees could serve as sponsoring organizations to coordinate drafting and ratification of such an agreement.¹¹⁸ A revitalized, broader reaching MOA could promote greater participation in MTSR operations and planning done by MTSRUs during training, exercises, and incident response and facilitate pre-incident familiarization between key interagency stakeholders at the operational and local levels.

Information-Sharing between MTSR Databases. Information technology systems have been used to support MTSR in recent years, including CART and Homeport. Additionally, several other systems are also used by the Coast Guard daily to support steady state MTS activities, including the Integrated Aids to Navigation Information System (I-ATONIS), the United States Aids to Navigation Information Management System (USAIMS), and the Marine Information for Safety and Law Enforcement (MISLE) system. Establishing data-sharing linkages between MTS information technology systems to reduce redundant data entry

requirements across various systems would benefit all government and industry stakeholders involved in the tracking, planning, and prioritization of MTSR operations. I-ATONIS and USAIMS are used by Coast Guard members “to update the status and condition of the aids when they inspect and service them.”¹¹⁹ Having these databases link to CART events would enable real-time updating of ATON EEIs in CART, as crews reestablish them post-incident in USAIMS. This would reduce timetables for passing critical information for reopening port areas and relieve MTSRU personnel the responsibility of manually changing EEI statuses of potentially hundreds of navigational aids in CART, allowing MTSRU personnel to focus greater attention on planning future MTSR activities. MISLE is the Coast Guard’s primary enterprise system of record for tracking service activities involving vessels, port infrastructure and facilities, and bridges, among other data sets.¹²⁰ As the primary enterprise system of record for the Coast Guard, MISLE is an ideal choice for linking to CART and would help ensure CART baseline EEI data is current prior to real-world incidents occurring. Interfaces and data linkages between these information systems would ensure cross-system data integrity, thereby reducing MTSRU administrative burdens during response and recovery and increasing efficiency of overall MTSR operations.

Conclusion

The US Coast Guard has a long history of participating in MTSR activities, even before legislative formalization with the *MTSA* and *SAFE Port Act*. Consolidation of various maritime services into the modern-era US Coast Guard, as well as evolution of key legislative acts and executive branch directives throughout the 20th century, have positioned the Coast Guard to meet 21st century national mandates and challenges pertaining to MTSR. However, Coast Guard MTSR efforts, considering increasing frequency and intensity of events adversely affecting the

MTS, could be improved. The Coast Guard has adapted *NIMS* and ICS to the maritime domain by creating MTSRUs within the Planning Section of Incident Commands, but the *IMH* still needs to better clarify MTSR roles and responsibilities between the Planning Section and Operations Section. Additionally, the Coast Guard created the IMAT as a deployable unit to deliver on demand training, exercise, and real-world support and personnel augmentation during incident responses, but billeting the IMAT with MTSL qualified personnel would make this team even better. Entering into agreements and participating in joint-agency committees with CBP, USACE, and NOAA have enabled whole-of-government approaches to MTSR and positions ICs to leverage unique interagency assets and capabilities to facilitate rapid resumption of commerce post-incident, but many of these agreements are outdated and should be re-envisioned as multi-service/agency agreements instead of standalone bi-lateral agreements. Additionally, MTSR agreements should also be expanded to other supporting interservice entities, such as NAVSEA. Lastly, web-based technologies, such as *CART* and *Homeport*, have enabled responders to track MTSR progress to inform planning and prioritization, while also providing the capability to quickly disseminate information to key government decision-makers and industry stakeholders, but other enterprise systems, such as I-ATONIS, USAIMS, and MISLE offer opportunities to establish data-sharing linkages to reduce MTSR administrative burdens.

¹ United States Coast Guard, *Maritime Commerce Strategic Outlook* (Washington, DC, 2018), 10,

<https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Marine-Transportation-Systems-CG-5PW/Maritime-Commerce/>.

² Ibid.

³ Jon D. Haveman and Howard J. Shatz, *Protecting the Nation's Seaports: Balancing Security and Cost*, ed. Jon D. Haveman and Howard J. Shatz (San Francisco, CA: Public Policy Institute of California, 2006), 2,

<https://www.ppic.org/publication/protecting-the-nations-seaports-balancing-security-and-cost/>.

⁴ Committee on the Marine Transportation System, *National Strategy for the Maritime Transportation System: A Framework for Action* (Washington, DC: Department of Transportation, 2008), 24,

https://www.cmts.gov/downloads/national_strategy_mts_2008.pdf.

⁵ John Nadeau, "Remarks on the safety, security of the Marine Transportation System," posted by Amy Midgett, *Coast Guard Maritime Commons*, October 30, 2018, <https://mariners.coastguard.dodlive.mil/2018/10/30/10-30-2018-rear-adm-john-nadeau-remarks-on-the-safety-security-of-the-marine-transportation-system/>.

⁶ Chris Dolce, "United States Has Been Struck By Five Category 4 or 5 Tropical Cyclones in 14 Months," *Weather.com*, October 25, 2018, <https://weather.com/storms/hurricane/news/2018-10-25-united-states-hurricane-typhoon-landfalls-category-4-or-5>.

⁷ *State of the Coast Guard 2018: Introductory Video*, video by Petty Officer 1st Class Patrick Kelley (United States: US Coast Guard, 2018), <https://www.youtube.com/watch?v=w6jEElmDc4c>.

⁸ US Department of Homeland Security and US Department of Transportation, *Transportation Systems-Sector Specific Plan*, (Washington, DC, 2015), 8, <https://www.dhs.gov/sites/default/files/publications/nipp-ssp-transportation-systems-2015-508.pdf>.

⁹ *Accession to the 1982 Law of the Sea Convention: Testimony before the Senate Committee on Foreign Relations*, 112th Cong., 1 (2012) (testimony of Admiral Robert Papp, Commandant, United States Coast Guard), https://www.foreign.senate.gov/imo/media/doc/Admiral_Robert_Papp_Testimony.pdf.

¹⁰ United States Coast Guard, "United States Coast Guard Historian's Office-Time Line: 1900's – 2000's," accessed January 16, 2019, <https://www.history.uscg.mil/Complete-Time-Line/Time-Line-1900-2000/>.

¹¹ Ibid.

¹² United States Coast Guard, *Coast Guard Publication 1: Doctrine for the U.S. Coast Guard* (Washington, DC: United States Coast Guard, 2014), 1, https://media.defense.gov/2018/Oct/05/2002049081/-1/-1/1/CGPUB_1-0_DOCTRINE.PDF.

