UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

OFFICE OF ADMINISTRATIVE LAW JUDGES

In the matter of:	
PUBLIC HEARING IN CONNECTION WITH THE INVESTIGATION OF THE ALLISION OF THE M/V COSCO BUSAN WITH THE SAN FRANCISCO-OAKLAND BAY BRIDGE, NOVEMBER 7, 2007	Docket No.: DCA-08:-MM-004

NTSB Board Room and Conference Center
429 L'Enfant Plaza
Washington, D.C. 20024

Tuesday,
April 8, 2008:

The above-entitled matter came on for hearing,

Pursuant to Notice at 8:30 a.m.

BEFORE: MARK ROSENKER, Chairman
JOSEPH OSTERMAN
DR. JACK SPENCER
ROBERT HENRY

APPEARANCES:

Technical Panel:

TOM ROTH-ROFFY
LARRY BOWLING
CAPTAIN ROB JONES
DR. BARRY STRAUCH
CRYSTAL THOMAS
PAUL STANCIL
BOB TRAINOR

PETER KNUDSON, Public Information Officer

Parties to the Hearing:

ROSS WHEATLEY, Chief of the Investigations Division, Coast Guard
CAPTAIN MICHAEL WATSON, American Pilots Association
CAPTAIN RICK HOLLY, California Department of Fish and Game, Office of Spill Prevention and Response
CAPTAIN NAGARAJAN M. SUBRAMANIAN (AGA), Fleet Management, Limited
CAPTAIN PATRICK A. MOLONEY, Executive Director, California Board of Pilot Commissioners
KNUTE MICHAEL MILLER, President, California Board of Pilot Commissioners
CAPTAIN PETER McISAAC, President and Port Agent, San Francisco Bar Pilots Association
MICHAEL HUGHES, Sperry Marine

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P R O C E E D I N G S

(Time Noted: 8:30 a.m.)

CHAIRMAN ROSENKER: Good morning. I'd like to welcome everyone to the board room of the National Transportation Safety Board. My name is Mark Rosenker. I'm the Chairman of the NTSB and I will be the Chairman for this Board of Inquiry. Today we are opening a public hearing concerning the accident involving the M/V Cosco Busan, which occurred in San Francisco Bay on November the 7th, 2007. This is an investigative hearing. The purpose of the hearing is to obtain additional evidence and further develop the Safety Board's understanding of the facts identified thus far in the investigation. This hearing will help the Safety Board determine the probable cause of the accident and make safety recommendations to prevent similar accidents from occurring in the future.

No determination of cause will be rendered during these proceedings. While significant domestic oil spills from vessels are rare events, they are widely publicized and scrutinized by experts around the globe. When an accident such as this does occur, it is the responsibility of the National Transportation Safety Board, with the assistance of the United States Coast Guard and other designated parties from government and industry, to find out what happened, why it happened and how we can prevent this unfortunate event from recurring. The goal of this hearing is two-fold.

First, the issues that will be discussed at this hearing, while technical in nature, serve to assist the Safety Board in developing additional factual information. It will be analyzed for the purpose of determining the probable cause of the accident. Secondly, this hearing also provides an avenue for the party participants to directly assist the dedicated efforts being put forth by the Board's investigative staff. I want to assure you that the Safety Board will pursue every meaningful lead toward an ultimate assessment of what caused this accident.

But we will also be fulfilling our broader mandate, to formulate recommendations to prevent such tragedies in the future. As previously stated, these proceedings tend to become highly technical affairs, but they are essential in seeking to identify information relevant to this investigation by the Board. The purpose of this inquiry is not to determine the rights or liability of private parties and questions or discussions dealing with such rights or liability will not be permitted during these proceedings.

Questions of witnesses that appear to be focused on litigation or potential liability of the parties will not be entertained. Over the course of this hearing we will continue to collect information that will assist the Safety Board in its examination of safety issues arising from this accident. Specifically, we will concentrate on the following issues. Number 1, the Cosco Busan's bridge navigation equipment functional

operability. Number 2, the Cosco Busan's safety management system and operations in San Francisco Bay. Number 3, the Coast Guard's Vessel Traffic Service level of control over the Cosco Busan prior to the allision. Number 4, accident notification and initial spill assessment. Number 5, oversight of the Cosco Busan pilot. And finally, Number 6, the safety net under state pilotage.

At this point, I'd like to introduce the other members of the Board of Inquiry. To my left, Mr. Joe Osterman. Mr. Osterman is the Agency's managing director. To my right, Dr. Jack Spencer. He's the Director of the Office of Marine Safety. And to my far left, Mr. Robert Henry, the Chief Marine Investigations Office of Marine Safety and he will act as the hearing officer today.

The Board will be assisted by a technical panel consisting of the following Safety Board staff. Mr. Tom Roth-Roffy; he is the Investigator in Charge from the Office of Marine Safety. Mr. Larry Bowling, the Operations Group Chairman of the Office of Marine Safety. Captain Rob Jones, Operations-Deck Group Chairman, the Office of Marine Safety. Dr. Barry Strauch, Human Factors-Operations Group Chairman from the Officer of Marine Safety. And Ms. Crystal Thomas, Environmental Group Chairman, Office of Railroad, Pipeline and Hazardous Material Investigations. Mr. Paul Stancil, Environmental Group, the Environmental Group Chairman, Office of Railroad, Pipeline and Hazardous Material Investigations.

Mr. Bob Trainor, Environmental Group, Environmental Group Chairman, Officer of Railroad, Pipeline and Hazardous Material Investigations. And finally, Mr. Peter Knudson, from the Safety Board's Public Affairs Office. He'll be here to work with the matters dealing with the news media today. Neither I nor any other Safety Board personnel will attempt, during this hearing, to analyze the testimony received, nor will any attempt be made at this time to determine the probable cause of the accident.

Such analyses and the cause determinations will be made by the full Safety Board upon the recommendations of the staff after consideration of the evidence gathered during the entire investigation. The final report on the accident, reflecting the Safety Board's analyses and the probable cause determinations will be considered for adoption by the full Board at a public meeting here at the Safety Board headquarters at a later date. The Safety Board's rules provide for the designation of parties to a public hearing.

In accordance with these rules, those persons, governmental agencies, companies and associations whose participation in the hearing is deemed necessary in the public interest and whose special knowledge will contribute to the development of pertinent evidence as designated as parties. The parties assisting the Safety Board in this hearing have been designated in accordance with these rules. As I call the name of each party, would the designated spokesperson please give his or

her name, their title and affiliation for the record? We'll start with the United States Coast Guard.

MR. WHEATLEY: Good morning, Mr. Chairman. I'm Ross Wheatley, Chief of the Investigations Division, Sector San Francisco, Coast Guard spokesperson.

CHAIRMAN ROSENKER: Thank you for joining us.

American Pilots Association?

CAPT. WATSON: Good morning, Mr. Chairman. I'm Captain Michael Watson, President of the American Pilots Association.

CHAIRMAN ROSENKER: California Department of Fish and Game, the Office of Spill Prevention and Response?

CAPT. HOLLY: Good morning, Mr. Chairman. Rick Holly, Field Operations, Northern California. Thank you.

CHAIRMAN ROSENKER: Thank you.

Fleet Management, Limited from Hong Kong?

CAPT. AGA: Good morning, Mr. Chairman. This is Captain Aga, Fleet Management, General Manager.

CHAIRMAN ROSENKER: California Board of Pilot Commissioners?

MR. MILLER: Good morning, Mr. Chairman. I am Knute Michael Miller. I am President of the Board of Pilot Commissioners for the Bays of San Francisco, San Pablo and Suisun, usually called the California Pilot Commission.

CHAIRMAN ROSENKER: Thank you. Welcome.

San Francisco Bar Pilots Association?

CAPT. McISAAC: Yes. Good morning, Mr. Chairman. My name is Captain Peter McIsaac. I'm President and Port Agent of the San Francisco Bar Pilots.

CHAIRMAN ROSENKER: Thank you.

Sperry Marine?

MR. HUGHES: Good morning, Mr. Chairman. I'm Michael Hughes, Manager of Product Support and Training for Sperry Marine.

CHAIRMAN ROSENKER: I want to thank publicly all of the other private, municipal, county, state and federal agencies that have supported the Safety Board throughout this investigation. On April 7th, 2008:, yesterday morning, the Board of Inquiry held a pre-hearing conference at the Safety Board's conference center. It was attended by the Safety Board's Technical Panel and representatives of the parties to the hearing. During that conference, the areas of inquiry and the scope of the issues to be explored at this hearing were delineated and the selection of witnesses to testify on these issues was finalized.

Copies of the hearing agenda developed at the pre-hearing conference are available in the foyer. There are numerous exhibits that will be used in this proceeding. Copies of the exhibits may be ordered through our Public Inquiries Branch. Their phone number is (202)314-6551. They may be found on the Board's website also at www.ntsb.gov. The witnesses testifying at

this hearing have been selected because of their ability to provide the best available information on the issues of marine safety pertinent to this accident investigation. The accident pilot, a member of the San Francisco Bar Pilots Association, a captain with Fleet Management, Limited and certain crew members from the M/V Cosco Busan were served subpoenas for this hearing. Each invoked his right against self-incrimination. They will not be appearing during these proceedings. The Investigator in Charge of the accident investigation will summarize certain facts about the accident and the investigative activities that have taken place to date.

Following this summary, the first witness will be called. The witnesses will be questioned first by the Board's Technical Panel, then by the designated spokesperson for each party to the hearing, followed by the Board of Inquiry. Questions from the public are not permitted in this type of investigative proceeding. As Chairman of the Board of Inquiry, I will be responsible for the conduct of the hearing. I will make all rulings on the admissibility of evidence and all such rulings will be final.

The record of the investigation, including the transcript of the hearing and all exhibits entered into the record, will become part of the Safety Board's public docket on this accident and will be available for inspection at the Board's Washington office. Anyone wanting to purchase the transcript,

including parties to the investigation, should contact the Court Reporter directly.

Before I introduce the accident Investigator in Charge, Mr. Roth-Roffy, I want to welcome Board member Debbie Hersman, she's here. She was the Board member on-scene in November and we appreciate all of the good work that she has done on this accident and we appreciate her joining us here today.

Mr. Roth-Roffy, are you ready to summarize the investigation and enter the exhibits into the public docket?

MR. ROTH-ROFFY: Yes, Mr. Chairman. I am.

CHAIRMAN ROSENKER: Please proceed. Mr. Henry, would you please call the first witness for his summary, for his summary? Go ahead.

MR. HENRY: Would the IC please give his presentation?

MR. ROTH-ROFFY: Yes, sir, Mr. Henry. Good morning, Chairman Rosenker, Mr. Osterman and members of the Board of Inquiry. On Wednesday, November 7th, 2007 about 08:30 local time, the Hong Kong registered 901-foot container ship, Cosco Busan, allided with the fendering system at the base of the Delta Tower of the San Francisco-Oakland Bay Bridge. The ship, destined for Busan, Korea, was outbound from the Port of Oakland, loaded with about 2500 containers.

This is an aerial view of the accident area, looking to the northwest. San Francisco can be seen in the distance at the upper left of the photo and Oakland is in the foreground. The

approximate route, intended route, of the Cosco Busan is shown by the yellow arrow. The motor vessel Cosco Busan was a Hong Kong registered container ship built in 2001. The ship was 901 feet long, 131 feet wide and its loaded dead weight was about 68,000 tons. The ship was fitted with a Simplified Voyage Data Recorder or SVDR, and that has provided valuable information to the investigation. The main navigation equipment used by the pilot and crew during the accident voyage were a three centimeter radar, a ten centimeter radar, an Electronic Chart System, a conning information display and an automatic information system or AIS.

This photo was taken on the bridge of the Cosco Busan. Shown by red arrows are the display unit for the two radars and the Electronic Chart System. Also shown are the conning information display, the helm and the AIS. The chart data based on the Electronic Chart System was not fully compliant with the international standards for electronic charts and therefore the electronic chart was not an electronic chart and information display system or ECDIS. Since the electronic chart was not a true ECDIS, the ship was still required to carry and use paper charts as its primary navigation chart system.

The Cosco Busan allided with the fendering system at the base of the Delta Tower of the Bay Bridge. The bridge was built in 1936 and carries about 280,000 vehicles per day between the cities of San Francisco and Oakland. This is a navigation chart of San Francisco Bay. The red arrow shows the location of the

bridge. The wide magenta line depicts the location of a tunnel for the transit subway system or BART.

The approximate intended route of the Cosco Busan is shown by the dotted red arrows. The course first involved a turn to the port, then a turn to the starboard and finally, the course through the D-E span of the bridge. The channel buoys, highlighted by the red circles, serve as aids to navigation and to mark the navigation channel. This slide shows the navigation chart at a smaller scale. The Delta and Echo towers are depicted and labeled as D and E. Also identified on the chart is the RACON fitted at the center of Delta-Echo span.

The RACON, which is short for radar beacon, is a marine navigation aid that transmits a signal that is periodically displayed on ships' radars within its range. The RACON displayed the Morse Code for the letter Y or Yankee, as shown on the chart, to the left of the RACON symbol on the radars and depicted by the red oval. Also shown on the chart are the buoys positioned on either side of the Delta Tower. This photo's taken from outbound container ship approaching the Bay Bridge along the approximate same route as the accident voyage in good visibility.

The location of the Delta and Echo towers are indicated by the red arrows and the 2200 foot span of the Delta-Echo span is indicated. The following is a summary of events leading up to the allision. The summary was constructed principally from the pilot's statement to the Safety Board and the transcript of the

audio recording of the voyage data recorder. Unfortunately, the Safety Board has not been able to interview any members of the ship's crew.

The pilot, who was not a member of the ship's crew, arrived on the ship's bridge about 06:20 and the ship was scheduled to depart Oakland at 06:30. Because of heavy fog which affected the entire Bay area, visibility was about a quarter mile or less. The ship's departure was delayed because of some ship's paperwork that had to be completed and because of vessel traffic in the Oakland estuary. While waiting for the ship to make underway preparations, the pilot checked the ship's radars. About 06:58, the pilot expressed concern to the ship's crew about the ability of the radars to track contacts, and with the assistance of the captain and the watch officer, the radars were adjusted or tuned.

About 07:14, the master notified the pilot that his superintendent had left the ship and the pilot responded that they would now have to wait for another tug to pass them in the estuary before getting under way. After the ship's lines had been taken in and the traffic had passed by the Cosco Busan, the ship got under way with a dead slow ahead bell at 08:08.

A tug was positioned at the stern with a slack line and the chief officer was on the bow for anchor handling duties and as a lookout. About 08:22, as the ship left the estuary and entered the bar channel. With the bridge just over one mile away, the

pilot asked the master about the meaning of red triangles on the electronic chart. The master responded, "This is on bridge." The pilot then said, "Oh, oh. I couldn't figure out what the red light, red triangles was." About 08:23, the pilot then ordered port rudder commands. At about 08:26 the pilot ordered starboard rudder commands to align the ship to pass under the Delta-Echo span.

As the ship approached the bridge, according to the pilot, both radar displays became distorted and he shifted to the Electronic Chart System as his primary navigation tool. About 08:27, when the ship was about one-third of a mile from the bridge and the ship was turning to starboard, the Coast Guard Vessel Traffic Service contacted the ship and asked what its intentions were. The pilot responded that he still intended to use the Delta-Echo span and continued to turn the ship to the starboard. About 08:30, the crew and the pilot saw the Delta Tower through the fog, but they did not have sufficient time to avoid alliding with the fendering system of the tower.

We'll now show a short two and a half minute animation of the accident sequence. The ship's track shown on a navigation chart is based on AIS information provided by the Coast Guard. At the lower right of the screen is an inset showing the radar images from the VDR. The red arrows indicate the location of the bridge in both images. The video starts at 08:18 and ends at 08:32 and it is played at ten times normal speed.

Okay, at this time you can see, at the right of the screen, is the Cosco Busan just getting under way. It is proceeding outbound from the Oakland estuary towards the bar channel. The scale image, the model of the Cosco Busan, is shown on the chart, as well as the tug, Revolution, which was tethered at its stern. You can see two lines at the aft end of the ship. One is the trackline history for the Cosco Busan, in red, and in blue is the trackline history for the tug, Revolution. At this point, the pilot issues a couple of heading commands to come to the left a little bit and as he approaches the bar channel, he issues a port rudder command, initiate to turn to port. About this time is when the pilot questioned the master about the meaning of the red triangles. And that's the end of the video.

As a result of the accident, the Cosco Busan's hull was damaged at its port forward side. Cost of repairs to the Cosco Busan was about $2.1 million. The damaged area of the ship was about 220 feet in length and about 14 feet in height. The damage penetrated about eight feet into the ship. About 55,000 gallons of fuel were spilled into the Bay from one of the two damaged fuel oil tanks. This photo shows the damage to the bridge with a red arrow indicating the damaged fender at the base of the tower. The repair cost was estimated to be about $1.5 million.

Continuing now with the accident timeline, about 08:30, the pilot notified Coast Guard VTS that the Cosco Busan had struck the Delta Tower at the Oakland Bay Bridge. Coast Guard Sector

San Francisco Command Center activated the Incident Management Division personnel. About 08:46, a representative of the San Francisco Bay Pilots Association called the Coast Guard Captain of the Port to inform him that the bridge fendering system is damaged and that oil was on the base and in the water.

About 08:49, the Pilots Association representative called Coast Guard VTS and informed that oil was pouring out of the hull and that they needed to activate the spill response procedures. About 08:57 the pilot contacted Vessel Traffic Service saying there was oil around the ship and that the slick is starting to form around the ship. VTS replied that they had already spoken with the Pilot Association representative about it and that the Coast Guard was responding for the fuel and the debris. Shortly afterwards, the pilot again telephoned VTS saying there's definitely oil in the water.

About 09:03, the pilot -- I'm sorry, the Coast Guard Pollution Investigation Team, consisting of two petty officers, responded to the Cosco Busan. While en route, the team reported to the Sector Command Center, via cellular phone, that they were observing a three foot wide oil slick in the water leading from the bridge to Anchorage 7, where the vessel was stationed. The team surveyed the damage and sent photographs back to the Sector Command Center by cell phone.

About 09:05 the pilot who relieved the accident pilot notified Oil Spill Response Organization, or OSRO, of the bridge

allision and the first response vessels were deployed at 09:10. About 09:15, the Qualified Individual, or QI, was notified of the oil spill and assumed responsibility for the response and cleanup actions on behalf of Fleet Management, the technical managers of the ship.

About 09:30, the acting Incident Management Division chief briefed the Coast Guard Captain of the Port, the District 11 Commander and the Coast Guard Chief of Response. About 09:35 the Oil Response Organization began mobilization. Additional assets continued to be deployed to the San Francisco Bay by the two oil spill response contractors throughout the first day. About 09:35, the Coast Guard Pollution Investigation Team requested permission to board the Cosco Busan and by 10:00 they began to determine the amount of fuel oil spilled from the ship.

About 09:42, the Qualified Individual notified the California Office of Emergency Services, or OES, of the oil spill. About 09:45, the State On-Scene Coordinator and the Coast Guard IMD established a unified command at the Coast Guard Sector San Francisco on Yerba Buena Island. About 10:00 oil spill response contractors began encountering spillable oil and initiated recovery operations. About 10:30, the Qualified Individual notified the Coast Guard that there was -- that they were the QI and that they would be coordinating the oil spill response.

About 10:44, the Coast Guard Pollution Investigation

Team reported to the Sector Command Center that oil had stopped flowing from the vessel and that an estimated 0.4 metric tons, or 146 gallons, had spilled into the water. About 12:05 the California Department of Fish and Game Oil Spill Prevention Specialist departed for the Cosco Busan in order to conduct a detailed analysis of the fuel tank volumes and to calculate the amount of missing fuel that had spilled into San Francisco Bay. About 13:36 and 15:06 the fog had cleared enough to allow the oil spill contractors to conduce over-flight operations to assess the spill and to direct deployment of skimming vessels. They were able to observe an oil sheen at several locations on San Francisco Bay, but no large pockets of oil were discovered. About 16:00, the Department of Fish and Game Oil Spill Prevention Specialist returned to the Incident Command Center and advised the SOSC that 58,000 gallons had spilled from the Cosco Busan.

About 17:30 on-water oil spill recovery operations for Day 1 were suspended for safety concerns due to darkness. Finally, about 21:00 the State Office Emergency Services conducted a conference call with local jurisdiction emergency services and the counties surrounding San Francisco Bay, informing them of the 58,000 gallon quantification. We'll now show a short animation created by NOAA some time after the accident based on information known at the time. Again, this was a hind cast. It was done several days after the accident.

Showing the dispersion and the movement of the oil as

effect of weather and tidal currents, next, I'll show a couple of photographs showing the appearance of the oil on the water. Shortly after the accident and the fog had cleared, you can see the oil slick on the water, and another photo showing a little bit darker accumulation of the oil near the shoreline. Finally, the following news clip is from November 8th, 2007, one day after the accident, shows the environmental impact of the fuel oil spill. The footage was provided courtesy of KPIX, the CBS affiliate in San Francisco. Once again, we would like to thank KPIX for that footage. That concludes my presentation, Mr. Chairman. All exhibits, all 100 exhibits have been entered into the docket and were released to the public at 8:30 this morning, including the transcription of the motor vessel Cosco Busan voyage data recorder navigating audio recording. The docket may also be accessed at this time from the NTSB public hearing webpage. Thank you.

CHAIRMAN ROSENKER: Thank you, Mr. Roth-Roffy. Appreciate that summary, very well done. And I would ask now Mr. Henry to call Mr. Hughes to the stand, please.

MR. HENRY: Mr. Hughes is already at the witness stand and I will ask him to please rise and, if you will, please raise your right hand?

(Whereupon,

MICHAEL JAMES HUGHES

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Please be seated. Mr. Hughes, would you please state your full name and business address?

A. Michael James Hughes, 1070 Seminole Trail, Charlottesville, Virginia 22901.

Q. By whom are you presently employed?

A. Sperry Marine.

Q. And what is your present position?

A. Manager of U.S. Product Support and Training.

Q. And how long have you held that position?

A. Almost three years now.

Q. And would you briefly describe your duties and responsibilities in your current position?

A. I manage military and commercial training, product support of the products that come out of our U.S. facilities and customer service.

Q. Would you briefly describe your education, training and experience that you obtained to qualify yourself for the current position?

A. I'm a graduate of the United States Merchant Marine Academy. I have a degree in Marine Transportation and a minor in Marine Engineering. I have an unlimited tonnage Deck Officer's license and am a qualified member -- of the Engine Department (QMED). I skippered Sperry Marine's research and development vessel for three years and did much of the R and D on this type of

equipment. And I spent seven years as Sperry Marine's senior instructor for commercial and military bridge operations, and for the last three years as the manager of the field engineering department.

Q. Mr. Hughes, if you could pull that mic just a little bit closer, please. And could you tell me, do you currently hold a marine license?

A. No, sir. My license has expired.

Q. Thank you. Mr. Chairman, the witness is qualified.

CHAIRMAN ROSENKER: We'll go to the first panel series of discussions. Go ahead.

BY MR. ROTH-ROFFY:

Q. Good morning, Mr. Hughes.

A. Good morning, sir.

Q. As per the agenda, I'd like to address the Sperry Marine bridge navigation equipment issues in -- basically, in three parts and I'd like to try to work those individually before going on to the next part of that. So the first part of the topic area involves the approvals of the Sperry Marine. Let's start first with the Electronic Chart System.

Could you describe the characteristics of the Electronic Chart System, I believe you call it a VMS or Voyage Management System, what that was rated for, whether it was an ECDIS or an Electronic Chart System?

A. Yes. This vessel had our Vision 2100 ECDIS. Now, due

to its configuration and chart usage aboard the vessel, it was actually sailing as an ECS, an Electronic Charting System, not as an ECDIS, a certified Electronic Chart Display Information System. The Vision 2100 system received its first type approval as an ECDIS from DNV in 2000. The software version onboard this ship at the time of the incident was VMS 5.5. That was certified by DND in 2002.

Q. Okay. And you say it was certified and type approved as an ECDIS, but for what reason, again, was it not approved as an ECDIS on board the Cosco Busan? Could you describe, in some detail -- I believe there were some issues with the electronic chart data base?

A. There'd be several issues on this vessel that would prevent it from being a certified ECDIS. To be a certified ECDIS, you really need the proper hardware/software and charts. This vessel had type approved hardware. It had type approved software as far as the ability of the software to sail as an ECDIS. However, it was not configured as an ECDIS. There are certain things that can be done on configuration that would prevent the vessel from being ECDIS certified. Those types of things were done of the ship, so it would be categorized as ECDIS-like.

The legal term would be Electronic Charting System (ECS), which would be an aid-to-navigation only. The third thing that you need to be certified ECDIS to sail paperlessly is the

correct type of electronic charts. That would be Electronic Navigational Chart, an ENC in the S-57 format. This vessel was using C-Map charts in the CM-93 format, also a well-respected vector chart, but not a certified chart.

So the fact that the software was not configured as an ECDIS and the fact that the system was not using certified ENC charts, either one of those would preclude its use as an ECDIS.

Q. And could you describe some of the features of the Electronic Chart System? For example, did it have the ability to record data that was captured during the accident sequence?

A. Yes, sir. This vessel had a three-node VMS system. VMS is Sperry software, which is our ECDIS software. So it had a navigation station, a planning station, and conning station. All three nodes are fully independent, but they sync up on the ship's local area network, the bridge network, so they all synchronize with each other for navigational data. The primary use is situational awareness. We have a full set of primary and secondary sensors giving you a real time plot of the ship on an electronic chart and that is all saved. Each VMS retains what we call a data log. The data log is an encrypted history.

It normally has at least 30 days of data and what it does is it saves, for that time period, the primary sensors, what sensors were active and what the health of those sensors were. It saves all contacts, any radar and/or AIS contacts that were integrated into the ECDIS and it saves all chart usage so you're

able to see exactly what the officer at that workstation, at that VMS workstation, was viewing. So what it records in regards to the chart would be the chart that was displayed, the center position, either of the ship or the center position of the chart if the system was in offset mode, the scale of the chart and the update date of the chart.

Q. Okay, sir. And can you briefly describe the operating history of that particular model of the VMS with Sperry Marine, whether or not there's been any operational problems with that, historically, in general, not just this particular VMS?

A. VMS came out in 1986. However, this particular generation of VMS came out in 1995. There's about 1500 VMS that we have installed. No major history with either the VMS sailing as ECS or as ECDIS. They're on a tremendous variety of commercial and military vessels, both surface and subsurface. And other-than-normal product related issues, no major issues with the VMS system.

Q. And could you describe the chart system that's used on the Sperry Marine VMS, perhaps the manufacturer and the model of that chart system and perhaps describe the options available to the crew in using that chart system or database?

A. All right. The VMS software, as an ECDIS or an ECS, obviously needs to display charts, electronic charts. They come in two formats, raster, which is really just a scanned image of a paper chart, or vector, which is a database, a chart database.

The VMS is capable of using a very wide variety of charts - the official unencrypted ENC charts in the S-27 format, the encrypted ENC charts in the S-63 format, Sea Map vector charts in both the C-Map ENC format and CM-93 formats, Chart World charts, raster charts in the Hydrographic Chart Raster Data (HCRF) format version 2.0 or in the BSB format, so most major commercial charts the system's capable of using.

Sperry Marine actually doesn't manufacture the charts; we just manufacture a system that's capable of displaying these charts. Aboard this particular vessel, they were using the C-Map CM-93 chart database. This is a vector chart database, which is really what you want on a -- this type of system that gives the operators a lot more information. With a vector database the big thing that separates vector from raster charts is since it's a database, the operators have a tremendous amount of control over the information that's displayed of the navigational task at hand and they have the ability to interact more with the chart, i.e., the ability to query it, items like that.

The systems also -- it's possible to have the system do some of the nautical safety checking as the vessel moves along. These are the major characteristics of the vector charts. With the C-Map charts, in particular, they are possible -- they allow the operators to do safety checking along the vessel's route and upon the vessel's voyage plan.

They allow for the operators to query any object on the

chart and then they would be able to see whatever the chart manufacturer, in this case, C-Map, had programmed in about that object. And they also allow the operators to really control the features displayed at any given time. There's dozens of features embedded within a vector chart. The standard ones would be the ability to show the symbology in either traditional or simplified format, the ability to control what the safe and unsafe water depths are by controlling what water's blue and what water's white on the chart, and the ability to control several layers, things like whether you have text or not for navigational aid names or whether you're seeing safety soundings.

Q. Okay. And you mentioned that the operator or user had the ability to query the database to get further information on the meaning of a particular symbol. Could you describe how that would be done?

A. Yes. There's actually three types of queries in the VMS software, a danger query, a chart query and a target query. In regards to a vector chart, the two queries that would come into play would either be a danger query or a chart query. The manual query is a chart query and in this case, when you're displaying a vector chart, anything on the chart, from a single depth sounding to a major navigational aid, the operator can push the button on the menu that says query, chart query, then they touch the object which they wish to query and the system will do a search in that area and bring up a list of all the vector database objects it

finds within that search area. Then the operator can select the appropriate object and see whatever information the chart supplier programmed in about it. For example, if you queried a light, you'd see things like the name and the light characteristics.

Q. And if you queried the meaning of a red triangle on a chart database presentation, you would describe what that symbol meant?

A. Well, it would tell you what the object was. It would most likely tell you the name of the object and it would tell you, for example, it was a conical buoy, any navigational related information, maybe what side of it you should've passed so yes, that would be standard information that would be available if you queried a buoy.

Q. Okay, I'd like to now move on to the radar and if you would, I'd like to have a similar discussion about the radar, starting first with the approval of the radars, whether they were ARPA or not and other information you can about the type approvals on the radars.

A. This vessel was fitted with two BridgeMaster E ARPA radars. The type approval for the radars, there's various types of approvals. I think there's about 25 in all, from nine countries. These include type approvals from Australia, China, Croatia, the European Union, Japan, Romania, Russia and the United States. This is a very common radar. There's been about 9,000 produced since its inception in the late 1990s. The vessel had

two of them, the X-Band and the S-Band, so three centimeters and ten centimeters inter-switched, so either display was capable of showing information from either antenna.

Q. Okay. And was the radar information displayed on the Electronic Chart System -- and we know for sure whether or not the crew had that feature enabled?

A. Yes, sir. This was an Integrated Bridge System (IBS), which simply means that the major components were all communicating with each other. The primary interfaces between the radar and the Electronic Chart System on board this vessel would've been one radar overlay, so at the navigation station, which is the primary conning position, O, for the VMS. The operators could choose to display the radar overlay, so then the radar image gets superimposed on top of the electronic chart. It has the ability to display targets, so any target acquired on the radars and potentially, the AIS, can be superimposed on top of the electronic chart and if there's a voyage plan loaded on the ECDIS, then the voyage plan gets superimposed on top of the radar screens.

Q. And did the radar save and capture any data for later analysis?

A. In regards to --

Q. Any screen images or any other tracking information that -- was any of that captured or recorded by the radar system?

A. On the radar system. Well, the -- while the radar

system is capable of recording data, it's more of an operator function. You save a short term on the memory card. There's no indication any of that was done. Really, the record of the radar comes from the SVDR system. The SVDR would be capturing a screen shot from the three centimeter radar every 15 or 30 seconds and that would be the record we have from the radar display. The VMS displays -- records far more data internally, but the radar does not.

Q. And the Electronic Chart System had the ability to create routes and was -- do you know if that -- routes were created or displayed on the electronic chart or the radar at the time of the accident?

A. There's no indication from any of the saved evidence that there was a voyage plan loaded on the VMS system. What we would expect to see, if there is a voyage plan loaded on the Voyage Management System that would be automatically superimposed on top of the radar screens, that would've been captured by the VDR as a red line of the screen, showing the voyage plan and the way-points and we've seen no evidence that that was ever captured.

Q. Okay. I'd like to now move into the next issue area for the navigation equipment. This is the condition of the Voyage Management System and the radar at the time of the history and its service history. Let's start again, first, with the VMS. Can you tell us a little bit about the service history of this particular VMS on the Cosco Busan?

A. The VMS was installed in Korea in 2001. As we said, it was a three-node system. Between its installation date and the time of the incident, there was a total of 24 services. This includes anything related to any of the three VMS workstations, any integrated bridge system issues, or any chart-related issues.

Would you like me to actually run through a quick summary of each service, sir, or --

Q. If you could, just the high points?

A. All right. Well, as we said, the installation was December 19th, 2001 in Korea. A year -- about a month later, we had our first service call in January of 2002. There were some issues with the monitor. It looks like we actually had two other services related to this. That issue was finally resolved in April in 2002 in Germany. It looks like it was a de-gaussing (ph.) issue related to the grounding of the CRT monitors. The next service was in Korea in July of 2002 with a follow-up service in Long Beach, California. Those were both related to the C-Map license.

In July of 2002, we attended the vessel to look at a discrepancy on the IBS between the cross track errors shown on the VMS and on the GPS systems. That was resolved in antenna offset corrections. In August of 2002, we attended in Hong Kong to make some adjustments on the VMS system. In August, also of 2002, we attended in Korea to adjust the radar overlay of the ARPA radar video on the VMS screen, also to look at an issue between the

great circle legs being displayed on the VMS and the ECDIS that was an operator setting.

Moving on, three months later, in November of 2002, we serviced the radar overlay inter-switch on the system. While it says radar, it's really Integrated Bridge System functions, so that's why it falls in here. In December of 2002, we attended in Long Beach, California. This was another C-Map licensing service. Also in December, we replaced the printer. The printer's used on the Integrated Bridge System for printing out voyage plans or target reports.

That printer was ordered in Long Beach, but actually installed about 12 days later in Korea. Moving on to July of 2003 -- so now we're about seven months later -- we attended the vessel again in Korea, just to trouble shoot some local area network communications issues on the IBS. Looks like a port was down in one of the computers, so we moved the LAN connection to a different port. In August of 2003, we attended in Korea, once again for C-Map licensing issues. August 15th of 2003 and in -- oh, in Germany, we came aboard.

This was most likely when they installed the AIS and we configured the VMS to output certain navigational information to the AIS. Also, at that time, the track steering was disabled. Track steering is where the ECDIS sends commands to the auto pilot to keep the ship automatically on a voyage plan. That was disabled at that point.

Moving on to August of 2003, about a month later, we attended in London just for general VMS maintenance. In September of 2003, we attended in Korea for C-Map licensing issues. In August of 2004 -- so about a year later, now -- we did some VMS configuration changes in Singapore. Looks like this was really just at the operator's request with alarm management and this is really the type of thing that -- why operators use ECS instead of ECDIS. It gives them the freedom to make these type of adjustments.

April of 2005, the software -- when it was installed, it was VMS version 4.6, when it was installed back in 2001. We're now up to April of 2005 and we upgrade the VMS software on the three workstations to 5.5, which is what it had up to the time of the -- until now. That was done in Germany. We also replaced some CD drives.

In March of 2006, we attended in the Netherlands for a C-Map licensing issue. And in April 15th of 2006, we had really the first hard failure of the equipment. VMS 3, which would be the planning station back at the chart table, had a mother board failure. These are commercial off-the-shelf equipment, so not unusual to see something like that after that length of time. And we returned that computer to the vessel ten days later in Singapore, where it was installed and the system once again had three full nodes.

Q. So your overall opinion of the service history of this

particular piece of equipment, was it normal or higher than normal in terms of the problems and the repairs that it had to receive?

A. We've probably seen a few more services here than we would on a system without C-Map, with the C-Map licensing. C-Map's a chart where you have to -- you basically rent it on a yearly basis, so once a year you have to license it and install it. There was about six C-Map licensing issues. A system without C-Map probably wouldn't have seen these. So it may be a little bit higher than average, but nothing unusual. It was related to the fact that about once a year we had to attend the vessel to assist with the C-Map licensing.

Q. And at the time of the accident, were there any known repair issues or problems with the system?

A. No, sir.

Q. Okay. Now, turning to the tests that were done after the accident, the Safety Board had requested the evaluation of the system following the accident. Do you have a report of that and could you describe the tests that were done and the results?

A. We attended the vessel in Oakland, California. This was our Product Service Report Number 759763 and we really just did a system test of the three VMS nodes and the network. What the report states is that the VMS was displaying correct chart. The VMS consisted of three nodes, VMS 1, VMS 2 and VMS 3. All stations had good data, that would be sensor data coming in. Both gyro data's available and selectable. Both GPS data's available

and selectable, VMS providing radar with good position data and all sensors working.

At this point, the MSE, the Marine Service Engineer, who attended, started looking at the playback function. That's the function of the system that reports the data log so it saves all the navigational information. Using playback, the incident was recorded at 1629 UTC. The vessel's heading was 315.3 at 10.5 knots, zero computed set adrift, wind at 2.8 knots. Basically, he's looking at the playback and just writing down what the sensor information was on the VMS at that time.

Zero computed set adrift, wind at 2.8 knots, depth to 9.9 meters position at 37.47.992 North and 172 degrees, 22.355 West, November 7th, 2007 -- made copy of the November 7th data logs on five floppies, shut down and restarted Nodes 1 and 2 -- that would be the navigation station and the conning station -- without error. All nodes show connected and system diagnostics and will provide the VMS data log to Brian Curtis of the NTSB. VMS fully operational.

Q. Thank you. Turning now to the radar, could you do a similar review of the service history of these radars, picking out any highlights, significant events in the service history?

A. I'll start with the ten centimeter.

Q. Okay.

A. So the S-Band radar was installed December 19th of 2001 in Korea. The next service was about a year later, nothing

unusual. It was just about ready to come out of warranty, so we attended and just made a few adjustments, also, in Korea. The first -- the next service was a year later, December 6 of 2003. We actually replaced a scanner array in England. That's a little unusual, but marine environment's a rough environment. The scanner ray would be the very top part of the antenna. Two and a half years later, we then attended in the Netherlands to make adjustment to the performance monitor.

A year after that, in July of 2007, we replaced a magnetron in Long Beach. At this point, we also determined we needed a receiver because of a tuning issue. That was ordered and then installed three days later on July 17th, 2007, also in Long Beach. The receiver was replaced and the tune issue was resolved. The next service was the post-incident follow-up.

Q. Okay. And now, again, turning to the tests that were done after the accident, if you could, please just describe the test done and briefly summarize the findings?

A. So our Marine Service Engineer also attended -- this would've been the same one obviously who did the VMS post-incident report, attended in Oakland. This was PSR Number 759761. To read his report again, we read check radar on all scales. Okay. Good radar target video and presentation, able to acquire and track targets, receiving alarms when losing targets or CPA alarms. CPA is Closest Point of Approach. Verified bearing and range --

Q. I'm sorry. I hate to interrupt you, but we're running a

little behind on time.

A. All right.

Q. Could you just go to the -- in that service report file, as a matter of public record, is an exhibit, so in the interest of conserving a little time, just go to the tests that were done after the accident?

A. Absolutely.

Q. The test and the results.

A. The important ones here is they were able to track targets. They had good video. And on the BIST, the Built-In System test, they monitored the primary voltages, which, for the magnetron was -- in this case was 5.3 amps. We like to see that between 4 and 7, so it was fine. And we had 552 volts, which also is good. We would expect to see that between 520 and 570. So in this case, both visually and with the Built-In System test, the S-Band looked real fine.

Q. Okay. What I'd like to do now is turn to the operation of the VMS and the radar. And in order to address this topic, I'd like to ask that some of the images that were captured from around the time of the accident be displayed on the screen. I guess we can start first with the radar images.

Okay, could you just take a look at that display and describe some of the more important aspects of that display, what we're looking at?

A. All right, this would be the X-Band display captured by

the SVDR. The PPI, showing the video in the center, the radar returns would be the yellow. While it's turned off later, right now the trails are on. Some people know these as target wake (ph.), so you'd be getting a history of any return. The bottom left-hand corner are the primary adjustments for radar performance. That's our frequency, our sea and rain clutter and our gain adjustment. Top left-hand corner is our range, currently it's on a three-mile range -- that's in the very top left-hand corner -- at a short pulse, SP, shown below it.

The top right-hand corner is our sensors. Right now it's -- we see we have a valid heading. We are using Speed Over Ground. The system is in RMT mode, relative motion with true trails in a course up orientation. And near the bottom of the right-hand side, you see the lat/long position with the time stamp. Right above that, if they acquire a contact is where you'd see the contact information for CPA/TCPA, Closest Point of Approach/Time of Closest Point of Approach, and similar information.

Q. Okay, Mr. Hughes, I believe you've had a chance to look at some of the radar images that were captured by the VDR. Could you describe some of the findings that you have about the way the system is operating and perhaps we can refer to specific images to address -- to display what you've found?

A. See the images during this point or --

Q. Yeah. I believe you had mentioned that there was some

adjustments being made to the video. If we could go to -- I'm sorry, just --

A. Yeah, as mentioned in the bottom left-hand corner of the display is where the primary operator adjustments are. What you'll see when we get the radar screenshot up is we have the frequency control, the sea clutter adjustment and the rain clutter adjustment and the gain setting. The system was in AFC, Automatic Frequency Control, which is what we'd expect. The computer does a very good job at maximizing our tuning. However, the real issue here is the system -- when it was tied up at the dock, the rain clutter and particularly, the sea clutter were in auto mode. What these do is the gain setting, it's really -- you can -- if you're not familiar with radar, sometimes think of it as the volume of the radar.

With the sea filter being in auto mode when the ship was tied at the dock, what the results would be is the radar would sense the return from the land right next to the ship and adjust the sea filter to damp that return out. What happened in this case is when the pilot and crew were adjusting the radar, prior to getting underway, and once they were underway, it was never taken out of auto sea mode. So what they were doing is they were increasing the gain and we end up seeing the gain set at a very high level and really, the root cause of this is they never -- the basic setting of not having sea filters turned up high was never done.

