

DEPARTMENT OF HOMELAND SECURITY
Office of Inspector General

**Allision of the M/V COSCO BUSAN With
the San Francisco-Oakland Bay Bridge**





Homeland
Security

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Preface

The Department of Homeland Security (DHS) Office of Inspector General (OIG) was established by the Homeland Security Act of 2002 (*Public Law 107-296*) by amendment to the Inspector General Act of 1978. This is one of a series of audit, inspection, and special reports prepared as part of our oversight responsibilities to promote economy, efficiency, and effectiveness within the department.

This report presents the results of our review of the U.S. Coast Guard's response to the November 7, 2007, collision of the M/V COSCO BUSAN with the San Francisco-Oakland Bay Bridge. The review was conducted pursuant to a request from the Speaker of the House of Representatives and the Chairman, Subcommittee on Coast Guard and Maritime Transportation. It is based on interviews with employees and officials of relevant agencies and institutions, direct observations, and a review of applicable documents.

The recommendations herein have been developed to the best knowledge available to our office, and have been discussed in draft with those responsible for implementation. It is our hope that this report will result in more effective, efficient, and economical operations. We express our appreciation to all of those who contributed to the preparation of this report.

A handwritten signature in cursive script that reads "Richard L. Skinner".

Richard L. Skinner
Inspector General

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Abbreviations

CGVTS	Coast Guard Vessel Traffic System
FOSC	Federal On-Scene Coordinator
ICS	Incident Command System
MISLE	Marine Information for Safety and Law Enforcement
MOA	Memorandum of Agreement
MSRC	Marine Spill Research Corporation
M/V	Motor Vessel
NIMS	National Incident Management System
NRC	National Response Corporation
NTSB	National Transportation Safety Board
OPA	Oil Pollution Act of 1990
OSC	On-Scene Coordinator
OSPR	Oil Spill Prevention and Response (State of California (CA))
OSRO	Oil Spill Response Organization
PAWSS	Ports and Waterways Safety System
RACONS	Radar Beacons
SCC	Sector Command Center
SOSC	State On-Scene Coordinator
VTS	Vessel Traffic Service

Executive Summary

This report presents the results of our review of the U.S. Coast Guard's response to the November 7, 2007, allision of the M/V COSCO BUSAN with the San Francisco-Oakland Bay Bridge. We assessed: (1) the actions of the Coast Guard San Francisco Vessel Traffic Service operations center prior to the allision; (2) the performance of the Coast Guard's pollution and marine casualty investigation; and (3) the Coast Guard's response during the first 24 hours following the mishap.

The Coast Guard's actions prior to and for the first 24 hours following the allision were generally consistent with the policies and procedures in place for the San Francisco Sector at the time of the mishap. We determined, however, the Coast Guard needs a national standard operating procedures doctrine for its Vessel Traffic Service program. Also, the guidelines for vessel movement during periods of restricted visibility need to be expanded and clarified.

A number of factors in the post-accident investigation will hinder the government's ability to identify all of the factors contributing to the mishap. Specifically, communications and navigation equipment was not secured and tested. In addition, the M/V COSCO BUSAN crewmembers and Vessel Traffic Service watchstanders were not properly and timely tested for drugs and alcohol.

Response to an oil spill is a multifaceted and multilayered effort requiring both an autonomous and cooperative response on the part of each stakeholder. This mishap highlighted the need for federal, state, and local agencies to become involved early and often in Area Committee meetings and exercises. Much of the credit for the success of the response is due to the efforts of the Coast Guard, the State of California Oil Spill Prevention and Response Division, and the Responsible Party.

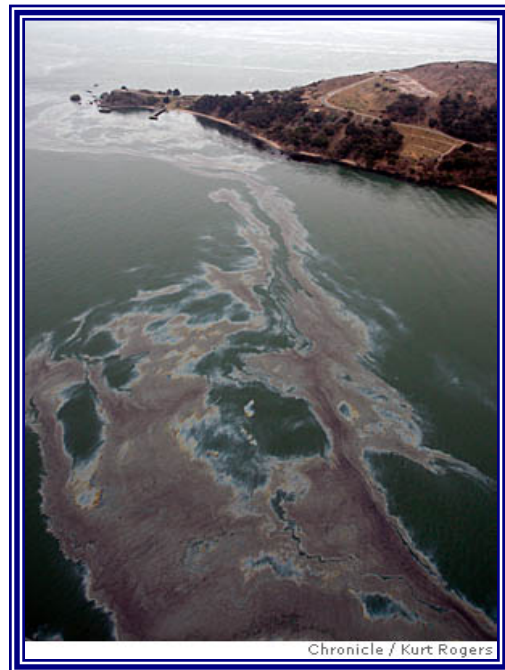
We are making nine recommendations to improve the effectiveness of Vessel Traffic Service operations, post-casualty investigations, and area contingency plans. To its credit, the U.S. Coast Guard is taking or planning to take actions to implement all recommendations.

Background

On November 7, 2007, at 8:30 a.m. with a reported visibility of approximately one-eighth to one-quarter mile due to heavy fog, the M/V (Motor Vessel) COSCO BUSAN, underway from Oakland, California, allided with the San Francisco-Oakland Bay Bridge. This allision created a large gash (100 ft x 12 ft, located 2-10 ft above waterline) in the port side of the vessel, which caused an estimated 53,653 gallons of fuel oil to spill into the San Francisco Bay and coat the surrounding shoreline. Prior to the allision, the U.S. Coast Guard's (Coast Guard) San Francisco Vessel Traffic Service (VTS) was communicating with the vessel as well as monitoring its progress. Following the allision, the Coast Guard, State of California Oil Spill Prevention and Response (OSPR) Division, as well as the Responsible Party responded to this maritime mishap, initiated a post-mishap marine casualty and pollution investigation, and coordinated the clean-up effort.

Due to concerns about the subsequent Coast Guard response and investigation, Speaker Nancy Pelosi and Chairman Elijah Cummings requested a 30-day brief and a 90-day review of this mishap (see Appendix C). The 30-day brief was conducted on February 12, 2008, focused on their concerns in three areas: VTS, Coast Guard investigation, and Coast Guard response. This report provides responses to the specific questions put forward by the Congress.

The San Francisco VTS operations center, located on Yerba Buena Island, California, has an area of responsibility that includes oceanic departures and arrivals for the San Francisco Bay and waterways that stretch approximately 133 miles from off shore, through the San Francisco Bay area, to the ports of Sacramento and Stockton, California. The primary function of the San Francisco VTS is to facilitate order and predictability on waterways by coordinating vessel movements. The San Francisco VTS is operated by the Coast Guard with a combined military and civilian staff. A four-person watch team mans the VTS command center. In 2007, the San Francisco VTS center managed the transit of 124,762 vessels in its area of responsibility.



Source: San Francisco Chronicle

Immediately following the allision, the Coast Guard's Sector San Francisco Response and Prevention Departments initiated a pollution investigation and a

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marine casualty investigation. The purpose of a Coast Guard investigation is to determine the cause of a mishap, whether any remedial measures should be taken, and whether any violation of federal law or regulation has occurred.¹

The Coast Guard is the lead federal agency for oil spill threats within or threatening coastal zones.² The Coast Guard is also responsible for designating Federal On-Scene Coordinators (FOSC) for each region; the Coast Guard Captain of the Port is normally designated the FOSC for the ports and waterways under his/her jurisdiction. The Coast Guard's first priority in oil spill response is that of public health and safety, followed by the actual response to the oil spill. In this mishap, the immediate public safety concern was not the oil spill, but instead was the physical condition of the San Francisco-Oakland Bay Bridge.

Coastal oil spills in the State of California are jointly managed by the Coast Guard, OSPR, and the Responsible Party. See Appendix D for a brief overview of the oil spill response and management authorities.



Source: San Francisco Chronicle M/V COSCO BUSAN at Anchor

¹ Coast Guard Marine Safety Manual Volume V, Ch. 1, A.1., p. 1-1 (Investigative Principles).

² 40 CFR Part 300, National Oil and Hazardous Substances Pollution Contingency Plan.

Results of Review

Vessel Traffic Service

The San Francisco VTS watchstanders followed their operating procedures for vessel movement the morning that the M/V COSCO BUSAN allided with the San Francisco-Oakland Bay Bridge. The watchstanders acknowledged the pilot's intentions to get underway and his intended route, and provided advisories for other vessel traffic that could affect the ship's transit through the San Francisco Bay. The watchstanders appropriately notified the pilot that visibility had been reported to be less than one-quarter mile all the way out to the Golden Gate Bridge. They also monitored the movement of the M/V COSCO BUSAN and queried the vessel when they became concerned about the vessel's heading. Given the current operating procedures and technical capabilities, there were no additional actions the VTS watchstanders could reasonably have taken to prevent the allision. However, we identified areas for improvement in the VTS program, including the need for a VTS national standard operating procedure and criteria for limiting the movement of vessels during periods of reduced visibility.

VTS Standard Operating Procedures

The Coast Guard does not have a VTS national standard operating procedure. Currently, the individual VTSs create their own local procedures based on guidance provided in the Coast Guard's Marine Safety Manual. The Manual only provides general concepts for VTS operations and not specific requirements for equipment operation, emergency procedures, or drug and alcohol testing for all VTS centers.

For example, the Manual does not address synchronization of radio communications and vessel automatic identification system data received by VTS centers. The San Francisco VTS operations center has the capability to record radio communications and automatic identification system data transmitted by vessels in its operating area. However, on November 7, 2007, the VTS and the M/V COSCO BUSAN transmissions were not synchronized to the same time mark. According to the Coast Guard, it is suspected that the timing signals for the recorded data were not resynchronized following maintenance of the San Francisco VTS equipment approximately a month prior to the allision. The failure to synchronize recorded data impairs the ability of investigators and other interested parties to accurately recreate the chain of events leading up to and following an incident.

Additionally, the San Francisco VTS operations center did not have the correct quick response sheets to guide watchstander actions following an incident. The San Francisco VTS and Sector command centers use quick response sheets to guide the actions of watchstanders and to promote quick and orderly notification

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of interested parties when an incident occurs. The quick response sheets that the VTS operations center had were those of the San Francisco Sector Command Center and were not tailored to meet the requirements of the VTS watchstanders. This may contribute to delays in reporting critical information following incidents in the future.

Furthermore, according to the Coast Guard, the watchstanders were not tested due to a lack of awareness of the drug and alcohol testing policies. For example, Sector San Francisco did not comply with the VTS program manager's practice of conducting post-incident drug and alcohol testing of the VTS watchstanders on duty when the M/V COSCO BUSAN allided with the San Francisco-Oakland Bay Bridge. By not administering the drug and alcohol tests, the Coast Guard is unable to positively rule out impairment of the VTS watchstanders as a contributing factor to the incident. Additional details concerning drug and alcohol testing are provided in the Marine Casualty and Pollution Investigation section of this report.



Source: Coast Guard

San Francisco VTS watchstander station

Specific Questions

What action did the watchstanders at the Coast Guard's Vessel Traffic System take prior to the allision?

The San Francisco VTS watchstanders followed their operating procedures for vessel movement the morning that the M/V COSCO BUSAN allided with the San Francisco-Oakland Bay Bridge. The VTS watchstanders also complied with the procedures for managing vessel movement during periods of restricted visibility,

including reading back the vessel's plan for transiting the San Francisco Bay and reporting all traffic that could affect the vessel's transit. Table 1 provides a timeline of communications between the VTS center and the M/V COSCO BUSAN.