¹³ United States Coast Guard, "United States Coast Guard Historian's Office: U.S. Coast Guard History Program," accessed January 16, 2019, <https://www.history.uscg.mil/About/>.

¹⁴ United States Coast Guard, *Coast Guard Publication 1: Doctrine for the U.S. Coast Guard* (Washington, DC: United States Coast Guard, 2014), 90, https://media.defense.gov/2018/Oct/05/2002049081/-1/-1/1/CGPUB_1-0_DOCTRINE.PDF.

¹⁵ William H. Thiesen, "The Long Blue Line: Lighthouse Service during the Civil War," *Coast Guard Compass*, June 22, 2017, <http://coastguard.dodlive.mil/2017/06/the-long-blue-line-lighthouse-service-during-the-civil-war/>.

¹⁶ U.S. National Archives, *Records of the Bureau of Marine Inspection and Navigation* (Washington, DC: National Archives, 2016), Record Group 41 (1774-1973), <https://www.archives.gov/research/guide-fed-records/groups/041.html#41.1>.

¹⁷ United States Coast Guard, *Coast Guard Publication 1: Doctrine for the U.S. Coast Guard* (Washington, DC: United States Coast Guard, 2014), i5, https://media.defense.gov/2018/Oct/05/2002049081/-1/-1/1/CGPUB_1-0_DOCTRINE.PDF.

¹⁸ United States Coast Guard, "United States Coast Guard Historian's Office: U.S. Coast Guard History Program," accessed January 16, 2019, <https://www.history.uscg.mil/About/>.

¹⁹ Scott Berinato, "Regulation That Has Shaped the Coast Guard's Security Mission," *CSO Online*, May 2004, <https://www.csoonline.com/article/2117144/compliance/regulation-that-has-shaped-the-coast-guard-s-security-mission.html>.

²⁰ *100th Anniversary of the Espionage Act and Creation of Captain of the Port*, Directed by Telfair Brown (United States, U.S. Coast Guard, 2017), Online Video, <https://www.dvidshub.net/video/532541/100th-anniversary-espionage-act-and-creation-captain-port>.

²¹ Ibid.

²² Maritime Transportation Security Act (MTSA) of 2002, Public Law 107-295 (November 25, 2002), accessed January 17, 2019, <https://www.congress.gov/107/plaws/publ295/PLAW-107publ295.pdf>.

-
- ²³ Magnuson Act, 50 U.S.C. § 191 (1950), accessed January 16, 2019, <https://www.law.cornell.edu/uscode/text/50/191>.
- ²⁴ The White House, *Executive Order 10173: Regulations Relating to the Safeguarding of Vessels, Harbors, Ports, and Waterfront Facilities of the United States* (Washington, DC, 1950), <https://www.trumanlibrary.org/executiveorders/index.php?pid=987&st=&st1=>.
- ²⁵ Ibid.
- ²⁶ Port and Waterways Safety Act, 33 U.S.C. § 25 (1972), accessed January 17, 2019, <http://uscode.house.gov/view.xhtml?path=/prelim@title33/chapter25&edition=prelim>.
- ²⁷ Larry Brooks, "Coast Guard Captain of the Port: A Brief History," *Proceedings* 75, no. 2 (Fall 2018): 16, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/>.
- ²⁸ "Prohibition of Vessel Operation and Cargo Transfers," *33 Code of Federal Regulations (C.F.R.) § 160.113* (1983), accessed January 17, 2019, https://www.ecfr.gov/cgi-bin/text-idx?SID=ddf0100881d213258e44ddb16a8e89b6&mc=true&node=pt33.2.160&rgn=div5#se33.2.160_1113.
- ²⁹ Andrew E. Tucci, "The Captain of the Port: A Vital Authority in Service to Our Nation," *Proceedings* 75, no. 2 (Fall 2018): 7, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/>.
- ³⁰ Larry Brooks, "Coast Guard Captain of the Port: A Brief History," *Proceedings* 75, no. 2 (Fall 2018): 16-17, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/>.
- ³¹ US Coast Guard, *On Scene Coordinator Report: Deepwater Horizon Oil Spill* (Washington, DC: US Coast Guard, 2011), 94-96, https://homeport.uscg.mil/Lists/Content/Attachments/119/DeepwaterHorizonReport%20-31Aug2011%20-CD_2.pdf.
- ³² Joshua A. Lindenbaum, "Assuring the Flow: Maritime Security Challenges and Trade Between the U.S. and China," *Richmond Journal of Global Law and Business* 6, no. 1 (2006): 97, <https://scholarship.richmond.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1052&context=global>.
- ³³ Maritime Transportation Security Act (MTSA) of 2002, Public Law 107-295 (November 25, 2002), accessed January 17, 2019, <https://www.congress.gov/107/plaws/publ295/PLAW-107publ295.pdf>.
- ³⁴ Ibid.
- ³⁵ "Maritime Security," *33 Code of Federal Regulations (C.F.R.), Chapter I, Subchapter H* (2003), accessed January 17, 2019, <https://www.ecfr.gov/cgi-bin/text-idx?gp=&SID=ec5e8fda374fcfe0a90d90085b38580a&mc=true&tpl=/ecfrbrowse/Title33/33CisubchapH.tpl>.
- ³⁶ "Maritime Security: Area Maritime Security," *33 Code of Federal Regulations (C.F.R.) § 103* (2003), accessed January 19, 2019, <https://www.ecfr.gov/cgi-bin/text-idx?SID=ec5e8fda374fcfe0a90d90085b38580a&mc=true&node=sp33.1.103.e&rgn=div6>.
- ³⁷ US Coast Guard, *The US Coast Guard Strategy for Maritime Safety, Security, and Stewardship* (Washington, DC: US Coast Guard, January 2007), i, <https://www.hsdl.org/?abstract&did=470382>.
- ³⁸ Security and Accountability for Every Port Act of 2006, Public Law 109-347 (October 13, 2006), accessed January 18, 2019, <https://www.congress.gov/bill/109th-congress/house-bill/4954>.
- ³⁹ Ibid.
- ⁴⁰ US Department of Homeland Security, *CBP/USCG Joint Protocols for the Expeditious Recovery of Trade* (Washington, DC: Department of Homeland Security, January 2008), 1.
- ⁴¹ Federal Emergency Management Agency, "National Preparedness System," accessed January 18, 2019, <https://www.fema.gov/national-preparedness-system>.
- ⁴² Keith Bea, *Federal Emergency Management Policy Changes After Hurricane Katrina: A Summary of Statutory Provisions* (Washington, DC: Congressional Research Service, March 2007), 33, <https://fas.org/sgp/crs/homesecc/RL33729.pdf>.
- ⁴³ United States Coast Guard, *Commandant Instruction 16000.28A: Marine Transportation System Recovery Planning and Operations* (Washington, DC: US Coast Guard, June 2014), <https://homeport.uscg.mil/Lists/Content/Attachments/1569/MTSR%20CI%20062614.pdf>.
- ⁴⁴ The White House, Homeland Security Presidential Directive (HSPD) 5 (Washington, DC: Office of the President of the United States, 2003), 3, <https://www.dhs.gov/publication/homeland-security-presidential-directive-5>.
- ⁴⁵ Federal Emergency Management Agency, *National Incident Management System* (Washington, DC: FEMA, October 2017), 67, <https://www.fema.gov/media-library/assets/documents/148019>.
- ⁴⁶ Ibid, 78.