Q. Okay, I think we have an image here showing what you were just referring to, was -- okay, the gain setting at this point, can you describe that and --

A. All right. So where we're looking is the bottom left-hand corner, the very bottom one is tuning. Right above that is our sea and rain filter and right above that is the gain. The way you read these is the -- for example, the gain, the gray bar would indicate the setting of the gain. Right now it's a little bit over half. The rain and sea filters are actually in auto mode. You see the A-U-T-O to the right of them. So right now, the system is automatically controlling the rain filter and the sea filter.

What these do is these reduce the gain setting in the case of the sea filter within the immediate area of the vessel. These are never taken out of auto. Since they are never taken out of auto, the crew adjusts the gain really higher than it should be. While this never impacts the vessel's ability to give a good picture, it does -- and you will see this in later shots -- give much more return on the display. What you'd see is things get a little larger, a little more clutter because the gain is up so high.

Q. Okay.

A. Where you really see the effects of the auto gain right now is you notice to the right of the ship, it's tied up at the dock, but you really don't see the land. The auto gain, since

you're right at the dock, would be a tremendous amount of return immediately around the vessel. In auto sea filter, the vessel would increase the sea filter until it damped out that return and that's why you'd be seeing the lack of return to the right side of the ship.

Q. Okay. I'm going to ask Mr. Scheffer (ph.) to pull up an image closer to the time of the allision. Please describe the radar image.

A. If you look once again at the gain setting, you notice now it's even higher. It's getting up near its maximum. The effects of that -- and you can really see it -- in the center of the screen, you can see the VRM that was set by the pilot. That's the little white dotted circle. And kind of outside of that -- and this is pure coincidence, but you really see in a lot of the return the banding around the system.

The clear area directly around the ship is the results of that auto sea. It's a good return, but once again, because that sea filter is so high, being in auto mode, and the gain is so high, you know, we are getting an extremely strong display of all the returns. It's still a good picture, though. We can see the two bridges, the island, our channel where we began, the various buoys. So a very high gain setting, but still an interpretable picture.

Q. Okay. And the time of this radar image, I believe, is 16:22, which would be about 08:22, about eight minutes before the

allision.

I'll ask Mr. Scheffer (ph.) to pull up an image about -- a little bit later than this one. Okay, this radar image is showing about 16:25 and can you tell me if you see the RACON firing this particular image?

A. Yes. The RACON would be the, starting from the left, would be the dash-dash-dot-dash almost broad on the starboard bow of the ship, coming off the left side of the bridge.

Q. Okay, I think that's about all I care to get into at this moment, Mr. Hughes. Mr. Chairman, I'm finished with my questioning of the witness.

CHAIRMAN ROSENKER: Thank you very much, Mr. Roth-Roffy. We'll go to Captain Rob Jones now, if he has any questions.

BY CAPT. JONES:

Q. Just a couple, Mike. The pictures that we've seen up there today, how would you characterize those, poor, fair, good, excellent?

A. The quality of the images --

Q. Yes.

A. -- as far as the recording?

Q. Yes.

A. Excellent.

Q. The one that was there at the dock at 08:00, where you said the image to the right was dampened due to the gain, how would you characterize that image prior to the vessel sailing?

A. As far as what the crew would think of that or --

Q. Well, yeah. I don't want you to interrupt for the crew, just what you see as far as, you know, you said is it interpretable where you can navigate out from that?

A. That's interpretable, I believe. I think because they never turned off the sea filter and instead adjusted the gain abnormally high, with the system in the auto sea clutter mode, it definitely impacted the picture as far as not displaying the returns immediately around the vessel. However, that's fairly close. Let's say, on average that would only affect 20 percent of the PPI from the ship, so outside of that range the effect should be negligible.

Q. Okay. The RACON that was just displayed on the bridge, the -- the Y, how would you characterize that, fair, good?

A. Very recognizable. Clear dash-dash-dot-dash.

Q. Okay, thank you.

CHAIRMAN ROSENKER: Thank you, Captain. Mr. Bowling, do you have any questions?

MR. BOWLING: I do not.

CHAIRMAN ROSENKER: And Dr. Strauch, do you have any questions?

DR. STRAUCH: No, sir.

CHAIRMAN ROSENKER: Thank you. At this point, I would like to know if any of the parties have questions and I'll go for the following order. First, with the United States Coast Guard?

MR. WHEATLEY: Thank you, Mr. Chairman. The Coast Guard has no questions.

CHAIRMAN ROSENKER: American Pilots Association?

CAPT. WATSON: No, Mr. Chair.

CHAIRMAN ROSENKER: California Department of Fish and Game, the Office of Spill Prevention and Response?

CAPT. HOLLY: No, Mr. Chairman.

CHAIRMAN ROSENKER: Fleet Management?

CAPT. AGA: Yes, Mr. Chairman.

CHAIRMAN ROSENKER: Go ahead, Captain.

BY CAPT. AGA:

Q. Mike, talking about the picture at 16:22, it appears that the ship was in turn and when the ship was turning, what happens to the radar picture? Can you tell the Board, please?

A. Is it possible to get that image displayed?

MR. ROTH-ROFFY: I'll put it up for you, Captain Aga.

BY CAPT. AGA:

Q. Yeah, at this point the ship is turning and what it does to the images and will there be an extended trail because of the turn?

A. In this image we see the ship is on its present heading of 253.8, is almost beam of the main portion of the bridge. We're seeing the very top section of the bridge, a much stronger return. We're really, at this point, shooting our RF energy directly into the girders and everything else. We're getting a very strong

return from the -- since it's beam. We did see the radar transponder in that image, also, but that was nothing unusual there that I can see.

Q. Just one more question. Did you -- before the ship, when you attended for the servicing, did you make any changes to the display or was there any adjustment necessary to the radar part of the -- system?

A. Was this the service in Long Beach prior to the incident or the post-incident service, sir?

Q. Post-incident service, Mr. Hughes.

A. I know the systems were tested, but no repairs or adjustments were made, to my knowledge.

Q. Okay. I just want to confirm that there were no adjustments made. The ship left with the same VMS and the radar when she left the Port of San Francisco. Thank you.

CAPT. AGA: I have no further questions.

CHAIRMAN ROSENKER: Thank you, Captain.

California Board of Pilot Commissioners?

MR. MILLER: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: San Francisco Bar Pilots Association?

CAPT. HURT: Yes, I do have one question.

CHAIRMAN ROSENKER: Go ahead.

BY CAPT. HURT:

Q. Mr. Hughes, what effect would, if you adjusted the radar

while still alongside the dock with the container cranes -- most typically, they are about mid-ship on the vessel, so just a couple hundred feet from the antennas -- what effect would that have on the adjustments in the auto sea mode?

A. In the auto sea mode, really, those are so close to the vessel, they would be taken off of the screen because it was on auto sea mode, but yes, any structure near the ship, particularly on shore, you know, when you're trying to tune the system you have to take into account. In this case, you know, you wouldn't be seeing anything on the far side of any towers or cranes. You know, typically would adjust these settings on a higher range scale to really maximize our target detection at those longer ranges scales for navigation. So you'd have to take it into account, but it's not unusual to tune the radar at the dock.

CAPT. HURT: Thank you.

CHAIRMAN ROSENKER: Okay, thank you very much. At this point, I'd ask if there are any questions from our Board of Inquiry. We'll start with Mr. Osterman. No questions? How about Dr. Spencer?

DR. SPENCER: Yes, sir. I have a couple elementary questions.

BY MR. SPENCER:

Q. Why did the ship have both a 10 centimeter and a 3 centimeter radar?

A. That would be normal for this class of vessel, sir.

Q. And what's the difference?

A. At a real base level, we normally regard the 10 centimeter S-Band as being better at detecting targets on longer range scales, whereas with regard to 3 centimeter X-Band at being better able to detect smaller targets in greater details at smaller range scales.

Q. And are both radars required on board ships?

A. It would be for this class of vessel, sir.

Q. On the Electronic Chart System, you mentioned that the non-ECDIS compliant chart gives users freedoms that the compliant ECDIS does not. Can you tell me what the requirements are with respect to electronic charts on ships?

A. Well, if you were sailing paperless with a certified ECDIS, the chart requirements would be that you would have to have an ENC chart, Electronic Navigational Chart, in the S-57 format, updated with the most recent updates displayed on the screen. If you use any other type of chart which is not an ENC -- ENC simply has to be in the right format from the right supplier -- then you would be operating in a non-paperless mode. Your primary would be the paper chart to comply with the 1974 SOLAS Regulations.

Q. All right. Have you ever encountered any situations where both radars started to become inoperable at the same time?

A. Not in my experience. This is why we have both radars on the vessel, so that if one goes down we always should have the backup available. It's also why they inter-switch them. The

inter-switch allows either antenna to be displayed on either display. So for example, if you lost one of your displays on the bridge, you could still look at either antenna or if you lost one antenna, you could see the one remaining antenna on both displays. A tremendous amount of design goes into these systems to preserve that amount of redundancy.

Q. All right. One more question. You mentioned that the radar displays were affected somewhat because the sea filter was not turned off. Is this a normal practice to keep the sea filter on or off as you're leaving port?

A. Well, in my experience, both learning these things initially and then teaching them for several years, what I've always learned is when you adjust the gain, you first start by turning the rain filter and the sea filter all the way down. You make your gain adjustments so you see a light speckle on the screen and then, if necessary, you bring your filters back up. In this case, since the system was never taken out of auto sea filter, when they were increasing the gain, they were basically kind of working against the auto setting on the sea filter.

Q. All right. Thank you, Mr. Hughes.

CHAIRMAN ROSENKER: Mr. Henry?

BY MR. HENRY:

Q. Mr. Hughes, does Sperry Marine provide training in the use of this navigation system?

A. Yes, sir. We have U.S. Coast Guard approved STCW95

compliant training in the operational use of ECDIS within the United States. We have similar training provided by the appropriate national organizations in both Germany and England. We have integrated courseware in distance learning capabilities and a mobile classroom where this training can be exported any place. We have a full-time staff of operator instructors on ECDIS and IBS which provide both classroom training, certified classroom training, uncertified classroom training and underway training.

Q. And where is this training offered?

A. We offer it worldwide. The certified training, as far as if it's STCW95 ECDIS-compliant training, is either in one of our three primary classrooms in the United States, Charlottesville, Virginia, New Malden, England, or Hamburg, Germany. Our mobile classroom can be certified, but only if, for example, the United States, we teach the class with the approval of the regional Coast Guard commander in that area. We do that occasionally. And then our non-certified courses are really the exact same content and we do them worldwide, either aboard the vessel or with the mobile classroom in a location of the customer's choosing.

Q. Is there a requirement that the licensed officers receive this training to maintain their license?

A. In regards to the ECDIS, no, sir.

Q. Does Sperry keep records of individuals that have taken and passed this course?

A. For any of the STCW95 courses, yes, we're required by the U.S. Coast Guard to maintain full records on that.

Q. Would you have records if the crew of the Cosco Busan that were on the vessel at the time of the accident had taken this training?

A. Yes, sir. We did check our records and weren't able to find the crew members listed in any of our training records.

Q. Is it possible that a similar course could've been offered by another vendor that would have achieved the same objective as your course?

A. It's possible.

Q. And is it necessary to take your training to become proficient in the use of this navigation equipment?

A. We believe it is. ECDIS and IBS are fairly complicated systems. They differ quite a bit in the operation between different manufacturers and my personal feeling is it's very important to learn your specific system. Learning another system would be like learning Mac operating systems and having to use Windows operating systems, so it is important to learn on your particular type of integrated bridge system Electronic Chart System.

Q. If a particular licensed officer is familiar with another kind of electronic navigation system, another manufacturer, is it necessarily transferred to becoming proficient in the use of your system?

A. It definitely helps. Some things -- if it's a certified ECDIS, there's things that are going to be the same and particularly with the charts, if you're using the certified charts, they -- for example, an ENC chart does not change regardless of which certified ECDIS you view it on, so there are some similarities, definitely.

Q. Thank you, Mr. Hughes.

MR. HENRY: Mr. Chairman, I'm done.

CHAIRMAN ROSENKER: Thank you very much. I just have a couple of questions.

BY CHAIRMAN ROSENKER:

Q. We talked about -- and I'll follow up to Dr. Spencer -- that the radars are created to be a redundant system. Is that correct, Mr. Hughes?

A. Yes, sir.

Q. And when these vessels will go out, under what type of conditions -- and I will ask you, is it possible for both of the systems to, in some way, shape or form, have problems at the same time?

A. I'm sure it would be possible. I haven't seen it, myself. They're on UPS's so the power supply's protected. They had the inter-switch, which we discussed before. You have two separate displays in the case of this vessel and two separate antennas. Is it possible that they're both taken out? I'm sure, under certain conditions, it could be. I've never seen it,

myself, sir.

Q. Okay. What type of condition might demonstrate itself in a way that would create such an opportunity for those screens to be, say, distorted?

A. Well, distorted, the most likely would either be degradation of certain consumable components. Radars are driven -- this generation of radars are driven by magnetron and a modulator. That is a consumable device. Some customers face them yearly, although they can last a decade or more. Degradation of the transmitter, the modulator and the magnetron would cause a lower video. However, in the case of this vessel, those had been replaced very recently.

Also, of course, the most obvious loss of radar screens would be a power outage or blackout, although they do have the UPS's to -- continue functionality normally. And also, operator settings -- it's always possible, as an operator, to adjust or tune the radar in such a way to create a picture that's not as useful as it could be.

Q. In the VDR that you looked at and the pictures that you saw, did you see significant distortion?

A. We saw an excess of returns caused by the very high gain setting. However, that said, it was still -- for me, it was still easy to determine what was a target, what was a bridge, what was an island, what was a buoy. So we had a very high level of return displayed on the screen, but it didn't seem to impact

significantly on a trained mariner's ability to interpret the data.

Q. Thank you. Did you have any closing statement that you wanted to offer?

A. No, Mr. Chairman.

CHAIRMAN ROSENKER: Okay. Thank you, Mr. Henry. Mr. Hughes, you're excused.

(Witness excused.)

CHAIRMAN ROSENKER: If you'll call the second witness.

MR. HENRY: Yes, sir. And I'd like to call Captain Aga to the stand, please.

Captain Aga, if you'd please remain standing? And I'll ask you to raise your right hand?

(Whereupon,

NAGARAJAN MUTOSWAMI

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Please be seated. Captain, would you please state your full name and business address? I don't believe your mic is on.

A. Can you hear me now? My name, for the record, is Nagarajan Mutoswami (ph.) Subramania. It's a long name. People call me Aga. I have given the full spelling of my name to Mr. Henry, so for the Court Reporter it would make it easy to get this from Mr. Henry.

Q. Captain, by whom are you presently employed?

A. Sir, I'm presently employed as General Manager with a company in Hong Kong called Fleet Management, Limited.

Q. And how long have you held that position?

A. I've held the position of General Manager for the last four years.

Q. And would you briefly describe your duties and responsibilities in your current position?

A. My immediate responsibility, I am directly in charge of running 23 ships as a technical manager. Apart from that, I have an overview of the -- functions from China, from the Philippines. I also am part of the company Crisis Management Team if there is a crisis.

Q. Can you briefly describe your education, training and experience that you obtained to qualify you for the current position you're in?

A. I started my seagoing career in the year 1976. I joined the India Merchant Marine Academy, which is the equivalent of the American Maritime Academy here, and I finished my apprenticeship and got my Second Mate's unlimited license in the year 1980. I further went out to sea and I got my Chief Mate's unlimited in 1982. And I sailed as second mate/chief mate and then I got my Master's license in the year 1988.

I became Master in the year 1989 and I sailed on ships until the end of 1991 about three years. When I came ashore, I

worked for a company out of India doing recruitment of Indian seafarers and training until the year 1994. Then in 1994, I went to the Philippines for the same company to run the manning and some technical operations from Philippines. In 1996 I came to Hong Kong to work in the business and insurance department of the company. In 1997, I joined my present company, Fleet Management, Limited. Until 2002 I was company lead in charge of full manning. From 2002 to 2004 I was specializing on operation related problems. From 2004 until now, I have been working in the current position, sir.

Q. And Captain, do you presently hold a marine license?

A. My marine license is no longer valid. I'll have to revalidate it.

Q. Thank you, Captain.

MR. HENRY: Mr. Chairman, the witness is qualified.

CHAIRMAN ROSENKER: Thank you, Captain. I really appreciate your being here. Do you have a short statement for the record before we go to the Technical Panel questions?

THE WITNESS #2: I wish to thank the NTSB for giving me an opportunity to come and be a part of this process. Thank you.

CHAIRMAN ROSENKER: That is a short statement. Thank you, Captain. We'll go to the Technical Panel and begin with Mr. Bowling. Following Mr. Bowling, we'll have Captain Jones, Dr. Strauch and then Mr. Roth-Roffy.

BY MR. BOWLING:

Q. Good morning. Captain Aga, would you mind telling me a little bit about the background of Fleet Management, Limited, please?

A. Fleet Management, Limited was established in 1995. The company specializes in technical management of ships. Currently, we manage about 195 vessels. The ships are of all types. We manage hull carriers, container vessels, tankers, chemical tankers and gas carriers. At one time we did manage cattle carrier, too. So basically, we're in the business of running ships.

Q. Okay, thank you. When did the company -- when was the first involvement with the Cosco Busan and Fleet Management?

A. The owners of the Cosco Busan, they approached us sometime in May of 2007. They wanted us to do a condition assessment and we sent out a superintendent. I think it was in the Port of Long Beach he came. He did an inspection and sent a report, then the owners went ahead with the purchase of the vessel. And in August 2007, sometime in the end of August 2007, they asked us to prepare a crew and they assigned a preliminary management contract with us.

So at that point, we started, which is -- we offer many models of crew, so they chose the manning model, which includes all Chinese crew on ships. So we told the manning agent to start recruiting the crew. We then interviewed the crew and the top four was sent for approval to the owners. And the crew was supposed to join some time at the end of September. Due to

commercial reasons, they got delayed until October 24th, I think. But they allowed us to put two people on board the ship some time at the end of September and we took over the ship on October 24th, 2007.

Q. Okay, thank you. What I'd like to do is explore just a few procedures within the safety management system and the company's asked that we redact some of the portions of those safety management procedures, as they're proprietary. Captain, would you provide me with a little bit of a background of the Fleet Management safety management system that was in place on the Cosco Busan?

A. The company has a safety management system which is pretty much standard. It has been certified by the DND. The company holds a Document of Compliance under the ISN code issued by DND. Then each ship that we have gets audited when we take over and every year there's an annual audit conducted to see if the safety management system is in place and is effective.

Q. Okay. And the Cosco Busan at the time was holding an interim SMC, Safety Management Certificate?

A. Yeah. Normally, when a new ship is added to the company's list of ships, you undergo a preliminary process and you are issued an interim safety management certificate, which is valid for three months. Then the company's asked to do an internal audit and then call for an external audit, which is a full audit and you get issued a safety management certificate. So

at the point of time, yes, the ship was having an internal safety management system.

Q. Okay. I would ask that we bring up Exhibit 10 and it's part of the company's safety management system titled Management Commitment and Responsibility and Captain Aga, I would ask you to explain what the company's expectation of the vessel master is per the company policy, please. Captain, while they're bringing the exhibit on the screen, you might know, with regard to the -- what's the company's expectations of the master in the implementation of the safety management system?

A. We expect the master to implement the safety quality and the policy of the company and we expect that he clearly lays down rules of operating the ship as per the ship management system that we have. He's supposed to make sure that he gives simple and clear instructions to the crew and to make the system effective. He also is responsible to -- he has the ultimate responsibility for the safe operation of the ship.

Q. All right, Captain. The exhibit's finally up, if we could scroll to the bottom of that. The highlight has been added to several of these safety management procedures. Scroll on down. Scroll up. Captain, in the highlighted paragraph, there are specific company instructions to the master pertaining to his authority related to safety and pollution prevention. Can you expand on that a little for me, please?

A. Yeah, the highlighted portion says that he has the

responsibility for implementing this policy onboard the ship, that is the Fleet Quality and Safety Policy. And we iterate, in our training, that yes, he has the complete authority at every moment when he's in charge of the vessel. He has the overriding authority to make sure that the ship is operated in a safe -- and run in a friendly manner.

Q. All right. Thank you, Captain. When Fleet Management took over control of the vessel on the 24th in Busan, Korea, what training measures were provided by the company to the crew upon their arrival to brief them on the safety management system and the expectations of management, as well as the specific systems on the vessel?

A. Okay. I just want to say that the crew that comes from on board the commercial ships, they are qualified under the STCW Convention, which is an international convention. They have long years of experience at sea, so they come pretty much trained. They are qualified; they are already trained. When they come onboard, it takes them some time to go through the requirements as listed in the ISN code and get on top of the safety and the basic functions of operating the ship.

So on that basis, you have an external classification society surveyor and says they're okay, they are qualified and that their ship is safe to go. So the 24th, when they came onboard, they went through this process and they were tested. The surveyor who was on board, he also conducted an abandon ship drill

and a fire drill to make sure that the ship was all ready to go and the crew were sufficiently familiarized with the ship and the system.

Additionally, Fleet Management had two special superintendents onboard the ship. One was the code captain and the other was a code engineer. They were there to train them further more than -- during the passage after they left the port. So at the time, on the 24th, when the ship was taken over, when the ship was certified, the crew was sufficiently familiarized as to the rules.

Q. Okay. And the crew -- the vessel departed the following day, correct?

A. That is correct.

Q. How did the class survey that was going on, the audit of the safety management system and the security plan and the other indoctrination processes, how did that affect the crew training in as far as the time they had to train?

A. The audit, itself, does not normally affect the -- the audit process is pretty standard and the crew is quite used to getting inspected by port safety control, the auditors, et cetera. That does not affect the training, itself. And the cargo operations go on simultaneously and what you have is a few people who, watching the ship's lines and looking at the cargo and taking safety patrol. The rest of the training goes on. This is done in rotation. So at the end of the day, before the ship sails, the

class surveyor has tested them for the knowledge that is required to operate the ship safely and that was done.

Q. Thank you. Regarding the selection of the crew and the screening, was that done by Fleet Management or was that done by the manning agent?

A. What happens in this process, what the manning agent does is we give them the particulars of the ship. We give them the type of ship that we're going to take over. Then he draws up a list of people. He checks their documentation and their experience; then he sends it to us and we read it, then the top four is interviewed and we approve the top four and we see that qualification and everything is okay. Then we send it to the owners for further approval so the process is complete. So we enroll the manning agent and the owners to finally approve the crew.

Q. Okay. Were any verifications made with the flag state of China regarding the crew licensing or the crew STCW certificates?

A. I'm going to have to check that because normally, you should have some reason to believe that a certificate is fraudulent, but we do have a process by which we do a random sampling and I will have to check whether this was done in this case.

Q. Do you know if the crew, before they arrived at the vessel or at the time they were on the vessel, from the 25th

through the arrival in San Francisco, ever were provided with bridge resource management training by FML or Fleet Management or a vendor?

A. Okay, the bridge resource management elements are -- into our safety management system. We had the boat captain, Captain Singh, onboard the ship, who was enrolled in training the crew. The bridge resource management, basically, is laying out how to make the best plan, how to track, what is the pilot/master exchange, so this training was done by Captain Singh during the transit from Korea to Long Beach.

Q. Okay. At the time of the crew's arrival in San Francisco or the -- I should say the Bay area on the 7th, which was the day before the incident, how would you assess their sense of teamwork? Were they working together well?

A. I think they were working together well.

Q. Had they ever sailed before as a team?

A. Three of the crew who were onboard that ship have sailed together before the chief engineer, the third engineer and the third mate. They were all crew who had sailed on fleet vessels before.

Q. Okay. Do you know if the master had ever been to the area before?

A. I have not spoken to the master, but I think maybe he was not, it was his first time. What I heard it was his first time to Oakland. But that is really standard. All ports in the

world are standard. You have a -- pilot to come into the port, so that's not an issue.

Q. Okay, thank you. What I'd like to do now is look at a couple of specific procedures that were in place in the in the safety management system and if you'll refer over to Exhibit 11, it's the bridge procedures manual. If you would, would you take a moment to explain how a passage plan is put together for your safety management system?

A. May I have the exhibit in front of me? Okay, the SMS requires that passage be planned from berth to berth and full stages of doing this. First stage is the appraisal where the officer entrusted with making a passage plan would look at all the documentation that is available and would make an estimation of the process that has to be undertaken. He would typically look at the coast pilot, the tide tables, the current charts and then make a determination and draw a course on the charts. After that, he also would keep in mind the -- policy of the company and also the master's directives as far as passing distances from key points.

Then, we have the execution and the monitoring stage where once the passage plan is signed off by the master and everybody, then we're talking about how the passage plan is to be conducted and then you monitor monitoring positions during the various legs of transit, how much time period is required to be -- the position is required to be put on the chart and what kind of position fixes you would like to take and how you normally would

estimate that the ship is following the proper track.

Q. Okay. Thank you, Captain. If we could now to Exhibit 12, it's further down in the bridge procedures manual. It discussed the execution and monitoring of the passage plan.

A. Yes, Mr. Bowling, I have it in front of me.

Q. Okay. In a highlighted section, the company has some direction to the master regarding transit -- restricted visibility. Would you mind expanding on that?

A. Let me read that.

Q. Section 1.3.6?

A. Yeah, what it says is that the master must be aware that vision fixes may not be possible in restricted visibility and it may introduce an unacceptable hazard of the safe conduct of the passage. What we're trying to highlight is that okay, while UPS and the electronic aid are available -- am I still on the mic?

Q. You're still on, yeah.

A. Yeah. So visual fixes are the best means of fixing, so we want to highlight this and bring it to the attention of the master that he takes this into consideration.

Q. Okay. And with regard to the monitoring of the passage plan, it's Section 1.3.7, which is the next page of that same exhibit. What are the company's expectations with the monitoring portion of the passage plan?

A. We expect that the ship monitor the position along the track very carefully. The master must give clear instructions to

the crew as to the time interval that is required and at sea, maybe one hour at sea, maybe four hours and --

CHAIRMAN ROSENKER: Could you please speak into the microphone? I think we're -- you're getting a little off-mic. Thank you.

THE WITNESS #2: Can you hear me, sir?

CHAIRMAN ROSENKER: Much better.

THE WITNESS #2: Okay. So what we are trying to highlight is we try to say that okay, the time interval for position fixes can vary from when the ship is at sea and when the ship is in coastal waters. So we want that the ship's position be continuously monitored so that the essentials of safe navigation are always followed.

BY MR. BOWLING:

Q. Okay, thank you. What I'd like to do is bring up Exhibit 17 now, which is the actual passage plan from Oakland, California to Korea that was in effect at the time the vessel departed. If we could bring up Exhibit 17 and Captain, I'd like to ask you a few questions related to that particular plan with particular emphasis on the waypoints out through the Golden Gate Bridge, Exhibit 17.

A. Okay, I have it in front of me.

Q. All right, Captain. If you would, go to Page 4 where you have the latitude/longitude course to steer?

A. I have it in front of me, yeah. Go ahead.

Q. Okay. Would you walk me through that section of the plan and at least tell me what was expected of the master navigational crew from the time they departed berth to the time they reached the sea buoy?

A. Okay. When the ship was in piloted course, the passage plan merely served as a guide. The pilot is the local expert who comes on board and the passage plan, when it's put down, it just gives a -- indication to the master what kind of route the pilot may follow. It depends. Once the pilot comes on board, then he follows the route as per his local expertise and it can vary from the chart laid down by the second officer who does not know the area well.

So my comment on the first part, until the time the ship was at sea, would be entirely dependent on the advice that the master receives from the local licensed pilot. So having said that, he probably will not follow exactly what the passage plan shows, but the passage plan would show you a safe track and whether the ship actually follows the track depends on the pilot entirely.

Q. Okay. When the master signs this document, which the master of the Cosco Busan did, on Page 6, what's he attesting to when he signs the document?

A. He basically attests to the fact that he agrees with the basic guidelines drawn out in the passage plan, but that does not

mean that this passage plan cannot be changed because it is up to the master's discretion. He attests that the officer who's been entrusted to do this passage plan has followed the guidelines laid out by him and -- but at the same time, he has the overriding authority to change this plan any time.

Q. Okay, Captain. Thank you. If you would go to Exhibit 25? That is actually an extract from Chart, Navigational Chart 588, which was on the bridge of the vessel and it's just an extract of the chart. The actual chart was too large to get into the docket. But I'd like you take a look at that chart and tell me now that the red arrows were added to that particular image to indicate where Tower Delta is and where Tower Echo is. Everything else is a photographic reproduction of the chart. Captain, this chart, would that have been part of the passage plan, as well?

A. Yeah, this chart would be part of the passage plan. Yes.

Q. With regard to the outbound courses laid on the chart by the crew, what would explain any variances in those courses to steer?

A. Now, again --

Q. On the passage plan.

A. Yeah, the passage plan -- are you asking me to compare this to the passage plan?

Q. The courses to steer outbound, yes.

A. Like I said, this passage plan on the chart that you're

showing, is just a guideline and it will be entirely dependent on the pilot, how he directs the ship once he takes over -- the vessel, when he comes onboard the ship. So this is just a guideline.

Q. Okay. How common is it that a passage plan would have courses to steer, a written passage plan with courses to steer that were different than the courses to steer put down on the chart, navigational chart?

A. Well, in this case the courses that have been laid out probably do not conform to the printed version of that passage plan. Is that what you're saying?

Q. Yes. I was just asking you to explain why there would be variances and why there wouldn't be an alignment with regard to the courses to steer?

A. Yeah, it would be entirely dependent on the local advice that he receives and the pilot -- we had interviewed some pilots when we were announced part of this NTSB team and he had said that okay, most of the pilots don't look at the passage plans made by the crew and even in the San Francisco bar piloting exchange, the document that is given by the pilot to the master, he may ask for the passage plan. It is not necessary.

And like I said, this is only a guideline and the currents and the sets around that area -- can be very varied and in fact, these courses that are laid down practically cannot be followed at all because it's entirely dependent on the particular

set and on that particular issue on a particular day, a particular time. It's a big ship; it's not a small ship. What happens is sometimes the front part of the ship is one current and the aft of the ship is in another current, so the pilot really is always watching the ship very carefully and he knows the currents and -- so I think this is -- my statement would be that this is only a guideline.

Q. Okay. Thank you, Captain. What I'd like to do now is get back into another procedure that we'll discuss in detail here in a minute. I'd like to go through Exhibit 19, which is another extract from the company's safety management system, titled Navigating in Restricted Visibility and Fog, and if I could get you to relay the company's expectations of the master there, Captain, I would really appreciate it.

A. At every stage, we attribute the fact that safety is the most important issue for us and we want the masters to be aware of this at every stage. And in restricted visibility, we want him to reassess and we want him to make sure that he takes all steps necessary to navigate the ship in a safe manner.

Q. Okay. Now, with this particular procedure, if we can bring up Exhibit Number 20, there's a checklist that is completed by the master and it is Bridge Checklist Number 10, Restricted Visibility. There are a series of reminders, I'll use that term, 1 through 5, to the master and would you mind briefing me on the use of this particular checklist and again, what the master's

attesting to when he signs the form?

A. Okay. The safety management system follows system checklist to make sure a certain procedure is followed. So until the master opening the requirements of the company or opening up the manual to read the requirements of the company, if he checks up on this, he pretty much complies with the requirements, what the company wants from him to make sure the ship is operated in a safe manner. That's what he's checking off to here.

Q. Okay. And again, the master had training in the safety management system prior to his arrival in Long Beach and then on into the Bay area, correct?

A. Yeah, that is correct. And the ship called the Port of Long Beach, sailed out of the Port of Long Beach, came into Oakland all in a safe manner. The master was in charge.

Q. All right. On this particular form there, this is the actual bridge checklist form that was completed on the morning. You can see it's 07:00 when they completed it. With regard to Item 4, are the international regulations for preventing collisions at sea being complied with, particularly with regard to proceeding at a safe speed? What would the company expect of the master in that regard?

A. The company expects the ship to proceed at a safe speed in align with the prevailing circumstances and conditions. He has to make an assessment of the type of traffic he has, the current, the set and then he has to determine what speed the ship can

travel at.

Q. The recorded AIS speed as the vessel approached the bridge was around 10 knots speed over ground. Would that fall into compliance with the company expectations given the existing restricted visibility?

A. My answer would be a little bit speculative, but anyway, the ship was not like a car. You can't go from zero to 60 miles an hour in six seconds. What happens is the ship is leaving is port. The ship left the dock, if I remember correctly, at 08:08: and at that time the ship's speed was zero and when she went into the turn, she was doing, at 08:16-08:18, the ship was still doing seven and a half knots, which is pretty much okay. Then the ship started turning, so probably I might -- I cannot -- maybe the pilot wanted the speed upturn to increase.

As you know, if the speed is higher, the rate of turn is faster. So it could be that the pilot wanted to turn the ship, ship was turning into the current first and then against the current, so this could be one explanation for increase of speed after she got into the port. Until that time he was on slow ahead and then he became half ahead and then he increased to full ahead. So at that instantaneous speed was achieved over a period of 30 minutes and it was not like the ship left the boat at 10 knots and it was proceeding at 10 knots all the time.

Q. Okay. Thank you, Captain. I'd like to look at Exhibit 15 now, which is another procedure in your safety management

system. Section 1.5.8, Pilots and Pilotage, could you work me through that procedure and tell me what the company expectations are with regard to the master, the master/pilot exchange and the master's oversight of the pilot while on board?

A. Okay, we -- that the master is in charge of the vessel. We ask him to pay great deference to the pilot's local knowledge and expertise. We ask him to take his advice seriously. But at any time, if he is in doubt, that the pilot is manifestly in distress, manifestly incompetent, then the master has the authority to take over from the pilot.

Remember that the ship, there can only be one person at the con, so when the pilot comes on board, the master signs off. You can see that checklist that you've got, it says who has the con. It's the pilot. So the pilot is giving the instructions to the crew. The master is watching over him and it has to be very, very clear, very evident to the master, manifestly in distress, manifestly incompetent. A pilot has to do something really crazy for the master to take over from the pilot.

Q. Regarding that same procedure, if you'd look at the procedure, itself, it doesn't say anything regarding crazy or -- basically, it says endangering the ship. Would that be more accurate?

A. Yeah, endangering the ship. But I'm just trying to say, you know, I can pull off Mr. Kirchner's statement? Can I use that? Mr. Kirchner, he made a statement to the Congress on March

4th, 2008: and the last paragraph -- I want to read off that paragraph. That's where the manifestly incompetent or incapacitated comes from. Can I access that? It's in the public docket.

Q. It's in the public docket?

A. Yeah.

Q. What exhibit number was that, Captain Aga?

A. I'll have to look at it.

Q. Thirty-six?

MR. HENRY: These are documents that Captain Jones has in his queue. Captain Jones, can you help retrieve the right document?

THE WITNESS #2: Can you go to the last page, sir?

BY MR. BOWLING:

Q. Is that the particular page you're looking for, Captain Aga?

A. No, no. The person I'm looking for is highlighted.

Q. Page 9, I believe.

A. Yeah. There you go, thank you. Page 7, okay. In that you can see the master has the right and in fact, the duty to intervene or displace the pilot in circumstances where the pilot is manifestly incompetent or incapacitated or the vessel is in immediate danger. That's where I said manifestly incompetent or incapacitated. Company's very clear that if it becomes evident, then he has -- the master has the right to take over.

Q. Okay. Would you expand, is it the right or an obligation to take over the control? Does the master ever relinquish control to the pilot?

A. The master hands over the con of the vessel to the pilot with the clear understanding that the ship will be navigated in a safe manner because he is the local expert and he is licensed by the local authority and he knows the area very well.

Q. Okay. Thank you, Captain. What I'd like to bring up now is Exhibit 1-6, which is the pilot card. It was provided to the pilot on the date of the 7th. Can you tell me the significance of that particular document and why the navigational crew would provide that to a pilot?

A. That's a pretty standard document. You can also refer to the -- it basically gives you the speeds at various revolutions and it gives you information about the amount of the drop of the vessel and it gives you basic particulars of the ship, so this is a requirement and it gives a pilot an idea of what are the speeds at various revolutions and what power does she have, what the ship has.

Q. Okay. Now, there's another checklist associated with the master/pilot exchange. It's Exhibit 1-8.

A. Yeah, that's the Bridge Checklist 4, I think.

Q. That's correct. If you don't mind, I'd like to expand on that particular document again with regard to the five items that are indicated that the master signed off on, what the company

expectations are when that form is completed.

A. So when the pilot comes on board, the company expects that there is a master/pilot exchange and then clear lines of communication as to -- and it defines who has the con. It says whether the pilot is in charge, who will con the vessel. It is identified and everybody knows on the bridge. The bridge team must know who is holding the con of the vessel. That's what the checklist is for.

Q. Okay. On the date of the 7th, when the Cosco Busan got underway, do you know the extent of communication that occurred between the pilot and the master or the navigational officer?

A. From what I've heard on the VDR, there was a lot of talk between them. They talked about the radar, the ARPA and before the vessel got underway and they had clear lines of communication. All orders that the pilot gave were executed correctly. There was no problem there. That's what I remember from the VDR.

Q. Okay. Item 4 on the checklist states that the progress of the ship and the execution of orders being monitored by the master and officer of the watch. How was that done onboard the Cosco Busan?

A. You have to picture the bridge. You have the master, the officer of the watch, and the houseman. When the pilot gives an order to the houseman, the houseman repeats the order. Then the master and the mate normally look up and make sure. Suppose he says Starboard 10, they look up to the -- angle indicator to

make sure that the houseman is doing the right thing, that he stops at Starboard 10 and when the order's executed, he repeats that the order is complete and he says Starboard 10.

So this is the kind of oversight that the master and the officer would have on the crew who is following the orders of the pilot and the pilot may ring a bell, you know -- the ship's crew would repeat that order, give the order. Once the engine reached the required revolution, they say ship is on slow ahead.

Q. Okay, thank you. We had earlier called the passage plan, which is Exhibit 17, up and it had berth to berth weight points. I'd like to ask you, with regard to the company required intervals of position fixing per that passage plan, how firm is a ten minute interval on position fixing?

A. We recommend that in coastal waters it should be done every ten minutes and in this case, the ship was moving in fog. There was a -- to the electronic chart. I think it was instantaneous position and it was also marked off at every five minutes. I have a printout of the electronic chart with the positions marked every five minutes.

Q. And that was being done on the outbound transit?

A. That is correct.

Q. And where do you have the chart at?

A. I have a printout with me. It's from the VMS system.

Q. Captain, do you have that in a format that we could present on the witness computer to put on the screen?

A. No, sir. I just got a printout from the VMS system.
Q. Okay.
MR. HENRY: Is this a document that's in the docket?
MR. BOWLING: It is not.
MR. HENRY: And what are we contending to do with this?
MR. BOWLING: You'd have to ask Captain Aga that, Mr. Henry.
MR. HENRY: Captain, we're really constrained to presenting information that has been entered into the docket and has been approved as an exhibit. Is this a document that you had previously submitted?
THE WITNESS #2: Sir, it probably forms part of the VMS snapshots that you've got in the docket, so it's just a VMS snapshot, that's it. It has history on it, that's all. It's probably a snapshot at the time 1630:51. It could be in the docket.
MR. HENRY: This is a document that Mr. Hughes maybe --
BY MR. BOWLING:
Q. What's the -- I'm sorry. What's the time, Captain Aga?
A. Sixteen-thirty-fifty-one. So it shows that the position was being marked every five minutes.
Q. Okay. Captain, while they're looking for that, I have a few more questions and I don't have any more exhibits, so we can work through those. If you don't mind, tell me a little bit about the master and his proficiency in English.

A. The master -- sorry, the mike went off. Okay. The conversation that I heard and the -- at the station, made by the pilots in Long Beach and the inbound pilot, leads me to believe that the English language of the master was not an issue.

Q. Well, when you communicated with the master, how would you assess your communication with him? Was it in English?

A. All communication with Chinese crew that I do is in English and I think I had no problems communicating with this man.

Q. Okay, what about the other navigational officers?

A. The other -- I have not communicated with them, but English language was never an issue on the ship.

Q. Okay. The designated working language of the ship is?

A. The designated working language of the ship is Chinese. Sorry, English. But the crew is all from the same region, so it is not uncommon for them to talk to each other in Chinese. If I had all Indian crew, they probably would speak -- the only exception would be that I have an all American crew and they speak English.

Q. Okay. If the working language of the ship is English and they have an English speaking pilot on the navigational bridge, what would be the language to be used for communication?

A. From what I heard on the VDR, they only use English and all orders were executed correctly. I think the English language issue was not an issue at all and it was not -- so the English language was okay.

Q. Does Fleet Management have any record of anyone complaining or saying that the master's familiarity with the English language was inadequate prior to the allision?

A. We have no record of anybody complaining about the English language.

Q. All right. Captain, I guess the question of the morning thus far will be with the situation being 30, 40 seconds, maybe a minute out prior to the allision, why didn't the master relieve the pilot per the safety management system?

A. We've had the VTS testifying that they could not find anything wrong. They found the pilot's demeanor to be very calm and he was very composed even when they queried him about the heading of the ship and all the transcripts, all the VDR, the audio that I've heard showed me nothing to show that the pilot was in distress of any kind. So it -- I mean, there was no indication to the master that the pilot was in any kind of trouble or distress of any kind. So I don't know why the pilot -- how he could have relieved the master when it was not apparent to him, how he could relieve the pilot when it was apparent to him that he was not in distress.

Q. Okay, Captain, this is your exhibit that you requested?

A. That is correct.

Q. And you wanted to point detail of the position fixes on that particular exhibit?

A. Yes. You can see the various time stamps on it, 16:20,

16:25 and then the 16:30, after the allision. So that's 08:20, 08:25 and if you walk back, you'll find positions at 16, 15 and 16 --

Q. Right. We can see them, Captain. They're very small there. How were those position fixes being communicated to the pilot?

A. Everybody's looking at the chart and the pilot had said, in a statement to the NTSB interviewing party, that he never asked for the fixes, he never wanted the fixes. He said it's like driving a car out of the freeway or his driveway and he never asked for it. But everybody was looking at the charts at the same time.