0635	The pilot onboard the M/V COSCO BUSAN reports to the VTS that he is preparing to depart Oakland for sea. At this time, the VTS center informs the pilot that the visibility was one-eighth to one-quarter mile all the way to the Golden Gate Bridge. Additionally, the VTS center confirms the vessel's intended track, which included transiting between the Delta and Echo columns of the San Francisco-Oakland Bay Bridge.
0806	The pilot notifies the VTS center that the M/V COSCO BUSAN is getting underway. The VTS center acknowledges that the vessel is underway and reads back the vessel's intentions for transiting the San Francisco Bay, including passage of the vessel between the Delta and Echo columns of the San Francisco-Oakland Bay Bridge.
0827	The VTS center asks the pilot whether he still intends to head out to sea and advises that the VTS center's equipment indicates the vessel is on a 235-degree heading. The pilot responds that the vessel is coming around and that he is steering 280 degrees.
0828	In response to a query from the VTS center, the pilot informs the VTS center that it is still his intention to pass beneath the Delta Echo span of the bay bridge.
0830	The pilot informs the VTS center that he has "touched" the bay bridge.

Was there additional action that could have been taken or information that could have been provided by the watchstanders that may have prevented the allision?

The VTS watchstanders on duty before the accident could not have taken any additional action that would have prevented the casualty. A time lag between a maneuver that a vessel is executing and the vessel movement data displayed in the VTS operations center precluded this possibility. For example, the VTS contacted the

pilot onboard the M/V COSCO BUSAN pilot at 8:27 a.m. (see Table 1) to advise him that the VTS center's equipment indicated that the vessel was on a 235-degree heading; the pilot informed the VTS operations center that the vessel was executing a turn and that he was steering 280 degrees. By the time the VTS watchstanders recognized that the M/V COSCO BUSAN appeared to be out of position to pass between the Delta and Echo columns of the San Francisco-Oakland Bay Bridge, the vessel had already started to execute its turn towards the bridge column.

To its credit, the San Francisco VTS operations center has recently implemented procedures that require augmentation of the existing offshore and San Francisco Bay watchstanders with a fourth watchstander during low visibility. This fourth watchstander now assists the others with providing radar traffic advisories to vessels when visibility is a half-mile or less. The low visibility watchstander's duties include temporary zooming of electronic displays in order to enhance the ability to assess risk and issue advisories. VTS watchstanders said that previously they rarely zoomed their displays down to a smaller scale due to a loss of situational awareness for their area of responsibility.

Does the San Francisco VTS center have the most up-to-date technology?

The San Francisco VTS operations center does not have the most up-to-date traffic technology. The system used by the San Francisco VTS operations center is the Coast Guard Vessel Traffic System (CGVTS), which was installed in

the 1990s. According to the Coast Guard, this system meets the agency's requirements for vessel traffic management and has received regular software upgrades to enhance and maintain system capability.

The CGVTS provided improvements over prior manual tracking of vessels by integrating data received from multiple sensors including radar, radio communications, and video. CGVTS was originally deployed in four ports, including San Francisco, California. The newer and more advanced vessel traffic management system, the Ports and Waterways Safety System (PAWSS), was only

partially installed at the San Francisco VTS operations center due to funding constraints that existed in 2003 and 2004 towards the end of the acquisition program. The partial installation nonetheless provided automatic identification system capabilities that were not available with the original installation of the CGVTS.

Under the current CGVTS software capabilities, the electronic chart display data does not provide the VTS watchstander the option of zooming in and displaying the location of the individual San Francisco-Oakland Bay Bridge columns. With such capability, the VTS watchstanders could improve their situational awareness of vessel proximity and orientation to the individual bridge columns. A planned upgrade to CGVTS (version 4.6) will enable the VTS watchstanders to display the bridge columns.

Should VTS have the capability of prohibiting ship transits during periods of reduced visibility?

The San Francisco VTS already has the authority (capability) to prohibit the transit of larger commercial vessels and passenger ferries during periods of reduced visibility.³ Only on rare occasions does the Coast Guard direct the movement or actions of a VTS participant. These rare

occasions have occurred when VTS watchstanders have observed obvious violations of regulations or dangerous conditions about which a participant may be unaware.

Additionally, the VTS has the authority to institute and enforce measures to enhance navigation and vessel safety and to protect the marine environment. This authority includes managing vessel entry and movement, or departure to, from, or within a VTS area during hazardous conditions, such as restricted visibility. However, San Francisco VTS' operational procedures do not currently provide watchstanders with the criteria necessary for determining the specific measures and when they should be implemented during varying conditions of restricted visibility. Without well-defined criteria, VTS watchstanders could fail to implement vessel movement measures when they are prudent or could implement vessel movement measures that are overly restrictive for the existing conditions.

To their credit, the Coast Guard and the San Francisco Harbor Safety Committee are taking a proactive approach to preventing future occurrences of maritime accidents similar to the M/V COSCO BUSAN's allision with the San Francisco-Oakland Bay Bridge. The Harbor Safety Committee determined that the guidelines for vessel movement during periods of restricted visibility need to be expanded and clarified. The Harbor Safety Committee is considering adding a number of guidelines that would advise against vessel movement during periods

³ 33 CFR Part 161; *Vessel Traffic Management*.

of restricted visibility in specific locations within the San Francisco Bay. Specifically, the committee is considering the identification of critical maneuvering areas through which large vessels should not transit if visibility is below one-half mile. For example, the Oakland Bar Channel has been identified as a critical maneuvering area due to its proximity to the Bay Bridge and Yerba Buena Island.

The Harbor Safety Committee also is considering the recommendation that vessels, when the visibility is one-half mile or less at the dock, remain at dock or, when proceeding to dock, should anchor unless proceeding to dock is the safest option. If these additional guidelines are adopted, they will be incorporated into the Harbor Safety Plan, San Francisco VTS' operational procedures, and the San Francisco Bar Pilots' Operations Guidelines. Such new guidelines would represent a positive move toward increased maritime safety in the San Francisco Harbor.⁴

Would additional Coast Guard authority over vessel traffic help prevent this type of situation?

Current legislation already provides the Coast Guard with the authority over vessel traffic necessary to protect life, property, and the marine environment. It would be speculative to suggest that additional Coast Guard authority over vessel traffic in and of itself

would prevent future mishaps in the San Francisco Bay. The Coast Guard would need to reevaluate several aspects of its VTS program before a decision can be made to change the VTS operations center's role from being primarily a navigational and advisory service tool to one which exercises direct control over all vessel movement, similar to that of an air traffic control center. The Coast Guard would also need to determine whether VTS operations center equipment capability, manpower, training, and funding requirements are adequate for this expanded role, as well as assess the implications of potential liability should a mishap occur while a vessel was complying with VTS operations center direction.

Recommendations

We recommend that the Commandant of the Coast Guard:

Recommendation #1: Ensure expedient issuance of the VTS National Standard Operating Procedures, which should address: (1) requirements

⁴ The San Francisco Harbor Safety Committee is a state-mandated body that consists of representatives from commercial, private, and federal maritime communities, including port operators, commercial shipping, passenger ferries, the National Oceanic and Atmospheric Administration, U.S. Army Corps of Engineers, Coast Guard, the U.S. Navy, and environmental organizations.

for post-mishap drug and alcohol testing for VTS watchstanders; (2) establishment of policy to ensure that all VTS operations centers synchronize recorded audio, video, and track data, along with quality assurance checks to ensure the quality and synchronization of that data; and (3) development of VTS operations center-specific quick response sheets.

Recommendation #2: In coordination with the cities of San Francisco and Oakland, the San Francisco Pilot's Association, and the San Francisco Harbor Safety Committee, develop criteria to limit vessel movement during varying conditions of restricted visibility.

Management Comments and OIG Analysis

The Coast Guard concurred with the above findings and recommendations in the report. Both recommendations will remain open until the VTS National Standard Operating Procedures are issued and our analysis determines the procedures adequately address our recommendations. Coast Guard's complete management comments to this report are provided in Appendix B.

The Coast Guard provided supplemental and technical comments to the draft report. We reviewed the comments and made revisions as appropriate.

Management Comments to Recommendation #1: CONCUR

The Coast Guard concurred with our recommendation for expedient issuance of the VTS National Standard Operating Procedures. According to the Coast Guard, the standard operating procedures, which are in final draft form, will address requirements for post-incident drug and alcohol testing. Further, the synchronization of VTS equipment and the development of VTS-specific quick response sheets will be included in future changes to the standard operating procedures.

OIG Analysis

We agree with the actions the Coast Guard plans on taking to address the intent of our recommendation. The Coast Guard needs to ensure the timely issuance of the standard operating procedure which have been under development for several years. This recommendation will remain open until the Coast Guard issues the VTS National Standard Operating Procedures.

Management Comments to Recommendation #2: CONCUR

The Coast Guard concurred with our recommendation for the development of criteria to limit vessel movement during varying conditions of restricted visibility. According to the Coast Guard, it is involved with the development of local policies affecting vessel movement, including the affects of extreme environmental conditions. Once the policies are finalized, the VTS will ensure that specific procedures are developed and documented in its operating procedures, and watchstanders are trained to implement them.

OIG Analysis

We agree with the actions the Coast Guard plans on taking to address the recommendation. This recommendation is resolved but will remain open until Coast Guard provides us documentation demonstrating that the policies have been finalized and incorporated in the VTS' operating procedures and training curriculum.

Marine Casualty and Pollution Investigation

Deficiencies in the Sector San Francisco's marine casualty and pollution investigation of the allision of the M/V COSCO BUSAN resulted in a lost opportunity to collect and preserve all evidence relevant to this mishap. Further, although the initial estimate of the amount of oil spilled was inaccurate, the Coast Guard based its initial response to the oil spill on a worst case scenario rather than on the initial estimate. A more accurate estimate earlier in the day would have been ideal, and was also possible; however, both the Coast Guard and the California State Office of OSPR reported that such an estimate would not have altered the *response* of the Unified Command, which includes the Coast Guard and the State of California. Considering the lack of consistent information immediately following the allision, the Coast Guard's assumption on which it based its response efforts was both adequate and appropriate.

Experience and Training

The level of experience and training of the investigators, as well as inadequate job aids used by the investigators, may have contributed to deficiencies in collecting and preserving evidence related to the mishap. During the M/V COSCO BUSAN's outbound transit from the Oakland Inner harbor, visibility was estimated to be less than one-quarter mile. Therefore the pilot, master, and bridge team relied on the vessel's navigational systems, and nearby fixed and floating aids-to-navigation to transit the Oakland Bar Channel and approach the San

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Francisco-Oakland Bay Bridge. The navigational systems include the global positioning system, Electronic Chart Display and Information System, and collision-avoidance system of the vessel. The pilot also relied on radar beacons (RACONS) affixed to the Bay Bridge that were intended to mark the center of the delta-echo span of the bridge. These RACONS were installed and maintained by the California Department of Transportation.⁵

Immediately following the mishap, Sector San Francisco dispatched three marine casualty investigators to the scene. Upon arrival, they collected a wide array of evidence (charts, logbooks, and other miscellaneous documentation). They also initiated breathalyzer testing of the M/V COSCO BUSAN master and bridge team. They did not, however, take action to secure critical aids to navigation (i.e., RACONS) or the vessel's communications and navigational systems to ensure that they were fully operational. The marine casualty investigators also did not secure the Voyage Data Recorder, because they were unaware of its existence on the vessel. Nonetheless, the Voyage Data Recorder captured the settings and output from the M/V COSCO BUSAN's communications and navigational equipment, thereby helping the investigators recreate the events that occurred prior to and during the allision.

Marine casualty investigators did not drug and alcohol test VTS watchstanders on duty during the mishap. 46 CFR § 4.07-1 states that marine casualty investigations are responsible for determining, whether the Coast Guard caused or contributed to the cause of the mishap and whether further investigation is warranted. By not conducting drug and alcohol testing, the opportunity to rule out physical or mental impairment as a contributing cause of the mishap was lost. Neither the current Job Aid nor the Marine Safety Manual referred to the drug and alcohol testing policies set forth in the Coast Guard Personnel Manual and Department of Transportation Order 3910.1C. Drug and alcohol testing should have been part of normal investigative practices regardless of these requirements.