-
- ⁴⁷ US Coast Guard, *On Scene Coordinator Report: Deepwater Horizon Oil Spill* (Washington, DC: US Coast Guard, 2011), 94-96, https://homeport.uscg.mil/Lists/Content/Attachments/119/DeepwaterHorizonReport%20-31Aug2011%20-CD_2.pdf.
- ⁴⁸ Rogers Henderson, *The Marine Transportation System Recovery Unit*, (Washington, DC: Office of Port and Facility Compliance, 2014), <https://homeport.uscg.mil/Lists/Content/Attachments/1626/MTSRU%20Information%20Sheet%20v4%200.pdf>.
- ⁴⁹ Linda A. Sturgis, Tiffany C. Smythe and Andrew E. Tucci, *Port Recovery in the Aftermath of Hurricane Sandy Improving Port Resiliency in the Era of Climate Change* (Washington, DC: Center for a New American Security, 2014), 7-12, <https://www.jstor.org/stable/resrep06221>.
- ⁵⁰ US Department of Homeland Security, "Written testimony of USCG District 8 Commander Rear Admiral Paul Thomas for a House Committee on Homeland Security field hearing titled 'Houston Strong: Hurricane Harvey Lessons Learned and the Path Forward,'" news release, April 9, 2018, <https://www.dhs.gov/news/2018/04/09/written-testimony-uscg-house-committee-homeland-security-field-hearing-titled>.
- ⁵¹ Department of Homeland Security, "Presidential Directives," accessed February 25, 2019, <https://www.dhs.gov/presidential-directives#>.
- ⁵² The White House, *National Strategy for Maritime Security* (Washington, DC, 2005), 27, <https://www.state.gov/t/pm/rls/othr/misc/255321.htm>.
- ⁵³ Maritime Security Policy Coordinating Committee, *Maritime Infrastructure Recovery Plan for the National Strategy for Maritime Security* (Washington, DC: Department of Homeland Security, 2006), https://www.dhs.gov/xlibrary/assets/HSPD_MIRPPPlan.pdf.
- ⁵⁴ US Department of Homeland Security, *CBP/USCG Joint Protocols for the Expedious Recovery of Trade* (Washington, DC: Department of Homeland Security, January 2008), 1.
- ⁵⁵ US Coast Guard Sector San Francisco, *Marine Salvage Response Plan: Annex 10200 of Northern California Area Maritime Security Plan* (San Francisco, CA: US Coast Guard, 2014), 3, https://homeport.uscg.mil/Lists/Content/Attachments/2173/2014_MSRP_2.pdf.
- ⁵⁶ National Oceanic and Atmospheric Administration, "Interagency Marine Debris Coordinating Committee," accessed on January 18, 2019, <https://marinedebris.noaa.gov/IMDCC>.
- ⁵⁷ Committee on the Marine Transportation System, *National Strategy for the Marine Transportation System: A Framework for Action* (Washington, DC, July 2008), 7, https://www.cmts.gov/downloads/national_strategy_mts_2008.pdf.
- ⁵⁸ United States Coast Guard, *Commandant Instruction 16000.28A: Marine Transportation System Recovery Planning and Operations* (Washington, DC: US Coast Guard, June 2014), 5, <https://homeport.uscg.mil/Lists/Content/Attachments/1569/MTSR%20CI%20062614.pdf>.
- ⁵⁹ Security and Accountability for Every Port Act of 2006, Public Law 109-347 (October 13, 2006), 21, accessed January 18, 2019, <https://www.congress.gov/bill/109th-congress/house-bill/4954>.
- ⁶⁰ US Government Accountability Office, *Maritime Security: Coast Guard Efforts to Address Port Recovery and Salvage Response* (Washington, DC: Government Accountability Office, 2012), 14, <https://www.gao.gov/assets/590/589946.pdf>.
- ⁶¹ Department of Homeland Security, *U.S. Customs & Border Protection (CBP)/U.S. Coast Guard* (National Maritime Security Advisory Committee, Washington, DC, October 2016), PowerPoint presentation, 7, <https://homeport.uscg.mil/Lists/Content/DispForm.aspx?ID=2729>.
- ⁶² Ibid, 6.
- ⁶³ Department of Transportation, *Maritime Emergency Response Guide* (Washington, DC: Department of Transportation, March 2015), 9, https://cms.dot.gov/sites/dot.gov/files/docs/Maritime%20Emergency%20Response%20Guide%20-%20March%202015_0.pdf.
- ⁶⁴ US Coast Guard Sector San Francisco, *Marine Salvage Response Plan: Annex 10200 of Northern California Area Maritime Security Plan* (San Francisco, CA: US Coast Guard, 2014), 3, https://homeport.uscg.mil/Lists/Content/Attachments/2173/2014_MSRP_2.pdf.
- ⁶⁵ Federal Emergency Management Agency, *Emergency Support Function #3 – Public Works and Engineering Annex* (Washington, DC: FEMA, January 2008), 6, <https://www.fema.gov/pdf/emergency/nrf/nrf-esf-03.pdf>.