Q. Captain, on the day of the incident, how effectively would you say the master implemented the company safety management system on that vessel?

A. The safety management system was very much in place and it was effective and we have to see if there was any failure. They're working on it.

Q. Okay. Are you making any changes to the safety management system as a result of lessons learned from the Cosco Busan incident?

A. We're working with the NTSB and with all the parties here to find out actually what happened. At this point in time there is nothing to suggest that there was something wrong with the safety management system. Everything points to some medical

issues that are involved with the local licensed pilot. So we will work on it and once we determine the actual cause, we will definitely implement changes, if any, to our system.

Q. Okay, thank you.

MR. BOWLING: Mr. Chairman, I have no further questions.

CHAIRMAN ROSENKER: Thank you very much. We'll go to Captain Jones. Before you begin, Captain Jones, just for administrative and planning purposes, we will take a break after the Technical Panel before we get to the parties and then we'll do a ten minute break, if that's okay with everyone. Go ahead.

BY CAPT. JONES:

Q. Good morning, Captain Aga.

A. Good morning, Rob.

Q. Just a couple quick ones. Your safety management system gives a lot of latitude to the captains with regards to the safe management of the vessel. With all that latitude, why do you think the captain got under way that morning?

A. That's a difficult question to answer because I have not spoken with the master, but I can -- it would be reasonable to assume that there was a local licensed pilot who came on board and who took the con and he gave orders to the ship to depart. Then there was -- chatter. There was not a traffic movement in the Bay showing that the Coast Guard had not shut down the port. So probably the master might have assessed that if the port is open and the pilot thinks it's fit to go, so he might have, you know,

acquiesced in a manner and followed the orders of the pilot and got under way.

Q. With regards to bridge resource management -- and you talked about that a little bit -- if anyone on the bridge, the bridge team, the crew, had doubts about the operation that day, who would they express them to? How would they make that known?

A. If the mates had any issues, they would express it to the master and if the master had any issues with the pilot, he has the authority to take over from the pilot.

Q. While they're still at the dock, who decides to get under way? You got a master up there, a pilot, local pilot, a bridge team. How is that decision made, especially in the conditions that they were faced with that day?

A. I've heard the VDR. I hear nothing about who made the decision. I would assume that when the pilot told the ship to single up, the ship singled up. At that point, they followed the pilot. Then the pilot said let go of the lines, they let go of the lines. So the master has the ultimate responsibility, but at that point, there was no discussion about whether the ship should get under way or not, so I would think probably the pilot.

Q. And just, further with regards to bridge resource management, the master/pilot exchange, getting under way in restricted visibility conditions like there were that day, does your company expect any more of an exchange, more in-depth discussion between the bridge team, the pilot, the master with

regards to those circumstances? What would you expect of that master?

A. Could you repeat that question? I couldn't -- I'm sorry.

Q. All right. My apologies. With the restricted visibility that day, before they get under way, what kind of information do you expect the exchange between the master and the pilot, any extra precautions because of the restricted visibility?

A. What we expect is, we follow the procedures that have been laid down in the ship safety management system. We expect that understand the calls be placed and the radar be watched more carefully and discuss with the pilot that okay, if he's ready to go -- he will probably ask him whether any traffic is there, so there was no traffic that day, so these are the things that he probably would check with the pilot.

Q. Do you expect him to follow a certain route, discuss the passage plan before they get under way?

A. Normally, the pilots are very reluctant to discuss any passage plan with the ship's crew, so there is a great reluctance all over the world. They say they know their job, they know the route, they know the -- they have the local knowledge, so it's very difficult. We would probably want that there is more exchange, but the pilots don't do -- and in this case, also, we have a local pilot. He had his own way of plotting his passage. He put the VRM at .33, that would give him a safe passage, but

that was never explained to the crew, the significance of the VR and somebody else should have an oversight on that -- so that would've helped.

Q. Will you expect the master to ask the pilot what speed was expected of the vessel as it went through the harbor?

A. Yeah. The thing is that the master would make sure that he does not breach the local -- there are speeds at every passage, when you're passing the berth, when you're passing ships and in the Bay. I understand that the Bay, the speed, maximum speed allowed is 15 knots, so if the pilot is lined up to transit through the bridge, so he would follow the pilot's lead.

Q. Okay. Thank you, Captain.

CHAIRMAN ROSENKER: Captain Jones, thank you. We'll now move to Dr. Strauch.

DR. STRAUCH: I have no questions.

CHAIRMAN ROSENKER: And Mr. Roth-Roffy?

MR. ROTH-RUFFY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: All right. As I promised, we'll take a ten minute break. We'll reconvene at -- let's see, 11:05 for the additional questions from the parties.

(Off the record.)

(On the record.)

CHAIRMAN ROSENKER: Hearing is back in session and before I offer the questioning to the parties, I would remind Captain Aga that you remain under oath and the Court Reporter's

having some difficulty with you and the microphone, so not too close, not too far, just right, Captain Aga, please. And don't hold on to the microphone, either. That will give him a problem. Thank you very much. We'll begin with the United States Coast Guard.

MR. WHEATLEY: Would it be possible to bring up Exhibit Number 25, please?

CHAIRMAN ROSENKER: Number 25 exhibit, please?

BY MR. WHEATLEY:

Q. Captain, you had indicated that, in part of the safety management system, the crew's responsible for -- basically track lines for transits in and out of port, correct?

A. That is correct.

Q. Okay. Captain, as part of the transit plan system for the Cosco Busan, which was in transit from Long Beach to San Francisco, do you know if they laid down track lines on the chart?

A. Could you repeat that? From Long Beach to San Francisco?

Q. Yes. Did the crew establish a passage plan, including the laying down of track lines in the San Francisco/Oakland area?

A. Yeah, I would assume they did.

Q. In looking at Exhibit Number 25, do you know if this is the chart that was used -- the track lines that were used for the inbound transit or the outbound transit?

A. I cannot say with certainty that it was the outbound or inbound, but it looks like the chart which has both the lines inbound and outbound. You can see on the exhibit, you see the course of 1-3-0? That would be going in. The ship used the Delta-Echo span. I think most container ships going to Oakland Harbor use the Delta-Echo span going in and out.

Q. During or just at the end of the inbound transit, the pilot who was on board had a discussion with the master of the vessel and expressed some concern about location of the inbound track line's proximity to the Delta Tower. Do you know if any changes were made to the track line as a result of that conversation?

A. I'm afraid that interview is not part of the public docket and so I have been asked not to refer to that and I advise you not to refer to that, too.

Q. Let me ask the question a little bit differently. Do you know if any changes were made to track lines between the time the vessel came into Oakland and the time that it headed out?

A. I do not know.

Q. Thank you.

MR. WHEATLEY: I have no further questions, Chairman.

CHAIRMAN ROSENKER: Thank you very much.

The American Pilots Association?

CAPT. WATSON: We have no questions.

CHAIRMAN ROSENKER: California Department of Fish and

Game?

CAPT. HOLLY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you.

California Board of Pilot Commissioners?

MR. MILLER: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: San Francisco Bar Pilots Association?

CAPT. HURT: No questions.

CHAIRMAN ROSENKER: And Sperry Marine?

MR. HUGHES: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you. I'll now ask the Board of Inquiry. We'll start with Mr. Osterman.

BY MR. OSTERMAN:

Q. Captain Aga, you made it very clear that the captain or the master, rather, would have the ability to recover control of the ship if he felt that the pilot was not operating in a manner that would be safe for the ship or otherwise incapacitated in some way. You manage 23 ships, is that correct?

A. We manage -- I was asked my immediate responsibility, I said -- yeah, 23 ships.

Q. Right. In your experience, how often have your masters overridden the pilots worldwide?

A. I have no data to say either way.

Q. Well, is it a frequent event or is it an infrequent event?

A. Now, if it happens and it would be lodged with the company as an incident, to my recall, I do not know one.

Q. So you haven’t had one and you've been doing this since 1997?

A. Yeah, that is correct.

Q. So it's a relatively infrequent event?

A. It's a relatively infrequent event, yeah. You trust the pilot who comes on board because he's the local expert.

Q. Okay. And you indicated that this master, you believe that he was in this port for the first time?

A. That is correct, sir.

Q. All right. Is it commonplace for your ships to depart port in limited visibility conditions?

A. Again, that would be speculative because I don't have data.

Q. Okay. In your experience with the fleet that you manage, the 23 ships, is the Port of San Francisco a complicated transit for your crews or is it a relatively simple -- in comparison with other ports around the world?

A. That would be my own opinion if I --

Q. That's what I'm asking.

A. -- can say from my experience, the pilots of the west world, they are very trustworthy and San Francisco, on top of the food chain, if I may say, as far as pilot capabilities concerned, so -- and the port is very wide open and you come in and pick up

the pilot outside the Golden Gate Bridge and you come through very easily.

Q. Okay. Your safety management system and the resource management process that you follow, do you expect a very formal exchange between your master and the pilot, both inbound and outbound transits?

A. We have laid out the minimum requirement that we must have from the master in our safety management system. We created a checklist to make sure that minimum is at least followed. It depends on the master. If he's in a conversant mood and if the pilot is in a good mood, they can have a long chat. If the pilot is not in a good mood and you want to leave the pilot alone and to let him do his job, that would be my opinion.

Q. And that checklist includes the pilot card and the general review of the plan, the transit plan, correct?

A. That is correct, sir. That is.

Q. Okay. But there's no formal format for the exchange between the pilot and the master, it is essentially left up to them how best to communicate the requirements of your minimum standards?

A. No, there is the checklist. We're supposed to -- we hand them a pilot exchange card and the pilot gives an information exchange card to the master and then you -- if the pilot has any questions about the equipment, then you sort out that with him and you make sure your equipment is working. Then they might ask you,

what speed do you turn and how much time do you need to stop the ship. These kinds of questions are asked by the pilot if they think that they need some clarification.

But you have laid out -- pretty much it's very formal and I think you follow most of the things that are required for safely navigating that ship.

Q. Okay. One thing that you pointed out was that the general communication stream was very hierarchical. If your crew had some concerns, they would voice that concern to the master, correct?

A. That is correct.

Q. Okay. Would it be acceptable or is it even -- does it even happen where the crew would communicate directly with the pilot without going through the master?

A. Yeah, it happens --

Q. It does? Okay

MR. OSTERMAN: Okay, no further questions.

CHAIRMAN ROSENKER: Thank you, Mr. Osterman.

Dr. Spencer?

DR. SPENCER: Thank you, Chairman.

BY DR. SPENCER:

Q. In his introductory statement, Mr. Roth-Roffy referred to Qualified Individual. Can you tell me what a Qualified Individual is, what the relationship is between that person and Fleet Management and what the role of the Qualified Individual is?

A. Under the OPA 90, every ship that calls the United States, is supposed to have a contract with a Qualified Individual and the details of the Qualified Individual are included in the vessel's response plan. The plan is submitted to the U.S. Coast Guard for approval or the Department of Fish and Game, I don't remember.

Yeah, for California you have to submit it to also the California Fish and Game Department. There are two VRPs. So whenever you have a collision or an oil spill in the United States, the ship's crew and the company will contact the Qualified Individual. In this case, the Qualified Individual for us is O'BRIEN'S Group for all our ships that call the United States. So his job is to make sure the notifications are done and the spill response is taken care of, sir.

Q. You mentioned that Fleet Management manages the ship. What degree of control does managing a ship have with respect to the selection and hiring of crew, the operation of the ship, navigation and so forth?

A. We select the crew and we have a contract with the owners and depending on the contract, the owners approve all the crew and after that, the crew is under the direction of the safety management system that is placed onboard the ship as technical managers show there is a day-to-day contact with the ship to make sure they follow the rules as laid out in the international conventions and also our safety management system.

Q. Do the crew work for Fleet Management or do they work for the owner?

A. They work for the owner, sir. We employ them on behalf of the owner.

Q. Do you employ them or do the owners employ them?

A. The owners employ. We are our agents, that's the contract.

Q. So they're paid by the owners?

A. Yes, that is correct.

Q. Is the VDR transcript part of the record? Okay, having listened to the VDR as we were transcribing it, would you say that Fleet Management's safety management instruction regarding master/pilot exchange was carried out according to the company policy?

A. They checked off on that checklist for -- and that sums up the master/pilot exchange. Sorry, go ahead.

Q. I'm sorry. Well, I know they signed off on it. I'm asking you, as an executive with the company, and as a master, yourself, whether you considered the degree of exchange between the master and the pilot in this case to be typical of what happens aboard Fleet Management ships and whether you consider the amount of information exchanged and understood by both parties was adequate?

A. Sorry, I can't say that --

Q. Okay.

A. The safety management system, the exchange was what is required, but looking in hindsight, they could have discussed more about the safety plan. There could have been an exchange between the pilot and the master about the restricted visibility requirements in the Port of San Francisco. So this is hindsight, but he did do the bare minimum requirement.

Q. Okay, thank you. I'd like to refer to Exhibit Number 25, please. Okay, you're ready?

A. Yes, sir.

Q. I have to warn you, I'm not a navigator, okay, so I'm not used to looking at charts like this, although I've seen them. And just, to my eye, I understand that these track lines that were put in here were put in by ship's personnel, is that right?

A. That is correct.

Q. The track line that goes underneath the Bay Bridge pretty much bisects the distance between these two circles here on the bridge. Is that right?

A. Yeah, it appears. Yes.

Q. Okay. And those are the RACONs?

A. Yeah, that is correct.

Q. Okay. Now, looking a little bit closer on the chart, I can see that that track line comes fairly close to Tower D. Can you tell me why somebody on a ship would plot a line closer to a tower than -- rather than, say, the center of a span?

A. Well, the -- would be just an opinion. One explanation

for this could be that the navigating officer could have -- that the RACON is in the water. Sometimes the buoys are placed there and you have a RACON that is in the water. So he might've thought that if he goes close to that RACON he might hit the buoy. So that might've happened.

And this is still about 500 feet and it also happened that there was some traffic -- and the ship might have followed this route and going into the Oakland Bay with the ebb and current. I do not know the time. I do not remember what the tide was doing at the time when the ship came in. It could've happened that they could have gone closer to this or -- it's only speculation, sir.

Q. Okay. Now, there was a crew member on board the ship who was plotting the position of the ship as it made its progress out from Oakland, is that right?

A. Yeah, that is correct. That's what I use my VMS, that it was a constant for the ship monitoring with a plot every five minutes.

Q. Okay. And so if that crew member were using this track line to gauge the progress of the ship and the ship did come close to the tower, as this track line does, is it likely that he would consider that there was nothing unusual about the transit?

A. Now, again, the track lines on the ship and what the pilot does are entirely different things, especially for the passage from the boat to the pilot station. So the pilot very

often changes, so this is known to all the people who are there on the bridge and they just follow to make sure that the -- he follows a safe track.

Q. All right. Well, I wasn't talking about the pilot. I was talking about the crew member onboard the ship who was charting the progress of the ship and I presume he was charting it against the track line that he was aware of, since he probably was not aware of what the pilot's intentions were, is that right?

A. Now, I explained this to the technical panel before, that this is a guideline and they would follow -- they would put the position on the ship, on the chart or on the VMS and to make sure that they're staying in the channel, but with the clear understanding that they will not necessarily follow this exact track when they are with the pilot. When they're at sea, they would follow unless the master determines otherwise and here, the person who had the con will make a determination and if that mate thinks that it's going way off, then he might draw attention.

Q. Okay. Is there anything in the record that indicates the mate might have thought the ship was off track?

A. I only heard the VDR transcript. There's nothing in that.

Q. Thank you. Also, in the VDR transcript, there is some dialog between the master of the ship and the pilot concerning what was the center of the bridge and what was the center of the span and when I listened to it, I wasn't sure I understood

completely what they were talking about, but do you consider, then, that this transit was a normal transit considering that plotted track line was close to Tower Number D and that the master and the pilot had to have some sort of discussion as to what the symbols were on the bridge or where the towers were or where the RACONs were?

A. It again becomes only my opinion, but I heard the transcript, so I do not know why the pilot asked the captain at that point in time what's the center of the bridge. I'm not able to make the determination of why he would ask that because the VDR also shows that he was constantly monitoring the radar and also that he was playing around with the radar. So I'm not able to make a judgment on why he asked the captain.

Q. Okay, thank you.

DR. SPENCER: I have no further questions.

CHAIRMAN ROSENKER: Thank you, Dr. Spencer.

Mr. Henry?

BY MR. HENRY:

Q. Captain Aga, I'd like to follow up on Dr. Spencer's line of questions. You had said that there was nothing from the second mate as far as the vessel standing in the danger based on his plotting affixes. Was that just in English or in Chinese?

A. There was no discussion on the VDR about the position of the ship, at all.

Q. In any language?

A. No, there was no discussion because the track, you can see up to the time he turns the ship is very clear and then he makes a turn to port. Now, when the pilot is going to come off the turn and go to starboard, that's a fluid situation there and you've got about six minutes. Ship is traveling, turning and then the VTS calls in, asks him for a clarification and then the crew is steering that, so you have VTS questioning him, the pilot answers calmly, so there is nobody who is fast at that point in time.

Q. Captain Aga, you've had a chance to hear the VDR playback. Would you care to characterize the stress level of the conversations as the vessel approached the bridge?

A. I don't know. It appeared that the pilot was really calm and when the VTS called in to say you're on a heading of two-three-five, what are your intentions, Captain? So -- goes -- I am on two-eight-zero, I'm coming around and that's in a very, flat mellow voice. There is no change in tone.

Q. I'm more concerned, Captain, about the stress level in the conversations that were in Chinese.

A. Stress level of -- okay. There is an excited chatter when they see the tower and at that point they relayed immediately to the pilot. The pilot also says, "I see it," then he goes hard to starboard.

Q. In your mind, the stress level went up in the Chinese

conversation as the vessel approached the bridge pier?

A. When they look out on the -- he saw that tower, that's the time that you hear some very excited chatter.

Q. But nothing was passed to the pilot --

A. Immediately the pilot said the master says bridge, bridge. And then the master says I see -- the pilot says I see it, then he said hard to starboard.

Q. All right, thank you. You had mentioned earlier that Captain Singh, an employee of Fleet Management, had been on the vessel for the two weeks prior to the accident?

A. That is correct, sir.

Q. And what was his purpose on the vessel?

A. Captain Singh joined the ship one month before the ship was taken over to make sure that all the systems were working -- and the departing crew, when the ship was sold, does not take away something, do something to the ship which may affect the safe operation of the ship. Then he further stayed back to train this crew in the finer points of the company's SMS and also give them specific information about the equipment that he noticed during that period.

Q. Did Captain Singh have a responsibility to coach the crew, especially the bridge crew, in how to deal with pilots in a foreign port?

A. That's part of the training that he does and then that is -- he must oversee that when the ship called Long Beach and I

think he was satisfied.

Q. Could you go into a little more depth as far as what training he provided to the crew in this sort of coaching?

A. Well, the crew -- if you -- if I calculate the total number of -- it's about 200 years at sea, 24 people on board, and the master has been at sea for 25 years, he's been an eight year's master. So as far as navigation and operation of ships, master/pilot exchange or anything to that effect would be pretty standard for that captain.

So what he would need some guidance in is finding out which section of the manual say is what and where is his authority enshrined and what does he do if he has problem, who he reports to, how it has to be done, who are the charters of the vessel, whether it's a commercial operation, all this would be explained to Captain Singh.

Q. I was looking for a little more information on the type of coaching he provided in how to deal with foreign pilots, foreign authorities.

A. I really do not know whether he did that, but the captain has been eight years -- I mean, I do not have the information, but keep in mind that this captain had been a captain for eight years and he's traveled all around the world. He's called -- I think he also called boats in the United States on the East Coast.

Q. Thank you, Captain.

MR. HENRY: I have no more questions.

BY CHAIRMAN ROSENKER:

Q. Captain Aga, thank you very much for all of your candor and all of the good information you've presented to all of us here. I have a few questions that I'd like to ask before we let you come down from the witness stand. First, could you give me a little brief tutorial of the container ship business, how it kind of works a little bit. In other words, there seems to be a lot of people involved in operating a ship like this.

A. Okay, sir. I'll do my best to tell you about the operation. Okay, the container business is organized in conferences. There are conferences. That means that group of companies who have access to the cargo and who have access to the buyer and the seller of cargoes, they get together and they establish services all around the world. So you could have a U.S. pack service, China/U.S. pack service and then, as a conference player, one company would be Cosco, one company would be Hanjin, one company would be American -- Line.

They would come together and say that okay, we have a capacity of 8,000 boxes every day, every month. They make a determination and say that okay, I will give you so many ships in this row. So then, all of them together would make a trading pattern and would say to the customer that we have a ship calling San Francisco every seven days, so you have cargo we can put on that ship.

So then, depending on the agreement, they would have a name of the ship and they would have a logo, depending on who owns it and who is the primary provider. Like in the case of the Cosco Busan, that's conference between Hanjin Shipping, Cosco Line and I do not know, there may be a third player. So the ship was named for Cosco, for Cosco's part it's Cosco and Busan comes from the Port of Busan in Korea and Hanjin goes all over the ship, so they are the commercial operators of the ship. Then you have the ship owners who buy the ship, who invest their money and who are responsible to their share holder to make a return based on the -- so this ship owner go back to the conference. All the players there need not necessarily be ship owners. They could charter a ship from the market. So there is a ship owner who owns a ship like Cosco Busan.

He says I have the ship, okay, then they say okay, we'll pay you $30,000, $50,000, depending on the rate, and you let us have the ship, make sure it's fully crew and it's capable of operating all over the world. Okay. Then the owner -- some owners have, like -- they have their own technical department. They run the ship completely. Everything is managed in-house. There are others who don't have the capacity for finding the crew, then they would -- or the experience to operate the ship safely.

So then they would look for managers like us. They would come to us and say can you run the ship for us? Okay, we say, we will run it for you. This is a small fee, maybe eight to

ten thousand dollars a month, and we would provide the crew and the services. So there is an investor who owns the ship, there is a manager who runs the ship, there is a commercial operator who puts the cargo onboard and who makes money out of transporting goods from China to the U.S. or all around the world.

Q. Okay. And that's an excellent, I think, tutorial on how this business works. It's complex and there are a lot of folks involved in it. Simply stated, we have an owner who goes and charters -- excuse me -- who makes a contract with you in order to be able to put a fully trained crew onboard the ship --

A. Yes, sir.

Q. -- and then there is this charter organization. Would that be characterized as Hanjin or is that Cosco?

A. Hanjin.

Q. Okay, so Hanjin is the business part of this thing where they're the folks that are actually trying to put the loads on the ship, is that correct?

A. That is correct.

Q. Who does the crew work for?

A. The crew works for the owner. We act as agents of the owner, that's how it's scripted and they work -- the owner pays the salary.

Q. Okay, I understand that. But who actually creates the schedule? Would it be Hanjin or the owner or you?

A. We create it on behalf of the owner.

Q. You create the schedule?
A. Well, the schedule for the crew.
Q. That -- well, okay.
A. Not for the ship.
Q. Okay.
A. The commercial operation is completely controlled by Hanjin.
Q. Okay, that's what I'm trying to find out. Now, are you suggesting that Hanjin says when the ship should sail?
A. That is correct, sir.
Q. Okay. So are they under -- is the crew under some kind of serious pressure to depart the pier in order to be able to make its destination in an appropriate amount of time?
A. No, the crew is not under any pressure because that's one of the things that we tell the crew, that safety is the most important business that we're in, so if you think it's not safe, you're the master, you make the determination. You don't --
Q. And who would the master then have to report to say I'm just not leaving because I don't think the conditions are safe?
A. He would report immediately to the port agent, that is the agent of Hanjin, and then he would also copy that message to us.
Q. Okay.
A. And we would back up the master, say that yes, he did the right thing.

Q. All right. Now, when we talk about -- and I'm going to shift from the business aspect of your discussion, but now to the bridge management resource aspect of this crew. First, how do you ensure that those senior officers that are working on the deck, on the bridge, have a command, in some way, of the English language when they're supposed to be operating in waters that are in the United States or other areas where they speak English?

A. Okay, sir. Under the STCW Convention, they must have good command of the English language to be certified as master or as an officer. So it's on the national administration, in this case, China. We will test him, we will make sure that he has good command of the English language and then they would give him the license to be a master. And the flag state, in this case, Hong Kong, signs off on the certificate saying that yes, we agree that China did a good job and he can be as a master on our ships. So this is the way it's organized.

Q. I want to get back to a couple of statements that we transcribed from the VDR. You heard the VDR, is that correct, Captain Aga?

A. Yes, sir. But I have not seen the transcript, so I have to go by memory.

Q. But you had heard it? Okay, so you don't know, then, some of the translation of the Chinese crew, then?

A. No, sir.

Q. Well, I'm putting you at a disadvantage and I hate to do

that, but I'll -- since you'll have an opportunity to read the transcript and since you heard the transcript, there were some interesting comments made by the bridge crew and various times prior to the allision. We'll use 07:55 as a first discussion and I'm just going to do a few of these to give you an idea. And this was in -- I believe it was done in Chinese. Is that correct, Captain Spencer? Okay.

And then we had it translated. One of the crew members said to -- and we don't know who he said this to, that's an issue, and we don't know where the captain was during this time. "What a thick fog." And that was at 07:55:04. A few moments later, additional discussion, some unintelligible comments and then we hear a signal that sounds one long and two short fog signals. And at 07:58 one of the crewmen says, "We can still sail? Never seen this before."

We continue down and we move into some additional discussion where there are some additional Chinese that we could not translate. One of the crewmen says, "We still have to go under that bridge." Another one says, "Yeah. Golden Gate. It's a big bridge." That's at 08:01. A little later, we get to 08:04. It's three minutes later. Another one of the crewmen on the bridge says, "For American ships under such conditions, they would not be under way." Another crewman says, "In this stretch, there is often fog?" in a questionable voice. "Over here in this stretch?" and he's talking about the area that we're transiting.

One says, "One hundred meters." Another one says, "Not quite a hundred meters, I feel." And then he says, "Huh?" "Not quite a hundred meters." And then another crewman says, "Containers are conspicuous. You don't put things out there. Put something white." And then he continues on to where we continue to hear additional questions about do we have people on the bow and continue discussions about the fog.

With that discussion going on and these were officers on the deck -- and I don't know and I know you don't know if the captain could hear this in Chinese, but it would seem to me that this indicated some concern on the part of the officers. And if we deal in an appropriate bridge resource management program, should something have happened at that time if there was concern about visibility and the ability to navigate that vessel safely through the bridge?

A. I would like to say that in China, if there is such a fog, the NSA shuts down the passage. So coming from there, the third mate and probably the -- discussing that oh, okay. Fog seems to be thick and they're just talking to each other. And probably the captain, also, can hear it, but the captain must have made the decision based on the information that was available to him. He looks at the traffic, there was no pressure for him to go, the pilot was good to go and the VTS is not saying anything to anybody to not to leave the port, so I think that that could have weighed in on the captain's mind, you know, hearing these guys, to

comment on what they said or discuss it further.

Q. And before they even signaled up the lines, made a decision to go, do you know that there were other vessels that had made decisions not to go?

A. I don't know that. What I have heard is that nobody left the port.

Q. I can't hear you, Captain. I'm sorry?

A. Now, what I've heard is that there were four ships to transit and they did not leave the Port of San Francisco. They did not leave the --

Q. And were any of those vessels that --

A. So this information was not conveyed to Cosco Busan's captain and the pilot also did not discuss this with him, saying that other poor guys are waiting. Do you want to wait? Somebody -- you know, if you ask, they would say that somebody has to go first, so --

Q. I understand. Now, were any of those vessels managed by Fleet Management?

A. No, sir.

Q. Okay. Were any of them Hanjin vessels?

A. I do not know.

Q. All right. Thank you very much, Captain Aga. We appreciate all of the information you provided us today.

A. Thank you.

Q. Before you leave, do you wish to have a closing

statement?

A. Just give me a moment.

THE WITNESS #2: Mr. Chairman, I would just take this opportunity to thank your technical panel. It has been great working with them and being a part of this process and it has really made me open my eyes to the way you do the business of the United States. I would just say thanks and thank you, sir.

CHAIRMAN ROSENKER: Thank you for participation with us today. Okay. You're excused.

(Witness excused.)

CHAIRMAN ROSENKER: Mr. Henry, go ahead.

MR. HENRY: Will Lieutenant Commander Kevin Mohr, Captain Paul Gugg, Commander Brian Tetreault please take the witness stand? Please remain standing. Please raise your right hand.

(Whereupon,

LIEUTENANT COMMANDER MOHR

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Please be seated. Lieutenant Commander Mohr, could you please state your full name and a business address?

A. Lieutenant Commander Kevin Mohr. Business address is Signal Road, San Francisco, California

Q. If you could please tell me who you are presently

employed with and your current position?

A. Sure. The U.S. Coast Guard and my present position is the Chief Waterways Management Division for Sector San Francisco.

Q. And how long have you held that position?

A. Approximately two years.

Q. Could you briefly describe your duties and responsibilities in this position?

A. Sure. I'm in charge of three distinct branches. The first is Waterway Safety. The second is the ATON (ph.) -- Navigational Liaison Officer. And the third is the Vessel Traffic Service.

Q. And please briefly describe your education, training and experience that you obtained for this current position.

A. Sure. I graduated from the United States Coast Guard Academy in 1994. From there, I was assigned to a cutter out of Washington State for two years. From there, I went to Houston, where I was a vessel inspector, also a casualty investigator for two years and a suspension/revocation investigator for approximately three years.

Q. Do you presently hold a marine license?

A. No, I don't.

Q. Thank you.

(Whereupon,

CAPTAIN PAUL GUGG

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Captain Gugg, will you please state your full name and business address?

A. Sure. I'm Captain Paul Gugg. Is this on? Can you hear me okay? Thank you. I'm Captain Paul Gugg and my business address is Sector San Francisco 1, Yerba Buena Island, San Francisco, California 94130.

Q. And your current position in the Coast Guard?

A. The Sector Commander.

Q. And how long have you held that position?

A. I've been the Sector Commander since January.

Q. And prior to that? Your position --

A. Oh, prior to that I was the Chief of Prevention in Alameda, California. Chief of the Pacific Area Prevention --

Q. As Sector Commander, could you please briefly describe your duties and responsibilities?

A. Sure. I have several titles. One is the Federal On-Scene Coordinator. That would be for oil spill response and the SAR (ph.) Mission Coordinator. I'm the Federal Maritime Security Coordinator, the officer in charge of marine inspection and the Captain of the Port for safety matters.

Q. And Captain, could you please briefly describe your education, training and experience that qualified you for this

position?

A. Yes, sir. I have a Bachelors and Masters of Science in Environmental Management. Through several Coast Guard courses and on-the-job training, I received my qualifications as a hull and machinery inspector. I'm a Marine Casualty Investigator and Pollution Investigator. I've been with the Coast Guard for roughly 25 years. My staff jobs and internships and field positions have included salvage, emergency response, vessel and facility response plans and incident command system --

Q. And Captain, do you presently hold a marine license?

A. I do not.

Q. Thank you.

(Whereupon,

COMMANDER BRIAN JAMES TETREAULT

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Commander Tetreault, could you please state your full name and business address?

A. Commander Brian James Tetreault, U.S. Coast Guard Headquarters, 2100 Second Street, South West, Washington, D.C.

Q. And your present position?

A. I'm Chief of the VTS Division at Coast Guard Headquarters, VTS Program Manager.

Q. And how long have you held that position?

A. One year, eight months.

Q. Could you briefly describe your duties and responsibilities in that position?

A. I'm responsible for developing policy, developing requirements and gathering -- and employing resources to carry out the Vessel Traffic Service's mission. I also coordinate vessel traffic service operations with other governments, international and local, state and I'm also a representative on the International Association of Lighthouse Authority's Vessel Traffic Services Committee.

Q. Could you briefly describe your education, training and experience that qualified you for this position?

A. I'm a 1987 graduate of the U.S. Coast Guard Academy. I've had three ship board tours and two tours of vessel traffic services and then several staff assignments dealing with either vessel traffic services, surveillance or navigation systems equipment and programs.

Q. And Commander Tetreault, do you presently hold a marine license?

A. I hold a second mate unlimited license and a 1600-ton master renewed for continuity.

Q. Thank you.

MR. HENRY: Mr. Chairman, the witnesses are well qualified.

CHAIRMAN ROSENKER: Thank you very much. And Commander,

Lieutenant Commander Mohr, I understand you have a presentation for us?

THE WITNESS #3: Yes. Thank you, Chairman. We have a brief presentation for both the Vessel Traffic Service and the Harbor Safety Committee. They are very brief in nature. They're designed to provide a foundation from which further questions can be drawn. I'll start with the Vessel Traffic Service branch. It's mission is to coordinate the safe and efficient transit of vessels in San Francisco Bay in an effort to prevent accidents and the associated loss of life and damage to property and the environment. And I'm not sure if we can get this presentation up on the display so other people can see the slides.

CHAIRMAN ROSENKER: Captain Sheffler, if you could coordinate with the AV man?

THE WITNESS #3: I actually have the presentations on a thumb drive, if that would help. In the interest of time, if you'd like me to continue without putting it up on the display, I can do that, too.

CHAIRMAN ROSENKER: Let's go with what we have right now and as we move through this, if our technical folks are able to support it, we'll get it on for you. Thank you. Sorry this happened.

THE WITNESS #3: No problem, Mr. Chairman. I'll continue with the Vessel Traffic Service mission to coordinate the safe and efficient transit of vessels in San Francisco Bay in an

effort to prevent accidents and the associated loss of life and damage to property and the environment. The Vessel Traffic Service area of responsibility is quite diverse, quite large, and includes an open-ocean approach, a hard-bottom congested central bay and a soft-bottom river and delta system that extends approximately 100 miles to the east, as far east as Sacramento and Stockton.

The VTS authority has evolved over the last 40 years, beginning with the Bridge-to-Bridge Radio/Telephone Act in 1971 and the Port and Waterway Safety Act of 1972. And both of these acts were created following a large oil spill directly underneath the Golden Gate Bridge where the Arizona Standard and the Oregon Standard tankers collided and giving the San Francisco Bay its largest oil spill to date.

The Port and Waterway Safety Act was significant to the Vessel Traffic Service because it gave the Coast Guard its authority to establish VTS's. It wasn't until 1976, when another oil spill, this time off the coast of New York, spawned the Port and Tanker Safety Act of 1978. This act was significant because it gave the Coast Guard the authority to direct vessel movements. In 1989, the Exxon Valdez spill spawned the Oil Pollution Act of 1990 or OPA 90, which made vessel traffic service participation mandatory for a given set of vessels.

All of these acts were clarified in 1994 further through 33 C.F.R. 161. The Coast Guard has a number of different

traffic management tools that it can use at its disposal to add predictability and safety to its waterways and they generally fall into one of two categories. The first is passive management and examples of passive management include NAV rules, regulated navigation areas, traffic separation schemes, buoy networks and other forms of aids in navigation. And in general, these types of passive management rely on the waterway's user for compliance. Active management, the other type, typically involves the vessel traffic service and that is where a Coast Guard or another authority will actually interact with the waterway's users to effect compliance. A little bit about the Vessel Traffic Service people.

We have 35 people in the branch. Seventy percent of them are civilian and approximately 30 percent are military. The average employment at VTS is seven years. Operators graduate -- every single operator graduates from a six-month intensive region-specific training program and upon graduation, is assigned to a four-person watch. The breakdown of a four-person watch includes the watch supervisor, the ocean delta operator, central bay operator and watch assistant.

And after the Cosco Busan incident, there were a number of articles in the local paper or discussions asking whether or not the VTS was actually part of the Coast Guard and it is indeed part of the Coast Guard. It's one branch within Waterways Management Division within the Prevention Department of Sector

San Francisco.

And finally, transits. The Vessel Traffic Service managed more than 124,000 transits in 2007, approximately 144,000 in 2006 for an average of about 342 per day and the majority of our transits are related to commuter ferries, approximately 70 percent, and a smaller portion are related to tanker and cargo vessels. But I would like to point to that although the cargo and tanker vessels represent a small portion of our overall transits managed, they do represent a larger portion of the risk due to their size. And that concludes my presentation in the VTS.

I'll move right into the Harbor Safety Committee, Just a brief history on the Harbor Safety Committee. It began following the Valdez and Huntingdon Beach oil spills, when the California legislature enacted the Oil Spill Prevention and Response Act of 1990 or OSPRA and this act created harbor safety committees for major harbors throughout California. The Harbor Safety Committee of the San Francisco Bay region held its first meeting in September of 1991. Its mission was to plan for the safe navigation and operation of tankers, barges and other vessels within each harbor by preparing a harbor safety plan encompassing all vessel traffic within the harbor.

The Harbor Safety Committee is comprised of approximately 20 maritime stakeholders from both public and private sectors and among those 20 people include representatives from the Coast Guard and the San Francisco Bay Pilots. The Harbor

Safety Committee contributes towards the OSPRA goal of improving oil spill prevention and in doing so it employs, typically, five work groups to get the work done. And right now, those active work groups include the Tug Escort, Navigation, Ferry Operations, Prevention Through People and PORTS work groups. And PORTS stands for the Physical Oceanographic Real Time System.

Those are the buoys that we have throughout San Francisco Bay that give us information about the currents, weather, et cetera. Harbor Safety Plan, the Harbor Safety Plan captures the best practices from the Harbor Safety Committee. It's a very comprehensive document, 174 pages. And these best practices are not enforceable, they're guidelines, unless they're specifically addressed by federal or state regulation.

And all federal regulations cited within the plan are enforced by the Coast Guard. All California regulations cited within the plan are enforced by one of two agencies, Cal Fish and Game or Cal State Lands. This plan is reviewed annually and any recommendations are made to the administrator of OSPR, Mr. Hughes.

And finally, Harbor Safety Committee successes, the Harbor Safety Committee in San Francisco Bay region has had a number of successes. In 2006 it was named the National Harbor Safety Committee of the Year. It created the ferry riding protocol in 2006, which was the first of its kind in the country, where it provided fixed routes for the approximately 70 percent of the VTS managed transits, adding predictability to the overall

Bay. Tank vessel tug escort requirements in 2001, California legislative support for PORTS in 2007, and most recently, transit limitations for vessels exceeding 1600 gross tons in reduced visibility. And that concludes my brief presentation for the Harbor Safety Committee. Thank you, Mr. Chairman, for giving me the opportunity.

CHAIRMAN ROSENKER: Thank you. I am sorry that we weren't able to support your audio-visual presentation, but at least you gave us a good overall understanding of both of the issues. Thank you very, very much.

MR. HENRY: Mr. Chairman?

CHAIRMAN ROSENKER: Yes, go right ahead.

MR. HENRY: That presentation will be included on our website when we craft the public hearing, when it's completed. So it will be included as part of our website.

CHAIRMAN ROSENKER: Again, I extend my apologies to you, Commander Mohr, for not being able to support you properly. With that, let's begin the questioning with the Technical Panel. My recommendation will be, when we complete this issue, we will take an hour's lunch break and then come back for the afternoon session. So we'll see what time that actually ends when we finish our questioning period. The Technical Panel will begin with Mr. Bowling, then followed by Captain Jones, Dr. Strauch and Mr. Roth-Roffy.

BY MR. BOWLING:

Q. Thank you, Mr. Chairman. What I'd like to do is start out at the program level and then we'll work down into the specific areas at Sector San Francisco. So I'd like to ask Commander Tetreault to provide me a little understanding or a better understanding with regard to how the Coast Guard's VTS systems are formulated as compared to those in other countries, such as Canada.

A. The Coast Guard, as I mentioned, I'm a member of the IALA VTS committee. IALA, the International Association of Lighthouse Authorities. And there are international guidelines for operations of VTS that IALA develops with overarching guidelines from the International Maritime Organization. So these high-level guidelines are the -- are what we pattern our VTS operations off of and what VTS's of other nations do as well.

So in the broadest sense, U.S. VTS operations are very similar to those in other nations. Now having said that, every VTS is very different, in that the specific procedures, the regulations that are in effect, the guidance, the types of services they provide, vary based on the risks that they're addressing within their local port area. So at the high-level procedures, general procedures, methods of operation and broadly, communications, are similar around the world at VTS's. However, specific local procedures vary quite a bit from VTS to VTS.

Q. Okay. Do the Coast Guard VTS run systems, are they in alignment with IMO expectations and guidelines?

A. Yes, they are. We follow them very closely. We're very involved in the modification of IMO and more specifically, IALA guidelines and we pattern our policies and procedures after those.

Q. Okay. Historically speaking, in the U.S., how much of an impact have various environmental laws had on VTS, with regard to the control of vessel movement?

A. A substantial effect. I think, as Lieutenant Commander Mohr covered in the history of VTS San Francisco, some of the primary ones are the Ports and Waterways Safety Act of 1972, which authorized the Coast Guard to operate and maintain Vessel Traffic Services. In 1978 the Ports and Tankers Safety Act gave the Coast Guard Vessel Traffic Services more authority to direct the movement of vessels and if you will, control vessel traffic. And then OPA 90, in 1990, made participation in Vessel Traffic Services mandatory for certain types of vessels. So these different acts have really had a large impact on VTS operations.

Q. Okay. And Commander, at the program level, how do most Coast Guard personnel gain their basic qualifications to serve in VTS?

A. There is a very detailed and fairly formal training program that Vessel Traffic Service operators must follow. It roughly consists of three parts. There's a basic certification that must be done, where trainees -- it's primarily classroom-based. Trainees are given basic instruction in Vessel Traffic Service operations, regulatory authority, history, and overall

procedures.

They also then are introduced to traffic management concepts, the broad ways that a Vessel Traffic Service operates, how they will be operating when they're on watch. And then, in this basic certification training, they also do some basic employment of these concepts through simulation. And that's the basic training. The bulk of the training takes place at the Vessel Traffic Service where the watch-stander will be assigned. They have a very intensive on-the-job training program as well detailed training in local geography, local procedures, local maritime conditions.