Failing to secure shipboard systems and aids to navigation, or conducting drug and alcohol testing may be attributed to the level of training and qualifications of the individuals assigned to the M/V COSCO BUSAN investigation. For example, the three individuals assigned to the investigation were not qualified marine casualty investigators. However, according to a Sector San Francisco standard, they were permitted to conduct investigations under the supervision of a fully qualified marine casualty investigator, and according to Coast Guard, this did occur. Further, five of the six investigators assigned to marine casualty investigation billets at Sector San Francisco were not qualified at the time of the mishap. The training and qualifications of the investigators assigned raise doubts about the quality of marine casualty investigations conducted by Sector San Francisco.

⁵ RACONS are radio beacons that return a Morse Code signature signal indicating range and bearing when triggered by a radar interrogator.

Specific Questions

Was the Coast Guard's initial investigation, including the securing of evidence and estimation of the extent of the oil release, adequate?

A number of deficiencies in the Coast Guard's post-accident investigative efforts may have hindered the government's ability to identify all of the factors, circumstances, and conditions that led to the M/V COSCO BUSAN allision and oil spill.

Investigation Classification

The Coast Guard misclassified the marine casualty investigation of the M/V COSCO BUSAN. Coast Guard casualty investigation classification criteria include a minimum threshold for property damage. In the M/V COSCO BUSAN mishap, the property damage was estimated by the Coast Guard to be well above the minimum threshold for a formal investigation. Additionally, although the amount of oil spilled did not meet the quantitative measures of a major spill under the law, it did meet the requirement that an oil spill is considered to be major, regardless of the quantity spilled, if that spill “. . . poses a substantial threat to public health or welfare of the U.S. or the environment or results in significant public concern. . . .”⁷ As such, the M/V COSCO BUSAN investigation should have been classified as formal.

Both informal and formal investigations require that Coast Guard investigators generate a timeline of events, conduct causal/human error analysis, draw conclusions, and issue safety recommendations if warranted. A formal investigation also requires that there be evidence to corroborate every fact, which makes the preservation and securing of evidence critical. In this mishap, as previously stated, the investigators did not take action to secure the ship's communications and navigational equipment and the privately-maintained radar beacons (RACONS) affixed to the San Francisco-Oakland Bay Bridge for the purpose of conducting independent post-accident testing. Additionally, the marine casualty investigators did not take steps to ensure drug and alcohol testing of VTS watchstanders. This resulted in the inability to identify all potential contributing causes in Coast Guard's investigation and may impede the ability of other investigations to determine the probable cause. This also hinders the institution of measures to prevent similar mishaps from occurring in the future.

⁷ 40 CFR § 300.5.

Estimation of Oil Released Into the Bay

Information collected by the Coast Guard and provided by the crew of the M/V COSCO BUSAN within the first hour of the collision varied, hindering an accurate estimate of the extent of the oil spill. Due to the uncertainties about the initial estimate of 142 gallons, the photograph of the damage to the ship, and the observations of the oil on the water by Pollution Investigators, the Coast Guard's Response Department assumed that the spill was likely greater than first estimated.

Methods to quantify the volume of oil discharged from a ship, as described by the Coast Guard's Response Department, include observation and calculations of the dimensions of oil visible on the water, review of the ship's oil log book to determine the amount of oil originally onboard, and sounding the ship's fuel and oil tanks to determine the amount of oil left in the tanks.

A number of factors prevented the Coast Guard from using these methods to quantify the volume of oil discharged from the ship. The dense fog on the day of the mishap made it impossible for the Coast Guard to conduct observation flights until later that same afternoon. Observation flights would have provided an immediate overview of the size and location of the oil spill. In addition, pollution investigators at Sector San Francisco currently have limited experience with the heavy bulk oil spilled, and have more experience with light oil or sheen, which may have hindered their ability to determine density or dimensions. Due to language problems between the pollution investigator and the ship's chief engineer, the Coast Guard was not able to verify the accuracy of the figures in the oil logbook or on the ship's gauges. Finally, pollution investigators are not trained to sound ships' tanks without the assistance and cooperation of the crew. Due to the technical complexities, this function is normally performed by the vessel's crew under the oversight of a qualified casualty investigator or by an independent contractor.

Based on the available though varying information, the Coast Guard made the assumption that the first estimate of 142 gallons was not accurate. Representatives of the Coast Guard's Response Department stated that initial estimates are never accurate and that until a more accurate number can be determined, first estimates are not necessarily the guide for determining response efforts.

Was drug and alcohol testing of maritime personnel conducted according to applicable Coast Guard regulation?

Drug and alcohol testing of maritime personnel was not conducted according to applicable Coast Guard regulations.

M/V COSCO BUSAN Officers and Crew: It is the marine employer's responsibility to

conduct alcohol testing within 2 hours, and drug testing within 32 hours, of all employees directly involved in serious marine incidents. It is the Coast Guard's responsibility to ensure the testing is conducted in a timely and complete manner as part of its investigatory responsibilities. In this case, Coast Guard investigators administered breath alcohol tests to the master, chief engineer, third officer, and an able seaman who were all on the bridge at the time of the accident. Subsequent testing by a third party was incomplete in that he collected a urine sample from the master of the M/V COSCO BUSAN and not from the rest of the vessel's crew. The error was not identified by Coast Guard investigators until after the 32-hour period had passed. The drug and alcohol testing of the remainder of the M/V COSCO BUSAN crew was completed on November 9, 2007 (53 hours after the mishap).

San Francisco VTS Watchstanders: The Coast Guard did not test VTS active duty personnel watchstanders involved in the mishap for drugs or alcohol according to agency policy nor did they test Coast Guard civilian VTS watchstanders working at the time of the incident for drugs, as authorized by Department of Transportation Order 3910.1C. Marine casualty investigators assigned to this incident were not aware that VTS employees are subject to drug or alcohol testing in mishaps such as this.

The Coast Guard explained that VTS watchstanders were not tested due to a lack of awareness of the drug and alcohol testing policies on the part of Sector San Francisco management. The Coast Guard's omission of such tests, as well as the marine employer's lack of timely testing of the M/V COSCO BUSAN's crewmembers, may prevent authorities from being able to rule out the use of drugs or alcohol as a contributing cause of the mishap.

Did the Coast Guard provide all records relating to the incident to the National Transportation Safety Board in a timely manner?

According to the National Transportation Safety Board, the Coast Guard cooperated fully, providing all relevant information on the mishap in a timely matter.

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Recommendations

We recommend that the Commandant of the Coast Guard:

Recommendation #3: Update Coast Guard policies and procedures as they relate to marine casualty investigations, addressing: (1) The collection of evidence by marine casualty investigators to ensure all relevant evidence is collected, for example, identification of the presence of a Voyage Data Recorder and securing it, as appropriate; and (2) The requirements for drug and alcohol testing of Coast Guard civilian and military personnel involved in a mishap.

Recommendation #4: Clarify the role and responsibility of the Coast Guard in quantifying the volume of pollutants released as a result of a marine casualty or pollution mishaps. Also, determine whether pollution investigators should independently quantify or verify the volume of pollutants released. Employ quantification experts or conduct an analysis of the costs and benefits to upgrading the training of nationwide pollution investigators in independently quantifying the volume of pollutants released in marine casualty mishaps.

Recommendation #5: Ensure that all Coast Guard marine casualty investigation billets are filled with trained and qualified marine casualty investigators.

Management Comments and OIG Analysis

Recommendations number #3 and #5 are considered resolved but will remain open until documentation is provided on actions taken and we can determine the corrective actions adequately address the recommendations. Recommendation #4 is unresolved. Coast Guard's complete management comments to this report are provided in Appendix B.

Management Comments to Recommendation #3: CONCUR IN PART

The Coast Guard concurs in part with our recommendation that Coast Guard policies and procedures be updated regarding the collection of evidence in marine casualty investigations, specifically the Voyage Data Recorder and drug and alcohol testing of Coast Guard military and civilian personnel. According to the Coast Guard, the Voyage Data Recorder is already included

in the Job Aid and no further action is required in this regard. The Coast Guard also states that the marine casualty investigations program does not have the authority to direct the drug and alcohol testing of Coast Guard military and civilian personnel, but rather testing of this nature falls under the authority of the unit's chain of command. Finally, the Coast Guard states that its authority to drug and alcohol test its military and civilian personnel is discretionary rather than a legal requirement and that the report should be modified to reflect the authority as such.

OIG Analysis

We agree that the Voyage Data Recorder is already included as evidence to be collected in the Job Aid (referred to as Course Recorder) used by marine casualty investigators and needs no further action in that regard. The Job Aid, however, needs to be updated to include post-incident drug and alcohol testing requirements that will be included in the VTS National SOP (See the Coast Guard's response to OIG Recommendation #1). The Marine Safety Manual, the Job Aid and the VTS National SOP must be consistent with regard to the drug and alcohol testing requirements.

While Coast Guard investigators may not have the authority to direct drug and alcohol testing of Coast Guard military and civilian personnel, the Coast Guard is authorized to do so. The Coast Guard is also required to conduct investigations of marine casualties, which require that the Coast Guard determine whether its own personnel contributed to the cause of the mishap. To this end, investigators in the case of the M/V COSCO BUSAN allision should have been requested by the unit's chain of command to conduct drug and alcohol tests of VTS watchstanders to rule out Coast Guard personnel as a contributing cause of the mishap.

Finally, the only drug and alcohol testing requirement referred to in the report is Coast Guard's VTS program policy. According to the Coast Guard, effective immediately, this requirement will be included in the VTS National SOP and in formal guidance to all VTSs making them aware of the policy and to provide guidance in developing local drug and alcohol testing procedures. Coast Guard should also direct the guidance to marine casualty investigators.

Management Comments to Recommendation #4: CONCUR IN PART

The Coast Guard concurred in part with the recommendation and requests that the recommendation be modified. The requested modification is that the Coast Guard should update contingency plans to ensure that qualified persons are available to assist in quantifying the volume of oil spilled. The Coast Guard will also update investigation and response training to ensure that all Coast Guard personnel understand the complexities and limitations of determining the volume of a spill and how that information should be used in pollution investigation and response.

OIG Analysis

The suggested Coast Guard change to the recommendation does not require the Coast Guard to clarify the role and responsibility of Coast Guard pollution investigation personnel in quantifying the volume of pollutants released in a mishap. Therefore, the recommendation will not be revised.

Management Comments to Recommendation #5: CONCUR

The Coast Guard concurred with this recommendation and agreed to modify the recommendation to require that *all* Coast Guard marine casualty investigation billets be filled with trained and qualified marine casualty investigators and not only those at Coast Guard's Sector San Francisco.

OIG Analysis

This recommendation is modified accordingly. The recommendation is considered resolved.

Coast Guard Response (First 24 Hours)

The Unified Command's response to the mishap was based on tenets of the San Francisco Area Contingency Plan. The Coast Guard's response adhered to the plan; however, there are areas where the Coast Guard's response could have been improved. For example, the Coast Guard did not complete initial notifications as required by the San Francisco Area Contingency Plan. This incomplete notification did not delay the oil spill response, as it began within 1 hour of the allision. The San Francisco Area Contingency Plan, which is on a triennial update cycle, will be updated in 2008. This update cycle provides the Area

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Committee members with an opportunity to incorporate a volunteer plan, developed and implemented by both the City of San Francisco and the State of California OSPR Division.