-
- ⁶⁶ Federal Emergency Management Agency, *Emergency Support Function #10 – Oil and Hazardous Materials Response Annex* (Washington, DC: FEMA, June 2016), 3, https://www.fema.gov/media-library-data/1470149472600-da7148fddd4ed137534486036abba0e8/ESF_10_Oil_and_Hazardous_Materials_20160705_508.pdf.
- ⁶⁷ National Oceanic and Atmospheric Administration: Office of Response and Restoration, "Coast Guard 2016 Maritime Transportation System Recovery Exercise," news release, August 26, 2016, <https://response.restoration.noaa.gov/about/media/us-coast-guard-2016-maritime-transportation-system-recovery-exercise.html>.
- ⁶⁸ National Oceanic and Atmospheric Administration, "Interagency Marine Debris Coordinating Committee," accessed on January 18, 2019, <https://marinedebris.noaa.gov/IMDCC>.
- ⁶⁹ NOAA Office of Coast Survey, "NOAA Positions Hydrographic Survey Assets in Hawaii in Preparation for Hurricane Lane," news release, August 23, 2018, <https://noaacoastsurvey.wordpress.com/2018/08/23/noaa-positions-hydrographic-survey-assets-in-hawaii-in-preparation-for-hurricane-lane/>.
- ⁷⁰ NOAA Office of Coast Survey, "NOAA Helps Ports Recover in Georgia and Florida following Hurricane Irma," news release, September 12, 2017, <https://www.nauticalcharts.noaa.gov/updates/?p=170344>.
- ⁷¹ United States Coast Guard, *Commandant Publication P3120.17B: Incident Management Handbook* (Washington, DC: US Coast Guard, May 2014), 2, <https://homeport.uscg.mil/Lists/Content/Attachments/2923/2014%20USCG%20Incident%20Management%20Handbook%20in%20English.pdf>.
- ⁷² Ibid.
- ⁷³ United States Coast Guard, *Commandant Instruction 16000.27: Alignment with the National Incident Management System and National Response Plan* (Washington, DC: US Coast Guard, June 2005), 1.
- ⁷⁴ United States Coast Guard, *Commandant Publication P3120.17B: Incident Management Handbook* (Washington, DC: US Coast Guard, May 2014), 16-4, <https://homeport.uscg.mil/Lists/Content/Attachments/2923/2014%20USCG%20Incident%20Management%20Handbook%20in%20English.pdf>.
- ⁷⁵ United States Coast Guard, *Navigation and Vessel Inspection Circular 04-18: Guidelines for Drafting the Marine Transportation System Recovery Plan* (Washington, DC: US Coast Guard, August 2018), 38, https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2018/NVIC-04_18.pdf.
- ⁷⁶ United States Coast Guard, *USCG IMH*, accessed on January 21, 2019, <https://play.google.com/store/apps/details?id=com.uscg.app>.
- ⁷⁷ Ibid.
- ⁷⁸ United States Coast Guard, *Commandant Instruction 16000.28A: Marine Transportation System Recovery Planning and Operations* (Washington, DC: US Coast Guard, June 2014), 1, <https://homeport.uscg.mil/Lists/Content/Attachments/1569/MTSR%20CI%20062614.pdf>.
- ⁷⁹ Rogers Henderson, *The Marine Transportation System Recovery Unit*, (Washington, DC: Office of Port and Facility Compliance, 2014), <https://homeport.uscg.mil/Lists/Content/Attachments/1626/MTSRU%20Information%20Sheet%20v4%200.pdf>.
- ⁸⁰ United States Coast Guard, *Commandant Instruction 16000.28A: Marine Transportation System Recovery Planning and Operations* (Washington, DC: US Coast Guard, June 2014), 10, <https://homeport.uscg.mil/Lists/Content/Attachments/1569/MTSR%20CI%20062614.pdf>.
- ⁸¹ United States Coast Guard, *Navigation and Vessel Inspection Circular 04-18: Guidelines for Drafting the Marine Transportation System Recovery Plan* (Washington, DC: US Coast Guard, August 2018), 36-37, https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2018/NVIC-04_18.pdf.
- ⁸² United States Coast Guard, *Commandant Instruction 16000.28A: Marine Transportation System Recovery Planning and Operations* (Washington, DC: US Coast Guard, June 2014), 11, <https://homeport.uscg.mil/Lists/Content/Attachments/1569/MTSR%20CI%20062614.pdf>.
- ⁸³ Bradley P. Bergan, "Revolutionizing MTS Recovery," *Proceedings* 68, no. 4 (Winter 2011-2012): 60, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/Proceedings-Archives-Delete/Proceedings-Archives/>.
- ⁸⁴ United States Coast Guard, *Common Assessment and Reporting Tool 2.0: User Manual* (Washington, DC: Office of Port and Facility Compliance, 2012), 4, <https://cgcart.uscg.mil>.

⁸⁵ Ibid.