This training may include ship rides with the types of vessels that they'll normally be working with, visits to pilot organizations, port authorities, other maritime operations, for familiarity with the area. And then the bulk of that local training is on the job, where the VTS trainee will be in the Vessel Traffic Center, working with a qualified operator and gradually being given more and more responsibility, being exposed to more and different situations. During that training, they're continually evaluated, usually on a weekly, if not even more frequent, basis to see that they're meeting certain goals, able to handle certain situations.

And then the final part is qualification, where once the trainee has demonstrated knowledge through examination and testing and then performance through the on-the-job training evaluations,

they are recommended for a qualification board, which is usually staffed by senior members of the VTS, watch-standers, perhaps the sector commander or other senior person at the sector. And they are examined, walked through scenarios and made to demonstrate that they are ready to be qualified to stand a watch on their own. Once they are, they're issued a qualification letter and are put into a watch section.

Q. Okay, thank you. That qualification letter would be issued under whose authority?

A. Under the sector commander's authority.

Q. Regarding the supervisory personnel, the term that was in place in San Francisco was the VTS watch supervisor. What level of training do the supervisory personnel have?

A. Each VTS has a separate level of training for their supervisors. There are international guidelines for training of Vessel Traffic Service personnel. The process that I just walked through is in line with those international guidelines. There are also guidelines for supervisory personnel. However, we haven't aligned our training programs to that yet.

But each Vessel Traffic Service has their own supervisory guidelines that generally cover the roles, the duties that the supervisor will be expected to perform. It also includes an on-the-job training aspect and a qualification board. So it's quite similar. In most cases, watch supervisors also have to have been qualified as a vessel traffic operator as well, so it's

usually you step up from that. Not always the case, but usually.

Q. Okay.

THE WITNESS #5: And Mr. Bowling, I could probably expound a little bit about the local policy for VTS San Francisco. The basic requirements for a supervisor are to stand at least 80 hours of watch as a break-in supervisor. They're required to stand watch with every single qualified supervisor that works at VTS and get recommendations from every single one of them. Once they receive all those recommendations, then they will be scheduled for an interview board and oral examination, which typically takes between one and two hours. It's pretty comprehensive. Once that happens and they satisfactorily pass the board, they are qualified as watch supervisor.

MR. BOWLING: Okay, thank you.

BY MR. BOWLING:

Q. Commander Tetreault, you made a comment that the Coast Guard was trying to align its training standards at the supervisory level with IALA standards. Where's the Coast Guard not in alignment with those standards?

A. IALA has what they call a model course for training watch supervisors. Our basic certification course for VTS operators is in line and covers all the topics in the IALA model course. And we are currently in the process of taking the IALA model course and matching up with our -- for watch supervisors and matching it up with our training program for supervisors. We are

in that process; we haven't implemented it yet.

Q. Okay, thank you. Once the personnel obtain the necessary training to effectively serve in the VTS, does the Coast Guard have any retention programs to keep them within that program discipline or that specialty?

A. For civilian employees it's fairly straightforward. Once they're qualified, they generally tend to stay in the job, so we retain them and their qualifications simply through them continuing in the job. There's relatively low turnover. For the military personnel, we -- the prior assignments at Vessel Traffic Services are considered when assignment decisions are made among other needs of the service and other qualifications. And we do not currently have a tracking program for tracking qualification status, but that's another thing that we're implementing as we continue to implement the IALA training and qualification guidelines.

Q. Okay. Are there adequate numbers of qualified personnel to stand watches throughout the systems that the Coast Guard operates?

A. Yes, sir, based on the risk assessments, the staffing that we've done, that we've evaluated, is necessary for each VTS. We continually evaluate our needs and if we identify an area where we need more people, we will request them through the budgeting process.

Q. Okay. And exactly how many systems does the Coast Guard

currently man and operate?

A. Vessel Traffic Services?

Q. Yes.

A. We have nine that are fully Coast -- I'm sorry -- 10 that are fully Coast Guard-operated, where it's Coast Guard, either military, civilian or a mix of the Coast Guard employees operating the VTS. Then there are two Vessel Traffic Services that we operate in partnership with local authorities or entities. In Los Angeles/Long Beach, we have a partnership with the Marine Exchange of Southern California. And then in Tampa, Florida we have a partnership with the Tampa Port Authority. In both of those VTS's there are permanently assigned Coast Guard personnel, either military or civilian, that are part of that and are always on watch.

Q. Okay, thank you. And Commander, at the program level, are there any inspection programs or quality control programs to ensure that the all the individual VTS's are fully staffed and operate in accordance with Commandant Policy?

A. We have what we call an Operational Evaluation Program, or OPEVAL, where we periodically, from the program at headquarters, visit Vessel Traffic Services, go through a checklist of items that they must have covered either in the procedures of their operations. We look at broad areas of equipment, personnel, training and operations and make sure that they meet the required standards through this checklist. And then

part of the OPEVAL is also a general impression of where the evaluators will sit down, observe watch procedures, interview watch-standers as well as the command, and then a report is written, with lessons learned and that's provided to the command, to identify any areas where they need to improve operations or get in line with national policies.

Q. Okay, thank you.

BY MR. BOWLING:

Q. Commander Mohr, we'll bring up Exhibit 22, Exhibit 22. I'd like to ask you to expand on this particular document, which comes out of a -- it's one of your operational training benders. It's VTS as an extension of a vessel bridge navigation team. If you can expand on that particular -- the two highlighted areas. And again, the highlight has been added just for visibility purposes here.

A. So you'd like me to comment on our basic philosophy about --

Q. How do you train your crew with regard to what is expected of them and how they assist a mariner on the bridge of a ship?

A. Sure. Our basic philosophy is, under normal circumstances, the Vessel Traffic Services is operating in a forming or recommendation capacity. So they considered themselves an extension of the bridge team, if you will. If the person at the Vessel Traffic Service sees something that perhaps the master

or the pilot on the bridge does not see, he'll bring that to his attention, his or her attention. Or, if he can determine a recommendation that perhaps will make the transit more safe, he'll bring that also to the master's attention or the pilot's attention. And does that answer your question?

Q. Yes, it does.

A. Okay.

Q. Okay, thank you. As far as the specific experience levels of the VTS watch-stander and the three VTS controllers that were on watch at the time of the Cosco Busan incident, can you tell me what level of experience they were at and how senior they were with regard to the program?

A. Sure. There were four people on watch that day, watch supervisor, ocean delta, Central Bay and watch assistant, and all of them are qualified operators. Combined, they had approximately 24 years experience. The watch supervisor had approximately 15 years experience.

Q. Okay, thank you.

BY MR. BOWLING:

Q. Commander Tetreault, since the PowerPoint presentation, we didn't get that up there, I would like to briefly have you tell me the difference between the Coast Guard enhanced VTS system and the Ports and Waterways Safety System.

A. The Coast Guard has two general -- at nine of our Vessel Traffic Services, our larger ones, we have two systems that we use

for vessel traffic management. They take in information from various sensors, present it in a display. It also includes communication equipment. At all nine ports there is the -- what we call the Ports and Waterways Safety System is installed. And then at the Ports of San Francisco and Puget Sound the primary system that they use for Vessel Traffic Service operations is what we call CGVTS, or the Coast Guard Vessel Traffic System.

Very broadly speaking, the systems do the same job and they are designed to meet the same requirements and they meet our requirements to do Vessel Traffic Service operations. However, there are some differences between them. The Coast Guard Vessel Traffic System, CGVTS, is based on a -- Unix is the operating system that it's based on and it also uses a common operating environment, which is a Department of Defense type of operating system. This allows it to be more interoperable. It's a little bit more familiar to some of our watch-standers that come from shipboard applications, where they used a similar system. And so it has those functionalities.

Whereas the Ports and Waterways Safety System was acquired in the late '90s, early the parts of this century, for -- through a major acquisition by the Lockheed Martin Company and it is a purpose design for Vessel Traffic Services. It's based on Windows so it has a different human interface feel to it and it also includes some features that aren't available or aren't as easily available on the CGVTS, such as enhanced use of automatic

identification system, and some of the chart displays have a little bit more detailed information on it.

Q. Okay, thank you. And again, from a program management standpoint, was Sector San Francisco VTS adequately equipped on the 7th to manage vessel traffic?

A. We believe it was. As I say, the Coast Guard Vessel Traffic System that was there meets our operational requirements and it has through previous operation evaluations and one that we completed subsequent to this incident.

Q. Okay, thank you.

BY MR. BOWLING:

Q. I'd like to bring up Exhibit Number 9. That is an online document titled "U.S. Coast Guard Vessel Traffic Service San Francisco User Manual, March 2005," and ask Commander Mohr, when we go to Page 2, to explain the highlighted portions concerning concept of operations, specifically the differences in the level of control that a VTS operator can exert over a vessel, and with regard to the monitoring, informing, recommending and directing.

A. Yes. Based on the Vessel Traffic Service program, we teach all of our operators to use what we refer to as a continuum of control, in other words, use the least amount of control necessary to get the job done. And this acronym that Mr. Bowling has put up on the screen basically describes the first level of the control as monitor, the second as inform, the third as

recommend, and the fourth as direct. And I think I mentioned this before, but in probably 95 percent or more of the time, the Vessel Traffic Service is operating in an advisory capacity, residing in one of these first two locations in the continuum of control. They are collecting information, they're processing information, they're looking for anomalies, and they're giving that information, those conclusions, back to the mariners so they can make better decisions in navigating their vessels.

Q. Okay. With regard to the use of this authority and the use of this control from VTS, were there any standing orders from the sector commander to the VTS personnel? Can you expand on that?

A. Sure. Yes, the standing orders took the form of the operations policy manual and in Chapter 4 it's pretty specific on how, if they get to the level where they have to offer a recommendation or offer direction, there's specific language on how they're to do that. And it states -- I actually have it in front of me. It states that the supervisor must be convinced that no better alternative exists before issuing direction.

And if they are to issue direction, they're to issue the direction in the form of a desired outcome. And the reasons for that are many. In general, the Vessel Traffic Service recognizes that the pilot or the master on board has the best information to drive his ship. They know the handling characteristics of the vessel. They know the wind and current that's affecting the

vessel. They are more aware of the hazards in the water that perhaps our radars and our AIS equipment can't pick up, and I'm thinking of kayaks, people swimming in the water.

Believe it or not, there's more than 1200 marine events that take place in the Bay area and those marine events include anything from regattas to powerboat races to people swimming. From Alcatraz to San Francisco it happens pretty frequently. So these are things that the person on the bridge of the vessel will probably be aware of, at least more so than the person at the Vessel Traffic Service. Also, the VTS operator typically is not licensed to drive a ship and the VTS operator isn't aware of any of the bridge dynamics that are occurring between the pilot and the master and the crew, who's actually issuing or conducting the rudder and speed commands.

Q. Thank you. I'd like to bring up Exhibit Number 13 now, which is Chapter 4 from Vessel Traffic -- actually Chapter 4, titled "Vessel Traffic Administration," from operational policies manual for VTS San Francisco. And Commander Mohr, I'd like you to explain the difference between, on Page 13, which is actually Page 2 of the exhibit, explain the difference between a VTS measure and a VTS direction and how frequently that is applied within a VTS.

A. Right. A VTS measure is direction applied to a large group of vessels, whereas a VTS direction is usually targeted towards a specific vessel or a finite group of vessels. Again, I mentioned this before, but measures and directions typically

inform of a desired outcome by a specific rudder course or speed commands.

Q. And within VTS San Francisco, do the controllers have the authority to issue that or will they clear that through the watch supervisor?

A. The watch supervisor. You know, if there's time, if we're talking about measures, which typically are more broad and less urgent, those measures will typically be cleared through the chain of command. But if they're in an urgent situation, then the watch supervisor can make that call.

Q. Okay, thank you. If we could bring up Exhibit 14? It's Chapter 5 from the same operational manual and it addresses incidents -- it's covering incidents. If you would, expand at least upon the Coast Guard's definition of an incident and what is expected from a VTS supervisor and the VTS controllers to prevent such an incident hopefully from occurring?

A. Right. I have Chapter 5 in front of me and I'll just read from that. An incident is defined as an event or events that have the potential to drastically affect the transit of one or more vessels, cause damage to property and the environment or cause injury or loss of life. And the direction given to our operators, when a VTS personnel -- person determines that a developing traffic encounter is unsafe, they shall follow the procedures below, a VTS recommendation. They shall contact the vessel involved and recommend an appropriate course of action, and

if this isn't complied or the danger still persists, then they will proceed to issuing a direction. And the specific language is, if a vessel declines to take appropriate action, the watch supervisor shall have VTS authority and direct the vessel to take action in order to rectify the situation.

Q. Thank you. How frequently in the months preceding the incident had VTS personnel exercised that level of control over any vessels, for any safety-related reasons?

A. Quite infrequently. In the six months prior to the Cosco Busan incident, there were six different instances when a VTS operator issued direction and that's out of about 50 -- that's out of about 56, if I recall, 56,000 transits. And in the six months or roughly five months after the Cosco Busan incident, there were about five directions issued for roughly 27,000 transits, so pretty infrequent.

Q. Okay, thank you. If we could bring up Exhibit Number 23, I'd like to take a look at that real quick. And Commander Mohr, this question will be directed to you. But minutes before the Cosco Busan allided with the bridge, the VTS controller raised the pilot on the VHF and inquired about the pilot's intentions. I'd like you to expand on the level of control that was being exerted at that point and the VTS controller's actions when he went out over the VHF to the pilot. And this exhibit was provided by the U.S. Coast Guard. It was taken off your PAWSS. It wasn't the actually screen that the VTS controller saw, correct?

A. That's correct.

Q. And I have added the red lines in the exhibit to indicate where the Delta Tower is located and where the Echo Tower is located. But this screen was provided again from the Coast Guard, indicating that was the general position of the Cosco Busan and the towing vessel, Revolution, when the initial radio call went out to the pilot, inquiring about intentions.

A. Okay. You've already mentioned the fact that this not the picture that the VTS operator was looking at.

Q. Correct. If you can expand on that?

A. Sure. This is the recording software that we use, but it does not give the same picture, it doesn't -- what the VTS operator was looking at was very different than what you're seeing here today. For starters, the VTS operator's picture doesn't provide heading information, it provides course over the ground and I believe this picture does. But just so I understand your question, you want me to comment on --

Q. When the VTS controller went out to the vessel and inquired about the pilot's intentions, what level of control was that and what was the purpose of the radio call out to the vessel?

A. Sure. He was both in the monitoring and informing phase of the continuum of control. He was informing the master of the course that the vessel was on, you know, what he saw on his display. But he was also collecting information from the pilot.

He was trying to confirm whether or not the pilot's

intentions had changed because the present course that the operator saw, seemed to indicate that maybe the pilot had changed his intentions, perhaps to anchor south, perhaps to head south to Anchorage 9, perhaps to head through the Charlie Delta; it wasn't clear. So his interrogative was really to clarify, you know, which of those intentions the pilot had decided to use with his vessel.

Q. Okay. So he was basically inquiring to ensure that the pilot wasn't planning on deviating from this original sailing plan?

A. That's exactly right.

Q. Okay. With regard to the VTS controller, the exact radio call -- and it's actually on Page 19 of Exhibit Number 3. But the VTS controller went out over the radio: "Unit Romeo, Traffic. AIS shows you on two-three-five heading. What are your intentions? Over." Was that statement accurate with regard to the -- what AIS was actually showing or recording from VTS?

A. The two-three-five was a course, so I would say, otherwise it is accurate. The Vessel Traffic Service doesn't have the ability to portray heading, or at least the software that the Central Bay operator was looking at.

Q. What would've been a better question for the VTS controller to inquire?

A. Probably, in that particular case, AIS shows you on a two-three-five course. If he had stated that, that would've been

more --

Q. Okay. Do you know if that information from the VTS controller impacted the pilot in any way?

A. I think that would be speculatory on my part to answer.

Q. At that particular point, the level of control that was being exerted from VTS was still at what level?

A. It was still at the monitor and inform phase of the continuum of control.

Q. Okay.

A. At that particular moment it wasn't clear to the vessel operator that the vessel imminent danger of alliding with the bridge. The radio call was merely to clarify intentions.

Q. Okay. Were there any procedures or other doctrine that would've prohibited the VTS controller from going back to the pilot and informing him of the close proximity of the vessel to the bridge span?

A. From a regulatory standpoint, no, but there was an understanding -- and we didn't include this in our training -- that when a pilot was about to, or master was about to embark on a critical maneuver, that we would try to limit radio communications so as not to distract the person driving the vessel.

Q. Okay. Exhibit 26 is actually the testimony of the VTS watch-stander on duty, who was the supervisor of the watch. And during the NTSB interview -- and I'll read this. I don't think we'll have it up on the screen by the time I get to it. On Page

20 -- 39. Excuse me. But the VTS controller during the interview -- excuse me. The VTS supervisor during the interview says, "On my display I was able to zoom in to kind of follow his track and it was apparent to us -- I mean to me -- that was extremely close. But again, not having that kind of definition, you really couldn't tell whether he would actually hit the bridge or not. The next call we got was from Unit Romeo, indicating that he had touched the bridge and that he would, he would continue to proceed to the Anchorage."

What prohibited the VTS watch supervisor from escalating the continuum of control up to a higher level, such as a recommending or a direct mode, and giving the pilot an indicated -- the desired outcome of the event, for example, steer clear of the bridge tower?

A. Right. From a regulatory standpoint again, we had the authority to do so, but at that point the pilot had already committed and in fact the pilot had already committed to his turn even before the ocean -- or the Central Bay operator had called the pilot on the radio. So the pilot had already committed to the Delta-Echo span. He clearly and very calmly indicated that he still intended to pass through the Delta-Echo span. And at that point a phone call or a radio call from the VTS, telling him his relative position to the bridge, probably would've served to distract the pilot further. The quote that you bring out or that point in time, it's also possible that the Cosco Busan was within

sight of the bridge. So again, a radio call from the Vessel Traffic Service I don't believe would've helped at that time.

Q. Okay. Can you tell me what was going on in the Vessel Traffic Center in that minute and a half or so after the radio call out until the time the vessel allided with the bridge? What was going on with the controllers and the watch supervisor?

A. Sure. After the pilot restated his intentions and said yes, you know, I'm already starting my turn to starboard and I'm passing two-eight-zero and I still intend to pass through the Delta-Echo span, at that point it became apparent or it gave the impression that the pilot at least knew where he was. So it didn't seem wise to then call the pilot at that point to let him know again where his position was. It appeared to the operator and the watch supervisor that this would only serve to further distract the pilot as he's about to embark on a very complicated maneuver, maneuvering through a span underneath a bridge in reduced visibility, at 10 knots, with a 900-foot vessel.

Q. Okay. When you were relaying the information off your pilot -- or your PowerPoint, you brought up the Ports and Waterways Safety Act. Can you tell me a little about the Port and Waterways Safety Act and the authority in that to VTS, specifically, with regard to controlling a vessel during times of restricted visibility?

A. Sure. And I believe this was actually in closure. I'm not positive about that. But that particular authority from the

Port and Waterways Safety Act is more clearly defined in 33 C.F.R. 161.11. And to summarize, it gives the Vessel Traffic Service the authority, in conditions of reduced visibility, to control a vessel and specifically control the movement of the vessel. I think that portion of the law applies specifically to the Cosco Busan's case.

Q. Okay. On the morning of the incident it did seem to me that, through the interviews and all the data that we collected on site, that the VTS team was aware of extremely limited visibility in and around the Bay area. Why weren't there any movement controls in place at that time in the morning for the higher risk vessels that had checked into the system?

A. Sure. The short answer is that it wasn't readily apparent that a blanket operational control to restrict vessel traffic in reduced visibility was needed. Companies go through considerable expense to outfit their vessels with equipment that mitigates risk of transit in the fog. These include two independent radars, AIS transceiver, electronic charts, GPS, gyro compass, et cetera.

The companies also employ the use of an experienced bar pilot or bay pilot. And all of these factors help to reduce the risk of navigating in the fog. With this particular transit, I will point out that the vessel was pointed or moored pointed westward and that actually made their westbound transit all the more easier. So in other words, they didn't have to conduct a

complex turning evolution upon their westbound transit outbound to sea.

Q. Okay. In the morning hours between 06:30 or 06:00 until the time of around 08:08:, there were two inbound vessels that actually diverted due to restricted visibility once they got beyond the Golden Gate Bridge. I believe they went to Anchorage 8 and Anchorage 9. There was another vessel that was at an adjacent berth, Oakland 23, that had delayed sailing. And at the time the vessel, the Cosco Busan, raised VTS controllers to let them know that they were getting underway, why weren't any concerns raised with the VTS at that point when the one pilot decided to go ahead and made the outbound transit?

A. Sure. Well, to start, there were no procedures or precedents as to do so for the folks who are in the watch. And at that point, pilots were considered independent contractors making independent decisions. So it was very possible that one pilot would make the decision not to proceed outbound and another pilot might feel safer. And I've already mentioned the fact that the Cosco Busan was oriented to the west and was proceeding outbound to sea, typically a more straightforward transit.

Q. Okay, thank you.

BY MR. BOWLING:

Q. At this point, I'd like to refer a couple of questions over to Captain Gugg, if I can get Exhibit 21 brought up. The exhibit is a memorandum of agreement on oil pollution prevention

and response between the commander of the 11th Coast Guard District and the State of California. And I'd like to go to Page 3 and Captain Gugg, if you can tell me a little bit about this document and the purpose of this particular document?

A. Sure. That document is currently under review. It is not a nuts and bolts SOP sort of document; it's an agreement to agree and it kind of formulates or frames our relationship with the State of California, with regards to leveraging capacity, to avoiding redundancy, and most importantly, to work on committees like the Area Contingency Plan and the Harbor Safety Committee. So again, it's a dated document and it's not what we refer to on a daily basis, but it frames our relationship and it is currently under review.

Q. Thank you, Captain. In that particular document, the -- but that document is current, correct?

A. It's in need of review. It was signed in '93 by, I believe, Governor Wilson and Admiral Rufe, clearly dated. The concepts are still in effect. So the answer to your question is yes, it's in effect but we understand that it needs to be updated several administrations old.

Q. Okay, thank you. With regard to Section 6 in that particular document, titled "Prevention of Oil Spills," in Subsection 1 there's a waterways management section and it talks about the expectations between the State of California and the Coast Guard, with regard to use of Vessel Traffic Service and the

state pilots as prevention tools. Can you expand on those areas of the document, on Pages 13 to 14?

A. I'm going to ask Commander Mohr to take a shot at that --

Q. Okay.

A. -- particular piece, if I can.

THE WITNESS #3: Basically, the MOA is very generic in nature and basically it serves to educate and also to endorse the use of Vessel Traffic Services, in terms of preventing oil spills.

BY MR. BOWLING:

Q. Okay. Commander Mohr, were any of the VTS team that are currently in place or were in place during the Cosco Busan incident, were they briefed in at least some of the outlines of the use of VTS and their tools, with regard to the MOA?

A. No. In fact, I would say that most people were not aware of the MOA or at least weren't aware of it as it applied to their job. But all of the tenets of the MOA were mirrored in all the standard operating procedures that we had at the Vessel Traffic Service.

Q. Okay, thank you. If we can go into a final portion of the session here, I'd like to talk about the -- get some questions asked regarding the Harbor Safety Committee of the San Francisco Bay Region. The presentation that we missed actually covered a lot of that, but what I'd like to do is just ask Commander Mohr to

give me again a brief outline of the Harbor Safety Committee and its purpose within the region.

A. Sure. The Harbor Safety Committee again was created from two separate oil spills, the Exxon Valdez and another oil spill off of Huntington Beach, and it actually spawned not just a Harbor Safety Committee in San Francisco Bay, but Harbor Safety Committees in five different ports in California.

And the Act, the Oil Spill Prevention and Recovery Act, or Response Act, actually is very specific about who should sit on the Harbor Safety Committee and it lists out 20 different people. They include a variety of port stakeholders, both public and private. And as I mentioned, there are provisions for the Coast Guard and the San Francisco Bay pilots to be representatives on the board.

Q. Okay, thank you. How was the exact plan formulated and how frequently is that plan put together?

A. Sure. I believe the first plan was created in 1992, but if you go on the San Francisco Bay Marine Exchange website, there's actually the links to harbor safety plans going back to 1998. And every year the plan is reviewed and recommendations are made to the administrator of OSPR, with respect to changes or changes to the guidelines that are listed in it.

Q. Okay, thank you. If I could get Exhibit Number 4? It's a section of the current Harbor Safety Plan 2007 and it does have a written portion of that plan, which talks about captain of the

port authority and the expectation of the use of that authority to prohibit movement of vessels within all or portions of the Bay during adverse weather conditions. Can you tell me a little about who was involved in the development of that particular recommendation?

A. Sure. Actually this particular recommendation was made or drafted long before I was at the sector, but I believe the policies came from or borrowed liberally from a lot of the pilots' best practices.

Q. Were there any standing orders in place in VTS where this would be put into force?

A. No, there were not. And I think the paragraph that you're referring to is in conditions of reduced visibility and they define reduced visibility as less than a half nautical mile.

Q. Correct.

A. Vessels should not get underway if they experience reduced visibility anywhere in their transit, unless the pilot or master deems that it is safe to do so. That's probably the phrase you're referring to. There were no standing orders that were carried over from this particular best practice in the Harbor Safety Committee plan.

Q. Okay.

A. Part of the reason for that, if I could just expound a little bit, is that the clause was very difficult to enforce. And most recently, the Harbor Safety Committee developed some more

specific language and they will be adding that language to the 2008 Harbor Safety Plan.

Q. Okay, thank you. I'm going to stay in the same doctrine there. We'll go to Exhibit 5. Or same document, I should say. It's Chapter 7, titled "Vessel Speed and Traffic Patterns." And there was a study that VTS had conducted earlier and it generated a development of a 15-knot speed within the Bay area. Can you tell me a little about the study and also was this study conducted in times of restricted visibility or just clear weather?

A. Sure. Right. The study that you're referring to was conducted in the early '90s by the Vessel Traffic Service. They reviewed the speeds of deep-draft vessels within their area of responsibility. I believe they reviewed more than 200 and found that the vast majority were traveling at speeds of less than 15 knots. So they sector commander made this proposal to the Harbor Safety Committee to institute a -- or suggest a best practice of traveling 15 knots or less.

The Harbor Safety Committee approved this measure and it went into the Harbor Safety Plan. Two years after it made it into the Harbor Safety Plan, there was actually regulation passed which made the 15-knot speed limit a regulated navigational area. So in other words, there was regulatory backing behind the 15-knot speed limit. I will point out, though, that although there is a 15-knot speed limit, it does not relieve the operator of a vessel of Rule 6 from the COLREGS, which talks to safe speed in any

condition, regarding all the circumstances.

Q. Correct. Thank you. Exhibit 6, if we can bring that up, it's another chapter within the Harbor Safety Plan. It's titled "Vessel Traffic Service." And Commander Mohr, I'd like you to expand at least on that section and tell me particularly what is meant on Page 34, with regard to how VTS authority was expected or is expected to be used during the conditions of vessel congestion and restricted visibility, adverse weather. It seems it's been addressed in the Harbor Safety Plan that's currently in place.

A. Sure. And basically the same language that you'll find in the Harbor Safety Plan is the same language that I've discussed from the VTS operations policies manual and also in the 33 C.F.R. 161.11.

Q. All right. Sorry, we're trying to get that up on the screen. With regard to the authority, again, is there any written guidance to your VTS control team, the controllers and the supervisors, on this Harbor Safety Plan, how this is to be enforced?

A. Sure, there is. Actually following the adoption of the new reduced visibility transit procedures that the Harbor Safety Committee adopted in March, Vessel Traffic Service then promulgated standing orders to enforce these new restrictions. And I'll go briefly over those restrictions. It basically states that if a vessel experiences reduced visibility as defined by less

than a half nautical mile, at dock they will not get underway. If an inbound vessel or a transiting vessel witnesses or receives news of visibility less than a half nautical mile at dock, then they will proceed to anchor or come up with an alternative route. And if the vessel receives a report of reduced visibility of less than a half nautical mile, again, in one of eight critical maneuvering areas, they will come up with an alternative route.

Q. Thank you, Commander. If we could go to Exhibit 7? It's Chapter 14, titled "Pilotage." And there's a section that at least the Harbor Safety Committee at some time addressed, vessel movements and the decision-making process by the master and the pilot to move a vessel, and it lists relevant factors. With regard to the Coast Guard's participation on that particular committee, can someone give me a background of where that particular section was developed?

A. Again, I wasn't stationed at Sector San Francisco when this was written, but my understanding was that a lot of the guidelines came from the pilots' best practices. And I'm probably not the best person to answer your question.

Q. Okay, thank you. We'll expand that when we get the pilots. The last exhibit I'd like to look at is Exhibit Number 8 and it's actually another chapter and it's titled "Plan Enforcement," and it talks about the expectations of the Coast Guard's enforcement of certain portions of the Harbor Safety Plan, and the state's. Can somebody expand on that particular chapter,

particularly with regard to the Oil Spill Prevention and Response Act?

A. Sure. In essence, all of the tenets of the Harbor Safety Plan are best practices or guidelines. However, if there are already existing regulations or authorities, then the Coast Guard is responsible for enforcing those laws and regulations. If the laws and regulations cited in the Harbor Safety Plan have to do with California state law, then it is state lands and state fish and game, who are typically tasked with enforcing those regulations.

Q. Okay. There's a section in that Harbor Safety Plan that we didn't pull up and we won't go back to it, but it talks about an outreach committee which has groups of personnel from Vessel Traffic Services San Francisco and the pilots. Can you tell me about that committee and the purpose of that?

A. Sure. The VTS Pilots Issues Committee, or VPIC, as we call it, was designed to, in an informal way, get the pilots together with Vessel Traffic Service senior management to talk about communication issues, really anything that was -- that needed work in terms of their relationship. In the past we've talked about radio congestion, in other words, you know, broadcasts that perhaps the Vessel Traffic Service was making that wasn't helpful and only served to distract the pilots.

We also talked about anytime a request to deviate was denied by the Vessel Traffic Service, that would be something that

we would talk about. You know, why did the -- from the Vessel Traffic Service, why did the VTS deny their request to deviate from a regulated navigational area? And then the pilot could then give his perspective as to why his requested deviation was perceived to be the safer option. So it's just a way that we can informally communicate and come to a better understanding on how to best promote safety within the Bay area. We meet about quarterly and so you know, roughly four times a year.

Q. Okay, thank you. Are there any communication issues that currently exist between the pilots and the Coast Guard that are being --

A. Not to my knowledge. We're fortunate enough to enjoy a very good working relationship with the San Francisco Bay pilots. And if issues do come up or, you know, when they have come up in the past, they're very quickly dealt with in a mechanical way through the VPIC.

Q. Okay. Commander, you are the chief of the Waterways Department within Sector San Francisco, so I'd like to ask you, on the date of the incident, how would you characterize the performance of VTS in meeting its stated mission in pollution prevention?

A. Sure. Directly following the Cosco Busan incident, we had a number of investigations that came through our offices. Two of them involved the Coast Guard. The VTS program came down and conducted an OPEVAL and we also conducted an internal review in

the VTS and both of those reviews found that there were things that the Vessel Traffic Service could've done better, but none of them actually contributed towards the incident. There were recommendations made in our internal review and the vast majority have already been addressed. I'll read them to you. The recommendations that our incident review board came up with were to set visibility thresholds for transits and identify critical maneuvering areas.

Both of those two factors have been addressed by the more recent policy adopted by the Harbor Safety Committee and promulgated through Vessel Traffic Service standing orders. The incident review board also recommended that we add an additional person to our VTS watch during conditions of reduced visibility as defined by less than a half a nautical mile. And that extra person will allow us to not only put more eyes on the same picture but also to increase the scale, if you will, or rescale our displays.

They also recommended that the VTS synchronize all of its recording information, the video, audio and track, track-line data. That was done immediately, the day after the Cosco Busan incident, and we've just -- actually we've just checked last week and it's still synchronized. We check it periodically now. And finally, redraft quick response cards to coordinate the efforts with the Sector Command Center and that effort is already underway not yet finished. We anticipate completion sometime this summer.

Q. Okay. And that was one area we didn't go into here at the public hearing because this is a discovery hearing. But when you're saying a QRC, you're referring to a quick response card, correct?

A. That's right.

Q. Can you briefly describe what that is?

A. Sure. A quick response card is a checklist that an operator would break out and you know, just basically go down the list. For the Vessel Traffic Service operators, we have a pretty extensive training programs, six months long, and so a lot of the particular incidents are ingrained in our operators through this training program. Where the QRCs really become helpful is when there's an incident that involves both the VTS and the Sector Command Center, and a QRC can help to basically divide out the work so that there's clear definition of the different roles between the VTS and the Sector Command Center.

Q. Okay, thank you, Commander.

MR. BOWLING: Mr. Chairman, I realize I'm longwinded, but I am actually done.

CHAIRMAN ROSENKER: That's good news. Thank you very much. I appreciate that, Mr. Bowling. Captain Jones, do you have questions?

CAPT. JONES: I'll just limit it to one.

CHAIRMAN ROSENKER: That's a good thing. Thank you very much.

BY CAPT. JONES:

Q. Just to clarify, Commander, the AIS, when the VTS first reached out to the pilot and said they had a heading -- they had them on a heading of two-three-five, is there any delay in the reception of AIS data at the VTS center?

A. Sure, there is. AIS is refreshed. I believe it's every -- the time actually changes relative to the change in speed and course of the vessel. So the more frequently or the more pronounced a vessel turns or changes its speed, the more frequently AIS will refresh. But in this particular case, AIS was refreshing around two to three seconds. It was about a two to three-second lag in what the operator was seeing relative to what the pilot would've seen or experienced on the bridge.

Q. Now the information that AIS is getting, is that heading or course over the ground?

A. Sure. AIS, for vessels more than 500 gross tons, AIS will be transmitting both the heading and the course over ground. The software which the operator was using only displayed course over ground. So there's no question that when he reported a two-three-five heading, what he was reporting -- what he meant to report was a two-three-five course over ground because that's what he was looking at, at his display.

Q. Okay, thank you.

CHAIRMAN ROSENKER: Thank you very much, Captain. We have Dr. Strauch.

DR. STRAUCH: I have no questions, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you. And Mr. Roth-Roffy?

MR. ROTH-ROFFY: No questions, sir.

CHAIRMAN ROSENKER: Thank you very much. We'll now ask the parties if they have any questions.

The Coast Guard? No, we'll start -- I'm sorry. Forgive me. The American Pilots Association?

CAPT. WATSON: No questions.

CHAIRMAN ROSENKER: Okay. California Department of Fish and Game?

CAPT. HOLLY: No questions.

CHAIRMAN ROSENKER: Fleet Management from Hong Kong? Captain Aga, do you have questions?

CAPT. AGA: Yes, Mr. Chairman.

CHAIRMAN ROSENKER: Go right ahead.

BY CAPT. AGA:

Q. Okay. Commander Mohr, I heard you saying that it was not really apparent to the watch-stander and the supervisor that the ship was going to hit the bridge. But I have in front of me Mr. Perez's statement, Page 75, where he says -- and I will read. "I was basically watching and unsure if it was going to make it or not. We almost predicted -- it was almost a prediction that we expected to get the call that he would hit the bridge." So can you qualify that?

A. Sure. I think, when I answered the question, I was

referring to the conversation between the Central Bay operator and the pilot, and the statement you're reading was from the watch supervisor, Mark Perez, a different person.

Q. Okay. Do you think that, at that stage, it would've been appropriate to follow the continuum of control and direct -- tell the ship that he was in danger and ask him to divert?

A. At that point from which you read the statement, the vessel was probably already within visibility of the bridge. And in any case, it had definitely already committed to passing between the Delta-Echo span.

So, no, I believe a radio call from the VTS at that point would've only served to distract the pilot when he was about to embark on a very critical maneuver under a bridge in reduced visibility, traveling at 10 knots with a 900-foot vessel.

Q. Does that mean that every time a vessel is in danger, we cannot expect the VTS to tell the ship that he is in danger because you would not want to confuse the pilot?

CHAIRMAN ROSENKER: That is a leading question and I'd prefer -- argumentative question, and I'd prefer that we don't get into that here. So with all due respect to you, I would ask that you would not ask that question.

CAPT. AGA: Apologies, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you.

CAPT. AGA: I'll withdraw that question. No further questions.

CHAIRMAN ROSENKER: Thank you very much. The California Board of Pilot Commissioners?

MR. MILLER: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: San Francisco Bar Pilots Associations?

CAPT. HURT: Yes, sir, I do have one question.

CHAIRMAN ROSENKER: Go right ahead.

BY CAPT. HURT:

Q. Commander Mohr, you mentioned in your opening statement that there was a collision between two tankers from the same company in 1971 and that was the genesis for the current VTS system. Do you know whether there was a San Francisco Bar Pilot on either one of those tankers?

A. Right. Yes, there was not a San Francisco Bar pilot on those two tankers. They were Standard Oil vessels, now Chevron, and they both had American pilots on board, American licensed pilots.

CAPT. HURT: Thank you.

CHAIRMAN ROSENKER: And Sperry Marine?

MR. HUGHES: No questions, sir.

CHAIRMAN ROSENKER: And finally the United States Coast Guard?

MR. WHEATLEY: Thank you, Mr. Chairman. No further questions.

CHAIRMAN ROSENKER: Very good. We'll take questioning

now to the Board of Inquiry. Mr. Osterman?

BY MR. OSTERMAN:

Q. Commander Mohr, we've heard a lot in the press about comparisons between VTS and air traffic control. You've done a superb job of telling us what VTS is. Can you do a little summary of what VTS is not?

A. Sure. We also paid pretty close attention to the media coverage, often comparing the Vessel Traffic Service to an air traffic control and certainly there are similarities, but I would say that there are some pretty big differences that exist. For starters, you really have to -- for an apples to apples comparison, you really have to compare Vessel Traffic Service with Class A airspace and that's the airspace you might find around an airport.

The San Francisco Bay is a congested waterway; it's not open ocean, so I believe that that would be the best comparison. In Class A airspace every aircraft is checked into the system so the air traffic controller sees every single aircraft that he could possibly be dealing with. At the Vessel Traffic Service that is not the case. Not every vessel is required to be checked in with the Vessel Traffic Service.

I mentioned earlier that we have 1200 marine event permits issued. Those are the permanent events every single year. Most of those events happen in the summertime and most of those events happen over the weekend. So it's not uncommon, over the

summertime in San Francisco Bay, to have 30 different marine events going on in a single weekend. All of those vessels, sailboats, fishing boats, kayaks, people swimming from Alcatraz to San Francisco, they're not checked in with the Vessel Traffic Service. So the VTS is really dealing with an incomplete picture, relative to what air traffic control sees. Also, the people in the Vessel Traffic Service are not licensed mariners, so you know, some of them quite possibly have never driven a ship before.

Q. Okay, thank you.

BY MR. OSTERMAN:

Q. And I have a question for Commander Tetreault. We've spoken a great deal about the San Francisco VTS program here, but there are VTS elsewhere in the United States, of course, and my understanding is that they are significantly different one from another, is that correct? And could you describe those differences?

A. Yes, sir, that's correct. And primarily the differences come about from the operations in their area, based on geography, the type of vessel traffic mix in the area, the regulations and things that are already in effect. So that's where the differences really come from and it translates into their operations as well, because the procedures that they come up with are designed to address the risks that have been identified in those port areas. So in each port area where there's a VTS, there's been some sort of risk assessment. They identify the

risks, they develop procedures to mitigate those risks, and then they implement them.

So for example, in certain of our -- I'll call them river VTS's. They're VTS's that have a substantial portion of their operation area on a very narrow river. In several of them they have a series of bridges that vessels have to go through and at high water levels, when there's heavy current running, the VTS can tells vessels to stop, one vessel goes, one vessel stays, you have to hold, and there's certain horsepower restrictions and things like that. So they impose certain requirements at -- to address the specific risks in those areas.

Q. Okay. And I also understand that in San Francisco there's the exclusive operation of the Coast Guard with another VTS that may be like in Long Beach, a merged commission with the Marine Exchange and the Coast Guard, is that correct?

A. Correct. In Los Angles and Long Beach and in Tampa we operate what we call Cooperative Vessel Traffic Services with port partners there, the Marine Exchange of Southern California in L.A./Long Beach and the Tampa Port Authority in Tampa. In those instances we still hold them to the same level of training. They have to abide by the same procedures; they fall in line with the IALA and IMO guidelines on Vessel Traffic Services operations. The difference is that some of the watch-standers are non-Coast Guard personnel however, there are always Coast Guard personnel on watch and involved and permanently stationed at the Vessel Traffic

Service. That's the flow of the Coast Guard's VTS authority, it comes through them.

MR. OSTERMAN: Thank you, gentlemen, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you very much, Mr. Osterman. Dr. Spencer, questions?

DR. SPENCER: Thank you, sir, I don't have any questions.

CHAIRMAN ROSENKER: Mr. Henry?

BY MR. HENRY:

Q. Commander Mohr, it would probably useful if you could tell us exactly what information the VTS operator knows about a particular vessel and maybe you could start by telling us what data is coming into the VTS, what appears on his screen, what does his computer do, but what does he know about a particular vessel?

A. Certainly. The Vessel Traffic Service employs a number of different sensors, information collecting techniques, as they carry out their duties. We have a network of radar systems, also AIS. And we have five different video cameras throughout the Bay area and we're actually expanding that by six more cameras, for a total of 11. And all of these different pieces of information are overlaid within the CGVTS software suite that Commander Tetreault discussed earlier. So the picture that they have, typically, you'll see both the radar picture and an AIS picture very close to one another, transposed over one another and the VTS operator can draw conclusions based on, you know, the relationship of those two

pieces of information.

Q. Let's say in poor visibility where he doesn't have an actual video of the vessel, just list the information that he knows about that vessel at a particular time.

A. Sure. Typically, he'll know the length of the vessel, the width of the vessel, that speed that it's traveling, the course over ground, whether or not the vessel is piloted, its transit route. Basically everything that's filed with the sailing plan is also available to the VTS operator.