The San Francisco Area Contingency Plan is adequate for the size and type of fuel oil spilled in this allision, as the plan is based on the worst case scenario and the maximum impact discharges of the largest vessel calling on the San Francisco port. According to the Oil Pollution Act of 1990, the contingency plan includes extensive plans and procedures for the rapid response to incidents affecting marine wildlife and fisheries. Drills are conducted to test the wildlife response section of the contingency plan; the most recent was conducted in 2006.

Specific Questions

Did the Unified Command effectively manage the resources available to the Coast Guard to effect containment and remediation of the spill?

The Unified Command effectively managed the resources it had available to contain and remedy the spill. The Unified Command's response was led by the Federal On Scene Commander (Sector San Francisco Commander). Additionally, the Responsible Party, representing the vessel owner, voluntarily fulfilled statutory requirements for oil spill removal as a

member of the Unified Command, which also included the State of California. The Responsible Party is required to have a Vessel Response Plan, which lists oil spill response resources under contract for a particular region. Two local Oil Spill Response Organizations' (OSRO) responded within 30 minutes of the mishap; the two companies brought in additional resources throughout the clean up period as required. The San Francisco Area Contingency Plan provides a link to the Regional Contingency Plan, which contains an extensive list of oil response providers located in the Western United States. This list, available at www.wrrl.us, highlights the capabilities of responders in terms of equipment and resources--booms, boats, etc.

The San Francisco Area Contingency Plan did not have an Incident Command Post location identified in advance. The Incident Command Post is the physical space in which the Unified Command operates. The Incident Command Post for this mishap was moved from its initial location at the Coast Guard Sector on Yerba Buena Island to the Fort Mason firehouse, which had been abandoned for 10 plus years. The Command Post was relocated one additional time to the Nimitz Center on Treasure Island. According to the Coast Guard, the first location was "terrible" because it had only one phone line and limited cell phone reception. The second Incident Command Post, the Fort Mason firehouse, could only be used for 2 days, as a wine tasting was scheduled there on the weekend.

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Additionally, there was no cell phone service in this location. The final location at the Nimitz Center was a large, workable facility, according to the Coast Guard. For more efficiency and effectiveness in the future, the San Francisco Bay and Delta Area Committee needs to predesignate a physical location (s) suitable for Unified Command operations. All future oil spill response and other all-hazard exercises should be managed from this location to ensure maximum suitability for this type of operation.

Active participation by all Unified Command members in the Joint Information Center could have improved the management and dissemination of critical information. A Joint Information Command was set up shortly after noon on November 7, 2007. Although all Unified Command members were invited, only Coast Guard personnel attended during the first 24 hours. By day 2, other Unified Command members participated, but the Joint Information Command was not attended in full until day 4 or 5 of the mishap. The lack of non-Coast Guard members in the Joint Information Center placed the responsibility of responding on behalf of the Unified Command in the first 24 hours solely and inappropriately on the Coast Guard. Our answer to the question regarding the adequacy of the San Francisco Area Contingency Plan in guiding the oil spill response provides more detail on the Unified Command's efforts.

To what extent was the delay in notification of local authorities and emergency responders of the size of the oil spill a result of inadequacies in the San Francisco Area Contingency Plan?

Local notification delays did not occur due to inadequacies in the San Francisco Area Contingency Plan. Delays in notifying local authorities and emergency responders of the size of the oil spill were due to problems in communication and coordination among members of the Unified Command, including the Coast Guard and the State of California, as opposed to inadequacies in the Contingency Plan. Communication issues included releasing the first estimate despite

accuracy concerns, and the subsequent delay in releasing the updated estimate to the public. Coordination issues resulted in a delay in transporting the OSPR expert to the ship to calculate the volume of oil discharged, and back to the Coast Guard's Command Center with the updated estimate.

Communication of Estimates

The Coast Guard has admitted that releasing the first estimate to the public was a mistake and has since taken steps to prevent repeating this error in the future. The first estimate of 142 gallons was obtained by the Coast Guard pollution investigator from the ship's chief engineer and communicated to the SCC at approximately 10:50 a.m. Pollution investigators expressed concern about the

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accuracy of that estimate; however, the estimate was nonetheless released to the public. On November 7, 2007, at approximately 5:00 p.m., after receiving the updated estimate of at least 58,000 gallons, the Unified Command agreed that this was an accurate estimate. The Coast Guard did not release this information to the public until about 9:00 p.m. The Coast Guard stated that it was “remiss” in not having released the information earlier. A Sector public affairs officer on duty that day said that heavy workloads and the time required for the press release approval process contributed to the delay.

Coordination

Coordination issues resulted in a delay in transporting the OSPR expert to the ship to calculate the volume of oil discharged, and back to the Coast Guard’s Command Center with the updated estimate. According to OSPR, the state quantification expert on duty the day of the mishap was ready and waiting at approximately 9:35 a.m. to be ferried to the ship to work on quantifying the volume of the oil spilled. Because the state did not possess a boat that could be used for this purpose, the expert had to wait for approximately 2 1/2 hours at the dock before being transported to the ship by the Coast Guard. After boarding the ship, the expert took approximately 1 hour to estimate that “at least” 58,000 gallons had been released from the M/V COSCO BUSAN. Despite the damage to the tanks, the expert was able to sound the tanks without the aid of the ship’s crew.

After calculating the estimate, the expert again waited for transportation back to the SCC to relay the information to his supervisor. The expert arrived and delivered the information at approximately 4:30 p.m. The expert explained that he did not want to use his cell phone to relay this information from the ship because of privacy concerns. Had the delays in transportation and communications not occurred, the Unified Command could have received quantification of the oil spill as early as 2:00 p.m.

Did the delay in notification of the size of the oil spill adversely impact the response of Coast Guard, state and local governments and Responsible Party to the mishap?

According to the Coast Guard and OSPR, having the accurate estimate earlier would not have changed their response efforts. Coast Guard pollution investigators gathered the information they needed to determine whether a violation had occurred and whether observation and clean up efforts had begun in a timely manner.

The delay in notification of the size of the oil spill did not have an impact on the emergency response. According to the National Contingency Plan, upon release

or discharge of a hazardous substance equal to or greater than the reportable quantity, a notification must be made to the National Response Center.⁸

In this mishap, the Responsible Party immediately notified the San Francisco VTS. We further discuss the delays and notification failures in answering questions below, regarding whether provisions of the San Francisco Area Contingency Plan were followed in response to the incident.

The Coast Guard was described by the environmental unit leader for OSPR as having almost “over responded” to the oil spill, from the time the allision occurred until the Unified Command obtained an accurate estimate of the quantity of oil spilled. The Coast Guard based its initial response on the worst case scenario for several reasons: (1) the Coast Guard was unable to conduct flights over the scene immediately after the allision due to dense fog; (2) the Coast Guard pollution investigators were not able to quantify the release of oil by sounding the tanks due to damage to the sounding tubes; and (3) there were wide variances in information gathered on the extent of the spill during the first hour after the allision.

The unit leader said that the Coast Guard responded quickly with assets (staffing and equipment) based on the "potential" oil spilled and not the "reported" oil spilled. The Coast Guard primarily conducted its response based on the following facts: (1) the M/V COSCO BUSAN had struck the San Francisco-Oakland Bay Bridge and suffered damage as a result; (2) oil had been spilled from the vessel; (3) the type of oil released and the preliminary trajectory prediction for the oil in the water was determined, including firsthand observation of the oil on the water; and (4) scientists and volunteers had observed and communicated concerning conditions along the coast.

To what extent was there local involvement in the development of the San Francisco Area Contingency Plan?

The extent of local involvement in initial development of the San Francisco Area Contingency Plan in 1993 is unknown. However, from 2005 through 2007, there was some limited local participation in the San Francisco Bay and Delta Area Committee for San Francisco, which develops and updates the San

Francisco Area Contingency Plan. Appendix E details membership attendance at San Francisco Area Committee meetings from October 11, 2005, to September 18, 2007. According to the Oil Pollution Act of 1990, Area Committees were established and are responsible for the development of Area Contingency Plans

⁸ 40 CFR § 300.125.

for "areas under the direction of the Federal on-scene coordinator."⁹ Further, according to the State of California, Area Contingency Plans "... are adopted by amendments to the State Contingency Plan to facilitate and coordinate ongoing work with local municipalities and coastal communities...The objective is to create consistency between the local, State and national contingency plans."¹⁰

The City of San Francisco Department of Emergency Management stated that, in retrospect, oil spill response should have been, and now will be, included on its All-Hazards Response List. The exclusion was due to the infrequent nature of oil spills as compared to the frequency of other All-Hazard events; prior to the M/V COSCO BUSAN mishap, the San Francisco Department of Emergency Management had not interacted with the Coast Guard on oil spills. In this mishap,



Source: USCG

Muir Beach Cleanup

the city chose to deploy its own boom in advance of any Coast Guard or Unified Command direction, which may or may not have been consistent with Unified Command booming strategies. The City of San Francisco stated that, for the future, it will take a more active role in Area Committee meetings, which provide input to the San Francisco Area Contingency Plan. The city has also created a Regional Emergency

Coordination plan, which calls for involvement by federal, state, and local organization and agencies.

There was a feeling of marginalization by some in the local communities as untrained volunteers who initially asked to assist were turned away. California Code of Regulations stipulates that all people working with hazardous materials must receive specific training and that volunteers will not be used for direct recovery of oil. The Area Contingency Plan contains a detailed volunteer plan, which outlines training requirements for volunteers, including specific hazardous material training. Certain positions, particularly those involving the care of oiled

⁹ Memorandum of Agreement between the State of California and the Eleventh Coast Guard District June 2, 1993.

¹⁰ Memorandum of Agreement between the State of California and the Eleventh Coast Guard District June 2, 1993.

birds, require as much as 24 hours of training. According to the San Francisco Area Contingency Plan, “Human health and safety is the first priority in decisions regarding the use of volunteers at an oil spill incident.”¹¹ Previously trained volunteers, such as those associated with the Oiled Wildlife Care Network and the Gulf of Farallones Beach Watch, were available and integral to the response.

However, due to the overwhelming number of available volunteers, on the fifth day of oil spill response, the Cities of San Francisco and Berkley developed an ad hoc plan with OSPR regarding volunteer training and credentialing and executed the process in such a manner that personnel were not pulled from their roles in the Unified Command. Volunteers were trained and credentialed in a timely manner and helped response crews with oiled debris clean-up at Berkley Marina and Ocean Beach. This process will be documented and incorporated into the city’s future oil spill response plans.

Lastly, Contra Costa County collected oil on its own, outside of the San Francisco Area Contingency Plan and the Unified Command Structure. Since this effort was not officially documented and was not accomplished in coordination with OSPR, the amounts and the source of the oil collected cannot be verified. It remains unknown whether or not that oil was spilled from the M/V COSCO BUSAN. Contra Costa County attended one meeting of the San Francisco Area Committee on August 24, 2006.

Is the San Francisco Area Contingency Plan adequate to guide the response to a spill the size and type of fuel oil encountered in this allision?

According to California OSPR environmental response personnel, the San Francisco Area Contingency Plan is adequate to guide a response of the size and type encountered in this allision. In their opinion, the plan also was executed as written by both OSPR and the Coast Guard.

All area contingency plans are required to “...address removal of a worst case discharge and to mitigate or prevent a substantial threat of such a discharge...”¹² The San Francisco Area Contingency Plan presents both a worst-case scenario, as well as a maximum, most probable discharge scenario, for the San Francisco Bay and Delta. The worst-case scenario is based on the discharge of a vessel’s entire cargo in adverse weather conditions, or the largest foreseeable discharge of a facility in adverse weather conditions. Three other scenarios depicted are Discharges of Maximum Impact, which detail the potential trajectory of oil from a mishap in the San Francisco Bay and in proximity to wetlands. The San Francisco Area Contingency Plan uses the capacity of the largest vessel calling on

¹¹ San Francisco Area Contingency Plan, Volume I, Section 9730.2.