-
- ⁸⁶ Bradley P. Bergan, "Revolutionizing MTS Recovery," *Proceedings* 68, no. 4 (Winter 2011-2012): 60, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/Proceedings-Archives-Delete/Proceedings-Archives/>.
- ⁸⁷ United States Coast Guard, *Common Assessment and Reporting Tool 2.0: User Manual* (Washington, DC: Office of Port and Facility Compliance, 2012), 5, <https://cgcart.uscg.mil>.
- ⁸⁸ *Ibid.*
- ⁸⁹ Bradley P. Bergan, "Revolutionizing MTS Recovery," *Proceedings* 68, no. 4 (Winter 2011-2012): 61, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/Proceedings-Archives-Delete/Proceedings-Archives/>.
- ⁹⁰ United States Coast Guard, *Commandant Instruction 16000.28A: Marine Transportation System Recovery Planning and Operations* (Washington, DC: US Coast Guard, June 2014), 11, <https://homeport.uscg.mil/Lists/Content/Attachments/1569/MTSR%20CI%20062614.pdf>.
- ⁹¹ *Ibid.*
- ⁹² United States Coast Guard, "Coast Guard Homeport," accessed February 25, 2019, <https://homeport.uscg.mil/>.
- ⁹³ United States Coast Guard, "Homeport 2.0," *Waves on the Waterfront* 5, no. 1 (Washington, DC: Office of Port and Facility Compliance, February 2016): 1, [https://www.dco.uscg.mil/Portals/9/CG-FAC/WoW/WavesOnTheWaterfront%20\(Feb%202016\).pdf?ver=2017-07-19-072852-867](https://www.dco.uscg.mil/Portals/9/CG-FAC/WoW/WavesOnTheWaterfront%20(Feb%202016).pdf?ver=2017-07-19-072852-867).
- ⁹⁴ United States Coast Guard, "Office of Port and Facility Compliance: Homeport 2.0 News and Information," accessed January 18, 2019, <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Port-and-Facility-Compliance-CG-FAC/Homeport-20/>.
- ⁹⁵ United States Coast Guard, *Homeport 2.0 User Guide for Public Users* (Washington, DC: US Coast Guard, May 2018), 1, https://homeport.uscg.mil/SiteCollectionDocuments/Homeport_2.0_User_Guide_for_Public.pdf.
- ⁹⁶ United States Coast Guard, "Incident Management Assist Team: CG-IMAT – Norfolk, Virginia," accessed January 18, 2019, <https://www.atlanticarea.uscg.mil/Our-Organization/Area-Units/CG-IMAT/>.
- ⁹⁷ United States Coast Guard Reserves, *Reservist* 62, no. 3 (Washington, DC: Commandant, CG-1313, 2015): 20-21, <https://uscgreservist.epubxp.com/i/534435-iss3-2015/21>.
- ⁹⁸ US Coast Guard, *Incident Management Assist Team 101* (US Coast Guard Incident Management Assist Team, Norfolk, Virginia, August 2015), PowerPoint presentation, 11, <https://www.nrt.org/sites/54/files/CG-IMAT%20101%20.pdf>.
- ⁹⁹ United States Coast Guard Reserves, *Reservist* 62, no. 3 (Washington, DC: Commandant, CG-1313, 2015): 20-21, <https://uscgreservist.epubxp.com/i/534435-iss3-2015/21>.
- ¹⁰⁰ Joseph Couch and Douglas Campbell, "The Coast Guard's Marine Transportation System Recovery Program: More than a decade of increasing effectiveness," *Proceedings* 75, no. 2 (Washington, DC: US Coast Guard, Fall 2018): 35-40, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/>.
- ¹⁰¹ United States Coast Guard, *Navigation and Vessel Inspection Circular 04-18: Guidelines for Drafting the Marine Transportation System Recovery Plan* (Washington, DC: US Coast Guard, August 2018), 18-30, https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2018/NVIC-04_18.pdf.
- ¹⁰² United States Coast Guard, *Navigation and Vessel Inspection Circular 09-02, Change 4: Guidelines for the Area Maritime Security Committees and Area Maritime Security Plans Required for U.S. Ports* (Washington, DC: US Coast Guard, 2002), 6, <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2002/NVIC%2009-02%20CH4%20Final%2012%20JUN%202013.pdf>.
- ¹⁰³ United States Coast Guard, "Office of Port and Facility Compliance," accessed on January 21, 2019, <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-cgfac/>.
- ¹⁰⁴ United States Coast Guard, "Office of Incident Management and Preparedness," accessed on January 21, 2019, <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Response-Policy-CG-5R/Office-of-Incident-Management-Preparedness-CG-5RI/>.
- ¹⁰⁵ United States Coast Guard, "Office of Waterways and Ocean Policy," accessed on January 21, 2019, <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Marine-Transportation-Systems-CG-5PW/Office-of-Waterways-and-Ocean-Policy/>.
- ¹⁰⁶ United States Coast Guard, *Commandant Instruction 16601.28A: Area Maritime Security Plan (AMSP) and Area Maritime Security (AMS) Assessment Development and Maintenance Process* (Washington, DC: US Coast Guard, June 2013), 3, https://media.defense.gov/2017/Mar/15/2001717004/-1/-1/0/CI_16601_28A.PDF.

-
- ¹⁰⁷ Paul Arnett, "The Port Security Grant Program: Good enough, or can it be made better?" (master's thesis, Naval Post Graduate School, 2016), 6, Defense Technical Information Center, <https://calhoun.nps.edu/handle/10945/49476>.
- ¹⁰⁸ United States Coast Guard, *Commandant Publication P3120.17B: Incident Management Handbook* (Washington, DC: US Coast Guard, May 2014), 16-4, <https://homeport.uscg.mil/Lists/Content/Attachments/2923/2014%20USCG%20Incident%20Management%20Handbook%20in%20English.pdf>.
- ¹⁰⁹ Ibid, 16-8.
- ¹¹⁰ Ibid, 7-1 – 7-16.
- ¹¹¹ Joseph Couch and Douglas Campbell, "The Coast Guard's Marine Transportation System Recovery Program: More than a decade of increasing effectiveness," *Proceedings* 75, no. 2 (Washington, DC: US Coast Guard, Fall 2018): 37-38, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/>.
- ¹¹² US Coast Guard, *Incident Management Assist Team Information Sheet* (Norfolk, Virginia, 2016).
- ¹¹³ United States Coast Guard Reserves, *Reservist* 62, no. 3 (Washington, DC: Commandant, CG-1313, 2015): 20-21. <https://uscgreservist.epubxp.com/i/534435-iss3-2015/21>.
- ¹¹⁴ US Coast Guard, *Incident Management Assist Team 101* (US Coast Guard Incident Management Assist Team, Norfolk, Virginia, August 2015), PowerPoint presentation, 6, <https://www.nrt.org/sites/54/files/CG-IMAT%20101%20.pdf>.
- ¹¹⁵ United States Coast Guard Atlantic Area, "National Strike Force," accessed on January 21, 2019, <https://www.atlanticarea.uscg.mil/Our-Organization/Area-Units/National-Strike-Force/>.
- ¹¹⁶ Ryan Owens, "Trade Recovery Protocols," *Proceedings* 68, no. 4 (Winter 2011-2012): 63, <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/Proceedings-Archives-Delete/Proceedings-Archives/>.
- ¹¹⁷ Keith Lehnhardt, "SUPSALV Sends...," *Faceplate* 22, no. 1 (Washington, DC: US Navy, September 2018): 3, https://www.navsea.navy.mil/Portals/103/Documents/SUPSALV/faceplate/Faceplate_September2018.pdf.
- ¹¹⁸ National Maritime Security Advisory Committee, "The National Maritime Security Advisory Committee," accessed February 25, 2019, <http://uscg-nmsac.blogspot.com/>.
- ¹¹⁹ Edward Lundquist, "USCG Navigation Center: Steering a steady course for safe, secure, efficient waterways," *Maritime Global News* (September 15, 2018), <http://maritimeglobalnews.com/news/navigation-center-steering-steady-d53kjp>.
- ¹²⁰ Gary Chappell, *Privacy Impact Assessment for the Marine Information for Safety and Law Enforcement (MISLE) System* (Washington, DC: Department of Homeland Security, September 2009), https://www.dhs.gov/xlibrary/assets/privacy/privacy_pia_uscg_misle.pdf.