Q. Now, does he know the type of vessel, chemical, tanker, a container?

A. Yes, yes, he does.

Q. He doesn't know the -- what the vessel is actually doing in the way of maneuvering? He doesn't know rate of turn?

A. No.

Q. He doesn't know rudder? He doesn't know engine commands?

A. No, absolutely not. And that's one of the reasons why the Vessel Traffic Services is cautious when it issues directions. It recognizes that the person on the bridge, the pilot, the master driving the vessel has better information than he or she does at the Vessel Traffic Service.

Q. The dialogue that went on between the operator and the pilot around 08:27, 08:28, initiated by the VTS, asking him what his intentions were, showing him on a course of two-three-zero,

and the pilot responded that I'm coming around, steering two-eight right now. Was he turning to port, turning to starboard?

A. Turning to starboard.

Q. What would the operator actually have understood from that communication?

A. Actually there's a lot he could tell from that communication. The Central Bay operator had him on a course of two-three-five and the pilot reported back that he had already initiated his turn and was passing two-eight-zero. So in other words, the vessel had already initiated a turn to starboard, which was consistent with his originally stated and confirmed intentions to pass through the Delta-Echo span.

Q. Okay. Commander Tetreault, as far as the program management level, you had mentioned that the Coast Guard performs op evaluations of the VTS. Is there a special unit in the Coast Guard that does this?

A. No, sir, there isn't. It's currently done out of the headquarters program office, my office here in Washington. However, with the standup of a new Coast Guard organization, the sector organization, they've established what they call sector standardization teams and we're working to incorporate evaluation of Vessel Traffic Services into those sector standardization teams, and they're based out of Yorktown, Virginia, so it's a separate command.

Q. What are the qualifications of members of these teams to

do these inspections?

A. We don't have specific qualifications for them, sir. However, as we're looking to stand up the VTS portion of the sector stand team, we're recommending that they be rated Coast Guard personnel that have been assigned -- have a prior VTS experience with part of the assignment.

Q. Had there been a prior unit at RTC Yorktown that had done these inspections in the past?

A. Not that I'm aware of, sir.

Q. Is there some sort of planned program for doing these evaluations, periodic inspections?

A. Yes, sir, we have a policy that we're developing now with a schedule for conducting operational evaluations every two or three years. And then we're also going to have criteria that would trigger an operational evaluation, such as a major incident, a major turnover of people, a major expansion of VTS responsibilities, new equipment, that sort of thing.

Q. Was there an op evaluation done after this accident?

A. Yes, sir, we completed one in January of this year.

Q. And when was the prior OPEVAL done for VTS San Francisco?

A. I believe it was September of 2006.

Q. And the results of that evaluation?

A. Were generally positive -- I don't remember the specifics, sir, but they found that they had documented procedures

that were in line with national policies equipment appeared to be operating well they were appropriately staffed.

Q. The concept of the continuum of control as applied by the Coast Guard, there are other VTS-type systems in other countries. Could you compare how the Coast Guard applies that concept with pilots supplied in other countries with modern VTS-type systems?

A. Yes, sir. A place designated as a VTS around the world is, by definition, following the International Maritime Organization and International Association of Lighthouse Authorities guidelines on VTS and these are -- the IMO guidelines are fairly general but they define certain types of services that a VTS provides and those are standard throughout the world and within the U.S.

Captured within those services are really where the concept of the continuum of control -- although, in international documents, it's not specifically spelled out the same way that we do it, the monitor, inform, recommend and direct. In international guidelines they talk about the Vessel Traffic Services providing navigation information service. So to a certain extent that covers the monitor and inform portion of our continuum of control. And then the two other services that are defined in international guidelines are navigation assistance service and then traffic organization service and that is where -- roughly aligned with our recommendations and direction authority

that we employ in U.S. VTSs. And the reason that the three types of services are separated out is it's conceivable that a VTS would be set up that wouldn't be able, either in a nation that didn't have the authority or didn't choose to employ the authority, wouldn't be able to issue directions, they would only provide the navigation information service. So they would only operate at the monitor and inform level. But in the U.S., if we establish a VTS, it's intended that they are able to provide all Vessel Traffic Services at all levels of the continuum.

Q. Could you give us a long-term perspective on what modernizations and improvements you foresee for the Coast Guard's VTS system?

A. With regards to technology, we are roughly halfway through the lifecycle of the systems that we have in place, of our -- in place in our VTS's now. So we've begun to look at, you know, replacement. It was a 15-year lifecycle and we're roughly seven, eight years into the deployment. So we're starting to look at renewing -- reviewing our requirements, developing new requirements and then developing those into additional -- any additional technology that we might need in the future to acquire, to replenish or replace what we have established now. With regards to operations, we are continually assessing the risks in VTS areas and other areas where VTS may be appropriate in conjunction with the local stakeholders.

We have what we call a Ports and Waterways Safety

Assessment, or PAWSA, that we do periodically in VTS ports and other large ports. And so as we identify, conduct these risk assessments and identify risks, if it's determined that a VTS is the appropriate mitigation measure, we may establish a VTS in that area or expand the certain VTS services that are being provided. So that's kind of a rough idea of technologically-wise and with regards to VTS operations, how we're looking for the near future.

Q. How does our VTS work with the Canadian system in areas where there's not concurrent, but the Straits of Juan de Fuca, where we're operating with them, together?

A. I could sum it in a word: fantastic. There's an existing -- in the Strait of Juan de Fuca there is an existing international agreement from, I believe, 1974 or '76, for the U.S. and Canada to operate a Cooperative Vessel Traffic Service there. And actually the operations are such that there are procedures where the U.S. monitors and does Vessel Traffic Services in Canadian waters, and vice versa, where it makes sense for the configuration of the waterway.

So in the Puget Sound region we work very closely. Every six months there are coordination meetings to develop joint procedures, have joint procedures manuals and that sort of thing. We're looking at a similar operation in the Great Lakes, where we have a Vessel Traffic Service in Sault St. Marie and the Canadians operate traffic services on the Great Lakes as well.

Q. Thank you, Commander.

MR. HENRY: Mr. Chairman, I've completed.

CHAIRMAN ROSENKER: Thank you, Mr. Henry. I just have a few questions and then we'll adjourn for lunch for an hour or so. I have to ask a couple of questions as it relates to procedure and process.

BY CHAIRMAN ROSENKER:

Q. First, the captain of the port. The captain of the port has the ability to close the port under certain conditions, is that correct?

A. Yes, sir, of course.

Q. What type of conditions would that might be?

A. Well, there would be security conditions. Obviously, if we elevated our MARSEC level, there would be safety conditions. It could be for reduced visibility or it could be for very inclement weather. It could be for a particular event, like Fleet Week.

Q. Okay. Now, when we talk about areas and issues such as weather, whether it's storms or whether you use the word visibility, what would be a particularly unsatisfactory visibility condition that might strike the commander of the port or captain of the port to make a decision that there needs to be some sensitivity, maybe even restricting it?

A. Well, yes, sir, I think the pilots and navigation subcommittee of the Harbor Safety Committee have helped us frame some of those -- some of that criteria and the half-mile

visibility is one that comes out at us.

Q. But is that as of -- is that a recent, relatively recent change?

A. It is very recent, sir.

Q. Okay, that's basically as a result of this accident --

A. It is, sir.

Q. -- is that correct?

A. It is, sir.

Q. Okay. Prior to that, what policies existed?

A. Well, there was a policy, a more general policy, that if visibility throughout the transit were a half-mile or less, that was to be, you know, a criteria to consider outside of the prudent route. Now that criteria, to me, was not practicable and for that reason it wasn't being adhered to.

Q. Why wasn't it practicable then and now it is practicable?

A. Well, sir, it's a little different, it was throughout the whole route as compared to what we've now identified, if it's less than a half-mile at the dock, if it's less than a half-mile in a critical navigating area, as compared to the entire transit.

Q. So what we did was clarify it?

A. Yes, sir.

Q. Much more understandable.

A. Make it more practicable.

Q. And a much more practical application of that

characterization, is that correct?

A. Correct, sir.

Q. So an eighth to a quarter of a mile? How would the captain of the port convey that type of information to a vessel? It goes through the VTS?

A. That's correct.

Q. So in other words, the VTS is really the portal to the vessels --

A. Yes, sir, and --

Q. -- concerning policies, concerning instruction, concerning situational issues that need to be -- that the crew must be aware of when they're operating in certain areas?

A. Yes, sir. Commander Mohr can fill you in a little about how that check-in system goes, if you care.

CHAIRMAN ROSENKER: Sure. That'd be great.

WITNESS #3: Sure. The Vessel Traffic Service receives weather reports and in this instance fog reports, from all of its users and it then takes that information and you know, turns it around and gives it back to vessels who are beginning their transits. In this particular case that happened. There was a conversation that took place regarding visibility.

BY CHAIRMAN ROSENKER:

Q. And it described the eighth to a quarter-mile visibility?

A. Exactly. And I believe it was referring to visibility

around Alcatraz Island.

Q. Okay. Now, there is something that has troubled me and I want to get your answers and perhaps Captain Gugg, maybe it's Commander Tetreault, maybe it is you, Lieutenant Commander Mohr. I read something in one or two of the local papers and I want you to -- it's a rumor, I think, but I want to know what the facts are and if you folks did anything to investigate it. The rumor was that as this pilot was navigating and it began to become clear that he was going to have a problem in getting under that bridge, that some folks at the VTS made some bets that he might strike the bridge. This is what I read in the local newspapers. I can't tell you where they got it, I don't know, but I want to know if you had heard those rumors and if you did hear those, what you all did to investigate those rumors.

A. Sure, I could probably answer that. The first time we heard of that was in the Chronicle article that you're referencing and I can tell you that absolutely that did not take place.

Q. And how do you confirm that it did not take place?

LCDR. MOHR: From conversations with the people who were on watch.

A. Okay, I take them at their word. These are professionals. And I'm glad we could air that here because I think that is a terrible thing to have floating around, that professionals that are doing this work could even imagine something like that. So I appreciate your checking that,

investigating it, Commander Mohr, and coming to the conclusion that this did not happen. That's correct?

A. Yes, sir.

CHAIRMAN ROSENKER: Thank you very much. With that, with no other questions, this panel will be released and we can reconvene after one hour of lunch.

(Witnesses excused.)

CHAIRMAN ROSENKER: We'll come back at 2:20. Thank you very much.

(Whereupon, at 1:20 p.m., a lunch recess was taken.)

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A F T E R N O O N S E S S I O N

(Time Noted: 2:20 p.m.)

CHAIRMAN ROSENKER: Okay, our microphones are now on. We reconvene for the afternoon session and I've got a couple of housekeeping items that I will share with you right now. First, my Counsel, Mr. Halbert (ph.), has supplied me with a statement that I need to read to you and it deals with Mr. Mathur's appearance before this Board. He'll be here to provide factual information related to his on-scene investigative activities on behalf of the California Department of Fish and Game.

At this hearing we will confine the scope of inquiry and questions to his activities the day of and the day after the Cosco Busan accident. Because of his support of a parallel criminal investigation, I will not permit questions to go beyond the scope I've just set out for my description a moment ago. And I would instruct Mr. Mathur to avoid a response to any question that goes beyond your activities for those two days.

The report offered by Mr. Mathur, contemporaneous with his activities on those days, has been added to the docket this morning and provided to the parties in hard copy. I would urge that we confine the majority of our inquiry to issues addressed in that report. That's my statement as it relates to Mr. Mathur's appointment -- appearance.

I'd also like to say we're going to change just slightly the way we handle the questions. This is a very large panel and if in fact we just allowed the technical panel to go through all of the witnesses, I believe we could be here until 9:00 or 10:00. So in an effort to provide an opportunity for the parties and the Board of Inquiry to do some questions, we thought it might be more expeditious if we went through each of the witnesses, in that entire sequence, one at a time. Would that be okay with the witnesses? I think you will find it to be a more expeditious and an easier way of addressing all of the questions. So with that said, I will ask Mr. Henry to call the next panel and to swear them in.

MR. HENRY: Thank you, Mr. Chairman. Just one point of clarification, as we go through the questions of a particular witness, that doesn't necessarily mean that, in discovery, we can't ask another witness a question and follow up?

CHAIRMAN ROSENKER: That is correct.

MR. HENRY: Thank you, sir.

CHAIRMAN ROSENKER: But for the most part, we will attempt to keep our questions to the panelists and treat them as a panel that way.

MR. HENRY: Very good. Thank you, sir. Will the panel please rise? Please raise your right hand.

(Whereupon,

CAPTAIN WILLIAM J. UBERTI

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Please be seated. Captain Uberti, will you please state your full name and business address?

A. Captain William J. Uberti. I'm presently in the process of being retired, so my home address is 14435 Mirando Street, Poway, California.

Q. And can you tell me your last assignment with the Coast Guard?

A. My last assignment was, I was the commander of Sector San Francisco.

Q. And your duties and responsibilities in that position?

A. I was the captain of the port, the federal on-scene coordinator, the federal maritime security coordinator, the officer in charge of marine inspection, and the search and rescue mission coordinator.

Q. And could you briefly describe your education, training and experience that qualified you for that position?

A. Graduated Coast Guard Officer Candidate School in January '79 two years at Marine Safety Office Detroit two years at sea Coast Guard Cutter Decisive four years at Marine Safety Office Hampton Roads four -- then I was -- no, excuse me, six

years at Marine Safety Office Hampton Roads, with a merchant marine industry training for six months included in that four years Marine Safety Office San Diego four years at Coast Guard Headquarters as program manager for Passenger Vessel Safety and later, Port State Control four years at Marine Safety Office Miami, where the last two I was the executive officer two years at Coast Guard District 11 as the assistant chief of marine safety for the D-11 PAC area and then from there I was three years as commanding officer of Marine Safety Office San Juan, and then later, deputy sector commander and over to two and a half years as the sector commander of San Francisco. And I have all the marine safety qualifications.

Q. And Captain, do you presently hold a marine license?

A. No, I don't.

(Whereupon,

ROY MATHUR

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Captain Mathur, would you please state your full name and business address?

A. My full name is -- I'm sorry. My full name is Roy Mathur and my business address is 425 Executive Court North, in Cordelia, California.

Q. And Captain, who are you presently employed with?

A. I'm employed with the Office of Spill Prevention and Response, Department of Fish and Game.

Q. And how long have you held that position?

A. Almost five years now.

Q. And can you briefly describe your duties and responsibilities in that position?

A. I'm an oil spill responder and a prevention specialist. So every time there's an oil spill, I am one of the people called on to respond to the oil spill to quantify and to do a root cause analysis and to report on it and see the remediation, sort of a cradle to the grave thing about an oil spill.

Q. And Captain, can you briefly describe your education, training and experience that qualified you for that position?

A. I went out to sea in 1979, after the academy, and moved up just like -- as a cadet, third mate, second mate, chief mate and a captain. I came ashore in 1992 and I took on a job as a marine consultant, damage and casualty surveyor, and mainly surveyed for Lloyd's vessel inspections and damage and casualty, those kind of things. Then I moved up to Northern California, took on a job with Stevedoring Services of America. This, including loading and discharging of ships, quite like the ship, like Cosco Busan, container ships -- it's a container terminal. After that I joined California State Lands Commission, a government agency in California, and from then I

transferred into OSPR, Department of Fish and Game, four years ago.

Q. And Captain, do you presently hold a marine license?

A. Yes, I do. Master mariner, foreign going, unlimited and unrestricted tonnage.

Q. Thank you, Captain.

(Whereupon,

LIEUTENANT ROB ROBERTS

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Lieutenant Roberts, would you please state your full name and business address?

A. Yes, sir, it's Lieutenant Rob Roberts, 1700 K Street, Suite 250, Sacramento.

Q. And you are presently employed with?

A. I'm a lieutenant supervisor for the California Department of Fish and Game, Office of Spill Prevention and Response.

Q. And how long have you held that position?

A. I've been with OSPR for seven years, five as the supervising lieutenant for North Coast and San Francisco Bay Area.

Q. Could you briefly describe your duties and responsibilities in that position?

A. I'm the field supervisor for the response group in the north and we handle marine spills and pollution events, hazardous material, sometimes, and we also do the investigations for a lot of that.

Q. And could you briefly describe your education, training and experience that qualified you for that position?

A. Sure. I was a deputy sheriff in the Bay area for 11 years prior to my assignment with this and I'm currently an instructor with California Fish and Game Academy for the ICS and for the pollution manual. And I've been with the department doing nothing but OSPR for the last seven years.

Q. And, Lieutenant Roberts, do you present hold a marine license?

A. I do not, sir.

(Whereupon,

BARRY McFARLAND

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. Mr. McFarland, could you please state your full name and business address?

A. Yes. My name is Barry McFarland. My business address is 2929 East Imperial Highway, Suite 290, and that's in Brea, California.

Q. And you are presently employed with?

A. I'm presently employed by The O'BRIEN'S Group.
Q. And how long have you held that position?
A. I've been with The O'BRIEN'S Group approximately eight and a half years.
Q. And briefly describe your duties and responsibilities.
A. My duties are currently manager of consulting services, which -- coordinating our services to our clients for both training and drills for oil spill and haz materials. I also serve as one of the Qualified Individuals listed with our company in the vessel response plans that we cover for our client vessels.
Q. And could you describe your education, training and experience that qualified you for that position?
A. Absolutely. I began in the oil spill business approximately 16 to 17 years ago. I was initially employed as a contractor to the National Oceanic and Atmospheric Administration, serving as part of their scientific support team, in support of large spills throughout the country. I have an Associate Degree in oceanography and a Bachelor's of Science in aquatic biology.
Q. And Mr. McFarland, do you presently hold a marine license?
A. No, sir.
(Whereupon,

ROBERT DUDGEON

was called as a witness and, after having been first duly sworn, was examined and testified as follows:)

BY MR. HENRY:

Q. And Mr. Dudgeon, would you please state your full name and business address?

A. Robert Dudgeon, 1011 Turk Street, the City of San Francisco 94102.

Q. And you are presently employed with?

A. The City of San Francisco's Department of Emergency Management within their Division of Emergency Services.

Q. And how long have you held that position?

A. Since 2005.

Q. Could you briefly describe your duties and responsibilities?

A. As the manager of plans and operations, I oversee just that, our plans section and our operations section as well. So when there's an event, our personnel represent the city either in a command post liaison to other agencies, or staff and manage the emergency operation center. And as the planning side, we develop plans and response contingencies for all manner of incident.

Q. Would you briefly describe the education, training and experience that qualified you for this position?

A. From 1988 to 1998 I worked as a paramedic and an EMT,

including field supervisory work. From 1998 until 2003 I did medical quality improvement, including investigation of medical incidents. And then in 2003 I went to the City of San Francisco to work in their EMS agency and began expanding my scope to include the broader venue of emergency management as a whole, albeit in the medical side. And in 2005 I was recruited to come over to then the Office of Emergency Services and eventually ended up in the management position where I am now.

As far as education goes, I received my paramedic training from Stanford Foothill and my Bachelor's from St. Mary's, in management. I'm also qualified through all the levels of the incident command system and have both taught and executed those skills on a number of occasions.

Q. And, Mr. Dudgeon, do you presently hold a marine license?

A. No, sir.

Q. Thank you, gentlemen.

MR. HENRY: Mr. Chairman, the witnesses are qualified.

CHAIRMAN ROSENKER: Thank you. And thank all of you for taking the time to join us here at this hearing today. We're very grateful for your testimony and the answers that you'll share with us.

Before I turn this over to the technical panel to begin the questioning, I've asked Dr. Spencer to give us a

little bit of a demonstration of what we are talking about, at least the kind of fuel oil that we're dealing with, along with what it might look like when it comes in contact with some water. We can't obviously do a whole demonstration here, but we do have some fuel oil, the type that did come out of the ship. And we also actually have an evidence bag of the actual sample, one of the samples that was taken from the Bay.

So Dr. Spencer, you're welcome to show the viscosity and what this stuff really is. This is for folks, frankly, that have never had a chance to be -- I don't want to use the word exposed, but certainly at least have a chance to see what this thing looks like live.

DR. SPENCER: What we have up here are some samples of oil, which any of you in the room who would like to look at it can come up during the breaks and take a look and see what we have just for demonstration purposes. This is an evidence bag containing a vial, a vial of oil from the Cosco Busan spill. It's basically just a black jar. I don't know how full the jar is, probably pretty full. The bag itself is dirty on the inside and it's clean on the outside, but it's, I don't know, polluted with oil that was on the outside of the sample jar. This is a container of heavy fuel oil which we've borrowed from a vendor up in the Baltimore area and I would like to say that all of these samples have been procured properly and will be disposed off properly at the appropriate

time.

This jar is a clear Mason jar that's half full of oil. Actually this morning you could see the level of the oil and what we intended to do was to swirl this around to show you how think the oil is and how sticky it is and how it clings to the inside of the jar. All I can report is it worked very well in rehearsal, but there's not too much to see. This is a jar of water and I'll pour some oil into it.

Now, I haven't done this sort of thing since I was in college and I certainly never did it with a suit on, putting the oil in. I don't know if you could see it. When it went in it did fall down some and there's a little bead of oil sitting on the bottom of the jar and we've got about a half an inch floating on the surface. It's thick stuff.

CHAIRMAN ROSENKER: I can also attest, there is an aroma to it.

DR. SPENCER: And if you shake it up a little bit, it breaks up into a bunch of small globules of oil. And these will be up here for the rest of the day.

CHAIRMAN ROSENKER: Thank you very much, Dr. Spencer. It just gives you an idea of the kind of thing that we were working with and just a sense of how catastrophic this spill was. We'll begin with Ms. Crystal Thomas. You'll lead the questions.

MS. THOMAS: Thank you, Mr. Chairman.

BY MS. THOMAS:

Q. Captain Uberti, good afternoon.

A. Good afternoon.

Q. We have several areas of questioning that we're going -- that we'll be getting into today. So for your benefit, I'll do my best to preference each area as we proceed further down. The first area that I'd like to talk about was your position in the unified command.

A. I was the federal on-scene coordinator.

Q. And was that your primary duty on that day?

A. It'd be to coordinate the response to the spill.

Q. Okay. And as the federal on-scene coordinator, what was your role in the unified command?

A. I was the federal on-scene coordinator. In other words, there were three people in the unified command, myself, the State On-Scene Coordinator and the responsible party. So the three of us worked together to coordinate the response.

Q. And what duties does a federal on-scene coordinator hold?

A. Make sure that the response conducted effectively and safely.

Q. Okay. I'd like to talk to you a little bit now about the Coast Guard regulatory authority over open-water oil spills. What is the Coast Guard's legal authority governing its responsibilities in open-water oil spill response and

enforcement?

A. Well, the Coast Guard is responsible for ensuring that the cleanup is properly taking place. First, they look to see who spilled the oil, to see if that person or entity is taking responsibility. If they have taken responsibility, then we oversight the spill response and make sure it's running effectively, and if it's not, then we can take it over. If there is no responsible party, then the Coast Guard itself would coordinate the response to that.

Q. And how is the responsibility and the response divided between the federal and state levels?

A. Well, it's a consensus type of thing. We work together to ensure that all -- everything is done correctly.

Q. Okay. Does the Coast Guard and State of California share equal authority over oil spills or does one party have preeminence over the other?

A. I would say we work equally, but I guess the federal on-scene coordinator would have the last say on it.

Q. Okay. A memorandum of agreement between the Coast Guard District 11 and State of California exists, concerning coordinated response to oil spills, among many other areas. Are you familiar with this document?

A. Yes.

Q. Would you please just give us a brief description of what this document entails?

A. Basically, it says that we will coordinate with each other, that we'll work together, that we'll share information, that type of thing.

Q. Okay. And does it describe any -- does it give any direction for how that should be accomplished?

A. Well, I'd have to look at the exhibit here.

Q. Okay. Okay, let's move on a little bit. I'd like to talk to you about incident notification, information received, your actions and also your interaction within the unified command.

A. Okay.

Q. Captain Uberti, during our interview that was conducted on January 28th, you indicated that your first indication of the Cosco Busan allision was at around 08:37, from a phone call from Captain McIsaac. And then, similarly, you were notified that there was oil in the water via a second phone call minutes later. Upon receipt of this information, what was your initial action?

A. I walked back to our Sector Command Center and I said let's get going on this and I talked with everyone back there. They had already been informed from the Vessel Traffic Service, so they were already moving. So I wanted to make sure we had pollution investigators getting ready to go out, I wanted to make sure, since this was an allision, we had marine inspectors ready to go out, I wanted to make sure that we had the marine

investigators ready to go out, and then I wanted to make sure that the notification's been made, especially in this case now because of the bridge allision, that the state knew about this so we can look at the bridge.

Q. Okay. And then, referencing the same interview, you said that the first time you were formally briefed was at 09:27, during a conference call.

A. That's correct.

Q. Between the time that you initially went to the Command Center upon learning of the accident and the time that you were briefed, what actions related to the response did you take?

A. In that case, I was waiting to get some information back. So we sent everyone out and I was waiting to get our information back at that time.

Q. Okay. Did you remain in the Command Center to wait for the information?

A. No, I was at my desk. I was in my office --

Q. Okay.

A. -- which is right by the Command Center.

Q. And what sort of information were you waiting to get back?

A. Well, what did the find? What's the situation with the ship, what's the situation with the bridge, what's the situation with oil being spilled, that type of thing.

Q. Okay, Back to the 09:27 briefing. Written statements

provided by Incident Management Division personnel indicate that yourself, the deputy commanding officer, chiefs of response prevention and Incident Management Division, as well as other incident management position personnel and the command duty officer were all on this conference call with you. What information related to the oil spill did you learn during this briefing?

A. Well, we learned that about -- the pilots had estimated about 450 gallons of oil that was -- about 400 gallons or so were spilled. That was their estimate. The ship was at Anchorage 7 that we were getting ready to put a safety zone around it that the bridge was being checked that we needed an over-flight that we're getting ready to initiate a critical incident conference with headquarters that the OSRO was notified and the need for drug and alcohol tests, that type of information.

Q. Okay. And about how long did this briefing last?

A. Ten minutes or so. Fifteen minutes.

Q. Okay. As a result of this briefing, what direction, if any, did you provide to the personnel on the call who were actively working the case?

A. Well, we said to call the air station and let's get an over-flight as soon as possible here. We made sure that the investigators were going to send out people to do the drug and alcohol testing. The safety zone was being put around the vessel, so that was being worked on. And basically, too, we were waiting

for our pollution investigators to give us a report back of what we were looking at.

Q. Okay. At this time, did you schedule a follow-up briefing so that personnel could keep you informed of their progress?

A. I didn't have to schedule one. What they would do is they would -- if something significant happened, they would come and get me, since my office was right beside the Sector Command Center.

Q. Okay. Did you assign any specific personnel to keep you advised of information as it came through?

A. Oh, I didn't have to do that, they already were doing that. So my Incident Management Division, Lieutenant J.G. Schneider (ph.), she took command of the spill response. Eventually, what was happening here was the incident -- control of the incident was initially handled by the Command Center and as the Incident Management Division was getting all put together and all of that, it was transferring over to them, so they would run it and take it away from the Command Center.

Q. Okay. So during our interview on the 28th and then again today, you told us that following that briefing you were receiving information informally, via Command Center personnel, incident management personnel, et cetera, and that you were also dealing with your public affairs officer about a press conference that was coming up?

A. That's correct.

Q. What actions directly related to the response were you involved in between the time the 09:27 briefing wrapped up and the time the press conference occurred around 12:10 in the afternoon?

A. Well, when the press conference -- we had to get ready for the press conference, so we needed the information. So we were trying to get a number of -- an accurate number of the oil that was spilled. That was one. We were setting up the security zone. There already was a security zone around the bridge, so we were making sure that that was going to be enforced. So we were recalling resources that were other where in the sector, to come down and enforce the security zone.

Also, we had the City of San Francisco's police boat. See, during this time, we had a meeting of the Neptune Coalition, which are the law enforcement agencies here, so they were already there. So they were volunteering their services. So the police boat, the City of San Francisco police boat volunteered. They said, we can help you enforce the safety zone and security zone, which we used them to do that, too.

So we were setting up enforcement of the various security zones and safety zones. And then we were also waiting for information about the OSROs and who the OSRO was and who the QI was and all of that and we were waiting to get that information as well.

Q. So were you actively taking any of these actions to

complete the task that you just mentioned, or getting in touch with the OSROs, or were you preparing for the press briefing, or what exactly were you doing?

A. No, I was preparing for the press briefing and my people were getting all of this information and they would just provide me with this information here. And then, if I had a question, they'd answer it.

Q. Okay. So the majority of that time, that few hours or two and a half hours, was spent preparing for the press briefing --

A. That's correct.

Q. -- and getting your information together?

A. That's correct.

Q. Okay. Okay. When were you first advised of the quantity of oil spilled?

A. It was about right before the press, right before the -- the press conference was at 12:10, so I would say around 11:30 or so. It would be right before that, that I got that information about the .4 metric tons.

Q. Okay. And who provided that information to you?

A. Well, it would be my IMD personnel who got it from our petty officer that was on the shift.

Q. At that time when you learned the .4 metric tons, which equates to approximately 146 gallons, at that time, had you seen any photos of the damage to the vessel or had you been advised of

any of the reports back from the pollution investigation team regarding the oil slick that they followed out to the vessel?

A. No, I just got the amount of -- the 146 gallons is what I got. I got that there was damage to the side of the ship. I got roughly the -- they told me roughly about a hundred-feet gash by 10 feet by three feet set in. Roughly is what I got out of them. So I knew there was damage, you know, to the vessel and that's the information I got.

Q. Okay. And based on the information you had about the damage to the vessel, did the 146 gallon estimate seem to make sense?

A. Well, it depends. I mean, if most of them were ballast tanks, it would. You know, if it was -- if the hit was up high and the tank was almost empty, it would, you know. So you see, it all depends, you know, on all of that. So that was the initial information that I got.

Q. Did they provide any information regarding the location of the tear, its distance above waterline or --

A. They told me -- no, they did tell me it was above the waterline and roughly the forward part of the ship.

Q. Okay.

A. Port side.

Q. Okay. During this time between the press conference and that initial briefing, were you actively providing direction to the Incident Management Division personnel or were you relying on

them to be decision makers?

A. They were giving me information and telling me their proposed actions and then I was saying yes or no type of thing.

Q. Do they have the authority to make decisions for you?

A. Well, it depends what decisions we're talking about here. But to respond to -- to do initial response to an oil spill, yes. I'll give you an example. Like during this time, the ship requested to move from Anchorage 7 to Anchorage 9, so that's a captain of port decision. So they came up to me and said, "Captain, the ship wants to move from seven to nine," and they explained why, because of the shallow water and all of this, so I gave the order and said yes, that's fine, that they can do that. See, but to direct the response, to do the normal stuff, they can do that and just keep me informed type of thing.

Q. So they would be qualified to do those sorts of tasks?

A. Yes, yes.

Q. Okay. What rank were the personnel who were doing these tasks?

A. Well, we had lieutenant junior grades, lieutenant. The lieutenant junior grade that day, Lieutenant J.G. Schneider was running and we had a chief petty officer that were doing it.

Q. Were there other more qualified people at the sector who could've been utilized?

A. Well, I had higher ranking people that knew how to do this, but they weren't there that day. So my chief of Incident

Management Division is Lieutenant Commander Avani and he was on the East Coast at that time.

Q. Okay. You told us during the January 28th interview that you wanted to perform an over-flight of the Bay area on the afternoon of the first day?

A. Correct.

Q. However, as a result of mechanical difficulties, you were unable to do so?

A. Right.

Q. What were you hoping to gain from personally participating in this over-flight and how would it have contributed to the response?

A. Oh. Well, in order to get the overall picture, you have to see what's going on here, see. So that day it was such dense fog that you couldn't see even on the surface let alone from the air, you couldn't launch anything. So we kind of -- we had our hands tied insofar as where the oil was and trying to quantify the amount from looking at it.

You know, so the other way to do it would be to quantify the amount by actually going on the ship and figuring it out and that's what we did initially. And then, of course, we asked the state for help for that.

Q. Would it normally be you who would've gone on an over-flight or would you send somebody else to do that?

A. I could send someone, but since I was the federal

on-scene coordinator, I wanted to go myself.

Q. Okay. Are you aware that, before that time, two MSRC contracted flights, over-flights had already occurred and that the results didn't indicate that there was much benefit of the over-flights due to the fog?

A. There wasn't much. Is that --

Q. Correct.

A. I knew that they put someone up, yeah, but still, I wanted to get up, you know, and see it for myself.

Q. Okay. And then, since you were unable to get the helicopter, you indicated that you did a reconnaissance by boat around 3:00 p.m. What were you hoping to gain from personally surveying the Bay by boat and how would it contribute the response?

A. Okay. What was happening here is, after the press conference, around, let's say, 1:00 or so, I was getting reports that the oil was spreading out, see. So the initial reports were coming in, that there was oil by Pier 30-32 and over by the ferry terminals, which was in the vicinity of the incident. So that's where the oil was supposed to be, kind of thing.

But then, later on, I was getting reports that the oil was out by Alcatraz and there was oil out by Angel Island, so I wanted to actually see what was going on. And since I couldn't get a helicopter due to mechanical problems, I sent the petty officer down to the air station so he can get in the over-flight

and then I ordered one of our boats, who was just coming in, I said okay, let's go. Just take me out.

And I went down and looked at Pier 30-32, the ferry terminal and then we moved over to Alcatraz and Angel Island, and when I got off of the Angel Island area, over by the Raccoon Straits, that's where I saw a heavier amount of oil and then that gave me an idea that this was much more than the initial reports that we got.

Q. And again, could you have sent somebody else to do that or did you feel it was your duty as --

A. No, sure, I could've --

Q. -- FOSC?

A. I could've sent anyone to do any of these things, okay, but to be a good federal on-scene coordinator, it's good to see it for yourself so you have a good feel of things and that way you can make better decisions. And so that's what I was trying to do.

Q. Okay. So were you acting as the federal on-scene coordinator during the time that you were out doing your survey?

A. Oh, yes, absolutely.

Q. Okay. And at that time, were you in communication with anyone at the sector, exchanging information?

A. Well, I was on the boat and I don't think I called anything back. We just went and looked and we were out for about an hour, an hour and a half, until it got dark, it was starting to get dark. And then we came back and then I went over to the

Command Center and almost simultaneously as I got back, Roy -- we got the report from Roy and the state, so we actually got, you know, actual numbers from quantification and all of that and then that's when we started to talk.

Q. Okay. Did the Coast Guard have somebody represented at the unified command continuously on day one?

A. Yes.

Q. And who would that person be?

A. Well, it would've been Chief Mosley who was there and Lieutenant J.G. Schneider was there, too.

Q. And would they have been acting FOSC while you were not there?

A. They were acting. They were my representatives. So I was the federal on-scene coordinator, so they were my representatives.

Q. Okay. And I believe you said that was a lieutenant junior grade and --

A. That's correct.

Q. -- a MST?

A. An MSTC.

Q. MSTC. Okay. Okay. So between the time, the 12:10 press conference wrapped up, about how long did that press conference take?

A. Oh, I'd say 45 minutes or so.

Q. Okay. So between the time that that wrapped up and

about 3:00 when you left to go out on the boat to survey the area, what activities directly related to the response were you involved in and who were you in contact with?

A. Well, I was getting reports now. See, I wanted to know exactly, you know, what did we have out there, who was -- you know, who was the OSRO, who's running all of this type of thing and all of that. So I got information back that, one, that The O'BRIEN'S Group was running this and then I wanted to know what OSROs were they using and they told me MSRC and NRC. So that was very good information because they're the two best oil spill response people -- I should say organizations, OSROs, in the San Francisco area.

So that made me feel comfortable. So I got that information back and I got information back that we had so many skimmers on scene, so much boom was being deployed, this type of thing. So I go, okay, that's very good. You know, the response is moving along very well. So that type of thing.

Q. And according to the Coast Guard timeline, at around 12:48, the unified command met, set objectives and begin to coordinate a response effort.

A. That's correct.

Q. Were you involved in this meeting?

A. I think so, yes.

Q. Who was present at this meeting?

A. You know, I don't have -- there is a list of people

that were there, but I don't have it in front of me here. But as far as I know --

Q. Was the State On-Scene Coordinator there?

A. Yes, the State On-Scene Coordinator was there. And I'm trying to remember if we had representatives from MSRC. I think they started showing up in the very beginning, but I'm not sure, to tell you the truth. I can't remember.

Q. Okay. Was there anybody at that time there from The O'BRIEN'S Group?

A. No.

Q. Would this be the first time the unified command was established or was it established earlier in the morning?

A. It was established earlier in the morning.

Q. Okay.

A. What was happening was people were coming in. As people would come -- the first day, everyone's trying to get together and then this is what's happening, people were starting to come in and get organized.

Q. Okay. And what sorts of objectives were set during this meeting of the unified command?

A. Well, the first one is going to be safety, naturally. Okay, second is to try to get as much, what do you call it, skimmers available, get them on scene booming, what should be boomed, that type of stuff.

Q. Okay. I'd like to talk to you a little bit now about

the assessment and evaluation of the information that was coming in regarding damage to the vessel, oil sightings, initial spill estimates, mobilization of resources, that sort of thing. According to the Coast Guard timeline, the pollution investigation team was en route by 09:03, arrived at the Bay Bridge around 09:10, then came along side the Cosco Busan by about 09:30. They boarded the vessel around 09:47, upon receiving permission to board.

Along the way, the pollution investigation team made several reports to the sector regarding their observations. The first report was that they were following a three-foot wide oil slick from the bridge all the way out to the Cosco Busan.

A. Um-hum.

Q. Did you receive this report?

A. I don't believe I did. At that time I didn't.

Q. Okay. The second report was that they observed a small stream of oil discharging from the vessel. Did you receive that report?

A. Initially, yes. Yeah.

Q. Okay. And then the third report estimated the gash in the hull to be a hundred foot long by 12 feet tall, roughly two to 10 feet above waterline. And right before that, the team had also sent a photograph of the damage back via cell phone. Did you receive this report --

A. Yes.

Q. -- or see that photo?
A. Yeah, I got that information.
Q. So did you see the photo of the damage at that time?
A. I don't know if I saw the photo, but I got that report of the damage.
Q. At that time --
A. Yes.
Q. -- when it came in? Okay. Then, according to Vessel Traffic Services' call records from the 7th, November 7th, '07, within about 45 minutes of the allision two separate calls came into VTS from vessels who reported passing through large amounts of oil south of the Bay. One was at 08:55 and one was at 09:14. Did you receive either of these reports?
A. That information was passed at the 09:27 conference that we had here, the initial brief and all of that. So I didn't get it that instant. What happened was, when they briefed me at 09:27, they were giving me this kind of information.
Q. Okay. Later in the afternoon, additional reports of oil sightings came in from the ferry terminal, Alcatraz and Angel Island, just to name a few. Did you receive any of these reports?
A. Yeah, that was the reason why I wanted to get underway on the boat right away or get an over-flight even more.
Q. Do you recall around what time you received these reports?
A. I would say roughly after the press conference, so say

between 1:00 and 2:00, roughly around there.

Q. And when were you informed of the pollution investigation team's estimated 146 gallons?

A. That was right before the press conference, so I would say around 11:30 or so.

Q. Okay. Did you have a lot of confidence in that figure when it came back?

A. No, not a lot of confidence. I mean, I had some confidence in it insofar -- well, first of all, let me back up a little bit. In the beginning, most initial reports are usually wrong, okay, but in this particular -- the reason why I decided to use that number was because we got it from my person talking to the ship's chief engineer, so it wasn't just an eyeball thing or -- you know, so that gave me a little bit of enough confidence to use it. Let me put it that way.

Q. Did you do any analysis of the number yourself, just in your head, the 146 gallons, based on, you know, the other information that you'd received regarding the tear size?

A. Well, the tear size was big, but when you look at the tear -- when you look at it, the amount of oil that was actually spilled out of that tear was only the last three feet or so of the tear. That was the tank that was damaged, partial tank. So the first part that was damaged was a ballast tank. The second tank that was ripped all the way across was a fuel tank, but the fuel was below that level. And so the third tank that got damaged was

only about three feet, but that was above. So you really can't -- it's deceiving, you know, so you have to know if it's full or empty, that type of thing.

Q. Okay. So if you didn't know if it was full or empty at the time the report came in, could you have said that it could've been the whole amount in the tank?

A. Oh, sure. Here's what would've happened. If I couldn't get a number from anybody, then what we would've just done, we would've just said there's a potential and we would've used what both fuel tanks were, which was about 500,000 gallons. So each one of those tanks held about 250,000 gallons. So we would've said that this ship -- you know, we have a potential for a 500,000 gallon spill.

Q. When would you have said that?

A. At the press conference, if I didn't have a number, see. But when I got a number from our person and the chief engineer, then we used that number, at least initially.

Q. So if you wouldn't have had a number, you would've reported the max potential?

A. The potential, the potential, yes.

Q. Which would be the capacity of the --

A. Both tanks.

Q. -- for each fuel tank?

A. Yeah, both.

Q. Which were Port Side Tanks Number 3 and 4?

A. Two and three. Was it three and four? Yeah, three -- yeah.

Q. Okay. But simply due to the fact that you received the 146 gallon figure, that's why you used that?

A. I received it from their chief engineer, from my petty officer on scene and that's why we used it.

Q. Okay. And did that figure, the 146 gallons -- they're putting up a picture right now of the damage.

A. Okay.

Q. Did that estimate, 146 gallons, besides the damage to the vessel, did it agree with the other information that was coming in, the large quantities of oil that were reported twice, south of the bridge?

A. Well, the thing is it was very, very dense fog, so it was very hard to quantify that type of thing. And if all of the oil stayed in one place, it could be believable, see. What made it not believable later on was the way it was spreading out over everything here. But initially it could be believable.