¹² 40 CFR § 300.5.

the San Francisco port, in addition to the hazards and risk of collision along the route it would take into the port, as a baseline for calculations.

In the case of the M/V COSCO BUSAN, neither the amount of oil spilled (approximately 53, 653 gallons) nor the total oil load (about 2 million gallons) met the worst-case scenario of approximately 50 million gallons outlined in the San Francisco Area Contingency Plan. Further, according to the Vessel Response Plan for the M/V COSCO BUSAN, the worst-case discharge would be approximately 2 million gallons, also well below the threshold.

Were the provisions of the San Francisco Area Contingency Plan followed during the response to this incident?

Some response provisions of the San Francisco Area Contingency Plan were followed. Other provisions relating to initial awareness, assessment, and notification were not followed. In general, according to the National Contingency Plan, the on-scene coordinator shall investigate and

determine relevant information, such as the threat to public health or the environment. The type, quantity, and source of the threat also must be determined. The on-scene coordinator should then classify the size and type of the spill and decide on the best course of action in response. The National Contingency Plan lists four operational response phases for oil spills.¹³

Phase One – Discovery or Notification

This phase stipulates that, upon discharge from any facility or vessel, any person in charge of a vessel or facility shall immediately notify the National Response Center or, if not practicable, notify the Coast Guard or Environmental Protection Agency predesignated on-scene coordinator for that geographic area.¹⁴ Once the National Response Center is in receipt of notification, it shall "...promptly notify the on-scene coordinator. The on-scene coordinator shall ensure notification of the appropriate state agency... affected by the discharge."¹⁵ The San Francisco Area Contingency Plan incorporates an initial notification checklist, which the Sector San Francisco Situational Unit incorporated into its Quick Response Checklist.

All phase one requirements in response to the M/V COSCO BUSAN mishap were not addressed in a timely manner. The San Francisco VTS notified Sector San Francisco at 8:30 a.m. that the M/V COSCO BUSAN had allided with the San Francisco-Oakland Bay Bridge. According to the San Francisco Area

¹³ 40 CFR Part 300 National oil and Hazardous Substances Pollution Contingency Plan.

¹⁴ 40 CFR § 300.300.

¹⁵ 40 CFR § 300.300.

Contingency Plan initial notification checklist, the Sector San Francisco watchstander was required to ask the reporting party, in this case the San Francisco VTS, whether the National Response Center and the State Office of Emergency Services had been notified. According to the Coast Guard telephone record transcripts and Sector San Francisco Watchstander Logs, the Sector San Francisco watchstander did not ask the required questions, nor did the watchstander make any required notifications. The Responsible Party notified the National Response Center at 9:51 a.m., and the State Office of Emergency Services at 9:42 a.m. As required, the National Response Center notified the San Francisco Sector Command Center of the mishap at 10:01 a.m., and subsequently contacted the State Office of Emergency Services.

The failure by the Sector San Francisco watchstander to make the notifications resulted in approximately a 1-hour delay in contacting the National Response Center and the State Office of Emergency Services. This notification delay did not have any impact on the spill response, the Responsible Party made its contacts as required, and response efforts got underway. However, the delay could have slowed State Office of Emergency Services and National Response Center notifications of other parties not already informed of the mishap. Table 2 is an outline of the notifications that occurred in the first 24 hours.

Table 2 Summary of Phase One Response Actions		
Time	Agency	Action
0830		M/V COSCO BUSAN allision
0830	VTS	Notifies Sector San Francisco of allision
0925	Coast Guard	OSPR personnel at Sector San Francisco notified of spill
0942	O'Brien's Group	Responsible Party notifies California Office of Emergency Services
0951	O'Brien's Group	Responsible Party notifies National Response Center
0951	O'Brien's Group	Activates Marine Spill Research Corporation (OSRO)
1000	SF Police Dept	Offers Assistance to Sector San Francisco
1001	NRC	Notifies Sector San Francisco and State Office of Emergency Services
1007	O'Brien's Group	Identifies to Unified Command as Qualified Individual and Responsible Party
1041	O'Brien's Group	Activates National Response Corporation (OSRO)
1100	OSPR	Oiled Wildlife Care Network placed on standby
1143	OSPR	California State Fish & Game notifies area trustees of mishap
1200		Unified Command holds first press conference
1348	Unified Command	Conference call with San Francisco Mayor's Office, City of San Francisco, Port Partners
1358	OSPR	Notifies local California State Senate & Assembly via Sacramento Liaison

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Phase Two - Preliminary Assessment and Initiation of Action

In the second phase, the on-scene coordinator is responsible “for promptly initiating a preliminary assessment” of the mishap using all available information, including, if possible, an on scene inspection.”¹⁶ Additionally, the on-scene coordinator is to “evaluate the magnitude and severity of the discharge or threat to public health or welfare of the United States or the environment. Assess the feasibility of removal; and... identify the potentially responsible parties.”¹⁷ Also, according to the Code of Federal Regulations, the on-scene coordinator “may allow the responsible party to voluntarily and promptly perform removal actions” and “shall ensure adequate surveillance over whatever actions are initiated.”¹⁸

To its credit, the Responsible Party in this mishap, self-identified and proceeded with its role in the response. However, this was the ideal or model situation and the federal and state government may not always be able to rely upon the Responsible Party to perform as required.

In any event, the Coast Guard was underway with the pollution response team within 34 minutes of the mishap. The Delta span of the bridge was evaluated within 43 minutes of the mishap, and the pollution response team was alongside the M/V COSCO BUSAN 65 minutes after the mishap occurred. It is also important to remember that visibility was approximately one-eighth to one-quarter mile at this time, making on-scene inspection difficult. Due to the heavy fog, it was impossible to make an accurate evaluation of the severity and size of the spill, as the traditional use of aerial observation was unavailable.

Key actions related to the Phase Two-Preliminary Assessment and Initiation of Action are depicted in Table 3. The Unified Command was established within 1 hour and 15 minutes of the mishap. The first formal meeting with all three Unified Command members – FOSC, State On-Scene Coordinator (SOSC), and Responsible Party – did not take place until 4:00 p.m.; however, this had no impact on the response which was already underway.

¹⁶ 40 CFR § 300.305.

¹⁷ 40 CFR § 300.305.

¹⁸ 40 CFR § 300.305.

**Table 3
Summary of Phase Two Response Actions**

Time	Agency	Action
0830		M/V COSCO BUSAN allision
0833	VTS SF	Notifies Caltrans of allision
0836	VTS SF	Issues Safety Notice to Mariner's Broadcast on Ch 16
0840	Sector SF	Notifies CG District 11 Bridge Section
0845	Station SF	Notified by Sector San Francisco of mishap
0850	Sector SF	Briefs Sector SF Incident Management Division
0903	Station SF	Underway to scene of mishap with pollution response team.
0905	VTS SF	Notifies Army Corps of Engineers of debris field in water
0913	Station SF	On scene at Delta span of bridge – inspecting for damage
0920	Station SF	Enroute to COSCO BUSAN
0925	OSPR	Personnel to inspect Ferry Terminal Area & West Span
0935	Station SF	Station SF on scene with COSCO BUSAN
0945	OSPR	OSPR assumes SOSC
0945		Unified Command established at Yerba Buena Island (OSPR & CG)
0955	Station SF	Station SF embarked a pollution response team to COSCO BUSAN
1030	Sector SF	.4MT Initial estimate provided to CG by Chief Engineer
1045	Sector SF	Issues Notice of Federal Interest to COSCO BUSAN
1126	OSPR	Confirmed discharge was Intermediate Fuel Oil 380
1200	CALTRANS	Bridge is structurally sound
1210		UC holds first press conference
1223	Sector SF	OSPR Quantification Expert underway to COSCO BUSAN
1230	CG Aids to Navigation Team	All navigation aids in vicinity of mishap working properly

Phase Three – Containment, Countermeasures, Cleanup, and Disposal

According to the U.S. Code of Federal Regulations, in the event of oil spills, “defensive actions shall begin as soon as possible to prevent, minimize or mitigate threat to the public health or welfare of the United States or the environment.”¹⁹

¹⁹ 40 CFR § 300.310.

Specific actions mentioned include analyzing water samples to determine the source and spread of the oil; controlling the source of the discharge; placement of physical barriers to deter the spread of the oil; and protecting natural resources and sensitive ecosystems.

The San Francisco Area Contingency Plan places its first priority on the protection of human health and safety after a mishap. According to the State of California Oil Spill Response Organization requirements for the San Francisco Area Contingency Plan, the resources are to be on site within 2 hours and on scene within 6 hours. The first OSRO (National Response Corporation) was on scene and skimming within 1 and 1/2 hours of the mishap, which is well within the 6-hour requirement. The second OSRO (Marine Spill Response Corporation) was on scene and skimming within 2 hours of the mishap. The California Transportation representatives were on scene at the damaged bridge span within 69 minutes of the mishap.



Source: NTSB

Damaged Bridge Column

Table 4 provides a brief timeline of the response actions. Both OSROs were on scene well before the mandated time. OSPR Shoreline Cleanup Assessment Teams started their shoreline assessments within 3 1/2 hours of the mishap and booming operations were also underway by that time. Additionally, the U.S. Army Corps of Engineers had removed 2 tons of debris from the water by the evening of the mishap.

**Table 4
Summary of Phase One Response Actions**

Time	Agency	Action
0830		M/V COSCO BUSAN allision
0905	NRC (OSRO)	Receives report of vessel hitting bridge
0910	NRC	Dispatch skimmers to bridge
0930	NRC	On scene – Heavy Fog – reports oil smell at 0935
0939	CALTRANS	On scene checking damage to bridge
0940	NRC	Dispatches additional boats
0940	MSRC (OSRO)	Mobilizes 2 skimmers and 4 boom boats
0950	MSRC	Skimmer on scene – conducts air monitoring and site assessment
1000	NRC	Vessels ‘in oil’ and skimming
1030	MSRC	Commences skimming operations
1045	MSRC	Two boom boats on scene w/1250 ft boom each
1110	MSRC	Two additional boom boats on scene
1125	MSRC	Skimmer on scene to skim and place boom
1130	NRC	2500 feet of boom placed Pier 39 & Aquatic park
1140	MSRC	Skimmer on scene
1200	OSPR/Coast Guard	SCAT depart for assessment of SF Piers
1246	NOAA	Oil trajectory completed and given to UC
1327	OSPR	Protective boom placed at Seal Cove – Pier 39
1443	ACOE	Two tons of debris recovered from bridge abutment
1445	MSRC	Skimmer Sentinel on scene
1500	MSRC	Booming of Crissy Field and Aquatic Park commences
1515	NRC	Directed to place boom on Crissy Field
1530	MSRC	Boom boat LCM on scene
1600	MSRC	Booming complete (Crissy Field & Aquatic Park)
1603	NPS	Closing affected beaches
1630	NRC	2500 ft of boom deployed and Skimmer JBF on scene
1630	MSRC	8000 ft of boom deployed and 3 additional skimmers on scene
1636	ACOE	95% of bridge piling fenders recovered
1730	UC	Water operations discontinued due to safety concerns at night
1820	UC	Approximately 8000 gallons of product recovered

Phase Four – Documentation and Cost Recovery

This final phase in oil spill response, Documentation and Cost Recovery, addresses the need for those involved to document all actions taken in response to a mishap in order to support and validate recovery costs.²⁰

Cost recovery is beyond the scope of the first 24 hours of the mishap, which is outside the scope of our review.

The Oil Pollution Act of 1990 required development of a rapid response plan for the treatment of marine resources, wildlife, and fisheries.

Is that plan currently in place and was it followed during the response to this incident?

