Under 46 U.S. Code §6308, no part of a report of a marine casualty investigation shall be admissible as evidence in any civil or administrative proceeding, other than an administrative proceeding initiated by the United States.

U.S. Coast Guard Marine Board Investigation ICO the sinking of SS El Faro held in Jacksonville, Florida held

24 February 2016

Volume 8

CAPT Neubauer: Good morning. This hearing will come to order. Today is February 24rd, 2016 and the time is 9:01 a.m. We're continuing at the Prime F. Osborn Convention Center, in Jacksonville, Florida. I am Captain Jason Neubauer, of the United States Coast Guard, Chief of the Coast Guard Office Investigations and analysis, Washington D.C. I'm the Chairman of the Coast Guard Marine Board of Investigation and the presiding officer over these proceedings. The Commandant of the Coast Guard has convened this board under the authority of Title 46, United States Code, Section 6301 and Title 46 Code of Federal Regulations Part IV to investigate the circumstances surrounding the sinking of the SS El Faro with the loss of 33 lives on October 1st, 2015 while transiting East of the Bahamas. I am conducting the investigation under the rules in 46 C.F.R. Part IV. The investigation will determine as closely as possible the factors that contributed to the incident so that proper recommendations for the prevention of similar casualties may be made. Whether there is evidence that any act of misconduct, inattention to duty, negligence or willful violation of the law on the part of any licensed or certificated personnel contributed to the casualty, and whether there is evidence that any Coast Guard personnel or any representative or employee of any other Government agency or any other person cause or contributed to the casualty. I have previously determined that the following organizations or individuals are parties in interest to the investigation. Tote Incorporated, ABS, Herbert Engineering Corporation

(HEC) and Mrs. Teresa Davidson as next of kin for Captain Michael Davidson, Master of the SS El Faro. These parties have a direct interest in the investigation and have demonstrated the potential for contributing significantly to the completeness of the investigation or otherwise enhancing the safety of life and property at sea through participation as party in interest. All parties in interest have a statutory right to employ counsel to represent them, to cross-examine witnesses and have witnesses called on their behalf.

I will examine all witnesses at this formal hearing under oath or affirmation and witnesses will be subject to Federal laws and penalties governing false official statements. Witnesses who are not parties in interest may be advised by their counsel concerning their rights. However, such counsel may not examine or cross-examine other witnesses or otherwise participate.

These proceedings are open to the public and to the media. I ask for the cooperation of all persons present to minimize any disruptive influence on the proceedings in general and on the witnesses in particular. Please turn your cell phones or other electronic devices off or to silent or vibrate mode. Please also try to minimize entry and departure during testimony. Flash photography will be permitted during this opening statement and during recess periods. The members of the press are welcome and an area has been set aside for your use during the proceedings. The news media may question witnesses concerning the testimony that they have given after I have released them from these proceedings. I ask that such interviews be conducted outside of this room. Since the date of the casualty the National Transportation Safety Board and Coast Guard have conducted substantial evidence collection activities and some of

that previously collected evidence will be considered during these hearings. Should any person have or believe that he or she has information not brought forward, but which might be of direct significance, that person is urged to bring that information to my attention by emailing elfaro@uscg.mil. The Coast Guard relies on strong partnerships to execute its missions. And this Marine Board of Investigation is no exception. The National Transportation Safety Board, provided a representative for this hearing. Mr. Tom Roth-Roffy, seated to my left is the Investigator in Charge for the NTSB investigation. Mr. Roth-Roffy, would you like to make a brief statement?

Mr. Roth-Roffy: Thank you Captain. Good morning, I am Tomas Roth-Roffy, Investigator in Charge for the National Transportation Safety Board's investigation of this accident. The NTSB has joined this hearing to avoid duplicating the development of facts. Nevertheless, I do wish to point out that this does not preclude the NTSB from developing additional information separately from this proceeding if that becomes necessary. At the conclusion of these hearings the NTSB will analyze the facts of this accident and determine the probable cause independently of the Coast Guard. Issue a separate report of the NTSB's findings and if appropriate issue recommendations to correct safety problems discovered during the investigation. Thank you Captain.