Q. When you say stay in one place, do you mean stay together or --

A. Yeah, stay together and not spread out, that type of thing.

Q. So not stay in one location?

A. Right, right.

Q. Okay, okay. Were you aware that the pollution

investigation team -- besides reporting the 146 gallon figure, when the pollution investigation team called in to the sector, they did report the max -- the volumes of the fuel tanks at that time. Were you aware that those numbers were reported?

A. No, I don't think I got that right away.

Q. Okay. During our interview on January 28th, you mentioned, I just need to know the big stuff. In your opinion, did knowing about the oil sightings, the damage to the vessel and then the observations of oil discharging from it, the initial spill estimates received, was that all things that you would want to know? Or, when you say the big stuff, what did you mean by that?

A. Well, a couple of things here. In regards to the ship, you know, was the ship going to sink on us here, okay, that type of thing. How much oil went out? Where is the oil? Do we have the oil spill response organizations engaged type of thing? You know, are areas being boomed off? That type of stuff, that's what I had to know here, you know.

Q. Would you say in the early hours you were actively working to piece together the information as it was coming in, to try to verify whether the 10 barrel or 146 gallon estimates were accurate?

A. Yes.

Q. And how were you doing so?

A. By why what we were waiting to get. What we did was,

when we got those initial informations, we were waiting for the state person, Roy, to come back with his quantifications because that was about the only way we can do it because we couldn't sound the tanks because of the damaged gauging. So we had to -- you know, we depended upon the state and oil spill expert to get this information to us.

Q. So there was no other way to get the amount that had released without the sounding tubes?

A. Right.

Q. Okay.

A. Right. They'd have to transfer fuel, that type of thing.

Q. Okay. Did you assign anyone, any personnel at the sector, the task of monitoring all the information that was coming in regarding the oil sightings, the vessel damage, oil discharge observations, initial spill estimates? Basically, ultimately in an effort to assess the magnitude of the spill, did you assign anybody to do that?

A. That would be the IMD person, Lieutenant J.G. Schneider.

Q. And were they specifically assigned that task, to assess the magnitude of the spill as the information was coming in?

A. That was her job. I didn't have to assign. I mean, that was her position, that was her job, to coordinate all of that information.

Q. Okay. During our interview on the 28th, you also

indicated that you would expect to be informed if Lieutenant J.G. Schneider and MSTC Mosley had concluded that the spill was much larger than what was estimated initially. Did you specifically direct them to assess the information? Did they pass you any information? Did they assimilate the information to say that it was larger at any point?

A. What they did was, as the reports were coming in, they would pass that information to me. So in the afternoon, like I previously said here, when the oil was reported by Angel Island, she reported it to me. When the oil was reported over by Alcatraz, she reported it to me. So as it was coming in, she was passing the information to me.

Q. At any point, did they say to you, we have all of these reports coming in and we don't know, something just doesn't seem to be right, something's not adding up?

A. Well, they didn't have to say that. You know, you can figure that out just by the reports.

Q. Did they say that?

A. No, I didn't get it. They didn't say it in those words, no, they were just passing me the information.

Q. So basically, they were just acting as information passers? They weren't making any sort of assessments themselves?

A. I wouldn't say that. I would say they were making assessments and passing me information as well.

Q. Okay. But they didn't relay any of the assessments to

you?

A. They relayed the information to me. Okay, we can put that way.

Q. Okay. As a result of the initial low spill estimates, do you feel that you allowed lesser experienced personnel to manage the spill response?

A. Would you say that again?

Q. As a result of the initial low volume estimates --

A. Um-hum.

Q. -- do you feel that you may have allowed lesser experienced personnel to manage the response?

A. We rolled out the best people we had on scene when this spill happened, so no.

Q. Okay. Do you feel that your role as the federal on-scene coordinator during the early hours of the response was an active role?

A. Yes.

Q. How often did you meet with or communicate with the State On-Scene Coordinator or the Qualified Individual during the first day?

A. Well, the Qualified Individual on the first day didn't show up until the end of the day, I think, at our 5:00 meeting. So the state person, Rob Roberts, I met him -- I personally started talking to him, I'd say, before the press conference, at 12:00 or so.

Q. I want to talk to you a little bit now about the urgency that existed to quantify the amount of oil released. Upon learning that there was oil in the water early in the morning, did you impart a sense of urgency on personnel at the sector, to quantify the amount of oil that had been discharged?

A. Absolutely. Sure. We had them get out there right away, in order to find out what we had here.

Q. And where would you say that determining the amount of oil that had released, where did that fall on your priority list?

A. Very, very high. Very high.

Q. So would you say that was your first priority or what?

A. Well, the very, very beginning, we were worried about the bridge allision. That was the highest, I guess you would say. Okay. Then second would be getting the oil -- quantifying the oil. But all of this is being done simultaneously here.

Q. Throughout the day, throughout the morning of the first day and the early afternoon, did you make regular requests of your personnel for updates on the amount of oil released or were they coming --

A. They were coming in. I didn't have to do that. They were coming in and telling me.

Q. In the event of oil spills, is it standard for the Coast Guard to send out a pollution investigation team to quantify the amount of oil released?

A. Yes, they go out to investigate the source and to

determine the amount of oil.

Q. Okay. Are they qualified to make any sort of quantifications or is their role to talk with the chief engineer and get the information from him?

A. Well, it's both, it's both. That's one way to quantify it, is to talk with the chief engineer.

Q. But would they be qualified to do the soundings themselves?

A. No, they're not.

Q. Okay. Were you actively awaiting or inquiring about the results of the pollution investigation team's investigation?

A. Yes.

Q. Did you assign anyone to maintain contact with them when they were out on task?

A. Well, I didn't have to do that, they were doing -- that was being done.

Q. And were you aware that California Department of Fish and Game, OSPR was attempting to get a specialist out to independently quantify the amount of fuel that had released?

A. Yes.

Q. Did the Coast Guard specifically request that the state provide this service?

A. I think the state did that on their own, that they -- they weren't pleased with that initial 146 gallons themselves, okay, so they decided to do that on their own, which was fine with

us. We're all working together.

Q. Okay. And did you have any contact with the state at that point? Did you express an urgency to them? Hey, we really need to get this number.

A. What I did was, because I knew that they were sending a person out, we were waiting for them to come back and report to us. So they knew that we were -- it's a unified command, so we're all waiting for this number to come back.

Q. So while they were out making their assessments, did anybody from the Coast Guard try to get in contact with them while they were out on task, to try to get the information from them or get an update on their progress?

A. We had a petty officer with Mr. Mathur there, so they were working side by side.

Q. Did the petty officer, while they were out there, make any contact back to the sector, to update the sector on the progress?

A. That I can't remember, to tell you the truth.

Q. Okay. Are you aware of the fact that the oil spill prevention specialist and his team arrived at Yerba Buena Island around 09:35 and waited roughly two and a half hours for a Coast Guard boat to take them out to the Cosco Busan around 12:05?

A. I have a different accounting of that here. And if you'd like to, I can read it here.

Q. Okay.

A. Okay. It says --

Q. What are you reading from?

A. I'm reading from notes from my people here, that they gave me this. It says, "Sector San Francisco records indicate a different timeline in reference to the OSPR expert's transportation. Incident management personnel statements indicate receiving a call from OSPR at 10:50, asking them to contact the OSPR expert, with directions to the Incident Management Branch, because he was lost on the sector facility.

At 11:20 sector response department personnel asked the OSPR expert for assistance in the spill quantification because of the specific challenges on board the Cosco Busan. At 11:32 the Sector Command Center was notified of the need for transportation of the OSPR expert to the ship.

Somewhere between 12:00 and 12:47 the OSPR expert arrived at the Cosco Busan via our 41-foot small boat. Sector can find no records and no witnesses in the Sector Command Center, in the unified command, in the Incident Management Branch, or anywhere else, to suggest that the OSPR expert was on board the sector facility prior to 10:50 and that any type of request was made by the OSPR expert for transportation to the Cosco Busan prior to the Coast Guard asking him to assist us at 11:20."

Q. Right. And we probably want to get a copy of that to be provided to us.

A. Okay.

Q. When was that statement prepared?
A. April 1st.
Q. So it was just recently prepared based on --
A. Yes, that's right. Based on that statement coming up because the first time I ever heard that statement, that Mr. Mathur had to wait that long, was I think the ISPR report, you know, when I read the ISPR report. That was shocking. That's the first time I heard that.
Q. How many boats does the Coast Guard have available to ferry people back and forth? Would you foresee any problems getting a boat or are there a lot of boats available?
A. No, no. I mean, we have -- I mean, the station has about five boats, okay, so that doesn't necessarily mean they have five boat crews readily available, but the boats are there. So to me, that wasn't an issue, you know, getting people back and forth.
Q. Okay. Okay, now I'd like to talk to you a little bit about a fact of the pollution team's quantification and other spill estimates, what effect those estimates had on the mobilization of resources and the response effort by the Coast Guard. Was the Coast Guard's level of response on day one based on the max potential spill, the 10 barrel spill reported by the relief pilot, the 146 gallon report that came in from the pollution investigation team, or other reports?
A. The maximum spill. See, strictly because it was dense fog, we couldn't see anything, so it was the maximum spill.

Q. And the maximum spill, as we talked about earlier, would be the quantify of the breached fuel tanks?

A. Yes.

Q. How would the Coast Guard's response have been different had the pollution investigation team initially reported 58,000 gallons as opposed to 146 gallons?

A. It wouldn't have been much different except for maybe I would've called out the Pacific Strike Team sooner. We ended up calling the Pacific Strike Team out at the end of the day when we had the 58,000 gallon number. So other than that, all the resources were rolling out in San Francisco as fast as they could be rolled out.

Q. And what sort of resources did the Pacific Strike Team have that could've assisted?

A. Well, they would've helped us in the unified command, just in the staffing levels that we would've needed there.

Q. Do they have any response resources?

A. They do have response resources here, but since the OSRO was moving all of their equipment into place immediately, it wouldn't have been necessary right away.

Q. Okay. Did the Coast Guard use those smaller estimates, the 10 barrel or 146 gallon estimate, to gauge whether the oil spill response organizations' response was adequate?

A. Well, the QI was rolling out the equipment as if it was a very large spill, so it really didn't matter what the initial

reports were.

Q. Are you aware if yourself or anyone else at the sector had provided those initial smaller estimates to any of -- either of the two oil spill response organizations or The O'BRIEN'S Group?

A. That I'm not sure about. I can't tell you.

Q. Okay. As far as communications with the oil spill response organizations go, did the Coast Guard have any role in directing the deployment of their response resources?

A. We called them to verify that they were going to move on this and they were, okay. And then, because of the dense fog, what was happening was the skimmers were coming out and they were trying as best they can to find any oil in all of that. So in the very, very beginning it's hard to deploy them. They were just looking for spots of oil and then skimming as best they could in the very beginning.

Q. Okay. Was the Coast Guard kept informed of the status of their activities?

A. The incident management team was. Yes, the Incident Management Division was.

Q. And were they in direct contact with either of the two organizations?

A. They were talking with MSRC, yes, and NRC.

Q. Okay. So would they be the -- would the Incident Management Division be the personnel who were assigned to stay in

contact with them?

A. Yes.

Q. Okay. And does the Coast Guard normally monitor response activities to make sure that the level of response is appropriate?

A. Absolutely. See, in this case the Qualified Individual, The O'BRIEN'S Group, took responsibility for the spill, so it's their responsibility then to coordinate the response and our responsibility to make sure that they're coordinating it properly, and so that's what was happening.

Q. And how comfortable were you with the level of response that occurred on day one?

A. I was very comfortable, to tell you the truth, I was very comfortable because a lot of equipment was being rolled out. At the end of the day, I believe we had eight skimmers, about 20 support boats, we had three or four areas in the port boomed off, and recovered about 8,000 gallons of product. So that's like amazing for -- even if it was clear weather, that would be amazing. So that was an excellent, excellent response.

Q. Okay. And then one last area, just contact with some local people, Did you or anyone at the sector notify the surrounding cities or counties in the Bay area, of the spill on the day of the allision?

A. Around 12:00 or so, my deputy was over in San

Francisco attending a conference over there, and so when this happened, they did notifications over there. But the job for notifications is the state Office of Emergency Services. That's their job to do the notifications. So as long as they're notified, then it's done.

Q. So the Coast Guard's not required to make those notifications, correct?

A. That's correct.

Q. It's up to the state Office of Emergency Services?

A. That's correct.

Q. Okay. That's all the questions I have. Thank you, Captain Uberti.

A. Thank you.

BY MR. TRAINOR:

Q. Captain Uberti --

A. Yes?

Q. -- I just have a few follow-up questions. I'm going to focus on the -- excuse me -- the timeline of events here.

A. Okay.

Q. Was your pollution inspection team the first group of Coast Guard personnel to board the vessel?

A. Yes.

Q. And they boarded the vessel at 9:50. Now, you also mentioned a second group of personnel sent out to the ship?

A. Marine inspectors and investigators to check the

damage and to find out, you know, what caused -- the cause of the collision, or allision.

Q. What time did they board the vessel?

A. Let me check here.

MR. TRAINOR: While Captain Uberti is looking for that, I would ask that the photo of the vessel be put back up on the screen.

THE WITNESS #6: It was at 10:56.

BY MR. TRAINOR:

Q. That's the time they boarded?

A. The sector investigating officers and the marine inspectors were on board at 10:56.

Q. Now, do you know if they were able to see the damage to the vessel prior to boarding the vessel?

A. Oh, yeah, sure.

Q. Did they report back to the sector command, the extent of damage? What time did you receive a report from them about the state of what was going on the ship?

A. From them, I didn't get a report back until probably right before lunch, right before the press conference, so before 12:10.

Q. Now, one of the marine inspectors you mentioned was to survey the damage. My guess is that that investigator would've realized that there were two fuel tanks breached. Is that a fair statement?

A. Yes.

Q. So when was that information received by you, that two fuel tanks had breached, about what time?

A. I would say, to get that specific information, probably in the afternoon sometime. It was after the press conference, after the 12:10 press conference, roughly.

Q. And again, about what time were you notified of -- given a description of the damage? The pollution inspection team indicated that they had made a report about the damage to the vessel. Did the group of marine inspectors also follow up with an additional report?

A. Well, yes. I mean --

Q. A verbal report?

A. Right. Yes. See, what they did was they would report -- you can tell by looking at that. They would report an estimate of the damage and what's pushed in and all of that. But what you don't get from that is that two fuel tanks are damaged. You know that the damage goes across that area, but you're not sure until we actually look at the plans, talk to the chief engineer, get into all of that, exactly, you know, what bulkheads are broken, you know, this type of --

Q. Now, aren't the fuel tanks on a cargo vessel normally along the side of the ship as well as the bottom of the ship?

A. That's correct, yes.

Q. If you saw that damage, would you think that there

was a good chance of possibly one or more fuel tanks might've been breached?

A. You would know. You can tell by looking at that, that at least one is, yes. Okay. But you couldn't tell if two were or not. You can tell at least one was.

Q. The thing that has bothered me from the very beginning in this accident is that this damage was known pretty early on and I don't get a sense that that registered with many people, in terms of particularly when this amount of 146 gallons or 10 barrels was reported back. Would that have caused you to wonder at all?

A. No, but let me explain something to you here. This picture that you're looking at here is deceiving because that's what it looks like after everything's been cleaned up and all of that. But when that ship hit the bridge -- I should say when that ship hit the bridge fendering system, half that fendering system was stuck inside the side of that bridge. I mean on the side of that ship. So it didn't look like a nice, clean thing that you're looking at right now. It would've had all kinds of wood shoved in there and that type of stuff. Plus the fact that our calculation showed that the initial discharge from that allision was at about 15 seconds or so. A majority of that tank was empty and all of that, see. So again, you know, unless you got there within the first 15 seconds or so, you're not going to see all of this stuff gushing out, that

type of thing, see. So it's a little misleading. You're looking at a cleaned up picture here.

Q. Would you have expected 146 gallons or 10 barrels of fuel oil to cause the degree of dispersion and oil in the water that was being reported that morning?

A. In the morning, the oil was being reported in the area of the allision, that type of area, 30-32 and all of that. So that was believable in the morning here. What made it more unbelievable was in the afternoon, when it was up by Alcatraz and up by Angel Island.

Q. And as the pollution team was going out to the vessel, they observed a three to four-foot width of a stream of oil and as I understand it, they reported that information back to the sector. Did that information reach you?

A. I didn't get three to four feet. I didn't get that information, no.

Q. I just want to verify again. In terms of notifications to the surrounding jurisdictions, that was not the responsibility of the Coast Guard, correct?

A. Under the area contingency plan, the state Office of Emergency Services makes those notifications.

Q. Okay. Now, you stated that your deputy was in the city and did pass that information to a city official.

A. In the beginning, yes.

Q. Do you know which city official that was?

A. It was someone from the mayor's office because he was attending, I think, a council meeting in San Francisco.

Q. And do you know about what time that information was conveyed?

A. Oh, I'd say roughly before the press -- around noon or so.

Q. And at that point, you were still -- were you still going on the 10 barrel or 146 gallon amount?

A. Yes.

Q. And do you know whether that amount was -- that quantity was conveyed to the city at the time?

A. You know, I can't say for sure on that.

Q. Okay. Thank you, that's all I have.

CHAIRMAN ROSENKER: Thank you very much, Mr. Trainor. Mr. Stancil, any questions?

MR. STANCIL: No, sir, I have no questions.

CHAIRMAN ROSENKER: No questions. Mr. Roth-Roffy?

MR. ROTH-ROFFY: No questions, sir.

CHAIRMAN ROSENKER: No questions. Okay, we'll move to the parties and we'll start with the American Pilot Association.

CAPT. WATSON: Mr. Chairman, yeah, we have a couple questions.

CHAIRMAN ROSENKER: That's fine.

BY CAPT. WATSON:

Q. Captain Uberti, originally you'd referred that you received the information from a relief pilot, about 450 gallons of spill, is that correct?

A. Yes.

Q. And who was that? Who reported it?

A. You mean his name? It was the relief pilot who relieved Captain Cota, so I don't know his name.

Q. Okay. Did you talk to him yourself?

A. No, he passed that to the Command Center.

Q. Okay.

A. I should say to the VTS, who passed it to the Command Center.

Q. In your communications with those people, did he describe how he determined the amount of oil?

A. No, I think he just -- through his eyeball. He was watching it. He looked at it.

Q. Just eyeballed it?

A. Yes.

Q. Did you say that you placed faith in the chief engineer's estimate of the 146 gallons because it was not an eyeball --

A. Right.

Q. -- estimate?

A. Right.

Q. Are you aware that the pilot has told the

investigators that he repeatedly told the people asking him how much oil was spilled in the water, that he repeatedly said he didn't know? He was being pressured to give an amount, but he repeatedly said that he did not know.

A. No, I didn't know that.

Q. Okay, thank you, Captain.

CHAIRMAN ROSENKER: Thank you very much. The next opportunity will be the Fleet Management Limited. Thank you. No questions for Fleet Management? California Board of Pilot Commissioners?

MR. MILLER: No questions.

CHAIRMAN ROSENKER: No questions. Sperry Marine?

MR. HUGHES: No questions.

CHAIRMAN ROSENKER: U.S. Coast Guard?

MR. WHEATLEY: Thank you, Mr. Chairman.

BY MR. WHEATLEY:

Q. I just have a couple of questions for you, Captain Uberti. There's been a lot of discussion about notice to the various entities involved in this oil spill. You mentioned that the Neptune Coalition was taking place on board Coast Guard Island on the morning of the spill. Who are the members of the Neptune Coalition?

A. Usually it's the local county sheriffs' organizations type of thing, along with the state and the highway patrol, OSPR and then the state highway patrol.

Q. Would that typically include the City of San Francisco or the County of San Francisco?

A. Yes, Sergeant Joe Lopez is the representative for the city and he was there that day.

Q. Oh, he was there that day?

A. Yes.

Q. Do you know if he was aware of the oil spill?

A. Yes, he volunteered the boat, his boat.

Q. What time of day was that, that you were told?

A. I'd say around -- between around nine, 10:00, around that time.

Q. Thank you. I have no further questions.

MR. WHEATLEY: Thank you, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you very much, Captain. And finally the California Department of Fish and Game?

CAPT. HOLLY: Yes, sir, I have one question for --

CHAIRMAN ROSENKER: Feel free.

CAPT. HOLLY: -- Captain Uberti.

BY CAPT. HOLLY:

Q. Captain Uberti, good afternoon.

A. Good afternoon.

Q. Just one quick question. Have you ever heard the term reasonable worst case?

A. Yes.

Q. How does that play in with how a responsible party

would respond to an oil spill?

A. Well, under the rules here, they have to get their response equipment in place, for federal rules, within six hours and for the state rules, within two hours, on scene. So I think it was 250 barrels capacity which had to be in place and we had much, much more than that in place within two hours.

Q. So just to follow up. So from the beginning, the responsible party, the QI, the OSROs are all responding to the spill as if it were a 200 or 2500 barrel spill, whatever you said.

A. Well, much more than that, much more than that.

Q. Okay, thanks. No further questions. Thank you.

CHAIRMAN ROSENKER: Thank you very much. We'll now take the Board of Inquiry's questions and we'll start with Mr. Osterman.

BY MR. OSTERMAN:

Q. Captain, I just wanted to make sure that I had a very basic understanding of the sequence. You got information from your officer on the scene, from the chief engineer, that it was 140-odd gallons, just before the press conference around 11:30, right?

A. That's correct.

Q. Okay. And when in the afternoon did the fog lift sufficiently for aerial observation?

A. I would say around 14:00 or so, it did.

Q. Okay. And at what time did you and the Command Center realize the magnitude of the spill, based on the calculations that had been done?

A. Well, okay, the calculations, I didn't get the calculations until around 17:00, around 5:00.

Q. Five o'clock?

A. That's when I got the calculations. I went out on one of my small boats, I would say between 2:00 and 4:00, around that time, to quantify it myself.

Q. Okay, that's all. I just wanted to make sure of that sequence.

CHAIRMAN ROSENKER: Thank you, Mr. Osterman. Captain Spencer?

BY DR. SPENCER:

Q. Thank you. Captain Uberti, are there oil spill contingency plans for San Francisco Bay?

A. Yes, absolutely.

Q. And how are those plans developed?

A. They're developed through area committees. We have three area committees in San Francisco, a northern, a central and a southern one, okay, and the committees meet and they put the plan together. And the plan is revised -- well, it's looked at every year, for minor revisions, and every three years it's up for major revision.

Q. Okay. Do these plans employ the use of spill

scenarios or something like that?

A. Yes, it has worst case scenarios in there. It lists all the oil pollution response equipment, all the OSROs. It has strategies in there for booming. Everything is in the plan.

Q. Do they get into details such as extreme fog?

A. I don't believe fog is addressed in the plan.

Q. Okay. In these plans, is there a sequence or some sort of a checklist for notifications and response that people can refer to?

A. Yes.

Q. Okay. And so during the course of this, what I heard earlier, there was a lot of -- I won't call it confusion, but there was at least some uncertainty as to what quantity was spilled, that perhaps a little bit [of uncertainty] as to who was doing what. And what I'm wondering about is, as you go through a checklist and check things off, how do you account for conflicting information or areas where you don't have information that you need to make a decision, and how does that affect moving on and continuing with other aspects?

A. Well, what happens is we set up a unified command, so between myself and the state and the responsible party representatives here, we get the information and we come up with, you know, a strategy based upon that.

Q. Okay. That's all my questions. Thank you, sir.

CHAIRMAN ROSENKER: Thank you. Mr. Henry?

BY MR. HENRY:

Q. Captain Uberti, you started off, in one of your earlier responses, talking about the crew drug testing that was done initially. Can you provide a little more detail on that, please?

A. Okay, the responsibility for the drug testing is -- and alcohol testing is the ship's responsibility, and the Coast Guard's responsibility is to make sure that they do it. Now, what happened here was our investigating officers got on board and they themselves did the alcohol testing immediately, right away for the people that had to be tested. So that was done right away. The drug testing was done -- the investigating officer went back later and -- well, he called the agent and told him to get them drug tested, the ship -- the crew member that required -- the master and the crew member that required it.

Now let me just back up just a little bit here because Captain McIsaac called me on his initial phone call and he told me that he was going to take care of getting the pilot drug and alcohol tested himself, so I didn't have to worry about that, and that was done. Okay. So to get the drug testing done, what happened was our investigating officer called the agent. The agent said yes, I'm going to get it done. He met the agent's rep on board the ship and he looked

at all the bottles that were going to be done and he asked, now are you going to test the master and the crew that are responsible? And the answer back to the investigating officer was yes, I am.

So he watched them test the master, okay, and then he went off and took care of some other investigating officer work. Okay. And then what happened was about a day went by and he called the agent and said, send me the chain of custody so I can see, you know, if everyone was tested correctly, and when he got the chain of custody, it was just for the master and not for the rest of the crew. So the ship failed to get the rest of the crew properly drug tested, so he immediately told the agent to get them back on board and get the drug testing done, and that was completed.

Q. Was that drug testing done within the specified time per the regulations?

A. That missed the window on that. So you have 32 hours, I think, to get it done and it was done about a day past that.

Q. So you said that the vessel operator is responsible for the people on the vessel, but that doesn't include the pilot. Now, what was done with respect to the pilot?

A. The pilot association took care of that themselves.

Q. And was that done in accordance with the regulations?

A. Yes.

Q. All the drug testing result was --
A. Negative.
Q. -- negative?
A. Negative for everyone. And alcohol for everyone.
Q. What's the regulatory cite that discusses drug testing in this situation?
A. I haven't got that.
Q. 46 C.F.R.?
A. It is 46 C.F.R., but I don't have that in front of me.
Q. Who made the decision that the appropriate people were designated to take drug testing?
A. That would be my investigating officer.
Q. And was that concurred with at a higher level? Were you involved in that agreement?
A. I didn't get personally involved in that.
Q. The regulation for individuals directly involved in a serious marine incident -- and I believe this qualified as a serious marine incident -- reads that it's an individual whose order, action or failure to act is determined to be or cannot be ruled out as a causal factor in the events leading up to or causing a serious marine incident.
A. Um-hum.
Q. Does the Coast Guard have a policy in place on the testing of Coast Guard personnel who may fall under this

category?

A. I was not aware of any policy whatsoever concerning that, concerning testing the Coast Guard people. So no.

Q. Is there a policy in place?

A. The Coast Guard personnel manual does authorize the commanding officer to test people if he believes that there's -- you know, if he believes that there's a reason to test them for drug testing.

Q. And the commanding officer would've been in this case?

A. Me.

Q. So the VTS operator was not drug tested or --

A. No, because I had no reason to even think that they had anything -- first of all, that they did anything wrong, and second, that there was an issue at all.

Q. Did you have any reason to think that the crew or the pilot had done anything wrong?

A. Well, see, but the federal regulations there specifically tell them to do that. That's a different story.

Q. Okay, that's all I have, sir.

CHAIRMAN ROSENKER: Thank you very much.

BY CHAIRMAN ROSENKER:

Q. And Captain Uberti, we're just about ready to complete this and I know you'll be pleased. You had a long and productive and successful career in the Coast Guard and I thank

you for that service. I just have a couple of brief questions and then we'll move along to the next witness.

First, do you have any idea, based on the initial crew you sent out, these are two, how would you characterize their grade and their --

A. They're petty officers.

Q. They're petty officers, okay. So they've got four to eight years in the service, something like that? Okay.

A. Roughly.

Q. Okay. And they boarded the vessel and they then went and talked to folks on the bridge and then also ended up with the chief engineer. Do we know the language skills of the chief engineer and was it clear what was being asked and how the chief engineer made this assessment?

A. They told me that they were -- they experienced a language barrier there. There was a language barrier there, so they did the best they can do in communicating with him.

Q. Okay. And do you also -- did you also know that someone, Captain Mathur, had been dispatched from the California Department of Fish and Game to do an assessment as well?

A. I knew that, yes.

Q. Okay. Did you know he was down at the pier, at the dock, waiting for some kind of transport?

A. No, that I didn't know. I knew that Rob Roberts was

sending an oil spill expert out there to help quantify this and all of that. But this business about waiting, that never came up to my level.

Q. Okay, I appreciate that. And again, I thank you for you joining us here today and I have no more questions from you, Captain Uberti.

CHAIRMAN ROSENKER: We'll move to the next witness.

BY MR. STANCIL:

Q. Good afternoon, Captain Mathur.

A. Good afternoon.

Q. According to the timeline that you provided to NTSB at your March 11th interview, you arrived at Yerba Buena Island at 09:35 on November 7th?

A. Approximately, yes.

Q. And what was your purpose for being there?

A. My purpose for being there was a call from Todd Ajari (ph.). He's a warden quite like -- he's a junior warden. He's Rob's junior. He works for Rob and he's a warden. The way it works in OSPR is, when you get a call of this kind, this accident, you have what's called an FRT, first response team. And there are three people here, a warden, an OSPS like me, and a biologist. All three respond.

That morning, I was on my way to Oakland to inspect a ship when I received this call from Todd. Todd Ajari got his information from Rob Roberts, right here, so he called me right

away and I was just about two or three miles away in Oakland, so it was quite easy for me to make a detour and get to site very, very quickly. And that's how I managed to get there that quickly. Ordinarily, it would take me a little more time than that.

Q. Okay, fine. What were your instructions concerning getting an oil spill quantification from the Cosco Busan?

A. Essentially, my instructions were ship has collided with a bridge. There is an oil spill. We need you to go and quantify. And the usual thing that we do, root cause analysis, both of them together, and so I immediately headed down to YBI, got there on site and I was all set, ready to go on the ship to do a quantification and the root cause analysis.

Q. Were you directed to only report your quantification to any particular individual?

A. No.

Q. Is there a protocol used by your organization, as to how you report your quantification?

A. Yes, there is.

Q. Could you explain that, sir?

A. The protocol is, when you get your figures, when you get your quantity of oil spilled, you do not give it to anybody except the SOSC in this case, Rob Roberts. And there's a reason for it. If you give it to the wrong parties or it gets in the hands of people who are not supposed to get it, it can

get leaked to the press and it can get exaggerated, exploded out of proportion and things that like that, and it has happened in the past. The way to do it is you funnel it up through your SOSC, who then takes it to the unified command and then they're the ones who release it to the public, to the press and whoever else they feel like.

Q. What is OSPR's rationale behind quantifying oil releases?

A. The rationale would be, well, we respond to the worst case scenario, always. And then, as you get the right quantity, you can scale up or scale down your response. And that really is quite a different matter from quantification. Quantification is one side. Spill response essentially is run by the wardens at the SOSC, the unified command level, and that is quite unrelated. I am doing my quantification. We are doing a quantification. They are responding on their own to the spill, to the worst case scenario, anyway.

Q. And what was your urgency in getting an oil release quantification back to the State On-Scene Coordinator?

A. You mean after the quantification, after the --

Q. What was the urgency to you to get this quantification, getting it back to him?

A. There was a fair urgency. See, you have planned ships loading and discharging quite like Cosco Busan, so I know the configuration of these ships. You do have fuel tanks on

the wings, usually large wing tanks, lots of oil. When a ship leaves California and it's going to the Far East, you know the bunker tanks are full, swollen. Usually you've got a long voyage ahead of you, so there's a lot of bunker on the ship.

So when you know that the ship has collided with a bridge and the ship's side is split open a little bit, a few things run through your mind immediately. Is the split on the top? That would mean less oil has leaked out. In the middle, more. At the bottom, a lot of oil has leaked out. Is the ship stable? Is she going to sink? Is she going to keel over? All these thoughts are in your mind and therefore the urgency. You would like to get on board and see what's what.

Q. Was anyone besides the SOSC, Lieutenant Roberts, waiting for your quantification, that you knew of?

A. Not that I know of.

Q. Did the Coast Guard also ask you to conduct a quantification of the oil spill?

A. Not really, no.

Q. You heard the statement just read by Captain Uberti, where the Coast Guard -- the statement is that the Coast Guard asked for your assistance at 11:20 and then arranged for transportation to the ship at 11:32. Do you agree with that statement?

A. 11:20, 11:32? I don't quite agree with that statement. We left YBI closer to noon, right after that. So

about 11:30 or so, I think I was still standing with my lifejacket on right at the dock, trying to get a boat.

Q. Do you agree that the Coast Guard asked you to conduct a quantification? Did they ask for your assistance?

A. They did not -- nobody from the Coast Guard asked me for a quantification. Rob Roberts, definitely, Todd Ajari, for sure, the other warden with me, but nobody else really asked me for a quantification. And well, my presence there itself means that's what he's going to go out there for. That's my job.

Q. So you previously explained to us that you were prepared to depart almost immediately upon your arrival at 09:35?

A. Quite right.

Q. How did you arrange for a boat to get your team out to the ship?

A. There are two or three of us who were there and Todd Ajari, the warden, he left on his own to the other part of YBI, to ask I think the other officers and the petty officers there, if he could get a boat and try and push the matter. I left and went towards the dock to see if I could talk to somebody there, that's where the boats are, and see if I could get a boat right there. You know, perhaps I might get lucky there. And there was a trainee with Todd Ajari, a warden. He tried a little on his own. And then we met repeatedly and none of us had any success in getting a boat. But don't get me wrong.

The thing is the Coast Guard, they do so many things, so very many things and in a case like this, they're so busy, nobody's really waiting for us and you know, with a boat waiting for us to hop on board that doesn't happen. In the past, every time we respond to the Coast Guard, we talk to them there's a boat arranged. There isn't this urgency usually in the spills that we respond to and it's quite easy and comfortable for us both, the Coast Guard and us, to get on the same boat, leave, do our thing and come back.

In this case, all the boats were out. Some boats were -- I think they were doing the recon. There was another by the ship. There was another circling the ship. So everybody was doing something and that's why we couldn't get a boat. So although we requested a boat, we were -- and I think they were very honest about it. They said hey, as soon as we can get you a boat, we will. But all the boats were occupied. They were all doing their thing.

Q. So according to your timeline, the first response team did not depart Yerba Buena Island until about 12:05 p.m.?

A. Us. Yes, us.

Q. Your group?

A. OSPR, yes, we didn't depart until about 12:05.

Q. And so it took between 09:35 and 12:05 to get this boat?

A. I think, yes, that will be right.

Q. How many times did you check on the status of the boat that was supposed to come and get you?

A. Well, personally, maybe once or twice or thrice is what I did. Todd Ajari did it a lot more. And then we both started calling private parties, other people who had private boats, just to try and see if we could expedite the whole thing and get a boat. If the Coast Guard couldn't give us one, we'd try and get one on our own. So we used this time to try and get other boats and I know we all tried very hard, but everybody seemed to be busy or very busy.

Q. Did the State Department of Fish and Game have any of its own boats that could've been used?

A. Not at that time. None.

Q. None in the area or they just don't have any?

A. I heard there was one in the area, in Fremont, which is about an hour and a half away. So when we thought we could -- and this was a personal boat. So I thought, if we could get that, that'd be at least an hour and a half. But in the meantime, I was quite confident the Coast Guard would give us a boat in that time. So we kind of nixed that and stayed with the one the Coast Guard was going to give us.

Q. Did you communicate with anyone else at the Coast Guard, your supervisor or anyone, that your mission was being delayed to get to the ship?

A. I don't think so. No, I did not.

Q. Do you remember going to the Coast Guard's Incident Management Division --

A. Yes, I do.

Q. -- later that morning?

A. Yes.

Q. And what were you doing there?

A. I went in briefly to see if we were -- I could see somebody and meet somebody whom I could ask for a boat. And everybody was very busy at that time, so I gracefully took a step back and went back to the dock and let Todd try to arrange for a boat.

Q. Did you observe any oil in the water or receive any reports of oil in the water as you were preparing to depart for the ship?

A. I did not see any in the water. I did hear Todd Ajari, who took a quick dash, apparently, he heard there was oil at ferry building, which is no more than five or ten minutes away. So apparently, he dashed up and came back and I didn't even know he was gone. He came back and told me, we saw a lot of oil around ferry building. That's all I know. That's all I was told.

Q. Okay. So at 12:05 you're on the boat, heading toward the Cosco Busan?

A. Correct.

Q. Did you observe any oil as you traveled out to the

vessel?

A. As we approached the vessel you could still see -- you could see sheening and you could see a little -- a few globs of oil go by with the current. Yes, you could.

Q. Did you observe the damage to the ship?

A. No, we did not. I did not.

Q. Okay. So when you finally arrived on board, you checked in. Did you have any difficulty communicating with the chief engineer or any of the crew?

A. I did not really have any trouble communicating with the chief engineer, but I'd like to qualify that. I don't speak Chinese and he doesn't speak very good English, but all we were doing is talking technical jargon. Everything here was technical. We didn't really have to talk to each other, as such, about this and that. But it's all about sounding, gauging, strapping, interpolation. Everything that he understands, I understand, and if he didn't understand, all you had to do was ask each other once or twice and you could clarify it. That's what I did. And I didn't really have too much problem with the chief engineer. He didn't speak -- I'm sorry?

Q. Go ahead, sir.

A. He didn't speak English as well as the master did, but it was good enough.

Q. Okay. Was he able to tell you which of the tanks had

been breached?

A. Yes, he did.

Q. Which ones?

A. He told me that three port and four port were breached. He was sure of it. Five port he wasn't sure of, whether it was leaking or not. Two port is a ballast tank and he thought that was breached as well.

Q. So he assisted you in calculating the amount of fuel that was lost?

A. Yes, he did.

Q. And how were you able to do this calculation? Could you explain the process?

A. Well, this was in three phases and I'll break them into the first, second and third phase. As soon as I got on the ship, I introduced myself to the captain, asked a few questions and then I told him, let's have the chief engineer up here. I want to go down and quantify. And this was all within a few minutes. So the chief engineer came up, we shook hands and I said, chief, let's go down and let's quantify.

We went straight down into the engine room and I said, five port, you're not sure about it. Call an oilman. One of the oilmen came in and I said, hang on to this tape. Start taking soundings of five port. Don't leave this place. I want to know whether oil is leaking out or not. Every two minutes I want a report of whether the sounding is going down

or not. So we left the oilman there, went on to four port, gauged it, went over to three port, couldn't gauge it, it was broken, it was really mangled, smashed in.

I thought, perhaps we could do it from the manhole, so we opened up the manhole and that was looking into the ocean, again, so you couldn't get anything out of that. Air pipe completely broken. There was no way out except the gauge, the electronic gauge. So we did our soundings here, took our soundings of four port. We knew where to go for three port, upstairs. That's where the electronic gauge is. In the meantime, he had transferred oil from tanks into a third tank the chief engineer had, so we gauged that tank as well. And then we went up to gauge three port from the electronic gauge. And all this was -- it didn't take took much time, really.

Q. How long did the process require?

A. I'd say no more than 25, 30 minutes.

Q. And how did you calculate the amount of oil that was missing? You had the figures from your soundings. What did you compare them with?

A. We had the previous day's soundings, the reserves on board. Every ship, before it departs port, has to give ROB to their owners, to people like Captain Aga, to the operators. What is the fuel you have on board? And that is a very formal sounding, very formal table that gets faxed, emailed or whatever. I pulled that out from the chief engineer. He

handed it to me. That was a starting figure. With the soundings that we had, that we took that morning, a few minutes ago, we have that here. We just subtracted the two and you get the final quantity.

Q. And what was the quantity that you calculated?

A. Two hundred and nineteen cubic meters, which amounts to 58,020 gallons.

Q. Okay. And what time was your calculation available? When did you finish this process?

A. You know, I know in my testimony I said about 1:35 or so. It's close to that, 1:35, 1:45, somewhere right there. Remember, this time you want to do three, four, five things all at the same time, so you're not really logging down your timeline, as such.

Q. Okay. At that time, did you immediately inform anyone of your quantification?

A. No, I did not. Right after I got my quantification, I told Todd Ajari, the warden, we got the figures. Let's go, call for the boat. And he did. He got on his phone and he started making his calls. I told Todd, you know, in the meantime, before the boat comes in, I'm going to go back to the captain and ask him some more questions. Remember, we do quantification and we do root cause analysis. For this, you need all the questions. You need to ask the master and the crew as many questions as you can. So that's what I went back

up for, while Todd tried to arrange for a boat back.

Q. Why didn't you immediately report the quantity back to the unified command?

A. You know, to report a quantity like this, you usually don't want to call it in. We don't usually phone in. You want to go in there, explain to your SOSC how you got the figure, the methodology, your calculations, your figures, you want to put it all down in front of him. And the rationale is, once I give him these figures, this was good as gold. This is what he takes to the bank. He can release it to the public, to the press, to everybody, so this better be right and for him to be confident that this is right. This is a man-to-man thing. This is what we do, we get together and I explain it to him very carefully, how I arrived at this figure, so that he knows that this is what he can run with. That's why I didn't really call it in and I was waiting for a boat to take us back, which would be no more than a half an hour.

Q. And your timeline indicated that you disembarked the Cosco Busan at 15:00?

A. Yes.

Q. And you returned to Yerba Buena Island. That was approximately one and a half hours after your spill quantification was completed?

A. I'd say that's right.

Q. What was the cause? You mentioned that you were

questioning the captain. Is this the cause for the delay in your departure?

A. Definitely not. I still had a lot of questions to ask the captain. When the boat did arrive, I could've asked him even more, but the whole thing was to get into the boat. So no matter what, if the boat came, I was going to leave my interview, my investigation and get into the boat.

Q. So then, according to your timeline, at 16:00 you advised unified command that the quantity of oil spilled was 58,020 gallons. Was that report made directly to the SOSC?

A. Yes, it was.

Q. Did you report those figures to anyone else?

A. You know, when I came back to YBI, I was looking around for Rob. He was somewhere there. So I called him and I think he was about 50 feet away. I said, Rob, where are you? This is where I am. I said, I'm coming there. On the way down I met Jessica Schneider and yeah, at this time the petty officer, the investigation petty officer who was with me, I think we parted company at this point -- Lucas Martin -- so he was with me right through, right from the time we boarded the vessel, the boat, the vessel, off. This was the time that he went away and I told Jessica, it's quite a big figure, you know? And then I went looking for Rob Roberts, met with him, explained to him just like I said, the methodology, how we calculated it. This was the figure. That's when I gave it to

him.