Bibliography

100th Anniversary of the Espionage Act and Creation of Captain of the Port. Directed by Telfair Brown. United States: US Coast Guard, 2017. Online Video, <https://www.dvidshub.net/video/532541/100th-anniversary-espionage-act-and-creation-captain-port>.

-
- Accession to the 1982 Law of the Sea Convention: Testimony before the Senate Committee on Foreign Relations, 112th Cong., 1 (2012). Testimony of Admiral Robert Papp, Commandant, United States Coast Guard.
https://www.foreign.senate.gov/imo/media/doc/Admiral_Robert_Papp_Testimony.pdf.
- Arnett, Paul. "The Port Security Grant Program: Good enough, or can it be made better?" Master's thesis, Naval Post Graduate School, 2016. Defense Technical Information Center.
<https://calhoun.nps.edu/handle/10945/49476>.
- Bea, Keith. *Federal Emergency Management Policy Changes After Hurricane Katrina: A Summary of Statutory Provisions*. Washington, DC: Congressional Research Service, March 2007. <https://fas.org/sgp/crs/homsec/RL33729.pdf>.
- Bergan, Bradley P. "Revolutionizing MTS Recovery." *Proceedings* 68, no. 4 (Winter 2011-2012): <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/Proceedings-Archives-Delete/Proceedings-Archives/>.
- Berinato, Scott. "Regulation That Has Shaped the Coast Guard's Security Mission." *CSO Online*, May 2004. <https://www.csoonline.com/article/2117144/compliance/regulation-that-has-shaped-the-coast-guard-s-security-mission.html>.
- Brooks, Larry. "Coast Guard Captain of the Port: A Brief History." *Proceedings* 75, no. 2 (Fall 2018): <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/>.
- Chappell, Gary. *Privacy Impact Assessment for the Marine Information for Safety and Law Enforcement (MISLE) System*. Washington, DC: Department of Homeland Security, September 2009. https://www.dhs.gov/xlibrary/assets/privacy/privacy_pia_uscg_misle.pdf.
- Committee on the Marine Transportation System. *National Strategy for the Marine Transportation System: A Framework for Action*. Washington, DC: 2008.
https://www.cmts.gov/downloads/national_strategy_mts_2008.pdf.
- Couch, Joseph and Douglas Campbell. "The Coast Guard's Marine Transportation System Recovery Program: More than a decade of increasing effectiveness." *Proceedings* 75, no. 2 (Washington, DC: US Coast Guard, Fall 2018): <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/>.
- Dolce, Chris. "United States Has Been Struck By Five Category 4 or 5 Tropical Cyclones in 14 Months." *Weather.com*, October 25, 2018.
<https://weather.com/storms/hurricane/news/2018-10-25-united-states-hurricane-typhoon-landfalls-category-4-or-5>.
- Federal Emergency Management Agency. *Emergency Support Function #3 – Public Works and Engineering Annex*. Washington, DC: FEMA, January 2008.
<https://www.fema.gov/pdf/emergency/nrf/nrf-esf-03.pdf>.
- Federal Emergency Management Agency. *Emergency Support Function #10 – Oil and Hazardous Materials Response Annex*. Washington, DC: FEMA, June 2016.

https://www.fema.gov/media-library-data/1470149472600-da7148fddd4ed137534486036abba0e8/ESF_10_Oil_and_Hazardous_Materials_20160705_508.pdf.

Federal Emergency Management Agency. *National Incident Management System*. Washington, DC: FEMA, October 2017. <https://www.fema.gov/media-library/assets/documents/148019>.

Federal Emergency Management Agency. “National Preparedness System.” Accessed January 18, 2019, <https://www.fema.gov/national-preparedness-system>.

Haveman Jon D. and Howard J. Shatz. *Protecting the Nation’s Seaports: Balancing Security and Cost*. Edited by Jon D. Haveman and Howard J. Shatz. San Francisco, CA: Public Policy Institute of California, 2006. <https://www.ppic.org/publication/protecting-the-nations-seaports-balancing-security-and-cost/>.

Henderson, Rogers. *The Marine Transportation System Recovery Unit*. Washington, DC: Office of Port and Facility Compliance, 2014. <https://homeport.uscg.mil/Lists/Content/Attachments/1626/MTSRU%20Information%20Sheet%20v4%200.pdf>.

Lehnhardt, Keith. “SUPSALV Sends...” *Faceplate* 22, no. 1 (Washington, DC: US Navy, September 2018): https://www.navsea.navy.mil/Portals/103/Documents/SUPSALV/faceplate/Faceplate_September2018.pdf.

Lindenbaum, Joshua A. “Assuring the Flow: Maritime Security Challenges and Trade Between the U.S. and China.” *Richmond Journal of Global Law and Business* 6, no. 1 (2006): <https://scholarship.richmond.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1052&context=global>.

Lundquist, Edward. “USCG Navigation Center: Steering a steady course for safe, secure, efficient waterways.” *Maritime Global News*, September 15, 2018. <http://maritimeglobalnews.com/news/navigation-center-steering-steady-d53kjp>.

Magnuson Act. 50 United States Code (U.S.C.) § 191 (1950). <https://www.law.cornell.edu/uscode/text/50/191>.

“Maritime Security.” 33 *Code of Federal Regulations (C.F.R.), Chapter I, Subchapter H* (2003). <https://www.ecfr.gov/cgi-bin/text-idx?gp=&SID=ec5e8fda374fcfe0a90d90085b38580a&mc=true&tpl=/ecfrbrowse/Title33/33CISubchapH.tpl>.

“Maritime Security: Area Maritime Security,” 33 *Code of Federal Regulations (C.F.R.) § 103* (2003). <https://www.ecfr.gov/cgi-bin/text-idx?SID=ec5e8fda374fcfe0a90d90085b38580a&mc=true&node=sp33.1.103.e&rgn=div6>.

Maritime Transportation Security Act (MTSA) of 2002. Public Law 107-295 (November 25, 2002). <https://www.congress.gov/107/plaws/publ295/PLAW-107publ295.pdf>.