CAPT Neubauer: Thank you. We will now call our first witness of the day, Petty Officer Matthew Chancery of the Coast Guard Seventh District. Petty Officer Chancery please come forward to the witness table and Lieutenant Commander Yemma will administer your oath and ask you some preliminary questions.

LCDR Yemma: Please raise your right hand. A false statement given to an agency of the United States is punishable by a fine and or imprisonment under 18 United States

Code section 1001, and also subject you to discipline under the Uniform Code of Military Justice. Knowing this do you solemnly swear that the testimony you're about to give will be the truth, the whole truth and nothing but the truth, so help you God?

WIT: I do.

LCDR Yemma: Thank you, be seated please. Please start by stating your full name and spelling your last name for the record?

WIT: It's Matthew Cadmon [sic] Chancery, and it's C-H-A-N-C-E-R-Y.

LCDR Yemma: And counsel would you please?

Counsel: Jeffery Travis Noyes, N-O-Y-E-S.

LCDR Yemma: Petty Officer Chancery can you state your current assignment within the Coast Guard please?

WIT: I'm an operations unit controller and situation unit controller for the Coast Guard Seventh District in Miami Florida.

LCDR Yemma: And what are some of your responsibilities?

CAPT Neubauer: Petty Officer Chancery can you please move the microphone a little closer?

WIT: Some of my responsibilities include oversight of Sector cases that are within the Coast Guard Seventh District as well as managing and prosecuting active search and rescue cases for the operations unit controller. For the situation unit controller it would be managing blue forces, tracking weather, and other duties that may be assigned for that job.

LCDR Yemma: And what are some of your prior assignments or work experience relevant to your current position?

WIT: My first assignment other than Operations Specialist 'A' school was on the Coast Guard Cutter Seneca. And then I spent 4 years at Coast Guard Sector Jacksonville. And I've been at Coast Guard Seventh District for about a year and a half now.

LCDR Yemma: And what's your highest level of education completed?

WIT: High school.

LCDR Yemma: And do you hold any licenses or professional certification?

WIT: No.

LCDR Yemma: Thank you. The board will have questions for you.

Mr. Fawcett: Good morning Petty Officer Chancery.

WIT: Good morning.

Mr. Fawcett: Throughout this morning for your testimony we'll cover two topics combined into a single area of questioning. One will be an overview of your duties and your background as it relates to search and rescue activities. And the other one will cover the day of the incident when you received the initial notification relating to the El Faro. So for the benefit of the public if you would try to steer clear of using acronyms that the Coast Guard uses exclusively. Or if you use them just try to explain to people what they are. We will use the acronym SAR, which means search and rescue just for the efficiency of questioning. And after the Coast Guard finishes its questions we will pass the questions, just so you know how this works, to the NTSB followed by the parties in interest so that they can have an opportunity to ask you questions if they choose and then return back to Captain Neubauer for follow on questions. If you need a break at any time please let us know.

WIT: Okay.

Mr. Fawcett: So the first area we would like to talk about a little bit is your, an overview of your background and the duties you perform as a SAR controller within the Seventh District. So could you kind of just for the public elaborate a little more on what your duties entail as plain language as you could describe it at the Seventh Coast Guard District command center.

WIT: Sure. So any case that goes on within Sector boundaries, I believe Captain Coggeshall went our area of responsibility, 1.8 million nautical miles. That's divided into Sectors. And then the Sectors each individually have their own area of responsibility. So anything that – any incident or distress situation that occurs within their area of responsibility I would provide oversight and policy to the operations unit controller to the Sector level. Also if the Coast Guard Seventh District is assuming the SAR mission coordinator role or acting as first RCC, rescue coordination center, I would then take the appropriate initial actions and brief whoever was standing SAR mission coordinator that day on the particular case and I would prosecute that case in accordance with the AIPOC model, I believe Mr. Webb went over that, but it's awareness, initial actions, planning, operation and conclusion. Typically on any SAR case you become aware of the situation, you take your initial actions, and then you would go back and forth between planning and operations as you're doing multiple sorties or if the case entails that. You go back and forth between planning and operations until the conclusion of that case.

Mr. Fawcett: So the Seventh District is approximately 1.8 million, is that square miles?