Q. And how was your quantification report received at the unified command?

A. I suppose it was mixed and I think they did exactly what they're supposed to do, they went back, they wanted to think about this, prepare the plan, start planning on this. So they all went into a huddle mode and started working it out with each other. And at that point, I was -- I got busy with my own team, about talking to them. I don't really remember about what. But they moved away and I remember quite clearly Rob Roberts and Captain Uberti and others started discussing what to do, how to do it and there's an animated conversation amongst them. I wasn't privy to that.

Q. Okay. You advised us that you returned to the Cosco Busan the next day, November 8th, to repeat the tank soundings and confirm your calculations?

A. This is normal, yes.

Q. What did you find?

A. I found -- well, the first day, when we quantified it, remember, ships are always down by stern. That's how they're designed to be even keeled. Or slightly down by stern, since you have all the suctions and the pipes and the piping on the aft of the tanks. That's how the design is. In this case, the first day, the ship was down by head because she'd lost oil and it had dipped the ship down by head. This is a fairly

normal condition.

Also, since they'd lost oil from the port side, the left side, she tilted, listed to the starboard a degree and a half. So in this quantification, the calculations, it gets a little more complicated than usual because you have to interpolate quite a bit for these abnormal conditions. The second day, when I went back, the oil had been transferred out of those tanks into another tank. The list had been corrected. The trim had been corrected. She was again down by stern. Now you can get very good soundings, pretty exact soundings. So I went back the second day to gauge the entire ship and re-qualify what I had quantified the first day.

Q. How close did the two figures match?

A. I'd say very, very close. There was 219 cubic meters the first day, 203 the second say. Remember, 219 and that of normal condition, it's normal, you will get a figure that's slightly off, but just about 15, 16 cubic meters out of -- you know, out of a million gallons? That's not bad.

Q. Was your spill quantification confirmed by any other party?

A. I learnt later on that Caleb Brett, they went out a week later. This is a professional gauging company. And they went out, I think, a week later without me and they conducted their own gauging and my figure and their figure, out of a million gallons odd, is about less than 10 gallons apart from

each other. I still think my figure is right and his is not as right.

Q. Okay, Captain Mathur, I have no further questions.

BY MR. TRAINOR:

Q. Captain Mathur, just a couple questions. When you were having delays and trouble getting out to the vessel that morning, did you notify Lieutenant Roberts that you were having problems getting out to the vessel?

A. No, I did not. He was busy. They were busy. You know, once something like this happens, stay away from these guys, unless you have something very, very important to tell them. Otherwise, you know, they're thinking of five things and they're on the phone -- it gets very busy. I had Todd Ajari to do that. He's another warden and he has the same know-how, literally, as Rob Roberts. So for me it's a lot more comfortable to tell Todd, Todd, try and get a boat. I'll try on my own and you try.

Q. You stated that you recognized the urgency in getting the quantity of oil released and Captain Uberti indicated there as an urgency to figure that amount. How do you reconcile the fact that it was considered to be an urgent matter but yet you felt he was too busy to be bothered? Can you explain that?

A. It was indeed urgent, there's no doubt about it, but I knew that there were two Coast Guard teams on board already, one right after the accident, another one a little after that.

So at the back of mind I thought they would have the quantity already. You know, it's been two, three hours now. They will have it already. So that kind of pushed -- you know, I didn't really push the matter as hard.

Secondly, the response really has very little to do with what I was going to quantify, what our figure was going to come out with. They were going -- they were blasting away on their own, deploying, responding and that -- my quantity would only make it a little better and embellish it a little more. As far as the response was concerned, I don't think that would've made any difference at all. Knowing these two things, the response that is happening independent of quantification and that there were other Coast Guard teams on board, I didn't quite push the matter as hard.

Q. Well, that begs another question. Without knowing exactly or having a sound estimate on the amount released, how would you know that the response was enough?

A. They respond to the worst case scenario. In this case, that was what you could hear all the time. We're going to respond to the worst case scenario. Ships hit the bridge. This is going to be big. So they were going hammer and tongs at it. So I was quite sure that the response is as furious and fast as it gets.

Q. All right. And the last question is, were you aware that up until the time you quantified the amount of oil

released, that the estimated amount of the spill was 10 barrels or 146 gallons?

A. I did not hear either figure, at all, the entire morning.

Q. Okay.

A. I absolutely didn't.

Q. Thank you.

A. You're welcome.

CHAIRMAN ROSENKER: Ms. Thomas, do you have any questions?

MS. THOMAS: I have no questions. Thank you.

CHAIRMAN ROSENKER: And Mr. Roth-Roffy?

MR. ROTH-ROFFY: Yes, sir, Mr. Chairman, I have a few questions of Mr. Mathur.

BY MR. ROTH-ROFFY:

Q. Good afternoon, Mr. Mathur.

A. Good afternoon, sir.

Q. We're in recent receipt of a report that you made following your trip to the Cosco Busan on the 11th of November and it's been distributed to the parties for their information as well. What I'd like to do is ask you a few questions about your report and I will direct my questions only at your activities on those first two days over which your report covers. I was a little confused with the timeline. I believe your statement to Mr. Stancil was that you first did the

quantification of the oil and then you interviewed the master. However, your report indicates that you interviewed the master and then did your quantification. Could you explain that confusion to me?

A. Right. I did this in three phases. The first phase was a quick rundown of questions to the captain, which is who, what, where, why, how? Once I got some of those answers, then I called the chief engineer up and I said, let's go down and quantify. When we finished this quantification, I come back up and continue with this investigation that you are reading right now.

Q. Excuse me?

A. Essentially, in the report I have -- remember, this report was written two, three, four days after the incident. This report really is a report that I shoot to my boss right here, Rick Holly. You know, I have the luck, the dubious luck of him being a master mariner as well, so it's easy for us to speak the same language, but at the same time, I've got to be very careful about what I write, how I write and how accurate I am because he understands everything and he's bound to come back with a whole lot of questions.

So this report was really intended to be a snapshot for him. That's what we usually do. In 24 hours, we shoot a report to him and then the report continues and it takes months for -- at times, for the report to be completed. So I've kind

of moved the phases, all three together here, so that he could read it. Now, this has been distributed. Essentially, the timeline here, nobody ever asked me to do a timeline until recently, until four months after the incident. So this timeline that you read, it's fairly accurate but I wouldn't really say it's exact.

Q. Okay. Is this the only report that covers your activities during those two days, the 7th and the 8th, or did you finalize or put this draft into a final version?

A. No, it's not finalized yet.

Q. Okay. Is there another report that you've already submitted that corrects any part of this?

A. No, I haven't submitted it yet.

Q. Okay. So this is the current report of your activities on those two days? There's nothing more factual or correct than what I'm looking at here?

A. Yes, that's right.

Q. And you say it was done two, three or four days afterwards. Could you narrow that down a little bit?

A. Yes, it was -- I probably went home and wrote just a sketch. See, as a surveyor in my past life, you know, you're very used to writing reports. So the quicker you start writing and jotting down your points, the more you remember, the less you forget, and probably the second or the third day is when I wrote this.

Q. And you mentioned, I believe, that all three of you were involved in all activities on board and this report, it says that you did something. Was -- in fact, the other members of that team involved in the same activities or were they off doing other duties while you were doing this stuff?

A. We all did the same thing at the same time. Todd Ajari and his trainee stayed with the captain for most of the time. The Coast Guard investigator stayed with me throughout the day because, literally, he was glued -- attached to the hip. He didn't leave, he stayed right there. And I think one of his jobs was to take samples, so he stayed with me right through, with the soundings, with the calculations, with the final figure, after the final figure, with the captain, questioning him more on this. He stayed with me throughout the day.

Q. Okay. And do you know if Warden Todd Ajari wrote a report of his activities on board the ship on those two days?

A. I'm not aware of it.

Q. In your report you mention the interview of the master. Did you interview any other crew members on those two days?

A. Yes, I did. I spoke briefly with the chief mate, I spoke to the chief engineer, I spoke to the bosun, the third mate and the helmsman.

Q. Okay. And those are identified in this report as

well. Did you by chance talk to the helmsman?

A. Briefly, yes.

Q. Okay, I'm not sure that's captured on here. Do you recall what the helmsman told you about his recollection of what happened? Did he have any -- how was his command of the English language? Was he able to talk to you easily or -- the helmsman I'm referring to now?

A. Mr. Roth-Roffy, yeah, at this time, I don't think I'm comfortable answering that question. The reason is I'm involved in a criminal investigation that's parallel with this and that question strongly overlays on.

Q. Okay, I understand. When you first spoke with the chief engineer, did he discuss with you his work that had proceeded you coming aboard with the U.S. Coast Guard, his quantification and what number he came up with at that time?

A. No, he did not. I did not ask him, he did not tell me and there was a tremendous urgency when I -- you know, as soon as he came up, we shook hands and I said, chief, let's go down now. So there was none of the exchange about, have you already quantified it? And usually we never ask. In OSPR, we never ask the party how much have you spilled? We like to do it ourselves. You don't want people to put words in your mouth. You like to do it yourself, quantify it and then confirm with them if you have to. So I absolutely did the same thing right here, took him straight down for my quantification

and I did not ask him and he did not -- nobody told me a figure.

Q. In your summarization of the master's interview, the master mentioned some delays due to traffic. Did the master mention anything about ship's paperwork affecting the time that the ship got underway?

A. No, he did not.

Q. Okay. On Page 3 of your summary you mentioned that the master made a freehand drawing of the Bay Bridge. Do you know what happened to that particular drawing?

A. I have it.

Q. Was it submitted as part of this report?

A. No, it wasn't submitted as part of this report, no.

Q. Would it be possible to get a copy of that drawing?

A. I can ask the criminal team if they want to release it and get back to you on that.

Q. Okay. Did the master have any comments about his perception of the pilot's behavior, if there's anything abnormal that he noticed and told you?

A. Again, sir, I'll reserve my comments all the time because this strongly overlays the criminal part again.

Q. I'm referring now to the first day on board when you interviewed him. Did he make any comments to you about his perception of the pilot's behavior? I mean, if you want a continuing objection, but I just want to make sure that you

understand my question.

A. We did speak about the pilot, the captain and I, we did and he did have some reservations and some concerns. Well, remember, this is right after the incident, right after the accident. He's still nervous. So he did have a few things to say, but I'm not sure I'm at liberty to say this because, again, it overlays very heavily on the future part of the investigation, from the criminal side.

Q. Is it in your report?

A. Not in this report.

Q. It's not in the report. Okay, then we'll stay away from that question. Okay, on Page 4 you state that, although it is easy to see that, the location of two red buoys located near the Delta Tower. Was that the master's statement or was that your own analysis, when you say that it's easy to see, on Page 4, towards the bottom?

A. I see it. Are you asking me about the two red buoys, are they conspicuous?

Q. No, actually I'm asking specifically about your report. It says, although it was easy to see that.

A. Yes.

Q. Was that your analysis or was that the master's statement?

A. It's my analysis.

Q. Okay, thank you. Okay, on Page 5 you state that the

-- at this point, I asked the master if there was any conversation with the pilot about commencing his voyage in thick fog and restricted visibility. The master did not state that he had an explicit conversation about commencing the voyage in fog and restricted visibility. Did the master make any comments to you about his concerns about getting underway, relative to the restricted visibility?

A. You know, as mariners, you know, when you have such think fog, generally, you're reluctant to commence a voyage in such think fog. If you're already underway, then you're already underway, so you continue your voyage. But to commence a voyage in such think fog has been a bone of contention for decades, for years, forever. Now, I did ask him, as an investigator, this question is right on top of your mind.

You're going to ask him, Captain, did you have any reservations about leaving, with this fog? And he explained how thick the fog was and at that point, I think he told me something to the effect like, you know, the pilot agreed. We had radars, we have a VTS, so I felt comfortable. If he was comfortable, I was comfortable. And he kind of left it at that. I don't think I reflected a very -- I don't express it as easily in my report, but essentially, he -- there was very little discussion on this, from what I gathered, between the pilot and him.

Q. On Page 6 you mentioned, at this point, I asked the

master if anyone paid any attention to the paper chart on the navigation table. I just wanted a clarification by that anyone. Does that include members of the crew?

A. Yes.

Q. Okay. And you also say that you looked at the chart and saw no outbound fixes?

A. Yes.

Q. Did you see any other fixes, perhaps inbound fixes?

CAPT. MATHUR: No, I just -- I saw exactly the chart that you put up over there.

Q. Okay.

A. It has no fixes. I had no fixes.

Q. Okay, because you were specific when you said outbound fixes.

A. I say outbound fixes because, if you notice the course, there's an inbound course and reciprocal outbound course. Generally, you wouldn't really have an inbound course when you're outbound, you'd rub it out, but it was there. So I cannot qualify that by saying, since both the arrows show two different courses in and out, there was nothing on the outbound.

Q. Okay, thank you. And on the same page, Page 6, you said, as the master stated, as the vessel approached the end of the deep-water buoy, they gave a broad port helm. I'm not familiar with that term, broad port helm.

A. At that point, I didn't know really exactly what helm he gave her, whether it was 10 port or 15 port of five port. All I know is exactly what I'm quoting in there from the Captain. He said it was such a broad port helm, it didn't -- to the Captain, it didn't have to be such a broad port helm. He could've given a gentle less wheel over. And this relates to the passage plan. When you put a passage plan together, you have to have no gray areas, danger areas, wheel over areas. Wheel over areas are places where you abruptly make a broad turn.

All this was a part of a passage plan, which I'd ask the master for and flipped through it real quick. And this was in that context, when he made a broad port helm, since I'd flipped through his passage plan, where this broad port helm should've been, if you make a broad port helm. So this was what the master was explaining to me. That's why the port helm was a bit too broad and too long.

Q. Okay, but the term broad implies that it was a high rudder angle, is that correct?

A. Yes, that's correct.

Q. Thank you. This report apparently covers the first day, November 7th. Do you have another report that covers your second day? And the second question to that, did you also re-interview the master on the second day?

A. No, I did not interview the master the second day. I

don't really have a report for the second day. I just have a daily activity report for the second day. Essentially, the second day was taken by quantification of the whole ship, this entire ship, so that takes several hours. It took from late -- early morning -- I'm sorry -- late morning until late evening, so I don't really have a report for the second day, except quantifying the whole ship.

Q. Okay. Did you do any other crew interviews on the second day?

A. No, I did not. I'd like to qualify that. When we did get on the ship the second say, I boarded the ship with the Coast Guard investigation team and this was a brand new set of investigators with -- and as soon he got on the ship, they wanted to interview the Captain and the crew. So I sat through maybe for the first five minutes and then I knew there was a lot of quantification to be done, a lot of -- and gauging, sampling and all of that, so I excused myself and I did not sit through that investigation.

Q. Okay. So you did sit through the interview with the master, or at least a portion of it?

A. For the first two minutes, maybe.

Q. Did you ask him any questions?

A. I did not ask him any questions and the reason I left was I could see that they were going to get -- go through almost the same questions that I asked the previous day. So

for me, it would be a waste of time.

Q. Okay, that's all I have, Captain Mathur. Thank you very much.

A. Thank you, sir.

CHAIRMAN ROSENKER: Thank you, Mr. Roth-Roffy. We'll begin with the parties. We'll start again with the American Pilots Association.

CAPT. WATSON: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you. Fleet Management Limited?

CAPT. AGA: Mr. Chairman, I have one question for Captain Mathur.

BY CAPT. AGA:

Q. The report that you made, Captain, is it -- have you done it with the assistance of rough notes that you took when you were on the ship?

A. Yes.

Q. Will those rough notes be made part of the NTSB docket?

A. Nobody has asked me that before, but if you want them, I can put them together.

Q. Thank you, sir. I have no further questions.

CHAIRMAN ROSENKER: Just give us a moment here while I confer with my Counsel and managing director.

(Off the record.)

(On the record.)

CHAIRMAN ROSENKER: Okay, Counsel suggests that we will make that request and then, upon getting them and examining them, we'll make a decision of whether they'll go into the docket or not. Thank you though.

The California Board of Pilot Commissioners?

MR. MILLER: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: San Francisco Bar Pilots Association?

CAPT. HURT: No questions.

CHAIRMAN ROSENKER: Sperry Marine?

MR. HUGHES: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Coast Guard?

MR. WHEATLEY: Thank you, Mr. Chairman, I do have a couple of questions for Captain Mathur.

BY MR. WHEATLEY:

Q. Captain, I just received your report here this afternoon, so I haven't had time to thoroughly read it and understand exactly what's in here. I'm a little confused. On Page 10 you talk about the interviews you did with the master and the mate. If I understood your testimony earlier, you said, when you initially got to the vessel, you went straight to the bridge and talked to the Captain, is that correct?

A. I shook hands with the Captain and then I told him, let's go down to your cabin. And the reason is every ship is

fitted with a SVDR and it's as clear as you and I are talking right now and you almost -- well, this is again a part of your investigative experience. You never really ask questions on the bridge because this gets recorded and the other side may not want to give you information because they know it's being recorded. Well, they can't tell you. So usually you get away from there and then you open up questioning so that, you know, people feel more free. So yes, I shook hands with him up there and said, let's go down, and went down to his cabin.

Q. Okay. And did anyone else go down to the cabin with you and the master?

A. Yes, all of us. Sorry. All of us, meaning Todd Ajari, his trainee, the investigator from the Coast Guard, and myself.

Q. Did the chief mate accompany you when you went down?

A. I don't remember that. I don't remember that.

Q. And just to kind of put this in perspective, how long do you recall the interview with the captain lasting when you personally met with him in his cabin?

A. Fifteen minutes.

Q. After you completed that initial interview, did you go back to the bridge and inspect any of the equipment on board the bridge?

A. All of it. All of it. I turned off and I -- just like the gentleman from Sperry explained, I turned off the

radars, put them on standby, turned them on again, adjusted the RF gain, the sea clutter and the VRM, the range rings, the markers, the EBL (ph.), just to make sure everything is working, and it was. Then I went to the other radar and did the same things there and the ECDIS, with the X and the S-Band both, took a look at the -- went to the echo sounder, the GPS, the DGPS, and one by one, the course recorder and I went and I took a copy of the course recorder, photocopied that.

So I went through all the instrumentation on the bridge and I even went to the extent of looking at the records, the logs, you know, for the gyro, for the magnetic, just to get an idea, you know, of how well the ship maintains itself, keeps itself. And I took a look at a lot of things very, very quickly, and this rather easy for us to do. See, we inspect ships every day, two, three a day at a time. So all of this is almost second nature. So it's quite easy for us to tell them to bring you this and bring you that and really get a snapshot of everything that he has on the bridge, relevant to an accident here in this case.

Q. Did the Coast Guard investigator that was with you, did he accompany you through this whole process?

A. You know, most of the time he was with me, but somewhere along the line I must've lost track of him. He was there but sometimes perhaps he wasn't. But he was there for almost all the time, looking over my shoulder. Yes, he was.

Q. And how long do you estimate that all of this process took?

A. Which one are you talking about, the gauging or the interview?

Q. No, the review of the equipment on board the bridge, the testing, all of that process. How long did that take?

A. No more than a half an hour.

Q. Okay. And did all of that take place before you went down to do the quantification, the sounding of the tanks?

A. I think it was after.

Q. It was afterwards?

A. Yes.

Q. So between the time that you interviewed the master, then you went and quantified and then went back to the bridge?

A. Correct.

Q. Now, you indicated that, on a second day, the next day -- excuse me -- you went back out to the vessel and you went with additional Coast Guard investigators and interpreters, is that correct?

A. That's right.

Q. Okay. As a result of going out on the second day, did you interview the chief engineer, utilizing the interpreter at all?

A. No, I did not.

Q. So all the information that you had, you had gained

prior to any subsequent investigation involving an interpreter?

A. Day one, that's it.

Q. Thank you.

MR. WHEATLEY: I have no further questions, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you, Captain. And finally the California Department of Fish and Game, the Office of Spill Prevention and Response?

CAPT. HOLLY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you. I'll turn it to the Board of Inquiry. Mr. Osterman? No questions from Mr. Osterman. Mr. Henry?

Q. Captain Mathur, I asked you briefly, when you had taken your oath, your experience. Could you give us a little more detail on your experience as a marine accident investigator?

A. Right after I quit sea life I came ashore. As Captain Aga says, we all call it that, when you come ashore. I took on a job as a marine casualty surveyor down in Los Angeles and most -- this is where you get called for all kinds of surveys, on-hire survey, off-hire survey, damage survey, casualty survey. When a ship bangs into a terminal and damages the terminal, damages itself, I went to the damage, who damages, who caused the damage, those kind of things.

So all those kind of surveys is what I was deeply

involved in. That's what I did in Los Angeles. And then, when I relocated to Northern California for another job, this was more of ship planning and ship loading and discharging. These are container ships at use in terminal in Oakland, what we now refer to as Oakland 26, Oakland 26. And that's where I worked before I joined the government, the state.

And this was essentially, you know, you look at the -- there's a ship planning, there's a program and you use it to plan ships. You put containers on and you put containers off. And it's a fairly precise science and very exact science, rather. And at the same time, you have to keep in mind the configuration of the ship, with the oil fuel tanks and the different weights distributed on the ship. So all of this was a large part of planning a ship when you load it. So that experience comes in very handy when you're dealing with the Cosco Busan.

Q. Would you say your experience is more heavily weighted on the deck side or the engineering side?

A. Entirely on the deck side, sir, yes.

Q. On the Cosco Busan, was the vessel equipped with a system of automated gauging of tanks to enable the engineers to read out these levels without having to do manual gauging?

A. Yes.

Q. And do you know if that was done to come up with a figure on the amount of oil that might've been lost?

A. By the chief engineer before I got there?
Q. Yes.
A. I don't know that.
Q. But that was not the system that you wanted to employ to do your work?
A. Definitely not.
Q. And why not?
A. It's not very accurate. It's accurate -- see, it's a gauge and it has increments of 10 tons, right, and it's not very accurate. The most accurate method is your hand and the tape and the stain on the tape. That is the most accurate method. You can always double-check with an electronic gauge, but you never really rely on this, on the electronic gauge. Nobody does completely. But if you want to really get a real quick calculation, just look at the gauges and you could tell how much oil there is in each tank.
Q. In your report, you go on for about two pages in describing your discussion with the master on the two RACONs, the two buoys, the C and D Towers, and you end by a quote from the master, that I don't know. Why did you feel it was necessary to write two pages of discussion on these navigation aids?
A. I think that's a crux and that's where you can really -- the reader gets to understand why the allision happened. So I kind of elaborated and I expanded on that. That is really

the meat of the matter, in my mind.

Q. You indicate that it was pretty clear if you look at ECDIS and it was pretty clear if you looked at the chart. Did anybody tell you that they actually looked at the chart during the departure from the dock before the collision?

A. In fact, it's the opposite, nobody looked at the chart.

Q. As far as the Cosco Busan, what was the number one required navigation instrument to be used primarily?

A. The paper chart. The paper chart is what you always use for your situation awareness. That's where you put your positions down. So it's a paper chart, the compass and lookout. These are three basic things in the maritime world. In this case, since you don't have -- you can't see anything, your radar becomes your primary aid. So you have your compass, your radar and your paper chart.

Q. Thank you, Captain.

MR. HENRY: I have no further questions.

CHAIRMAN ROSENKER: Thank you very much. And I just have a few questions to kind of end this up with and then we'll take a break and then we'll get to the last of the three witnesses.

BY CHAIRMAN ROSENKER:

Q. Captain Mathur, you appear to have an excellent background and an impressive resume, a good deal of experience.

How many accidents would you say you've actually investigated?

A. Of this magnitude, this is probably the first.

Q. This is the first one?

A. Yes, as a big as this.

Q. Okay. But you've seen and been involved with oil spills before, in your area of responsibility?

A. Yes, sir, many.

Q. You have seen a number of them?

A. Many.

Q. Do you have a state car, by any chance?

A. Yes, I do.

Q. Okay. Does it have a two-way radio in it?

A. It doesn't work.

Q. It doesn't work?

A. Yeah.

Q. Okay. Okay, perhaps that can be fixed when you get back. Would you be characterized as part of the first response team?

A. Yes, I am.

Q. Does that mean you have lights and sirens in your auto?

A. No, I don't.

Q. Okay. I suspect the lieutenant would probably have lights --

A. Yes, he does.

Q. -- and sirens on his. But you'd be able to get there fairly quickly? It's a government vehicle, a state government vehicle.

A. The answer is, I follow normal traffic rules. I can't get there any faster than anybody else.

Q. Okay. How were you alerted if your two-way radio was not working?

A. Cell phone.

Q. Cell phone. And who called you?

A. Todd Ajari, Warden Todd Ajari.

Q. Okay. And he also works for the lieutenant?

A. Yes, sir.

Q. Okay. And he was on his way?

A. He was already there.

Q. He was already there?

A. Right.

Q. What time did you get alerted? I believe you said it before, but I just want to put it in perspective again.

A. I think about 09:45. 09:35, 09:45, somewhere thereabouts.

Q. Okay. And what time did you arrive at the island?

A. Where I was when I received the call is about three miles away from the island, so that's how much time it took me. There was very light traffic I got there fairly quickly. I'd say about 09:45, 09:50, no more than that.

Q. Okay. You parked your car?
A. I parked my car.
Q. The objective for you -- you had an objective -- was to get out to that ship, is that correct?
A. That's correct.
Q. Okay. So how did you go about doing that?
A. When I got out of my car and parked, I could park right next to Todd because he was standing in the car park right there. So I parked almost right next to him, got out of the car and we were ready to go, in the sense that I asked him what happened. He gave me the short spiel of exactly what happened and the he said, we've got to get out to the ship, got to do a quantification, got to do the usual stuff. I said, I'm all ready. I opened the truck, got my lifejacket, put it on, got my pad out and that's all I needed, really.
Q. Okay. And had Todd told you that he already contacted the Coast Guard to get some support as far as some lift out there to the vessel?
A. I don't remember that.
Q. Okay. But how did you then believe you were going to get there?
A. We both started calling anxiously and he went back to the unified command. I stayed at the car park. I tried to make calls. I even called some of my personal friends to see if I could get a boat. So I was busy trying to do this and at

the same time was trying to walk towards the dock. You never know, you can get lucky. A boat might be right there, you know, it might come by. So the important thing is to be right there and hopefully you can hop on to the next one leaving.

Q. Okay.

A. So at that time there was a tremendous sense of urgency, but at the same time, now we know this, that we should've probably knocked on every door, but we didn't. I didn't.

Q. I understand.

A. Todd Ajari, I think, went and knocked on some doors.

Q. I understand. And so now around 10:00, 10:30 you're still at the dock awaiting some kind of lift to get out to the vessel, is that correct?

A. That's correct.

Q. And I suspect that you're frustrated, Captain?

A. It was a little frustrating, but at the same time, I understand very clearly, the Coast Guard, since 9/11, they do a hundred things all at the same time. That's the mandate, that's what they do and they do it extremely sincerely, honestly and they're very diligent about it. So it's not like anybody was trying to put us off. I was sure of that. They were trying their best and I'm quite sure, if they could give us boat, they would absolutely give us a boat. It's just that they were so occupied, because it was such a big accident, that

we couldn't just -- they couldn't just leave a boat here for us.

Q. Yeah, and I believe that. Have you ever heard the term -- and I'm not trying to make a pun of this -- the fog of war? Have you ever heard that discussion?

A. The fog of war?

Q. Or that concept, the fog of war?

A. No, I'm not familiar with that.

Q. Okay. A lot of confusion when things are going on in war. I'm sure the Captain has heard that, the fog of war, and maybe studied it at the Naval War College or whatever. I did. And I'm not trying to make a pun, but I believe there was a fog of war going on here and I suspect the Captain might even agree with me. A lot of things going on.

CHAIRMAN ROSENKER: Captain, would you agree?

THE WITNESS #6: I agree, yes.

BY CHAIRMAN ROSENKER:

Q. So what we have also, then, is you were waiting, not knowing when you're going to be to get out there and the time is ticking away. Now, you knew this was a large spill. You didn't know exactly how large, but your experience indicates to you, it's a big vessel, she was on her way out for a long voyage, the potential for it could've been catastrophic. Did you believe that?

A. I believed that.

Q. Okay. So you really still needed to get out there as quickly as you can but recognized that it was extremely difficult to come up with some kind of way of getting you out there?

A. That's exactly right.

Q. Okay. So you waited and waited and waited until around noon?

A. Until around noon.

Q. And that's when you got a lift out with another -- with a Coast Guard vessel?

A. Correct.

Q. Okay. You got out there and you began immediately to do the work that you were assigned to, which was to do an assessment of how much potential fuel oil had spilled into the Bay?

A. Yes, that's right.

Q. And you did a very good job of that because you came up darn close on to what really came out, is that correct?

A. That is right.

Q. Okay. And how long -- and I know you said it earlier, but I just want to continue this timeline. How long did it take you to do that?

A. I've said half an hour. That's pretty approximate, but I'd said yes, about a half an hour.

Q. So 12:30, quarter of 1:00, 1:00, you had a pretty

good understanding of approximately how much fuel had been expelled into the water?

A. I'd say closer to 1:30.

Q. 1:30?

A. Yes.

Q. Okay. Now, what normally would you do when you finally come up with that type of a calculation, recognizing that you probably are the one person that really has a good handle of what happened as it relates to the amount of fuel that came out?

A. At that point, I was quite sure that the Coast Guard teams that have gone back have really relayed a lot of what happened on the ship, how it collided and things like that. As far as the quantification is concerned, my -- sorry, sorry. Excuse me. My only goal was to get back to the SOSC and give it to him personally.

Q. And help me understand why that was necessary to have a personal conversation and a telephone -- I understand why you might not want to do it over the two-way radio, the ship's marine radio?

A. Right.

Q. But why would you not necessarily consider offering this information by telephone, cellular telephone?

A. You know, if I gave him this -- I thought about it at that time, but you know, always I give it to him firsthand.

You have eye contact. You have the methodology that you explain to him. That is the norm. And I didn't think this was going to be any different, and especially with a figure this large, I'd like to really explain to him how I arrived at this so that I knew, once I gave it to him, he is going to straight to the press, he's going to go to the FOSC, they're going to -- this is going to be broadcast everywhere. I need to tell him exactly --

Q. And you're right, you are exactly right that this is important information --

A. Right.

Q. -- that is necessary to do a good assessment of the situation that's there at this moment. And when you began to realize that it was going to be difficult, how did you plan on getting off the ship?

A. The same way that I got on, with a Coast Guard boat. And as soon as we finished the gauging, I told Todd, let's get a boat back. He called the Coast Guard dispatch and they said the boat's going to be on its way.

Q. Now, Captain, you did have a little bit of an experience --

A. Yes.

Q. -- now, in the morning --

A. Yes, I did.

Q. -- okay, of waiting for the Coast Guard to give you a

hand.

A. Yes.

Q. So what I'm trying to understand here is that you had a relatively negative experience in getting lift out to the vessel. You had gotten what you needed to know. You had calculated, along with the engineer, the appropriate amount of information that needed to be passed back to your supervisor and then -- so that I understand, the vessel that dropped you off, did it leave?

A. It did leave, yes.

Q. Or was it sitting around waiting for you?

A. Yes, it went.

Q. So you knew that that vessel was gone?

A. It was gone, yes.

Q. Okay. And you made a decision to call for another vessel to come and pick you up?

A. That's right.

Q. And you, even recognizing the experience you had earlier in the morning, believed that something would appear in a relatively short period of time?

A. Yes. Usually, almost always in my past experience, this happens very quickly. When you call for the boat, the Coast Guard's always been incredibly helpful and they always --

Q. When did you realize that this thing was starting to really drag out? And I know you were frustrated in the

morning. You shared that with me. When did you begin to get frustrated while you were on the Cosco Busan? When did you begin to say this is unacceptable? What am I going to do?

A. After about a half an hour after I had the quantification, that's when I started getting a little uneasy.

Q. And that's about 2:00?

A. About 2:00, 2:30 I got really restless and I said, Todd, we've got to get out of here. We've got to get a boat. We've got to leave.

Q. And it never occurred to you in this entire time that once you had the calculation and you were beginning to get frustrated by the Coast Guard's lack of ability to support you and getting you off of this vessel, that this information is important, I better get it to the boss?

A. It did occur to me, but again -- yes, it did.

Q. It did occur to you?

A. It absolutely did.

Q. And then what did you do?

A. I did not call on the cell phone. Again, for the same reasons that I mentioned before. I didn't call; I just waited for the boat to arrive. In hindsight, I would've called, now that I know what I know. But at that time, I was sure I'd like to go back and explain to him, show him what it is, give him my calculations and then let him run with it.

Q. And again, Captain, you did an admirable job of

getting the information. What is somewhat disappointing is, when you got it, you didn't share it as expeditiously as potentially you could have.

A. I understand.

Q. And that, in fact, causes potentially some issues here because this is a significant spill and with the appropriate amount of situational awareness, it may have been a help somewhere.

A. I agree.

Q. Again, Captain, thank you again. I appreciate you coming here.

CHAIRMAN ROSENKER: We're going to take a break and we'll be back in 10 minutes. That will be 5:00. Thank you all.

(Off the record.)

(On the record.)

CHAIRMAN ROSENKER: We reconvene and I'll now ask for the next witness, who will be Lieutenant Rob Roberts, and we'll start with the Technical Panel. Who's our first questioner?

MS. THOMAS: I am, Mr. Chairman.

CHAIRMAN ROSENKER: Go right ahead, Ms. Thomas.

BY MS. THOMAS:

Q. Okay. Good afternoon.

A. Good afternoon.

Q. Lieutenant Roberts, as the State On-Scene Coordinator

for the Cosco Busan accident, what were your responsibilities and role in the unified command?

A. As the State On-Scene Coordinator, I represent the State of California in managing and conducting coordinated management of the spill response for marine oil spills.

Q. Okay. As far as California's regulatory authority goes, what is the state's legal authority governing its responsibilities in open-water oil spills?

A. That's the Lambert-Keene Seastrand Oil Spill Prevention Act, pursuant to the American Trader, which was a subsequent spill in California to the Exxon Valdez. It kind of mirrors the OPA 90 regulations but it's a little more stringent for the State of California. And that gives us our authority. It places the investigation, response, prevention, marine safety issues under the Department of Fish and Game because we have a trustee status for the environment.

Q. Okay. Oh, so is that the document that gives the Department of Fish and Game lead authority over oil site response versus the Office of Emergency Services?

A. Yes, yes, it's codified in the California government code.

Q. Okay. How is responsibility divided between the federal and state levels?

A. Could you be a little more specific about responsibility?

Q. Responsibility in the oil spill response.

A. Well, we work together. Usually, on every incident, there'll be a federal person representing the Captain of the port and then somebody from my office, usually a warden, and if it's big enough, we'll get a biologist or an OSP out there for technical expertise and assistance, but we work as partners.

Q. And is that part of the memorandum of agreement that currently exists?

A. That's part of it, along with some notification agreements and cross-sharing of information, but yes.

Q. Okay. We're going to go into the accident notification now. You stated during your March 12th interview that you were first notified, in passing of a few petty officers from the Coast Guard, of the allision while you were at San Francisco for a prescheduled meeting. What information were you provided at that point?

A. Basically, I was told -- and I don't recall exactly which petty officer. It might've been Munoz. But I was told that there was a container ship that struck the Bay Bridge and it happened just within a half-hour or 20 minutes of when I was on Yerba Buena Island.

Q. At that point, were you told that there was any oil in the water? Were you showed any photographs of the damage?

A. Not at that point, no.

Q. Okay. So upon learning that information, what was your

initial action?

A. Initially, I started walking toward the Incident Management Division, which is a building just a little bit north of the Sector Command Center and where I work quite frequently with the Coast Guard. And as I was walking that way, I made a telephone call to our OSPR dispatch to say, hey, I just heard about this. Have you heard anything? And they had not.

Q. Okay. You mentioned during that same interview that you activated a first response team around 09:45. Could you explain the role and responsibilities of a first response team?

A. Sure. So I was on my way to the Incident Management Division office and I contacted dispatch. They hadn't heard anything, so we're mandated under the same government code and California water code and some other legislative statutes that if the responsible has not made a notification to the state OES, then the responding party, whether it's a fire department, a police officer, whatever, a government entity has to ensure that and if it hasn't been done, then we'd make the notification.

So I called dispatch, I called our deputy administrator and informed him of at least the information I had, that there was an allision, you know, it's heavy fog, we have no other reports of a quantity or type of oil, but that there's a high potential for it. So I did that and then I asked that the field response team be activated, which is standard protocol. And I said, I want to start getting some folks rolling here. And I did have

Warden Todd Ajari with me, too.

Q. Okay. And who were the members of the field response team?

A. Who are they or who --

Q. Who were they in the event of the Cosco Busan allision?

A. For the Cosco Busan event, the members that responded that day were Captain Roy Mathur, to my left, Warden Ajari, who works for me, and one his trainees. They were on the island for a meeting. They had actually met me there at about 09:20. And we had a biologist, Kathleen Jennings, and her supervisor, Randy Emi (ph.), that responded initially. Those are the ones I saw first on scene.

Q. And Captain Mathur was on the team to conduct a spill quantification, correct?

A. Yes, that's his -- that's part of his job, yes.

Q. Okay. And is it standard for the Department of Fish and Game to send an oil spill prevention specialist to do a quantification?

A. It's not standard for every incident but of anything obviously of this magnitude we would, yes.

Q. Are you required to?

A. No.

Q. And what priority does the Department of Fish and Game place on spill quantification during the initial phase of a response?

A. It's a priority but it's not our top priority. You know, first is safety of the human beings, our citizens and our responders. Second, we want to ensure that, you know, there's an effective and it complies with state and federal regs. But we want to get as many assets as we can out for that. And then, because it's -- the burden is on the responsible party and you know, quite frankly, it's their oil.

They have owners and PI club that they're going to have to report this, you know. So part of their job is to figure out what happened and as soon as they can, identify how much it is. But it's definitely something that we want to look at to get an idea of how long the response is going to be and how -- you know, for scheduling. But the initial first few hours, it's not top priority.

Q. Is the quantification that would be made, is it used to determine the amount of response assets that should be deployed?

A. It is if we're talking about maybe a 40-foot vessel that sunk. We would talk to the skipper and if he said yeah, I got 30 gallons on board, or, you know, it's a sailboat and we've just lost a little bit of oil and hydraulic fluid, yeah, we wouldn't send -- you know, we wouldn't send everybody in the state. But with something of this magnitude, when I found out, a 900-foot container ship and I notified our deputy administrator, pretty much I told him, you know, let's put all vacations, all days off on hold, recall anybody and start

getting people on standby because this is going to be big, potentially.

Q. So you didn't wait to ramp up the response?

A. No.

Q. How was the command structure established for this response?

A. Initially?

Q. Initially, correct.

A. Okay. Initially, when I did get up to the Incident Management Division, I was met by Lieutenant J.G. Schneider and I said hey, I'm here. And we work a lot together, so there was -- if you look through the incident management handbook or any of the training manuals it'll say, typically, to identify yourself and your authority and your role. But because of the work we do with the Coast Guard almost on a daily basis, you know, I showed up and she knew instantly that I was going to be the state on-scene coordinator.

And I kind of just said hey, I'm going to take it for the state. I got some people rolling. Who's going to handle it on your side? And she said -- she looked over at -- Chief Mosley was there and she says, you know, I think Dave's got a little more experience, so I'm going to let him be the FOSCR for right now, and that's how -- we started up with that. And then our next questions were, who is the responsible party?

We were trying to get several databases that we were

looking at. There was a little bit of conflicting -- as I recall. Again, this is like the Chairman said, "the fog of war." So a lot was going on in my head and I'm wondering, you know, why OES hadn't -- why I'm finding out about it and there's a lot of things that I'm contemplating, you know, it hit, is it sinking -- all of the things that we've heard already.

But to the best of my recollection, the vessel had recently changed ownership, so one set of data on the web was showing us that it was, you know, a Korean flag and one was a Chinese flag. And MSRC was one of the identified OSROs, which I'm very familiar with, as was NRC, too, at some point. So there was a little bit of confusion to that, but I don't exactly remember which. I just know that they were both being activated, but I don't know exactly who we integrated. But at the time, Jessica Schneider, Chief Mosley and myself were the command.

Q. Okay. And FOSCR, is that the representative?

A. Yes. I'm sorry.

Q. Okay. For the federal on-scene coordinator?

A. Yes, yes, they represent -- like the captain said, they've been trained, they're certified and they have the ability, for a lot of the areas, to be able to speak on behalf and manage the response for him.

Q. Okay. And so you would say around that time, around -- I believe you said around 09:45 the unified command was established or around what time?

A. Roughly, yeah, 09:45 is when I deemed it in my notes and in my opinion, we were unified at that point. We had a federal counterpart, a state counterpart and we were working together cohesively to manage this spill.

Q. And would you say the unified command was functional at that point?

A. Absolutely.

Q. Okay. How much interaction did you have with Captain Uberti, the federal on-scene coordinator, and Barry McFarland, the incident commander, on the day of the accident?

A. We all were identified later on in the day as being a triumvirate and the three parties that were going to manage this spill and we worked a lot throughout the rest of the spill.

Q. How about initially?

A. Initially, I started interacting with Captain Uberti just previous to our 12:05 press conference. His PIO came up, PIO, she came up and said, you know, we've got an interview scheduled with Caltrans and we'd like you to, you know, be there too. So we met a couple minutes before and just shook hands and then we were actually right outside by the boat launch, to interview there. That was my first interaction with Captain Uberti.

Q. Okay. And what about Barry McFarland?

A. I believe he arrived sometime later in the afternoon,

closer to 5:00 or 6:00.