-
- Maritime Security Policy Coordinating Committee (MSPCC). *The Maritime Infrastructure Recovery Plan for the National Strategy for Maritime Security*. Washington, DC: Department of Homeland Security/Government Printing Office, 2006.
https://www.dhs.gov/xlibrary/assets/HSPD_MIRPPlan.pdf.
- Nadeau, John. "Remarks on the safety, security of the Marine Transportation System." Posted by Amy Midgett. *Coast Guard Maritime Commons*, October 30, 2018.
<https://mariners.coastguard.dodlive.mil/2018/10/30/10-30-2018-rear-adm-john-nadeau-remarks-on-the-safety-security-of-the-marine-transportation-system/>.
- National Maritime Security Advisory Committee. "The National Maritime Security Advisory Committee." <http://uscg-nmsac.blogspot.com/>.
- National Oceanic and Atmospheric Administration. "Interagency Marine Debris Coordinating Committee." <https://marinedebris.noaa.gov/IMDCC>.
- National Oceanic and Atmospheric Administration: Office of Coast Survey. "NOAA Helps Ports Recover in Georgia and Florida following Hurricane Irma." News release, September 12, 2017. <https://www.nauticalcharts.noaa.gov/updates/?p=170344>.
- National Oceanic and Atmospheric Administration: Office of Coast Survey, "NOAA Positions Hydrographic Survey Assets in Hawaii in Preparation for Hurricane Lane." News release, August 23, 2018. <https://noaacoastsurvey.wordpress.com/2018/08/23/noaa-positions-hydrographic-survey-assets-in-hawaii-in-preparation-for-hurricane-lane/>.
- National Oceanic and Atmospheric Administration: Office of Response and Restoration. "Coast Guard 2016 Maritime Transportation System Recovery Exercise." News release, August 26, 2016. <https://response.restoration.noaa.gov/about/media/us-coast-guard-2016-maritime-transportation-system-recovery-exercise.html>.
- Owens, Ryan. "Trade Recovery Protocols." *Proceedings* 68, no. 4 (Winter 2011-2012): <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/Proceedings-Archives-Delete/Proceedings-Archives/>.
- Port and Waterways Safety Act. 33 United States Code (U.S.C.) § 25 (1972).
<http://uscode.house.gov/view.xhtml?path=/prelim@title33/chapter25&edition=prelim>.
- "Prohibition of Vessel Operation and Cargo Transfers." 33 *Code of Federal Regulations* (C.F.R.) § 160.113 (1983). https://www.ecfr.gov/cgi-bin/text-idx?SID=ddf0100881d213258e44ddb16a8e89b6&mc=true&node=pt33.2.160&rgn=div5#se33.2.160_1113.
- State of the Coast Guard 2018: Introductory Video*. Video by Petty Officer 1st Class Patrick Kelley. United States: US Coast Guard, 2018),
<https://www.youtube.com/watch?v=w6jEElmDc4c>.

-
- Sturgis, Linda A., Tiffany C. Smythe and Andrew E. Tucci. *Port Recovery in the Aftermath of Hurricane Sandy Improving Port Resiliency in the Era of Climate Change*. Washington, DC: Center for a New American Security, 2014. <https://www.jstor.org/stable/resrep06221>.
- The White House. *Executive Order 10173: Regulations Relating to the Safeguarding of Vessels, Harbors, Ports, and Waterfront Facilities of the United States*. Washington, DC: 1950. <https://www.trumanlibrary.org/executiveorders/index.php?pid=987&st=&st1=>.
- The White House. Homeland Security Presidential Directive (HSPD) 5. Washington, DC: Office of the President of the United States, 2003. <https://www.dhs.gov/publication/homeland-security-presidential-directive-5>.
- The White House. *National Strategy for Maritime Security*. Washington, DC: 2005. <https://www.state.gov/t/pm/rls/othr/misc/255321.htm>.
- Thiesen, William H. "The Long Blue Line: Lighthouse Service during the Civil War." *Coast Guard Compass*, June 22, 2017. <http://coastguard.dodlive.mil/2017/06/the-long-blue-line-lighthouse-service-during-the-civil-war/>.
- Tucci, Andrew E. "The Captain of the Port: A Vital Authority in Service to Our Nation." *Proceedings* 75, no. 2 (Fall 2018): <https://www.dco.uscg.mil/Featured-Content/Proceedings-Magazine/>.
- US Coast Guard Atlantic Area. "National Strike Force." <https://www.atlanticarea.uscg.mil/Our-Organization/Area-Units/National-Strike-Force/>.
- US Coast Guard. *Commandant Instruction 16000.27: Alignment with the National Incident Management System and National Response Plan*. Washington, DC: US Coast Guard, June 2005.
- US Coast Guard. *Commandant Instruction 16000.28A: Marine Transportation System Recovery Planning and Operations*. Washington, DC: US Coast Guard, June 2014. <https://homeport.uscg.mil/Lists/Content/Attachments/1569/MTSR%20CI%20062614.pdf>.
- US Coast Guard. *Commandant Instruction 16601.28A: Area Maritime Security Plan (AMSP) and Area Maritime Security (AMS) Assessment Development and Maintenance Process*. Washington, DC: US Coast Guard, June 2013. https://media.defense.gov/2017/Mar/15/2001717004/-1/-1/0/CI_16601_28A.PDF.
- US Coast Guard. *Coast Guard Publication 1: Doctrine for the U.S. Coast Guard*. Washington, DC: United States Coast Guard, 2014. https://media.defense.gov/2018/Oct/05/2002049081/-1/-1/1/CGPUB_1-0_DOCTRINE.PDF.
- US Coast Guard. *Commandant Publication P3120.17B: Incident Management Handbook*. Washington, DC: US Coast Guard, May 2014. <https://homeport.uscg.mil/Lists/Content/Attachments/2923/2014%20USCG%20Incident%20Management%20Handbook%20in%20English.pdf>.