WIT: Square miles, yes.

Mr. Fawcett: So within the organization who oversees your operations? We heard testimony about the Atlantic Area, Coast Guard Atlantic Area. Did they so to speak supervise the actions of the D7 command center?

WIT: They are our support. They're – yes. In general terms yes. They would be in charge of supervising the District command center.

Mr. Fawcett: So you know in really high profile cases other than the Coast Guard Atlantic Area do you report to some kind of Headquarters entity? Like for example do you get involved with some kind of unit at the Headquarters level as you begin to work a particular case of this magnitude?

WIT: Can you be more specific?

Mr. Fawcett: In other words if the Coast Guard has a national command center or something akin to that where – that takes a look at all of the search and rescue activities taking place throughout the Coast Guard, is that correct?

WIT: Yes.

Mr. Fawcett: So for your particular job, what kind of specific training do they have for the job that you hold and could you describe briefly the qualification and designation process?

WIT: Sure. The specific qualification process for me started with the Operation Specialist 'A' school. Everybody that's in my rate goes to that. And then your training and your qualification process will be – it will be different depending on where you go. At the Coast Guard Seventh District you stand watches, the minimum is 15 with a qualified individual and you would basically be learning from them how to do the job.

And you also attend a MSP course, or maritime search planning course at Yorktown, Virginia. And that's approximately 1 month long.

Mr. Fawcett: So once you've attended the training and you've fulfilled the minimum number of watches, it could be more, is that correct?

WIT: Absolutely, generally it is more.

Mr. Fawcett: So what happens next in terms of how you get designated in writing that you're a qualified watch stander?

WIT: Sure. So at that point there's also a SAR test that's a written test administered by the Coast Guard Seventh District SAR specialist Mr. Eddy. Once you complete that test to his satisfaction we also do a preliminary oral board with him. Once that's completed we do a final oral review board with various members of the Seventh District including the chain of command. And once that's completed you are designated in writing as an operations unit controller for the Coast Guard Seventh District.

Mr. Fawcett: Thank you. So how long have you been performing your present duties?

WIT: Are you asking how long I've been qualified, or how long I've been there?

Mr. Fawcett: Well how long, from the time you reported into the Seventh District and were qualified. How long have you been doing these duties?

WIT: Approximately 1 year.

Mr. Fawcett: And are you qualified and designated for other duties within the Seventh District Command Center?

WIT: Yes, sir, that's correct.

Mr. Fawcett: Just briefly explain what you're qualified and designated to perform.

WIT: For OU, search and rescue and for situation unit leader.

Mr. Fawcett: So leading up, one question that I wanted to ask, the operational specialist training, how long is that?

WIT: I believe it's 8 weeks.

Mr. Fawcett: And that covers what basic areas of training? Just in general, just a.

WIT: Radioman procedures, ship board navigation and radars, just everything that an Operation Specialist generally should know.

Mr. Fawcett: So leading up to the morning of the 1st of October, 2015, when did you begin your duty cycle?

WIT: At 0600 that morning.

Mr. Fawcett: Had you stood watch in the days immediately preceding the accident day?

WIT: I had not stood watch before that, no.

Mr. Fawcett: Okay. So what kind of – what kind of duty rotation, just briefly, could you describe what that's like?

WIT: It's generally supposed to be 2 days on with 3 days off. So 24 hours in a 48 hour period. Uh with 72 hours off.

Mr. Fawcett: And in general leading up to the accident day was that the way that was working?

WIT: In general, yes. I would say that's fair.

Mr. Fawcett: Okay. So were there any deviations from that? I mean in general you said, but I mean did you work like extra shifts or more time for any reason leading up to the accident day?

CAPT Neubauer: And this would be to the best of your recollection. If you can't remember specifically just, that's fine.

WIT: No I don't believe leading up to that I worked in any extra. But it's not a standard set, you're going to work these 2 days and you're going to have these 3 days off. It varies.

Mr. Fawcett: So the night before the morning that you came on watch on the 1st of October, 2015, do you recall if you had an adequate sleep that night?

WIT: Yes.

Mr. Fawcett: So as you come in to the watch, you know you have to come up to speed on what goes on, on the watch so that you're prepared to take the watch. Could you describe what the relief process was like that morning?