Was it adequate to guide this aspect of the response?

Do the relevant federal agencies conduct drills specifically related to fish and wildlife protection?

The San Francisco Area Contingency Plan incorporates a rapid response plan for the treatment of marine resources, wildlife, and fisheries, per the Oil Pollution Act of 1990. This plan was followed, in conjunction with the San Francisco Area Contingency Plan's Volume II's site-specific containment and protection strategies for environmentally sensitive sites. According to California State OSPR scientists, as well as National Marine Fishery Service personnel, the plan was, and is, adequate to guide this aspect of the response.

Further, federal agencies conduct drills specifically related to fish and wildlife protection. The Coast Guard participated in the Sulfur Springs Creek Exercise in 2006. This exercise was designated as a full scale, Marine Environmental Protection Exercise designed to validate the information and procedures contained in the Regional Contingency Plan, Area Contingency Plan, California Wildlife Contingency Plan, and Valero Benicia Refinery Oil Spill Contingency Plan. The exercise also identified weaknesses to correct subsequent versions of the contingency plans, identified strengths to share best practices with the response community, and tested command and control processes within an incident command/unified command framework.

²⁰ 40 CFR 300.315.

The California Code of Regulations outlines state drill and exercise requirements for contingency plans. According to California State Law, it is mandatory that the “entire plan is exercised at least once every 3 years...”²¹ The Coast Guard participated in the Safe Seas 2006, Exercise, which tested the San Francisco Area Contingency Plan, the Region IX Regional Response Plan, and the Harley Marine Services Vessel Response Plan. Numerous federal, state and local agencies, including the Coast Guard, National Marine Fisheries Service, National Marine Sanctuaries Fish and Wildlife Service, and OSPR jointly conducted this multipart exercise.

Safe Seas 2006 commenced with a Table Top Exercise, which focused on initial spill notifications, followed by a Command Post Exercise largely centered on initial Incident Command Post standup. Safe Seas 2006 terminated with a Field Training Exercise, which combined extensive technology demonstrations with actual field deployments. One of the objectives and major lessons learned during Safe Seas 2006 was demonstration of the ability to conduct initial environmental assessments and forecasts and development of the appropriate plans for such matters as shoreline protection, wildlife protection, cultural resource protection, dispersant use, and place of refuge.

Recommendations

We recommend that the Commandant of the Coast Guard:

Recommendation #6: Review current Sector San Francisco Command Center Standard Operating Procedures to ensure all Quick Response Checklists are current and accurately reflect the San Francisco Area Contingency Plan.

Recommendation #7: Ensure Sector San Francisco Command Center watchstanders and supervisors receive recurrent training on the use of Quick Response Checklists.

Recommendation #8: Collaborate with all stakeholders on the San Francisco Area Committee to predesignate a location(s) for the Unified Command’s Incident Command Post, including adequate space for the Joint Information Center, and regularly use this space for oil spill response and other all-hazards exercises.

Recommendation #9: Collaborate with all stakeholders of the San Francisco Area Contingency Plan to develop policies and procedures for managing, training, and credentialing large numbers of volunteers who offer assistance during oil spills.

²¹ 14 CCR § 820.01.

Management Comments and OIG Analysis

The Coast Guard concurred with the above recommendations. The recommendations will remain open until more specific details and documentation are provided on actions taken so that we can determine whether these actions adequately address the recommendations.

Management Comments to Recommendation #6: CONCUR

The Coast Guard concurred with the recommendation for developing current and accurate Quick Response Sheets for San Francisco Sector Command Center as well as the San Francisco VTS. According to the Coast Guard, the development of these Quick Response Sheets aligns with planned future construction of an integrated Sector Command Center in which both the Command Center and the VTS will be located. Construction of this building is estimated to be complete by 2011.

OIG Analysis

We agree with the actions the Coast Guard plans on taking to address the intent of our recommendation. This recommendation will remain open until the Coast Guard provides us with documentation demonstrating the development of the Quick Response Sheets for the VTS and Sector Command Center. Co-location of the Sector Command Center and VTS will serve to improve communications during mishaps. We consider recommendation #6 resolved.

Management Comments to Recommendation #7: CONCUR IN PART

The Coast Guard concurred in part with the recommendation that Sector San Francisco Command Center watchstanders and supervisors receive recurrent training on the use of Quick Response Checklists. According to the Coast Guard, the watchstanders already receive qualification and recurrent training on the procedures they are required to accomplish including the use of Quick Response Checklists. The Coast Guard recommends a revision of the recommendation based on the above comments.

OIG Analysis

We agree with the actions the Coast Guard plans on taking to address the intent of our recommendation. This recommendation will remain open until the Coast Guard provides us with documentation demonstrating that the recurrent training was accomplished. We consider recommendation #7 resolved.

Management Comments to Recommendation #8: CONCUR

The Coast Guard concurred with the recommendation that the Area Committee predesignate an Incident Command Post (s) in the San Francisco Area Contingency Plan. According to the Coast Guard, Sector San Francisco will incorporate this change in the next revision of the Area Contingency Plan.

OIG Analysis

We agree with the Coast Guard's actions to address the intent of our recommendation. This recommendation will remain open until the Coast Guard provides us with documentation outlining the designation of an Incident Command Post location (s) in the San Francisco Area Contingency Plan, as well as plans to use the location (s) for exercises and drills. We consider recommendation #8 resolved.

Management Comments to Recommendation #9: CONCUR

The Coast Guard concurred with our recommendation that all stakeholders of the San Francisco Area Contingency Plan collaborate to develop policies and procedures for managing, training, and credentialing large numbers of volunteers. According to the Coast Guard, the Area Committee will update the San Francisco Area Contingency Plan with a volunteer management plan developed and implemented by the State of California. This plan will address the use of volunteers at all levels, including county and local jurisdictions affected by the oil spill. The first Volunteer Sub-committee meeting of the Area Committee was held on January 14, 2008.

OIG Analysis

We agree with the actions the Coast Guard plans on taking to address the intent of our recommendation. This recommendation will remain open until the Coast Guard provides us documentation

demonstrating that a volunteer management plan, as discussed, has been formally included in the San Francisco Area Contingency Plan. We consider recommendation #9 resolved.

Sector Implementation

The request for a 90-day review of the M/V COSCO BUSAN mishap, asked for an assessment of whether the Coast Guard's reorganization contributed to the deficiencies in its Coast Guard's response. We were unable to assess the impact of the Coast Guard's reorganization into Sectors on the oil spill response.

Prior to 2005, the Coast Guard was organized around its operational programs. The Coast Guard was reorganized in August 2005 around core operational service delivery processes, such as prevention of mishaps, or responses to mitigate the effects of mishaps. This Sector structure is comprised of Command Staff, Response Department, Prevention Department, and Logistics Department. Sector San Francisco was officially commissioned when the Coast Guard merged the former Marine Safety Office San Francisco, Group San Francisco, and San Francisco VTS. Sector San Francisco is a unit of District Eleven. To properly assess the impact of this reorganization, and in the interest of improving Coast Guard operations, a more in-depth review of the overall changes, including roles and responsibilities, would be required.

Medical Waivers for Federal Pilots

During the course of our review, concerns were raised about granting medical waivers to federal pilots, as well the length of time required to process license applications and renewals. According to the Coast Guard, centralization and medical review of all mariner physicals will serve to enhance maritime safety. The Coast Guard should maintain adequate medical staff that possess the credentials necessary to ensure all physicals are reviewed in a timely and accurate manner. Further, 46 USC § 7101 requires that pilots must have a "thorough physical examination each year," in addition to a physical examination that is required every 5 years for license renewal.

However, the process by which a pilot is required to submit an annual report of physical examination by a physician has changed since the M/V COSCO BUSAN pilot in the mishap submitted his most recent physical examination. Prior to 2007, a pilot was only required to submit an annual report of physical examination to the Coast Guard upon request. In September 2006, the Coast Guard published notice in the Federal Register exercising its authority to require routine submission of the physical examination reports. With this change, pilots were required to submit their latest physical report to the Regional Examination Center that issued their license by December 2006. This submission date was

Allision of the M/V COSCO BUSAN with the San Francisco-Oakland Bay Bridge

later changed to April 2007. Pilots were also required to submit their annual exams within 30 days of completion each year thereafter.

The M/V COSCO BUSAN pilot's most recent physical examination report was submitted, as required, to the Regional Examination Center in San Francisco where it was verified but not reviewed. In October 2007, the Regional Examination Centers began forwarding all annual physical examinations to the National Maritime Center where they were reviewed by medical professionals at its Medical Evaluation Branch. Had the pilot in the M/V COSCO BUSAN mishap submitted a physical examination report after October 2007, the National Maritime Center's medical staff could have flagged the submission for further review and possible denial.

When concerns are raised regarding medical conditions of active mariners that may have significant potential to affect maritime safety, the cases are referred to local Coast Guard Investigating Officers for resolution. If the Coast Guard determines, after coordinating with the examining physician and other specialists consulted, that a disqualifying medical condition exists which cannot be waived, the Coast Guard is required to initiate proceedings to suspend or revoke the pilot's federal license. However, it is not likely that Coast Guard suspension and revocation proceedings, had they been initiated prior to this mishap, would have been completed prior to the incident based on typical processing timelines.

The Coast Guard is currently transitioning to a centralized 100% medical review of all mariner physicals by healthcare professionals. Upon full implementation in September 2008, this process should significantly decrease the future risks of significant medical conditions not being identified in federal pilot applicants and renewal candidates.

Appendix A

Purpose, Scope, and Methodology

We conducted this review in response to a request from the Speaker of the House of Representatives and the Subcommittee on Coast Guard and Maritime Transportation of the House of Representatives. We assessed the first 24 hours of the Coast Guard's response to the oil spill that followed the allision of the M/V COSCO BUSAN with the San Francisco-Oakland Bay Bridge. Specifically, our objectives were to assess:

- The actions taken by the San Francisco VTS to prevent the M/V COSCO BUSAN from striking the San Francisco-Oakland Bay Bridge.
- The actions taken by the Coast Guard in response to the allision between the M/V COSCO BUSAN and the San Francisco-Oakland Bay Bridge; and
- The actions taken by the Coast Guard in evaluating the volume of oil spilled from the M/V COSCO BUSAN. We also evaluated the Coast Guard's efforts to execute the San Francisco Area Contingency Plan during the first twenty-four hours following the mishap.

We reviewed Coast Guard's documents related to the oil spill response, including the National Contingency Plan; Regional Contingency Plan; San Francisco Area Contingency Plan; Sector San Francisco Organization Manual; Incident Command System; audio, video, and computerized files; and transcripts of the time period leading up to and following the mishap.

We conducted fieldwork at Coast Guard headquarters in Washington, DC, and made site visits to Coast Guard Sector San Francisco, California; VTS, San Francisco, California; VTS, New York, New York; and Coast Guard Command and Control Engineering Center, Portsmouth, VA. Interviews were conducted with the California Office of Oil Spill Prevention and Response, City of San Francisco Emergency Management, and Coast Guard personnel. Fieldwork was conducted from January 2008 to March 2008.

Our review was conducted under the authority of the *Inspector General Act of 1978*, as amended, and according to the *Quality Standards for Inspections* issued by the President's Council on Integrity and Efficiency.