Q. Did you speak with him at any point before he arrived?

A. I did at one point. I talked to him just really briefly. He was busy, as was I, but I wanted to -- I was told that he was going to be the QI and -- the Qualified Individual representing the responsible party, as the incident commander, and I called to find out who he was and where he was. I hadn't personally worked with him before, but I've heard of The O'BRIEN'S Group, they're a topnotch organization and I said, I need to find out where this guy is. And he said, at the time, he was driving up and he was coordinating assets. He started telling me what he was doing, but I said hey, I'm only going to recognize somebody who's on scene as a QI. So that was a brief conversation with him.

Q. And did somebody report to the scene to be --

A. Yes, he told me that he was having a gentleman named Barry Keegan (ph.), with MSRC, kind of manage the operations on site up there, but it turned out that he was -- and I said, well, I don't know where he is, and he had been at, I think, Concord or one of their facilities and was coordinating there and I said -- well, I told Mr. McFarland, I said, I need him here. So Barry called him and got him over there in probably a half-hour or 40 minutes.

Q. Okay. How much of your first day did you spend working at the incident command post?

A. I was at the incident command post from 09:20, when I got on scene, or 9:15 until -- I think I left around 09:00 that night.

Q. So you spent pretty much the whole day there?

A. Absolutely, yes.

Q. Okay. And what sort of activities were you involved in and what was your main focus?

A. Well, again, I didn't have the luxury of having the personnel that some of the other agencies have. You know, I was the chief cook and bottle washer for the first hour or so, until we got some folks to help me out. But a lot of it was making notifications, trying to ascertain if, in fact, MSRC or NRC were on site. And they were, they were already responding. They had skimmers out, I mean, within an hour or so. It was phenomenal. I was making notifications to National Marine Sanctuaries. I asked that the National Park Service be notified.

Some of our players that are routinely in the area committee with us, we had put the -- in California we have the Oiled Wildlife Care Network. It's a bird recovery and rehab organization and I had them put initially on standby and then said -- we activated them within an hour or two after that. But we typically won't do that unless we perceive, you know -- because it does involve volunteers and man hours and a lot to activate that. But the first couple hours there was a lot of phone calls.

I was getting -- because of my affiliation with, like,

the Neptune Coalition, which I was there for that meeting, and I've been co-chair for the area committee for the last six years and in various other committees in the Bay area, and drills. People were calling me for the first four or five hours. I had state parks calling me and saying they were seeing oil, Alcatraz rangers, people throughout Marin and stuff.

Q. Okay. During the first day at the command post, did you receive information about oil sightings, damage to the Cosco Busan, observations of the oil that was discharging from it, and just the initial spill estimates that had come in?

A. Like I said, Dave Matthews, he's a counterpart of mine with state parks, he called me and said -- this was sometime prior to 2:00, 1:00 or something. He called me and said hey, I'm getting oil washing up on the south end of Angel Island. And he said, it's pretty heavy, it's thick, it's black. One thing I did do is I went around to the -- while I was waiting for some of my team to get there and after I had made notifications and got the ball rolling, I wanted to get an eyeball, kind of like the captain did, and I drove around just on the island about 10 minutes and saw some light to moderate black oil, but not a lot.

And then I sent my warden. While he was waiting for Roy Mathur, I said, run over real quick to the ferry terminal. I know the Bay real well and I know it's going to start stacking up under the pier. Let's see what we've got. And so he came back 10 minutes later and he told me, yeah, he's been seeing heavy to --

or moderate oil I think was the word he was using, but it was definitely black and it was stacking up under the ferry building, all the way in and started working its way on the odd numbered piers, Pier 7, Pier 9, all the way around.

Q. Around what time was that?

A. That was close to 10:00, 10:30, something like that, 10:00, maybe.

Q. Did you receive the 10 barrel or 146 gallon estimates?

A. I never heard a 10 barrel, ever. Chief Mosley did mention something and in my head, again, with the fog of war, I kept thinking I was hearing 142, but maybe it was 146. He did tell me that but it just literally went in one ear and out the other. It was too precise a number. I mean, if he had said 400 or a thousand, something rounded off, but for it to be 146, I was like, it means something different; it has to.

Q. So you didn't believe it to be very accurate?

A. Well, I mean, just the prima facie, just on the straight value of it, saying 146, who -- within an hour, an hour and a half, whenever I heard that, who would know that precise? I mean, we didn't round it out at 500 gallons or we lost -- so I was thinking, maybe they're thinking metric tons. Some of the things that went through my head that I remember, well, it's a Chinese vessel. I think, well, maybe they're talking -- maybe it was the translation. Maybe they're talking cubic meters or cubic, you know -- metric tons or long tons. I didn't know. And I'm like,

what are they -- what is 146? I just didn't fathom that as being a real number.

Q. Right. And based on the observations you received, did it even make sense?

A. Well, I didn't have any observations. Again, in this fog, I couldn't see. You know, I couldn't see my car in the parking lot.

Q. I mean the ones that you had mentioned, about at the ferry terminal, the oil.

A. From what I saw it potentially could've been, because I personally didn't see a lot of oil. What really hit home with me was when I got -- Chief Mosley showed me a picture of his digital camera and I saw the side of that vessel and I went, oh. You know, that's when we really stepped it up.

Q. And around what time was that?

A. I don't know if I have the notes, but it was within the first hour and a half or so, whenever his team came back.

Q. Okay. What did the state base their response on?

A. We train and drill on a reasonable worst case. So again, if it's, you know, a barge that grounds or something, we're going to roll out for whatever the capacity is for a tanker, too. On this one, I heard it was an allision. I didn't know. They were telling me it wasn't going to sink, so I wasn't worried about the entire cargo, obviously. But when I did see those figures, that's when I told the deputy -- when I saw the photo, I said,

let's open up the ops center up in Sacramento, and we got that stuff rolling.

Q. So would the state's response have been any different if the initial figure would've came back as 58,000 gallons versus 146 gallons?

A. No, not at all, no. And just to clarify for Mr. Mathur, he's worked with me enough years and he knows, you know, that he's almost a tertiary because we don't -- we're spread out pretty sporadically and with the traffic the way it is in the Bay area and the high congestions, sometimes it's an hour or two, three hours before we can get out there. And whether it's a pipeline or something else that's discharged, we -- you know, I know the responsible party's trying their hardest to quantify it and they're going to, you know, do the due diligence. I know Coast Guard's in on it.

So with him I want -- and his instruction has always been, I want it accurate, I don't want it rushed, I want you to take your time because whatever I get, I have to go -- I have a very, very prominent governor in California and this information goes all the way up through him and I know that whatever I report, I have to be able to stand a red-face test and back it up. So that's why I don't really put -- there's a personal urgency and I think that's kind of what we all think. We all feel this personal urgency and we want to know, because we're investigators, we're responders and we want to help and we want to save the world, but

I want it done right and I want it done once. And he knows I'm going to ask him 20 questions, which I did, you know, when he had finally told me.

Q. So was your response based on the reasonable worst case spill?

A. Yes, absolutely.

Q. And the reasonable worst case spill is the capacity of the largest fuel tank on board?

A. Yes. And to be honest with you, I didn't know -- obviously, I didn't know the capacities, but I know it's a 900-foot oceangoing vessel that crosses the Pacific. I know it's a lot of oil.

Q. Okay. I want to get into the field response team's departure, return, et cetera.

A. Okay.

Q. Did you have any interaction with Captain Mathur when he reported to the island, to Yerba Buena Island, around -- he said, I think, around 09:35.

A. Yeah, not that I recall. And if I did, it was just I saw him out on the grass or something. I know I didn't have any conversations with him.

Q. And were the instructions given to him to quantify the amount of oil?

A. Yes, either over the phone or I told my officer, I said, grab him and you stick with him and get out there, you know, do

your cause analysis, do your -- you know, stick with him, but you're his helper. You're kind of his elf is what I told him.

Q. Okay. And did you request that he keep in contact with you and inform you of his progress?

A. No, I did not.

Q. Sorry. Did you direct Captain Mathur to report his quantification directly to you?

A. For this incident I did not, but he's worked for me enough and all the people in that staff know that when I get involved -- usually, like I said, a warden will manage a response, but if it gets kicked up to a level where it's going to be, you know, of economic sensitivity, you know, high environmental or political, then I step in. And they know, working with me, that I want an accurate figure. I don't want to have to go back and explain why we messed up. So he knows that I want it personally to me. And based on previous responses together, I want to give it -- him to give it to me so I can ask questions as a check and balance before it goes out to the unified command.

Q. Would you expect that he would phone the number back -- the quantity back to you once he had it?

A. I don't know. Usually I want -- you know, the amount of questions that I ask them in verifying, especially something like this or, again, like a pipeline, I pretty much want to -- it's going to be a very, very in-depth conversation and a lot of times I want to see the figures, you know, just -- and again, it's a

check and balance. So I can't really answer that. It's hard to say in hindsight what -- it's not fair.

Q. So would it better to get the number on the phone earlier or in person later?

A. You know, in retrospect -- and we just went over this with the Chairman pointing out. Now knowing what we know, it probably would've helped out the political spill, as I call it, the political spill we had. But as far as responding to oil and cleaning up oil, we did a phenomenal job. And it didn't matter whether I got it at 06:00, 07:00, 08:00 at night, we were still out there and I was working with O'BRIEN'S and MSRC and NRC and the Coast Guard and we got it done, we really did. So in hindsight, yes, looking back, but the previous instructions were, you know, it can wait. We're responding like it's a worst case anyway. So if it isn't, it's good to know and we can start sending people home.

Q. And where does determining the amount of oil discharged fall on your priority list?

A. Where does the what?

Q. Determining the amount of oil?

A. Oh, determining. Again, it's up there but it's not a high priority. You know, I want to get this response rolling and I want to make sure that notifications are made. I want to get -- you know, keep people safe. And it was foggy. I didn't want any extra vessels out there that weren't professionals, out there on

the scene.

Q. At any point, did you try to contact Captain Mathur while he was out on task?

A. No, I did not.

Q. Okay. Does the Department of Fish and Game have any role in directing the deployment of on-water resources, put every resource --

A. Yeah, we do if it's, in the industry, at least in California out there, we call an orphan spill. We work very closely with the Coast Guard and either the Coast Guard or us will handle operations because we don't have a responsible party to coordinate that. But in this case, when we have a reputable -- two reputable response organizations on the water and a highly trained response company, no, we don't need to give them -- we don't need to micromanage them in the first few hours. We let them do their thing.

When we'd start writing an IP and setting objectives, absolutely. Then the Coast Guard and we have complete oversight. And we take authority very seriously, but those first few hours we work off what's called a 201 and we don't -- that time lag would just slow them down. We let them do their stuff. They've trained with us for years. I personally have trained with both of these organizations for years. I'm extremely confident in their capabilities.

Q. On day one, did they provide any status reports to you

directly?

A. They did to -- I had one of my biologists as the planning section chief originally, and so she was getting intel. It was kind of scattered the first hour or so, but by about 1:30 or 2:00 we had it pretty well nailed down and we knew what was out there and they were calling in that they were finding oil. And again, it was still foggy.

BY MR. TRAINOR:

Q. We need to keep our eye on the clock, I'm afraid. Just a couple of points. You've heard Captain Uberti and you've heard Captain Mathur's testimony, in terms of quantifying the oil and the problems. Is there anything you take issue with, with what they said or anything you wish to add to the discussion that we've already had?

A. No, you know, it's a perspective. You know, like I said, in hindsight, when we look at the political side and the media side, absolutely, it would've been. If we could've gotten that number out immediately, that would've definitely been. We may not even be having this portion of this. But that being said, it did not, absolutely did not, unequivocally did not change the way we responded to the amount of oil, I believe, because we were working in dark anyway.

Q. Okay, two more questions.

A. Sure.

Q. What is the reason for the urgency of quantifying the

spill? Is it for purposes of having an effective response or is it to placate or satisfy your superiors, including the governor and so forth?

A. It's a little bit of both, you know, but if we -- in the initial phases, when we don't know what we have and especially the specific dynamics in the San Francisco Bay, this stuff, as you saw earlier, stays together. You know, we got reports later on in the afternoon, from the ferries and from some of the fishermen and these were coming in scattered. They were saying, hey, we saw this giant slug and we saw the spread. It went out and came back in.

Absolutely, it would be nice to know, you know, everything right away, but it's like anything else. We put the pieces of the puzzle together, but as long as we respond to what it potentially could be, you know, we're doing everything we can. And we had every -- as soon as equipment was ready -- nothing was sitting around in the barn, nothing. So a soon as soon as something was ready, it was rolling.

Q. All right. And my last question is, to our understanding, the Office of Emergency Services is responsible for notifying local jurisdictions.

A. Yes.

Q. Is that correct?

A. Yes, it is.

Q. Do you have any direct knowledge as far as what

notifications the Office of Emergency Services made within the San Francisco Bay area, with respect to this accident?

A. Yes, sir, they did. My deputy administrator, I believe, called it in. And I think actually The O'BRIEN'S Group or one of the QIs did probably previous to that. But the way it was reported and the way the matrix was at the time, it was specific to a county. And that's the procedure in California at the time. Since Cosco Busan, it has been changed. But if something happened in the San Francisco Bay, on the water, on November 7th, it was whatever county it was reported to. And there's a reason for that. Because of the time I won't explain why this happened.

Q. What do you mean the county it reported to?

A. It gets reported to various state agencies, but as far as a specific notification to a county or city, this was reported as happening in Alameda County. This accident, this incident happened in Alameda County. In retrospect, now we know in hindsight it was San Francisco County. That still wouldn't have fixed the issue, though, because that just means San Francisco would've known and maybe Oakland would've been upset. But the way it went down, OES, state OES notified several. And it's all in dockets, but they notified basically every entity that would be responsible for responding to an incident in Alameda County.

Q. Thank you.

A. Okay.

MR. TRAINOR: That's all, Mr. Chairman.

CHAIRMAN ROSENKER: Thank you. Mr. Stancil?

MR. STANCIL: No questions.

CHAIRMAN ROSENKER: Mr. Roth-Roffy?

MR. ROTH-ROFFY: No questions, sir.

CHAIRMAN ROSENKER: Ms. Thomas, did you have any additional questions? You looked like you may have had a couple. You're welcome to --

MS. THOMAS: No, I'm fine. Thank you, Mr. Chairman.

CHAIRMAN ROSENKER: Are you sure? Okay. With that, I'll offer opportunities for questions for the parties. We'll start with the American Pilots Association. I know I'm being repetitious when I do that, but it's just a little easier to put the hash marks down this way.

CAPT. WATSON: Thank you, Mr. Chairman. We have no questions.

CHAIRMAN ROSENKER: Okay. The Fleet Management Limited out of Hong Kong?

CAPT. AGA: Thank you, Mr. Chairman. We have no questions.

CHAIRMAN ROSENKER: Okay. California Board of Pilot Commissioners?

MR. MILLER: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: San Francisco Bar Pilots Association?

CAPT. HURT: No questions. Thank you.

CHAIRMAN ROSENKER: Sperry Marine?
MR. HUGHES: No questions, Mr. Chairman.
CHAIRMAN ROSENKER: U.S. Coast Guard?
MR. WHEATLEY: No questions, Mr. Chairman.
CHAIRMAN ROSENKER: Okay. And finally, California Department of Fish and Game, the Office of Spill Prevention and Response?
CAPT. HOLLY: No questions, Mr. Chairman.
CHAIRMAN ROSENKER: Okay. How about the Board of Inquiry? Mr. Osterman?
MR. OSTERMAN: Nothing.
CHAIRMAN ROSENKER: Dr. Spencer?
DR. SPENCER: No, sir.
CHAIRMAN ROSENKER: And Mr. Henry? Well, you've been an outstanding witness. You've obviously --
THE WITNESS #8: You guys are too kind. Thank you.
CHAIRMAN ROSENKER: Well, do you want me to ask you a couple of questions, Lieutenant?
THE WITNESS #8: No, sir, no, sir.
CHAIRMAN ROSENKER: I'm available to ask you some questions now.
THE WITNESS #8: Maybe later over a beer, sir.
CHAIRMAN ROSENKER: I look forward to that, Lieutenant, and I appreciate your candor and your testimony on these issues. So we'll move to the next witness.

BY MR. TRAINOR:

Q. Mr. McFarland, you are an employee of The O'BRIEN'S Group?

A. Yes, sir, that's correct.

Q. We've heard the term qualified individual and can you just explain briefly what that denotes?

A. Yes. Qualified individual was a term that's defined in oil pollution after 1990 and it designates an individual who resides in the United States, who speaks fluent English, who has familiarity with the response plan for the vessel and has the authority to execute that plan and mobilize resources on behalf of the vessel owner/operator and responsible party.

Q. Now as the Qualified Individual, you were essentially working for the owner or Fleet Management?

A. In this case we're working for Fleet Management.

Q. Okay. Now at the time of the accident or the allision, you were in Southern California, were you not?

A. I was, yes.

Q. What time were you notified about the incident?

A. I was personally notified approximately 09:45.

Q. And you were directed to return to San Francisco?

A. I was notified by our command center that we have established in Louisiana. Our command center is a 24-hour operation and it's based on Slidell, Louisiana, and they received notification from the ship and they in turn called me on the West

Coast.

Q. Okay. And they directed you to San Francisco, is that correct, your dispatch center?

A. I was.

Q. What time did you arrive?

A. In San Francisco?

Q. Yes.

A. I arrived approximately 6:00 p.m.

Q. At the Command Center?

A. At the Command Center, Yerba Buena Island.

Q. In the time that you were heading back to San Francisco, were you in contact with your dispatch center or the Coast Guard in San Francisco or Fleet Management or all three, whoever?

A. If I could just make one distinction if you don't mind, sir?

Q. Sure.

A. I was not acting as the Qualified Individual. The Qualified Individual is a person who was in our command center in Slidell. I was acting at his direction, as we call it, the deputy incident commander. Until I arrived on scene in San Francisco, at that point, I would then become the incident commander, not necessarily the Qualified Individual. Those two distinctions can be separate or they can be combined in one role. We tend to keep them separate for the sake of legalities and definitions. So I became the incident commander when I arrived at Yerba Buena. The

Qualified Individual remained as an individual with us in Slidell, Louisiana.

Q. Okay. Thank you for that.

A. I'm sorry. Now the question?

Q. Who were you in contact with as you were driving up to San Francisco?

A. I was in contact with quite a few parties. My initial contact immediately before I departed Southern California was directly to MSRC. That was my first call. That was approximately 09:50 a.m. and I talked to MSRC and got information that they had already mobilized. They had been called by another party. And we confirmed that we were -- that O'BRIEN'S was acting as the QI, my company was, and that I had the authorization to make sure they understood that we were in charge and we were going to authorize their mobilization of resources.

Q. And the second spill responder that was mobilized, did you talk with them as well?

A. I did talk with NRCES, if that's who you mean.

Q. Yes.

A. I talked to them later that morning and confirmed that they were, in fact, mobilizing.

Q. Now during the day, were you in more or less continuous communication with somebody about the events transpiring?

A. I was in contact with the Coast Guard San Francisco Sector office. My estimate's probably about every hour. I was

also in contact with MSRC approximately about once an hour. And I was also in contact with our command center in Slidell, Louisiana, at least once an hour.

Q. Between yourself, your office in Louisiana and the two spill contractors, was there a lot of discussion about quantifying the amount of the spill? Did you have problems in that respect?

A. We were attempting to get a quantity, yes. We did get information from MSRC of the 10 barrel figure that's been discussed. My understanding is that that was conveyed to them, I believe, by one of the pilots. So we had that initial -- early on, not initially. Early on, we did have the 10 barrel figure, but we were making attempts to try to get better information.

Q. How critical is it for a company such as yours to have a fairly accurate quantity, in terms of what was spilled? How critical is that information to your function?

A. It's a critical piece of information we want to know, absolutely.

Q. Was your response hinder or hampered in any way in this accident because of the uncertainty of the amount spilled?

A. I don't think the response was hampered. As far as the technical response and the equipment deployed, we responded quickly with a very large quantity of equipment for a reasonable worst case. I think the fact that we recovered 33 percent of the volume on water with skimming equipment in the first four days is remarkable, and I think that's attributable to the fact that we

did respond very, very quickly in excess of any regulations. I think I'll agree with the other parties, you know, did that lack of a quantification early cost us in our ability to have credibility with other agencies and the public? That was probably a hindrance.

Q. Did the confirmation of the 58,000 gallon figure late in the afternoon, did that have any adverse effect on day two and the following days, in terms of your ability to recover and clean up the oil?

A. No, it did not.

Q. Would you say that we were -- everybody involved in this case was lucky in the sense that you were still able to get resources deployed and that it turned out to be sufficient for the amount of released?

A. Actually, sir, I'd say we were pretty unlucky.

Q. How so?

A. I think the conditions at the time and the situational awareness that we had, the fog, the very strong currents, the dynamic environment of the Bay area, had it not been -- had we not had those extreme conditions, we could've done even much better than we did. But given those conditions, we did a phenomenal job.

Q. I've heard that from other quarters as well, so we commend you for that. From your perspective, what are the lessons learned -- to be learned from this accident in the -- from the standpoint of quantifying the spill and notifying appropriate

authorities?

A. Well, I think certainly it's a lesson learned. I think that it has been stated elsewhere that one of those critical impacts is to ensure those local notifications are made as quickly as possible, with the most accurate information.

Q. And finally, were you getting reports -- did you receive any reports of the vessel damage?

A. No, I did not personally receive any reports on vessel damage.

Q. Do you know if your dispatch center in Slidell did?

A. We received information that there were pictures posted on the Internet, of the collision, of the damage to the vessel and we did -- our Slidell command center did actually access those and contacted me to explain, verbally over the phone, the extent of the damage. We didn't have any detailed damage reports or damage reports from the vessel itself.

Q. Having looked at the photos of the damage to the vessel, would your instinct have been that an estimated 10 barrels or 146 gallons was a reasonable estimate of the oil released with that type of damage?

A. Certainly the damage is dramatic and that was a factor, obviously, in part of our decision process that first day. Is it possible that only 10 barrels could be released? I don't know if I can speculate. But certainly the damage and the visual damage of the vessel would indicate a very -- a potential for a much

larger spill.

Q. Well, thank you very much.

MR. TRAINOR: That's all I have, Mr. Chairman.

CHAIRMAN ROSENKER: Mr. Stancil?

MR. STANCIL: I have no questions, Mr. Chairman.

CHAIRMAN ROSENKER: How about Mr. Tom Roth-Roffy?

MR. ROTH-ROFFY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Okay. And we'll go to our parties. Once again we'll start with the American Pilots Association.

CAPT. WATSON: No, Mr. Chairman.

CHAIRMAN ROSENKER: Fleet Management?

CAPT. AGA: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: California Board of Pilot Commissioners?

MR. MILLER: Nothing, Mr. Chairman. Thank you.

CHAIRMAN ROSENKER: San Francisco Bar Pilots Association?

CAPT. HURT: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Sperry Marine?

MR. HUGHES: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: The U.S. Coast Guard?

MR. WHEATLEY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: And the California Department of Fish and Game, the Office of Spill Prevention and Response?

CAPT. HOLLY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Okay. We'll ask Mr. Osterman if he has any questions.

MR. OSTERMAN: No questions.

CHAIRMAN ROSENKER: Dr. Spencer? Mr. Henry?

BY CHAIRMAN ROSENKER:

Q. And it may have been the exact time, it may have been in your testimony earlier. I was busy, unfortunately, conferring with -- there's another accident we're looking at, so -- and it's a marine accident?

A. As are we, sir.

Q. The time that the first group of responders to begin the mitigation, what time did that actually begin?

A. The first group was -- the first call that we made was to Marine Spill Response Corporation. It's in the testimony to the timelines from both OSROs. And I know that the NRC Environmental Services self-mobilized based on radio traffic. So I would really have to refer back to those specific timelines, sir, to give you, you know, who came first or who came second.

Q. But it was relatively quick.

A. They were both mobilized extremely quickly and very quick initially, yes.

Q. Okay. And what type of equipment would they normally do in an initial response?

A. In initial response, we have two factors, one is containment and one is recovery and certainly both of those are

equally important. So we mobilize skimming vessels. In this case we had multiple skimming vessels from both companies and those skimmers are designed to pick up oil from the water. And the best ones initially are ones that minimize how much water is recovered so we can maximize our oil in those tanks and maximize our recovery. And that was done right away.

Additionally, we also mobilized booming vessels, which are vessels that have floating barriers and booms on board to help corral and contain that oil, whether it be at the vessel for a continuous release, or it be on water containment to try capture oil to make it more skimmable.

Q. And where do you begin a process of mitigation and booming and skimming? I mean, you know where the vessel had its allision, you know that it sailed to an Anchorage, and where does the command structure say start sending vessels here, start sending them there to begin the process? Or is it haphazard in its initial stages?

A. Initially one of our early objectives is to control the source and the vessel is typically the source. So initially our response by default is typically to the vessel itself.

Q. And in this case it was at an Anchorage?

A. That's correct. In this case it was Anchorage 7.

Q. Okay. And how many vessels would normally come out in the initial response?

A. In this case, from MSRC, there were six vessels and I

believe NRC was two or three vessels.

Q. So about nine vessels. Did they all go to the Anchorage or are they all kind of beginning to patrol, trying to find the spill?

A. Their arrival ETA and on scene at the vessel is staggered. So the very first vessel actually went to the ship itself, to the Cosco Busan, and their first job is to do air monitoring to ensure that our response personnel are going to be in a safe respiratory environment. Okay. So that was the initial response. They also reported and we had multiple reports that the source was secured and that the vessel was not leaking anything significant and there was very little oil reported near the vessel itself, at Anchorage 7. At that point the response vessels are redirected to try to locate and find the heaviest oil concentrations and begin recovering those.

Q. And by the time the first day was over, which was around 5:00 or so, is that correct?

A. I don't know the exact time that we stopped skimming operations, but skimming operations were ceased at nightfall --

Q. Right.

A. -- for safety concerns.

Q. 5:00, 5:30, 6:00?

A. I believe 5:30 is the number I recall.

Q. How many vessels were actually out there on that first day?

A. On that first day, I'd have to refer exactly to, you know, all the lists, but I know we had over eight skimming vessels and we had many, many other support vessels working together with them.

Q. Okay. Well, again, I've heard nothing but good things about the initial response and that, given the circumstances that we were operating in, you all were operating in, it was an amazing feat, so I congratulate on that.

CHAIRMAN ROSENKER: We'll go to the next witness, which is Mr. Dudgeon?

THE WITNESS #10: Correct.

BY MR. STANCIL:

Q. Good afternoon, Mr. Dudgeon. We'll go right to the timeline that was obtained from the City and County of San Francisco. It indicates that San Francisco Department of Emergency Management was first notified of the bridge allision at 9:20 on November 7th, is that correct?

A. It was right around that time.

Q. Okay. What was San Francisco's assessment of this initial information?

A. Well, initially the information was that a ship had collided with one of the towers on the Bay Bridge and there was not mention of an oil spill. So what we got was something from the Regional Terrorism Threat Assessment Center that basically said a ship hit the bridge but there's no terrorist threat, so we

didn't have a lot of concern. It's purely a marine issue at that point. As long as there's no life safety issues involved, there's not a lot for us to do.

Q. Okay. And then next, at 09:26, San Francisco Fire Boat 1 was requested to respond. What were they going to do?

A. They never actually made it out of the dock. That was an interesting situation, as I understand it, to where it was again one these relationships we've heard several times today, where everybody knows everybody in this community and phone calls were made between people that were, I think, actually -- I don't want to say exactly where they were, but phone calls were made between people who knew each other and the fire boat decided to dispatch themselves to this particular incident.

So they began firing up the boat and it takes a few minutes to actually get it warmed up, pulled away from the dock and get the crew aboard because they're on an engine and the fire boat. And in the meantime, before they were actually underway, they started communicating with the Coast Guard and were informed that they weren't needed at the scene. And so before they actually made it out of the slip, they canceled the response.

Q. Okay. What was the purpose of their deployment? What was their mission going to be?

A. Life safety because what they had heard was a ship hit the bridge and their initial assumption was that there could be people in the water and they could have a rescue operation. So

that's their primary mission.

Q. Okay. Your timeline then indicates that San Francisco received a spill quantity estimate of 140 gallons during a conference call that occurred at 13:00. That conference call was with the Coast Guard?

A. The Coast Guard was present on that conference call. I'm not exactly sure how the 140 gallon number got transmitted to the city or exactly when, but I knew that number in the morning, before this conference call ever took place. So I mean, I couldn't tell you the pathway, but I do know that that number was said by the Coast Guard on the 1:00 conference call.

Q. What was the reaction of the City and County of San Francisco to that reported quantity?

A. On the conference call, they decided to take a proactive stance and they referred it to the health officer for advice. They decided that it would be prudent to post no fishing and no swimming signs, that sort of nature, along the port and around the waterways to the Bay.

Q. Did you have any major concern about the spill at that time?

A. Not at that point, not with the amount being 140 gallons.

Q. Okay. Did you later receive any reports or complaints from other sources that would suggest that the oil spill was much larger?

A. Well, clarify your question. Are you saying -- I'm not quite sure what you're asking me.

Q. Well, according to your timeline --

A. Late at night or --

Q. According to your timeline, there were other incidents that occurred, one at noon at Pier 1, where the offices were evacuated?

A. Correct.

Q. Another involving a surfer? Did any of those incidents suggest to you that it might be larger than just 140 gallons?

A. In retrospect, they might, had, should have, but none of us are oil spill experts. For the majority of the city personnel, this was our first oil spill. That said, towards later in the afternoon we started wondering, something's just not right. Things just don't seem like they're adding up. And we were going to -- it was actually very late in the afternoon and we were going to start looking at it the next morning and figure out exactly what was going on, but it just didn't seem to fit because, yes, the port offices -- it was actually the port department. Their offices are in the ferry building and they actually shut down their offices because of the smell.

And they did air monitoring in the area and at the same point we decided, you know, there was posting of no fishing and no swimming. The surfer, that was one surfer that came out with a light sheen of oil and that actually went through the Golden Gate

National Recreation Area, through the National Park Service EMS, so it was second and third-hand information coming in from there. And he actually refused treatment. So it was lots of little things that just weren't adding up, but again, not being oil spill experts, we took it as, is it possible that all 140 gallons ended up on the port and it really stinks? Sure, it's possible.

Q. So when these things happened, did the city attempt to seek additional information from the Coast Guard or was there any further contact with the state concerning what was going on with the spill?

A. To the best of my knowledge, we took the Coast Guard at their word because they were on a conference call with us at 1:00 and we felt that was the best source of information at the time.

Q. Okay. According to your timeline, a conference call then occurred at 21:15 on November 7th, during which the size of the spill was reported to be 58,000 gallons. Was the first time that San Francisco became aware of the full scope of the incident?

A. Absolutely.

Q. And what was your reaction upon receiving that call?

A. Surprised, to be real honest, quite surprised, wondered why it took that long to get that information out to us about the scope of the spill.

Q. What actions were taken by San Francisco after learning about this? Did you mobilize any resources? What happened?

A. Well, at that point, at 09:15 at night, the conference

call wasn't over until closer to 10:00. At that point, it was a matter of notifying everybody in city government what actually occurred because it actually came through the regional Office of Emergency Services. Their duty officer called the conference call through our duty officer. My boss and myself were both on that call. Afterwards, it was a matter of deciding a plan for the next day. It was decided that I would report to the command post and then it was notifying the mayor's office, the fire department, the police department, all the usual players.

Q. Okay. What are the oil spill response capabilities and assets of the City and County of San Francisco?

A. Well, in terms of --

Q. As to what existed on November 7th.

A. In terms of on-water recovery, we don't do that. Some of the marinas and some of the port facilities have harbor boom that they can deploy and that's probably about the extent of it, to be honest, to the best of my knowledge.

Q. Does the city own a skimming vessel?

A. No, sir, not to my knowledge. Let's put it that way.

Q. You mentioned that there are boom at marinas. Is that owned by the city?

A. I think some is owned by city and some are private marinas.

Q. Did you use any of this boom on the first day of the incident to protect any of the harbors?

A. I think they did. It was either the first day or the second day. Some of the marinas deployed some boom, but I couldn't tell you if it was the 7th or the 8th, to be honest.

Q. What damage was caused by giving you an incorrect quantification assessment early on the first day?

A. Well, I think it's important to take this back a step and the actual number, to me, isn't as important as sort of a relevant scope of the situation. So the same could be said of an earthquake or any emergency. If the relative scope of the problem is big, then you respond accordingly. So in this case, had we known that the relative scope of this spill was much larger than 140 gallons, which, honestly, we all looked at as something that's a fairly routine cleanup that the pollution -- you know, the pollution response community does on a regular basis. It doesn't have a huge impact to us as a city, unless it has a direct impact on waterfront.

Well, 140 gallons doesn't pose much of a threat to our waterfront, whereas 58,000 does. So rather than get hung up on the number, I like to look back at what's the relative scope of the problem? Had we known that -- had we been told that it was a 900-foot ship, 200-foot gash, potential for loss of oil in the water, regardless of the exact number, we would've responded differently. And to that end, I think it's a little speculative because this was our first oil spill.

But some of the logical progression of events would've

been we probably would have sent somebody to the command post that day and started trying to assist them with anything that needed to be -- with anything they might need. Again, we don't have on-water recovery but we do have assets that can be used in the management of an event and --

Q. What sorts of assets would they be?

A. Well, had we been available or had we been involved on the first day, we might've avoided the whole Fort Mason as a command post. I mean, I can tell you because it's in my shop. We probably would've offered up our emergency operations center right off the bat, at least as an initial place to be until we could find something more permanent, knowing what the hotel room space was in town, so you're not going to get a ballroom, just because of the amount of people that were in town. But it's things like that. We can offer indirect support, just as we did the following day, on the 8th, when we were in the command post.

Q. And what sorts of things did you do the next day to contribute to the oil spill response and assist the unified command?

A. Anything they asked us, we tried to provide. The joint information center was short on equipment. They didn't have phones, they didn't have digital audio tape, they didn't have printers. It was just thrown together in a hurry, so whatever we could, we brought. To my knowledge, I don't think -- we're still missing a printer, by the way. Basically, whatever they needed,

we threw at the problem, whatever we had to give.

When I was approached when I first got there about helping them find a second command post, we put somebody on that. There wasn't enough room for the Agency representatives in the command post because it's rather small and noisy cold place. We brought out a mobile command post to augment the situation. There were issues with connectivity as far as the Internet goes. We requested that San Mateo bring up one of their communications vans to try and remedy that. So whatever was needed, we tried to provide. All they had to do was ask.

Q. Okay, I have no further questions.

CHAIRMAN ROSENKER: Thank you, Mr. Stancil. Mr. Trainor?

MR. TRAINOR: No questions.

CHAIRMAN ROSENKER: Ms. Thomas? Mr. Roth-Roffy?

MS. THOMAS: No questions, sir.

CHAIRMAN ROSENKER: Okay. Well, I'll offer it now back to our parties and we'll start with the American Pilots Association.

CAPT. WATSON: No, sir, we have no questions. Thank you again.

CHAIRMAN ROSENKER: Fleet Management Limited?

CAPT. AGA: No, sir, no questions.

CHAIRMAN ROSENKER: The California Board of Pilot Commissioners?

MR. MILLER: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: San Francisco Bar Pilots Association?

CAPT. HURT: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Sperry Marine?

MR. HUGHES: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: The U.S. Coast Guard?

MR. WHEATLEY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: And finally the California Department of Fish and Game, the Office of Spill Prevention and Response?

CAPT. HOLLY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Okay. Well, the Board of Inquiry. Mr. Osterman? Dr. Spencer has some questions.

DR. SPENCER: Thank you, Chairman.

BY DR. SPENCER:

Q. Does the City of San Francisco participate on the Harbor Safety Committee?

A. We do.

Q. And in the course of deliberations of the Harbor Safety Committee, I guess oil spills are one of the things that are considered, is that right?

A. I don't personally participate in that, but I know we have personnel that do attend, so I can't speak to anything that happens in that committee.

Q. Okay. I'm just commenting on or thinking about your remark about not being notified for so long and we've retraced, this afternoon, about the process and the timeline here. But it would seem to be that an oil spill in the Bay ought to set off some sort of alarm to all the communities around the Bay. Now, I understand that -- well, maybe I don't understand. Do you know if the notification procedure has been changed so that if there's another spill somewhere in the Bay, that the city would be notified?

A. We're getting notified of everything in the Bay now. Yeah, there's been some changes at the state warning center.

Q. Okay, okay. Thank you. That's all the questions I have.

CHAIRMAN ROSENKER: Mr. Henry?

MR. HENRY: No questions, Mr. Chairman.

CHAIRMAN ROSENKER: Okay.

BY CHAIRMAN ROSENKER:

Q. Are you getting too much information now, Mr. Dudgeon?

A. No, sir, there's no such thing as too much information.

Q. I would agree with that. I would agree with that. And I want to thank you for, certainly, your testimony and also the tremendous support that you gave the Command Center, with all of the assets that ultimately came in the next day. I just have a couple of questions before we close out today's session and that is, you indicated in your testimony that things began during the

day to appear that there was more to the issue than just 140-some gallons of spill, is that correct?

A. Yeah.

Q. On the fist day?

A. I would say, in retrospect, one and one was adding up to three instead of two.

Q. Okay. And as that was happening, I mean, I assume there was a good deal news coverage of this event and maybe you have an all-news radio station or something like that, whatever. Were you listening to that kind of coverage?

A. I personally was not. Given the initial report of 140 gallons, I continued with my already packed schedule for the day. My boss was closely monitoring the situation and her and the mayor's chief of staff were actually the ones that were becoming concerned that things weren't as they should be.

Q. And when that concern manifested itself, did it in any way suggest that maybe they or someone needed to call the Coast Guard to try to get a good handle on what was really happening?

A. I believe that happened, actually.

Q. And who did that?

A. Because we have a lot of casual -- we have a lot of casual relationships with the Coast Guard.

Q. And who would've done that and what information was transmitted from those calls?

A. I believe that my boss actually talked to the Coast

Guard and it's reaching. I'd have to sit down and have an in-depth conversation with her. But it's my recollection that she actually had a couple of conversations with the Coast Guard, as did our chief of staff, because somewhere in the afternoon they started bouncing around this 10 barrel number, which is a little different than the 140 gallons. But to be honest with you, I personally was wrapped up with several other issues that day --

Q. Um-hum.

A. -- and felt as though they were handling this relatively, in my mind, minor oil spill and it wasn't until it was corrected, where the scope of it changed dramatically that night, where it became my sole focus for the next several weeks.

Q. And Mr. Dudgeon, when did you and your colleagues, your office, get apprised that this was more than the 10 barrels, 142 gallons, 46 gallons, when did you actually get a good figure that this was 50-some odd thousand gallons?

A. That would've been at about 09:00, 09:15 the night of the 7th.

Q. So it took --

A. And that was on a conference call.

Q. It took somewhere close to four hours to let the city know, is that correct?

A. That's correct.

Q. Of the nature of what the true assessment was?

A. Yes, sir.

CHAIRMAN ROSENKER: Okay. Well, I thank you for your testimony and I thank all of you for your testimony today. This has been, I think, a productive hearing the first day and we look forward to our next group of panelists that will appear tomorrow morning.

I would ask that once again we begin promptly at 8:30 in the morning and I'll do as many breaks as we possibly can, but we will finish tomorrow no matter what time it takes. So I look forward to seeing all of our parties back tomorrow. And do we release all of the witnesses that we have had today or how does that work, Mr. Henry?

MR. HENRY: We may bring that up right now.

CHAIRMAN ROSENKER: Well, let's bring that up so that we know exactly who we're going to potentially keep. And then, for those, they may be released and go home. It's up to you, Mr. Henry.

MR. HENRY: Why don't we start with the Coast Guard?

CHAIRMAN ROSENKER: The question is, are there witnesses that you would like to keep on standby?

MR. WHEATLEY: At this point, I don't believe the Coast Guard has any intention of asking to keep any of our witnesses from today on standby. So the witnesses for tomorrow certainly are available all day, as long as it takes to complete the process. But it would be the Coast Guard's request, if possible and with full understanding that there may need to be a recall of

witnesses by other parties, be allowed to release these witnesses as soon as it's practicable.

CHAIRMAN ROSENKER: We'll go to the American Pilots Association. Do they need any additional witnesses or a recall on witnesses?

CAPT. WATSON: Mr. Chairman, I don't think we need that. No, sir, you can release them.

CHAIRMAN ROSENKER: Okay. Fleet Management Limited, would you want to potentially call any witnesses that we had today?

CAPT. AGA: No, sir, we don't have any request.

CHAIRMAN ROSENKER: Okay. California Board of Pilot Commissioners?

MR. MILLER: No, sir, we don't need to recall them.

CHAIRMAN ROSENKER: Okay. The San Francisco Bar Pilots Association?

CAPT. HURT: No, sir.

CHAIRMAN ROSENKER: No need for them, okay. Sperry Marine?

MR. HUGHES: No, Mr. Chairman.

CHAIRMAN ROSENKER: We've already talked to the Coast Guard. And finally the California Department of Fish and Game, the Office of Spill Prevention and Response?

CAPT. HOLLY: No, Mr. Chairman.

CHAIRMAN ROSENKER: So are we saying that we can release

today's witnesses?

MR. HENRY: With the exception of the two witnesses that are --

CHAIRMAN ROSENKER: Then you are released and you're welcome to go home.

(Witnesses excused.)

CHAIRMAN ROSENKER: Thank you again for all of your participation and your patience with us today, and cooperation. This meeting will be adjourned until 8:30 in the morning.

(Whereupon, the hearing was adjourned, to be reconvened on the following day, Wednesday, April 9, 2008, at 8:30 a.m.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	PUBLIC HEARING ON ALLISION OF THE CONTAINER SHIP M/V COSCO BUSAN WITH THE SAN FRANCISCO-OAKLAND BAY BRIDGE
DOCKET NUMBER:	DCA-08:-MM-004
PLACE:	Washington, D.C.
DATE:	April 8, 2008:

was held according to the record, and that this is the original, complete, true and accurate transcript which has been compared to the recording accomplished at the hearing.

_____

Timothy Atkinson
Official Reporter