WIT: Well the relief process is the same every morning. So there's a certain flow that follows, but generally we would start off with briefing where all of our blue forces were, where all of our assets were. They would then brief the weather. And then you're going to go on to any pending active or ongoing search and rescue cases. And then you're going to do all of your pending active or ongoing law enforcement case. And then any type of intelligence based – or any cases like that ----

CAPT Neubauer: Sir, you're tailing off a little bit. Could you speak a little closer please? Thank you.

WIT: Sure.

Mr. Fawcett: So generally you and the person that you were relieving exchange this information and in general how long does that process take?

WIT: In general 30 to 45 minutes.

Mr. Fawcett: And it's a – would you describe it as a comprehensive picture of what's going on so that you could prepare and be ready to perform the watch?

WIT: I would.

Mr. Fawcett: Thank you very much. I'll pass the questions to Mr. Webb.

Mr. Webb: Good morning Petty Officer Chancery, how are you doing?

WIT: Good morning.

Mr. Webb: When you do the relief process is it as a group or is it individually, the individual positions?

WIT: It's both. So everything's done as an entire group, but the individual positions would brief their own individual positions.

Mr. Webb: But once everybody's satisfied that they have the information that's when the watch is relieved for all three, or four positions in the command center?

WIT: Yes.

Mr. Webb: In the command center. In addition to the normal items that are briefed when there is a special event such as a -- the hurricane or law enforcement activity migrant interdiction - is there any additional briefing going on?

WIT: Sometimes.

Mr. Webb: That morning did you receive more information on the position of the hurricane or the strength of it?

WIT: We – we – we talked about the hurricane and some of the predictions that were supposed to happen. But I don't remember what was actually specifically said.

Mr. Webb: What time did your shift actually begin?

WIT: At 0600.

Mr. Webb: 0600. The shift length is how long in the D7 command center?

WIT: 12 hours.

Mr. Webb: During the – your month of, normal month of duty how many night watches do you stand?

WIT: Again that depends.

Mr. Webb: On average.

WIT: It's really hard to say. Umm, maybe 16 on average.

Mr. Webb: The – were you in a day time rotation or were you going from nights to days at that point?

WIT: No. And at the command center we try not to allow that to happen if operationally possible. Generally we'll be on nights for one month or days for one month. And my chain of command tries to stick to that as much as operationally possible.

Mr. Webb: Is there a longer period in between the night watches and the day watches to shift your acclimation to days or your acclimation to nights, the days off wise to get enough sleep?

WIT: Days off I believe I get enough sleep. But if you're asking if there's any extra days allocated when you're switching between nights and days, I don't believe that there is, no.

Mr. Webb: Okay. So can you explain to me what your awareness was of the tropical weather that was occurring in the Caribbean that morning?

WIT: Sure. I knew that there was a storm in the general area of the Bahamas. I knew it was forecasted to head to the Southwest and there was also different projected

models on what it was supposed to do. But – and I got briefed on, you know all of our assets, where they were, what they were doing because of that.

Mr. Webb: Who do you go to and did you go to them that morning either during the watch relief or after the watch relief to get the latest information on the hurricane?

WIT: So we have an inbox set up that the National Weather Service sends us emails periodically that would provide us information on that. Or I would go to the NOAA website, National Hurricane Center and look for data on that.

Mr. Webb: And was that done on the 1st?

WIT: Umm huh. Yes.

CAPT Neubauer: In regard to your hurricane knowledge at the time, did you know that the hurricane was forecasted to strengthen significantly? Do you remember that?

WIT: I don't specifically remember that.

CAPT Neubauer: Thank you.

Mr. Webb: So in the watch relief you talk about status of forces and how up to date is that information? Is that from the night before or at the time of the watch relief do you get updated information on status of forces?

WIT: Yes. So generally right before the watch relief all positions are updated, checked and all of the assets are repositioned to where they are currently prior to that pass down.

Mr. Webb: So the Coast Guard uses modeling for risk assessment and the requirement for command centers to use, or to conduct a risk assessment at the beginning of their watch. Did you – do you do that in D7 to get a GAR or a GAR score for your day's watch? Do you discuss the risks that are occurring during the day?