Contractor support was used to assist in the review of the adequacy of the San Francisco Area Contingency Plan. RHH Associates, Inc. provides consulting services to private sector and public sector clients in marine safety, environmental protection, operational and regulatory compliance, maritime security, and marine emergency response management and mitigation, including planning, training, and exercises. The contractor provided subject matter expertise on oil spill and marine emergency response planning, and oil spill response management. The contractor has 22 years of experience in the Coast Guard, specializing in marine safety operations and emergency response management. Specifically, the

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Appendix A
Purpose, Scope, and Methodology

contractor was involved in the development of the first five United States Area Contingency Plans in New England, and the design and execution of several domestic and international oil spill response exercises. The contractor has been a member of numerous oil spill management teams, and conducted training on the Incident Command System and other aspects of emergency response management

Appendix B Management Comments to the Draft Report

U.S. Department of
Homeland Security
United States
Coast Guard



Commandant
United States Coast Guard

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7501

MEMORANDUM

4 APR 2008

From: R.J. Papp, Jr., VADM
Chief of Staff, U.S. Coast Guard

Reply to: CG-823
Attn of: Mark Kulwicki
202-267-2294

To: Inspector General

Subj: DHS OIG DRAFT REPORT: "ALLISION OF THE M/V COSCO BUSAN WITH THE
SAN FRANCISCO - OAKLAND BAY BRIDGE"

Ref: (a) DHS OIG REVISED DRAFT REPORT (April 2, 2008)

1. This letter transmits our proposed response to the Office of Inspector General (OIG) draft report findings and recommendations contained in reference (a).
2. If you have any questions, please contact Mark Kulwicki at (202)-267-2294.

#

Enclosure: U.S. Coast Guard Response to GAO Audit

Appendix B

Management Comments to the Draft Report

UNITED STATES COAST GUARD STATEMENT ON INSPECTOR GENERAL REPORT

TITLE: "ALLISION OF THE M/V COSCO BUSAN WITH THE SAN FRANCISCO - OAKLAND BAY BRIDGE" (Revised Draft Report dated April 2, 2008)

The United States Coast Guard generally concurs with the OIG's recommendations included in this report and appreciates the efforts of DHS OIG in documenting areas for improvement. We are currently taking corrective actions to address these recommendations. The Coast Guard provides the following comments in response to the findings of the report. These are organized under five sections: Introduction, Recommendation and Responses, Supplemental comments, Technical comments, and Editorial comments.

INTRODUCTION

In 2005, the Commandant approved a project to restructure the Coast Guard's Mariner Licensing and Documentation program. Implementation began in 2006 upon receipt of initial funding. A significant element of the project is the transition to centralized evaluation of all mariner applications, including 100% review of all mariner physicals by medical professionals.

As of April 2008, more than half of the 17 Regional Examination Centers (RECs) have either begun or completed transitions, with the centralized facility at the National Maritime Center (NMC) performing the evaluations of all of the applications submitted through these RECs. By September 2008, the NMC will be evaluating all applications for mariner credentials.

The Coast Guard recognizes the importance of evaluating the physical examinations of merchant mariners. One of the final changes to the restructuring and centralization plan prior to its approval in 2005 was the creation of a more robust medical evaluation staff. Since implementation, the staff has been increased and we continue to monitor all of the staffing at NMC to ensure the appropriate resources are applied where needed.

In October 2007, prior to the COSCO BUSAN marine casualty, the Coast Guard initiated a process change directing all RECs, whether they had begun their transition or not, to forward all annual pilot physicals to NMC for centralized review by the Medical Evaluation Branch comprised of medical professionals. By October 2008, all of the annual pilot physicals submitted will have been reviewed by NMC.

The process described in this report whereby cases may be referred to Coast Guard Investigating Officers applies to all mariners, not just pilots. If the medical condition is reviewed in conjunction with an application for an original or renewed credential, the result may simply be denying the application for the credential. However, if the individual holds an active credential, then the initiation of suspension and revocation proceedings may be required.

Appendix B

Management Comments to the Draft Report

RECOMMENDATIONS AND RESPONSES

Recommendation #1: Ensure expedient issuance of the VTS National Standard Operating Procedures, which should address: (1) requirements for post-mishap drug and alcohol testing for VTS watchstanders; (2) establishment of policy to ensure that all VTS centers synchronize recorded audio, video, and track data, along with quality assurance checks to ensure the quality and synchronization of that data; and (3) development of VTS center-specific quick response sheets.

Concur. The VTS National SOP (NSOP) has been under development for several years and is currently in final draft form in clearance at Coast Guard Headquarters. It will provide more specific guidance to VTSs than the existing general guidance contained in the Marine Safety Manual. Regarding the specific items that are recommended to be included in the NSOP:

- (1) Requirements for post-incident drug and alcohol testing will be included in the NSOP. Formal guidance effective immediately is being sent to all VTSs to make them aware of the policy and provide guidance in developing local drug and alcohol testing procedures.
- (2) Requirements for time synchronization of VTS equipment will be included in a future change to the NSOP or in other technical equipment documentation as appropriate. All VTSs have been made aware of the need for equipment time synchronization through informal notice from Headquarters. The Coast Guard's Command and Control Center (C2CEN) will be tasked with sending specific technical guidance for equipment synchronization.
- (3) Requirements for development of VTS-specific quick response sheets will be included in future changes to the NSOP. Prior to their inclusion, the headquarters VTS program and Sector Command Center program will coordinate on overall QRS requirements and identify linkages between VTS and SCC procedures. The results of this coordination will be included in the NSOP. In the interim, informal guidance will be provided to VTSs to work with their local SCC to align procedures and consider QRS development.

Recommendation #2: In coordination with the cities of San Francisco and Oakland, the San Francisco Pilot's Association, and the San Francisco Harbor Safety Commission, develop criteria to limit vessel movement during varying conditions of restricted visibility.

Concur.

VTSs are involved with the development of local policies affecting vessel movement, including the affects of extreme environmental conditions. VTSs have a longstanding relationship with port stakeholders and leverage this relationship to develop local policies and best practices. Once policies are finalized, the VTS will ensure specific procedures are developed, documented in operating procedures and watchstanders are trained to implement them.

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Management Comments to the Draft Report

Recommendation #3: Update Coast Guard policies and procedures as they relate to marine casualty investigations, addressing (1) The collection of evidence by marine casualty investigators to ensure all relevant evidence is collected, for example, identification of the presence of a Voyage Data Recorder and securing as appropriate; and (2) The requirements for drug and alcohol testing of Coast Guard civilian and military personnel involved in a mishap.

- (1) **Concur with comment.** Job aids and policy already require collection and securing of evidence, including Voyage Data Recorders as appropriate. The Marine Casualty and Pollution Investigator Job Aid was updated in August 2007 and includes this material and does not require further action. An update of the Marine Safety Manual is near completion. The drug and alcohol testing of Coast Guard Personnel does not fall under the authorities of the Marine Casualty Investigations program. Investigating officers do not have the authority to direct drug and alcohol testing of Coast Guard military and civilian personnel. Testing of this nature is directed through the unit's chain of command.
- (2) **Concur in part.** There is no legal requirement that VTS watchstanders, either active duty military or civilian, undergo drug testing following a marine accident. USCG personnel policy does *authorize* a commander to order drug or alcohol testing of an active duty member upon 'reasonable suspicion' following an incident. Similarly, a VTS supervisor *may* order a civilian watchstander to undergo a drug test following an accident that lead to 'substantial property damage' under DOT policy. Neither of these policies, however, impose an absolute requirement that VTS watchstanders undergo drug or alcohol testing following a marine casualty within their area of responsibility. We recommend that any language in the draft report that implies such an obligation be clarified to reflect that drug testing of VTS watchstanders in a post-accident scenario is discretionary.

Recommendation #4: Clarify the role and responsibility of the Coast Guard in quantifying the volume of pollutants as a result of a marine casualty or pollution mishaps. Also, determine whether pollution investigators should independently quantify or verify the volume of pollutants released. Employ quantification experts or conduct an analysis of the costs and benefits to upgrading the training of nationwide pollution investigators in independently quantifying the volume of pollutants released in marine casualty mishaps.

Concur in part. The Coast Guard will update contingency plans to ensure that qualified persons are available to assist in quantifying the volume of oil spilled. We will also update investigation and response training to ensure all Coast Guard personnel understand the complexities and limitations of determining the volume of a spill and how that information should be used in pollution investigation and response. We suggest the aforementioned wording be used in the recommendations.

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Recommendation #5: Ensure that the marine casualty investigation billets at Sector San Francisco are filled with trained and qualified marine casualty investigators.

Concur. This should recommend that *all* Coast Guard marine casualty investigator billets are filled with trained and qualified marine casualty investigators, not just those at Sector San Francisco.

Recommendation #6: Review current Sector San Francisco Command Center Standard Operating Procedures to ensure all Quick Response Checklists are current and accurately reflect the San Francisco Area Contingency Plan.

Concur. The VTS and the Sector Command Center (SCC) are currently developing Quick Response Sheets (QRS) that address both VTS and SCC issues for all situations and will be used by both entities in the event QRS use is required. This is in line with the future construction of an integrated Sector Command Center that locates the SCC and the VTS in adjacent spaces in the same building (estimated to have construction completed by 2011).

Recommendation #7: Ensure Sector San Francisco Command Center watchstanders and supervisors receive recurrent training on the use of Quick Response Checklists.

Concur in part. Sector Command Center watchstanders already receive qualification and recurrent training on the procedures they are required to accomplish which incorporates the use of Quick Response Checklists. Therefore, we recommend this recommendation be reworded to read:

"Ensure the use of Quick Response Checklists is included in recurrent training for Sector San Francisco Command Center watchstanders and supervisors."

Recommendation #8: Collaborate with all stakeholders on the San Francisco Area Committee to predesignate a location(s) for the Unified Command's Incident Command Post, including adequate space for the Joint Information Center, and regularly use this space for oil response and other all hazards exercises.

Concur. Sector San Francisco will incorporate this into the next review of the Area Contingency Plan.

Recommendation #9: Collaborate with all stakeholders of the San Francisco Area Contingency Plan to develop policies and procedures for managing, training, and credentialing large numbers of volunteers who offer assistance during oil spills.

Concur. The Area Committee will update the Area Contingency Plan with a volunteer management plan developed and implemented by the State of California that incorporates volunteers at all levels (all county and local in the affected area), not just City of San Francisco. The first "Volunteer" Sub-Committee meeting of the Area Committee took place on January 14th, 2008.

Appendix C
Letter from Speaker of the House Nancy Pelosi, and the Honorable
Elijah E. Cummings

Congress of the United States
Washington, DC 20515

December 4, 2007

Mr. Richard L. Skinner
Inspector General
Department of Homeland Security
245 Murray Drive, S.W.
Washington, D.C. 20528

Dear Mr. Skinner:

On November 7, 2007, the M/V COSCO BUSAN hit the San Francisco-Oakland Bay Bridge. Significant questions have been raised regarding this marine casualty, including whether adequate safety measures were in place to prevent such an accident, whether the Federally coordinated response to the accident was adequate for a spill of this magnitude, and whether the follow-up investigation of the casualty by the Coast Guard conformed with best investigatory practices.

I request that you conduct a 30-day review of the facts and circumstances surrounding the allision and the subsequent investigation and response. I would expect a briefing regarding your initial findings no later than 1 February 2008, followed in 60 days by your written findings.

Based on information gathered during the course of a field hearing held by the Subcommittee on Coast Guard and Maritime Transportation in San Francisco on November 19, 2007, we expect that you will include a review of the following:

San Francisco Vessel Traffic Service (VTS):

- What action did the watch-standers at the Coast Guard's Vessel Traffic System take prior to the allision?
- Was there additional action that could have been taken or information that could have been provided by the watch-standers that may have prevented the allision?
- Does the San Francisco Vessel Traffic Service have the most up-to-date technology?
- Should Vessel Traffic Service have the capability of prohibiting ship transits during periods of reduced visibility?
- Would additional Coast Guard authority over the Vessel Traffic Service help prevent this type of situation?

Coast Guard Investigation:

- Was the Coast Guard's initial investigation, including the securing of evidence and estimation of the extent of the oil release, adequate?