-
- US Coast Guard. *Common Assessment and Reporting Tool 2.0: User Manual*. Washington, DC: Office of Port and Facility Compliance, 2012. <https://cgcart.uscg.mil>.
- US Coast Guard. "Coast Guard Homeport." <https://homeport.uscg.mil/>.
- US Coast Guard. *Homeport 2.0 User Guide for Public Users*. Washington, DC: US Coast Guard, May 2018.
[https://homeport.uscg.mil/SiteCollectionDocuments/Homeport 2.0 User Guide for Public .pdf](https://homeport.uscg.mil/SiteCollectionDocuments/Homeport%202.0%20User%20Guide%20for%20Public%20Users.pdf).
- US Coast Guard. "Homeport 2.0." *Waves on the Waterfront* 5, no. 1 (Washington, DC: Office of Port and Facility Compliance, February 2016): [https://www.dco.uscg.mil/Portals/9/CG-FAC/WoW/WavesOnTheWaterfront%20\(Feb%202016\).pdf?ver=2017-07-19-072852-867](https://www.dco.uscg.mil/Portals/9/CG-FAC/WoW/WavesOnTheWaterfront%20(Feb%202016).pdf?ver=2017-07-19-072852-867).
- US Coast Guard. *Incident Management Assist Team 101*. PowerPoint Presentation. US Coast Guard Incident Management Assist Team, Norfolk, Virginia, August 2015.
<https://www.nrt.org/sites/54/files/CG-IMAT%20101%20.pdf>.
- US Coast Guard. "Incident Management Assist Team: CG-IMAT – Norfolk, Virginia." <https://www.atlanticarea.uscg.mil/Our-Organization/Area-Units/CG-IMAT/>.
- US Coast Guard. *Incident Management Assist Team Information Sheet*. Norfolk, Virginia, 2016.
- US Coast Guard. *Maritime Commerce Strategic Outlook*. Washington, DC, 2018.
<https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Marine-Transportation-Systems-CG-5PW/Maritime-Commerce/>.
- US Coast Guard. *Navigation and Vessel Inspection Circular 04-18: Guidelines for Drafting the Marine Transportation System Recovery Plan*. Washington, DC: US Coast Guard, August 2018. https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2018/NVIC-04_18.pdf.
- US Coast Guard. *Navigation and Vessel Inspection Circular 09-02, Change 4: Guidelines for the Area Maritime Security Committees and Area Maritime Security Plans Required for U.S. Ports*. Washington, DC: US Coast Guard, 2002).
<https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2002/NVIC%2009-02%20CH4%20Final%2012%20JUN%202013.pdf>.
- US Coast Guard. "Office of Incident Management and Preparedness." <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Response-Policy-CG-5R/Office-of-Incident-Management-Preparedness-CG-5RI/>.
- US Coast Guard. "Office of Port and Facility Compliance." <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-/cgfac/>.

-
- US Coast Guard. "Office of Port and Facility Compliance: Homeport 2.0 News and Information." <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Port-and-Facility-Compliance-CG-FAC/Homeport-20/>.
- US Coast Guard. "Office of Waterways and Ocean Policy." <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Marine-Transportation-Systems-CG-5PW/Office-of-Waterways-and-Ocean-Policy/>.
- US Coast Guard. *On Scene Coordinator Report: Deepwater Horizon Oil Spill*. Washington, DC: US Coast Guard, 2011.
https://homeport.uscg.mil/Lists/Content/Attachments/119/DeepwaterHorizonReport%20-31Aug2011%20-CD_2.pdf.
- US Coast Guard. *The U.S. Coast Guard Strategy for Maritime Safety, Security, and Stewardship*. Washington, DC: Office of the Commandant, 2007.
<https://www.hsdl.org/?abstract&did=470382>.
- US Coast Guard. "United States Coast Guard Historian's Office-Time Line: 1900's – 2000's." <https://www.history.uscg.mil/Complete-Time-Line/Time-Line-1900-2000/>.
- US Coast Guard. "United States Coast Guard Historian's Office: U.S. Coast Guard History Program." <https://www.history.uscg.mil/About/>.
- US Coast Guard. *USCG IMH*. <https://play.google.com/store/apps/details?id=com.uscg.app>.
- US Coast Guard Reserves. *Reservist* 62, no. 3 (Washington, DC: Commandant, CG-1313, 2015): <https://uscgreservist.epubxp.com/i/534435-iss3-2015/21>.
- US Coast Guard Sector San Francisco. *Marine Salvage Response Plan: Annex 10200 of Northern California Area Maritime Security Plan*. San Francisco, CA: US Coast Guard, 2014. https://homeport.uscg.mil/Lists/Content/Attachments/2173/2014_MSRP_2.pdf.
- US Congress. *Security and Accountability for Every Port Act of 2006*. HR 4954. 109th Congress, Public Law 109-347 (October 13, 2006). <https://www.congress.gov/bill/109th-congress/house-bill/4954>.
- US Department of Homeland Security. *CBP/USCG Joint Protocols for the Expeditious Recovery of Trade*. Washington, DC: Department of Homeland Security, January 2008.
- US Department of Homeland Security. "Presidential Directives." <https://www.dhs.gov/presidential-directives#>.
- US Department of Homeland Security. *U.S. Customs & Border Protection (CBP)/U.S. Coast Guard*. PowerPoint Presentation. National Maritime Security Advisory Committee, Washington, DC, October 2016.
<https://homeport.uscg.mil/Lists/Content/DispForm.aspx?ID=2729>.
- US Department of Homeland Security. "Written testimony of USCG District 8 Commander Rear Admiral Paul Thomas for a House Committee on Homeland Security field hearing

titled ‘Houston Strong: Hurricane Harvey Lessons Learned and the Path Forward,’” News release, April 9, 2018. <https://www.dhs.gov/news/2018/04/09/written-testimony-uscg-house-committee-homeland-security-field-hearing-titled>.

US Department of Homeland Security and US Department of Transportation. *Transportation Systems-Sector Specific Plan*. Washington, DC: 2015. <https://www.dhs.gov/sites/default/files/publications/nipp-ssp-transportation-systems-2015-508.pdf>.

US Department of Transportation. *Maritime Emergency Response Guide*. Washington, DC: Department of Transportation, March 2015. https://cms.dot.gov/sites/dot.gov/files/docs/Maritime%20Emergency%20Response%20Guide%20-%20March%202015_0.pdf.

US Government Accountability Office. *Maritime Security: Coast Guard Efforts to Address Port Recovery and Salvage Response*. Washington, DC: Government Accountability Office, 2012. <https://www.gao.gov/assets/590/589946.pdf>.

US National Archives. *Records of the Bureau of Marine Inspection and Navigation*. Washington, DC: National Archives, 2016. Record Group 41 (1774-1973). <https://www.archives.gov/research/guide-fed-records/groups/041.html#41.1>.