WIT: Can you speak into the mic, sir?

Mr. Webb: Okay. The Coast Guard uses the GAR, the risk assessment model GAR. And one of the uses is in the command center. That morning was risk discussed and did you have a GAR score for your command center for your watch?

WIT: I don't believe that we had a GAR score for the command center. But every mission that we send out Coast Guard crews on we look at very heavily at operational risk management.

Mr. Webb: Were the risks of the day, that may occur that day were they discussed during watch relief?

WIT: No I don't think the risks of that day that may occur were discussed. Because anything could happen generally on any given day. So I think that would lead to a lot of speculations.

Mr. Webb: Okay. We're going to go to the actual event and I want to talk about awareness. And can you please describe the event that occurred during your watch on October 1st concerning the El Faro? And how the situation started for you.

WIT: Okay. Describe how the situation started for me. Was that the question?

Mr. Webb: Can you describe how the case started for you?

WIT: Sure. I received a telephone call from Atlantic Area command center. They advised me that there was a ship experiencing some difficulties in the Bahamas. I believe that I received the name of the ship, the position, that they were disabled, that they had taken on some water through a blown scuttle. That they were listing and that their engineers were working on it. They were dewatering the vessel. And he said he was going to follow up with an email shortly. I received the email then. The email had

the information that we had discussed and it was also was – it contained in a SSAS alert format that was actually part of that email from LANT Area. And it also had comments basically what we had talked about. And it also said that the ship was in no danger of sinking in that email that I got. And that was my initial notification that they were disabled, that the ship had begun to list, that they had taken on water, but they were removing that water, they were pumping it out. The ship was in no danger of sinking and they had lost propulsion. At that point on the email ----

CAPT Neubauer: I'm just having trouble hearing the witness, I'm sorry.

Mr. Webb: Also we have an Exhibit 34 which is the email.

WIT: Umm huh.

Mr. Webb: I would like to have you take a look at that.

WIT: Sure.

Mr. Webb: Let me know if that's the email that you received.

WIT: That is. And uh, so it's from, it's from LANT watch which is a command center inbox, it's monitored there by the Atlantic Area watch standers. It's to the District 7 command center inbox. El Faro, San Salvador and it says we received the following Inmarsat C distress alert from motor vessel El Faro in position MISLE reports it is 737 foot vessel. The vessel also activated its SSAS alarm. The command security officer for the vessel contacted the vessel and relayed their condition to us. POC John Lawrence. And then this is what's written. A scuttle opened in rough weather and the vessel took on water creating a 15 degree list. They stopped the ingress of water they are not at risk of sinking, but they are without power and engines. They are dewatering

the vessel. Please assume SMC and work with RCC Bahamas to respond and report back with your efforts.

CAPT Neubauer: I would like to make a note for the record here. That the length provided in this email 737 feet is the length of the vessel indicated in the Coast Guard's MISLE system, MISLE 5.0 and that is the length between perpendiculars for the El Faro.

Mr. Webb: Okay. We also, Exhibit 33 is the actual audio recording of that call. If I could play it.

CAPT Neubauer: We're going to play the audio just to help refresh your memory from that morning.

AUDIO: Coast Guard Seventh District Petty Officer Chancery. Hi Lieutenant Commander Hobby LANT Area command center how are you? Hi Commander Hobby, what can I do for you this morning? Well are you are SAR desk today? I am. Okay. Well I got an Inmarsat C alert and it came in as an Inmarsat C and as a SSAS alert, but it is going off in the Bahamas. Okay. And it's a 737 foot boat. Okay, great, I'll pass it off to the Bahamas then. Okay. Give me all the information. I'm going to send you, that's what I wanted to ask you about, whether to contact the Bahamas directly, or report – brief you and you work with the Bahamas. Well so I'll contact the Bahamas, because we have OPBAT down there. Okay. So I'll contact them and go from that way. Okay. I'll forward this to you. 700 foot motor tanker? 737, I'll send you all the details. Is it at Nassau or is it at Freeport? It is most of the way, it's toward the Turks and Caicos. Okay. It's like 2/3rd of the way toward Turks from Nassau. Okay. I'll send it to you. All right, thanks. Thank you. Bye.