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Appendix C

Letter from Speaker of the House, Nancy Pelosi, and the Honorable Elijah E. Cummings

- Was drug and alcohol testing of maritime personnel conducted in accordance with applicable Coast Guard regulations?
- Did the Coast Guard provide all records relating to this incident to the National Transportation Safety Board in a timely manner?

Coast Guard Response:

- Did the Unified Command effectively manage the resources available to the Coast Guard to effect containment and remediation of the spill?
- To what extent was the delay in notification of local authorities and emergency responders of the size of the oil spill a result of inadequacies in the San Francisco Area Contingency Plan?
- Did the delay in notification of the size of the oil spill adversely impact the response of the Coast Guard, State and local governments, and Responsible Party response to the release?
- To what extent was there local involvement in the development of the San Francisco Area Contingency Plan?
- Is the San Francisco Area Contingency Plan adequate to guide the response to a spill of the size and type of fuel encountered in this allision?
- Were the provisions of the San Francisco Area Contingency Plan followed during the response to this incident?
- The Oil Pollution Act of 1990 required development of a rapid response plan for the treatment of marine resources, wildlife and fisheries. Is that plan currently in place and was it followed during the response to this incident? Was it adequate to guide this aspect of the response? Do the relevant federal agencies ever do drills specifically related to fish and wildlife protection?

In addition, the investigation should review the Coast Guard's existing emergency response capabilities in San Francisco Bay and make recommendations regarding needed improvements, and should assess whether recent reorganizations within the Coast Guard contributed to the inadequacy of the prevention, response, and investigation of this incident.

Thank you for your timely response to this request. We look forward to reviewing the findings of this investigation.

Sincerely,


NANCY PELOSI
Speaker of the House


ELIJAH E. CUMMINGS
Chairman, Subcommittee on
Coast Guard & Maritime Transportation

Appendix D

San Francisco Area Contingency Plan Authorities

The Coast Guard, the State of California OSPR, and the Responsible Party jointly manage coastal oil spills in California. A brief overview of the oil spill response and management authorities is discussed below followed by a flowchart of authorities for oil spill response in the United States.

Oil Pollution Act of 1990: The Oil Pollution Act of 1990 was enacted after the Exxon Valdez mishap in 1989. According to 40 CFR Part 300, the National Contingency Plan provides “the organizational structure and procedures for preparing for and responding to discharges of oil...”²² Flowing downward from the National Contingency Plan are the requirements for Regional Contingency Plans (RCP) and Area Contingency Plans (ACP). San Francisco’s Area Contingency Plan falls under the Region IX Region Contingency Plan. The San Francisco Area Contingency Plan (SFACP) of 2005 was in effect during the M/V COSCO BUSAN mishap.

National Response Plan: The intent of The National Response Plan, developed in response to Homeland Security Presidential Directive (HSPD)-5, is to, “...align Federal coordination structures, capabilities and resources into a unified, all discipline and all-hazards approach to domestic incident management.”²³ The National Response Plan uses the National Incident Management System (NIMS) as its infrastructure.²⁴ Integral to NIMS is the Incident Command System (ICS), which uses a Unified Command or Single Incident Commander concept to manage all-hazards including oil spills.

A Unified Command was established for the M/V COSCO BUSAN mishap and was manned by the Coast Guard as the FOSC, the State of California as the SOSOC and the O’Brien’s Group as the Responsible Party for the M/V COSCO BUSAN. The Unified Command used the ICS as its framework in order to “... enable effective and efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure”²⁵ The National Response Plan provides the framework within which the tenets of the Oil Pollution Act of 1990 are enacted.

²² 40 CFR § 300.1.

²³ National Response Plan; December 2004, Page i.

²⁴ The National Response Plan was superseded by the National Response Framework on March 22, 2008.

²⁵ National Incident Management System, FEMA 501/December 2007 (draft), Page 43.

Appendix D

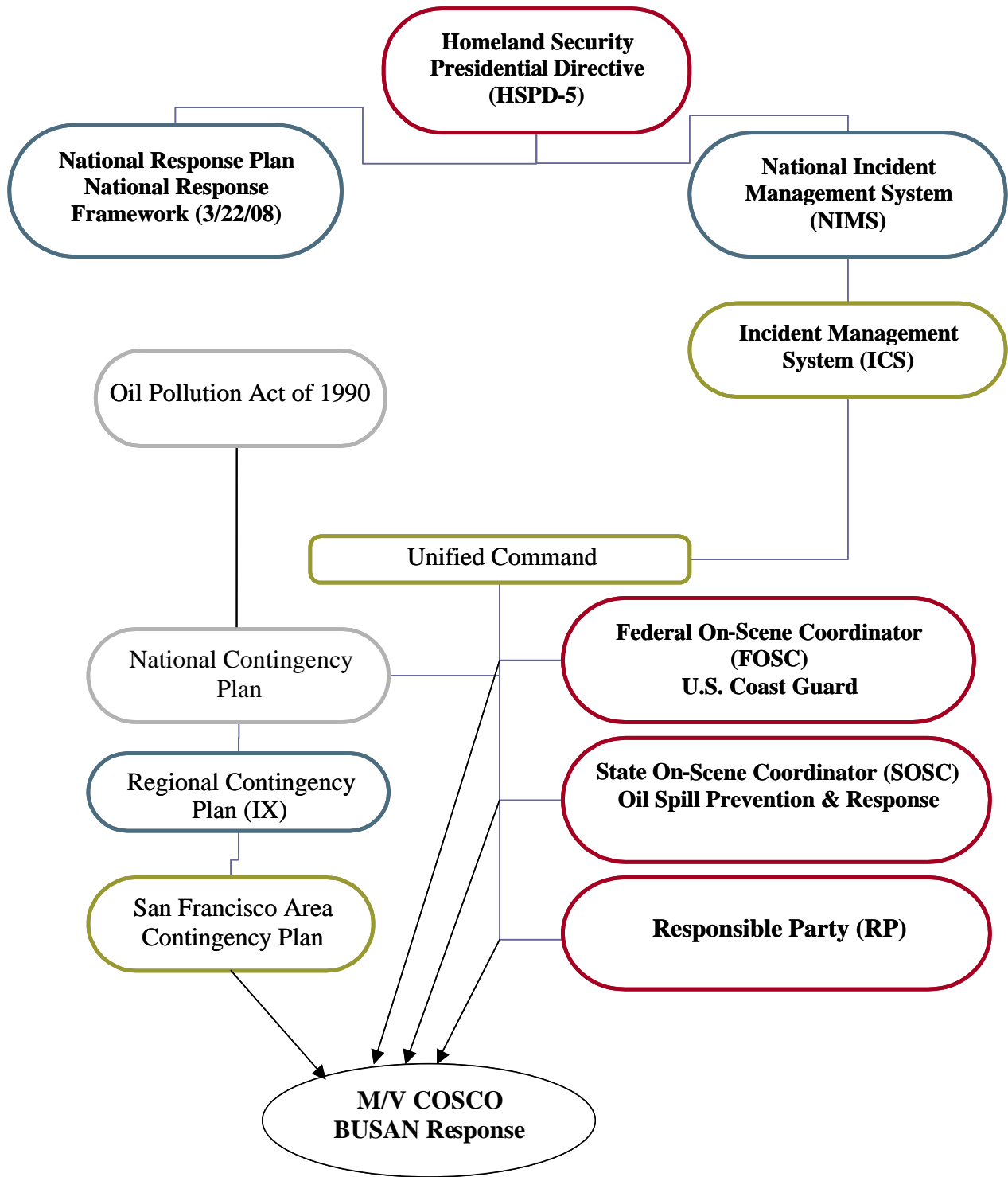
San Francisco Area Contingency Plan Authorities

San Francisco Area Contingency Plan Authorities: The Oil Pollution Act of 1990 set forth the establishment of area committees in areas designated by the President. Federal, state, and local agencies compose these area committees. Additionally, each area committee is responsible for developing an Area Contingency Plan (ACP) under the direction of the Federal On-Scene Coordinator (FOSC). This contingency plan "...shall be adequate to remove a worst case discharge of oil or a hazardous substance, and to mitigate or prevent a substantial threat of such a discharge, from a vessel, offshore facility, or onshore facility operating in or near the geographic area"²⁶ Additional responsibilities of the area committees include pre-planning joint response efforts, shoreline cleanup, protection of sensitive environmental areas and the protection, rescue and rehabilitation of fisheries and wildlife.

Memorandum of Agreement Between State of California and Coast Guard: A Memorandum of Agreement (MOA) was signed on June 2, 1993, between the State of California and the Eleventh Coast Guard District. This MOA is an agreement of cooperation between the Coast Guard and the State of California with regard to each entity's roles and responsibilities in oil pollution prevention and response.

²⁶ San Francisco Area Contingency Plan; October 2005; Section 1100.

Appendix D
San Francisco Area Contingency Plan Authorities



Allision of the M/V COSCO BUSAN with the San Francisco-Oakland Bay Bridge

Appendix E
San Francisco Area Committee Attendance

**San Francisco Bay and Delta Area Committee Meetings Attendees From:
 October 2005 to September 2007**

<u>San Francisco Bay and Delta Area Committee Attendee Quantity</u>	<u>10/11/05</u>	<u>12/14/05</u>	<u>02/14/06</u>	<u>04/13/06</u>	<u>06/06/06</u>	<u>08/24/06</u>	<u>10/24/06</u>	<u>01/16/07</u>	<u>03/20/07</u>	<u>05/15/07</u>	<u>07/17/07</u>	<u>09/18/07</u>
All American Pipeline/Pacific Atlantis Terminals											2	
Bay Area Ship Services			1	1	1					1	1	1
BCDC	1		1				1					
Blue Water & Associates	1	1	1		1	2	1			1		1
Cal. State Lands Commission		1	1	1	1							
CCC (CA Coastal Commission)	1	1	1	1	1	1	1	1	2		2	1
CG PACAREA/DII			1									
Chevron	1			1								
City of Oakland				1		1						
Conocophillips					1		1	1			1	
Contra Costa Co. / OES						1						
DOI (Dept. of Interior)	1	4	1	3	1		2		1		1	2
Entrix			1									
Marin County OES	1		1	1								
MSRC	2	1	1	1	2	2	1		1	2	1	1
National Park Service				1								
NOAA - Gulf of the Farallones	1	1	1		1	1						1
NOAA - SSC (Scientific Support Coordinator)				1			1			1	1	
NRC (Nat'l Response Corp.)		1		1	2	2				1		
Oakland Fire Dept. / OES										1		
OSPR - DFG	6	5	9	6	6	5	6	2	4	5	6	2
Pacific Merchant Shipping Assoc.											1	
Parker Diving Svcs							1					
Port of Benicia											1	
Port of Oakland							1		1		1	
SF Bar Pilots											1	
SF Health Department			1				1		1			
So. Cal Ship		1			1							
Sonoma County DES	1		1		1				1			
Ultramar Inc., Golden Eagle Refinery	1											
US Army Corp of Engineers MOTCO											1	
USCG	2	2		5	3	1	3	2	8	5	5	4
USFWS						1						
Valero Refining Co.						1						

Source: ISPR

Appendix F
Major Contributors to this Report

Richard Johnson – Director, Coast Guard and Maritime Security Operations Division
Robert Greene – Supervisory Auditor
Lorinda Couch – Management Analyst
Andrea Rambow – Management Analyst
David DeHaven – Auditor
Joseph Stone – Management Analyst
Tessa May-Fraser – Program Analyst
Robert Hazelton – Contractor Support

Appendix G
Report Distribution.

Department of Homeland Security

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DHS Office of Inspector General/MAIL STOP 2600, Attention:
Office of Investigations - Hotline, 245 Murray Drive, SW, Building 410,
Washington, DC 20528.

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