CAPT Neubauer: Mr. Webb I have a few questions before we start in. Did you know at the time when that phone call came immediately if that was a U.S. flagged vessel?

WIT: No, not at the time.

CAPT Neubauer: Okay, thank you. Actually did you find out shortly thereafter by looking in the data base, or?

WIT: Yes.

CAPT Neubauer: Thank you.

Mr. Webb: Petty Officer Chancery can you explain OPBAT?

WIT: Sure. It's operations Bahamas Turks and Caicos. It's a – it's an operations center that's set up, they're out of Nassau, Bahamas. They're our in country hub. They work for the Seventh District command center, but they also work for the U.S. Embassy that's over in Nassau, Bahamas. And they work directly for the Director of the U.S. Embassy. They provide law enforcement, search and rescue capabilities for the Bahamas which we forward deploy Jay Hawks or MH-60's to Andros Island and Great Inagua Island. There's generally two on Great Inagua and one on Andros Island in the Bahamas. And they facilitate the coordination and the communication between us, the Government of the Bahamas, the Royal Bahamian Defense Force, our Coast Guard liaison officers that's over there and they facilitate the communications when launching our Coast Guard assets in the Bahamas.

Mr. Webb: What type of training is provided to those watch standers? Is it at the same level as the command center or do they get a different training set?

WIT: Mr. Webb I don't know. I haven't been to OPBAT.

Mr. Webb: And can you explain what the Jay Hawk's or 60's are just quickly for?

WIT: Sure. The MH-60 is the Coast Guard's medium range recovery helicopter. And we also have MH-65 which are short range helicopter.

Mr. Webb: Thank you. So you're in the information gathering stage of the case and you now have basically two positions in that email. Can you tell me if you plotted both of those positions, the one off of the SSAS alert and the one off the Inmarsat C alert? And which one did you plot if you only plotted one?

WIT: I believe – I believe I plotted both of them.

Mr. Webb: And was there a difference in those positions?

WIT: Yes there is.

Mr. Webb: Do you remember how large of a difference it was?

WIT: No I don't.

Mr. Webb: And which uh, do you remember where they plotted?

WIT: In the vicinity of Rum Kay, which is a small inhabited Island in the Bahamas.

Mr. Webb: And where is Rum Kay?

WIT: It's in the Bahamas. It's to the – it's to the East of the Crooked, to the Northeast of the Crooked.

Mr. Webb: So in the information gathering stage what tool do you use to complete that task and how long does that normally take?

WIT: A few minutes. You would use a SAR OPS which is a search and rescue optimal planning system. And you would plot those positions with that.

Mr. Webb: In SAR OPS does it have the ability to show you depth of water?

WIT: So that takes a little bit longer. But yes it does. You can do charts, overlays and that type of things that you can pull up water depth.

Mr. Webb: In that area does the chart overlays and NOAA charts, do they cover that area of the Atlantic?

WIT: Yes.

Mr. Webb: The – what QRC or check sheet are you using at this point?

WIT: The initial SAR check sheet.

Mr. Webb: And was that completed?

WIT: Yes.

Mr. Webb: So you had the positions and do you remember the depth of water that you thought the vessel was in at that time?

WIT: No I don't remember the depth of water that I thought that the vessel was in at that time.

CAPT Neubauer: Mr. Webb I want to clarify a couple of points before we move on. Just for my own recollection, what came first the email or the call from LANT?

WIT: The call. The call came first and then the email. It was followed up by the email.

CAPT Neubauer: Okay. So we covered it out of order at the hearing. We should have played the call first and then the email came directly thereafter? And would our SAR response be different initially for a foreign vessel than a U.S. vessel?

WIT: No.

CAPT Neubauer: Thank you.

Mr. Webb: So you had the point of contact for Tote, which is Captain Lawrence. And I would like to turn your attention to Exhibit 31 which is your phone call to Captain Lawrence. I would like to play that at this time.

AUDIO: John Lawrence. Hey John, Petty Officer Chancery, I'm from the Coast Guard in Miami, Florida. How are you? Yes, sir. I'm calling you back you were listed as a POC for the El Faro. That's correct. Okay. Do you have contact or direct communications with the vessel? I did, they called me. I was just trying to call them back. Okay. And satellite dropped the call. I can give you the phone number. Yes, give me the phone number to the vessel, that's fine. Okay. Satellite number you have to dial 8 – 011 first to get the satellite. All right. 870-773-206-528. Okay. I'm going to repeat that back. 011-870-773-206-528. That's correct. That's what he called me on. And I tried calling him back a few minutes ago to see if they had had any contact with you guys yet. They haven't – who contacted the – they contacted LANT Area. [in audible] Yeah I talked to them and they said they were notifying you and then – can you tell me what the plans for [in audible] now. They said you were going to contact the Bahamas I guess? Well, yes, sir. So here's the deal and that depends. So right now, right now based off of all the information you've provided and you know I'm not in a distress phase currently because they said they're not at risk of sinking and they have dewatered and they – and I'm looking they are without power and engines. Correct. Are they – so are they able to anchor that boat right there? I don't see, they're 48 miles East of San Salvador, so I don't think so. Well but the position that I'm looking at they should be able to anchor. Oh really? It's not that deep. And there's some small Islands that they're right near. So I'm trying to – you have a better map than me. Ha ha ha. I'm sorry, your last name was? Chancery, C-H-A-N-C-E-R-Y. And right now yes, I am going to pass this information on to the Bahamas and you know it just depends, because this is a large motor vessel. So generally for these types of situations where

there's not like an emergent distress where we need to, you know go out there and remove people from the vessel or something like that. Correct. They are disabled, then generally it would be up to the company to provide some type of tug assist or something else like that. Okay. Okay. And have you guys, have you, you know do you guys have like commercial towing assistance or any type of salvage contract in place already? Yes. Okay. Yes, we do. And I can contact them. I would say to contact them sooner rather than later. Okay. Because you know I'm going to obviously call the ship and try and get a better, you know feel of what the situation is. But from what was passed on to me right now we would be – we would generally go that route. Okay, no that makes sense. You're in a territorial seas of a foreign country as well. I'm looking at it right now. And the nearest probably safe haven where they could pull in would be Turks and Caicos. Okay. All right? Okay. And I'll give you call back with updates. Are you going to be the point of contact through this case with me? Yes, sir. Okay, all right, great. All right I'm going to try to give the ship a call just to get a better handle on what the situation is and what's going on now. Okay. And if you hear from them just give me a call back. Okay. And what's your direct number? It's 305. Okay. 415-6700. Okay, sir. Thank you. Thank you. Bye.

Mr. Webb: Okay. So during that call you described to him that you believe that the ship could anchor and from the position you were looking at. Can you tell me what tool you were using to get that depth?

WIT: I think I believed that if they were near that position that they could possibly anchor. And it was the Raster Charts on the SAR OPS.

Mr. Webb: And that position that you were using at that point was Inmarsat C or the SSAS?

WIT: I believe it was the SSAS.

Mr. Webb: Okay.

CAPT Neubauer: I have one follow up question from earlier. If this had been a foreign vessel in territorial waters of the Bahamas, do we have the right to immediately enter that area and do a search?

WIT: Yes we do.

CAPT Neubauer: Is there a special agreement with the Bahamas or is that true for any foreign country?

WIT: That's true for any foreign country as long as the nature of the distress is known and we can provide timely and effective assistance to that – to that vessel in distress.

CAPT Neubauer: Thank you.

Mr. Webb: Territorial seas are described as how far off shore?

WIT: Within 12 nautical miles.

Mr. Webb: Was any of the positions within 12 miles?

WIT: Yes. And it's because it's an Island State, it's an archipelagic State.

Mr. Webb: The positions that were given there, were they within 12 miles?

WIT: Yes.

Mr. Webb: During the call you could hear in the background the SARSAT computer alert. Can you explain what the alert was telling you at that point? The audio that you could hear that said emergency?

WIT: Yeah, so at that point when you hear attention emergency, that was the El Faro EPRIB going off.

Mr. Webb: And was – is that a standard alert for the computer itself, or the SARSAT computer, is that the initial way you are notified or is that a secondary alert? Can you – there are a couple different tones when you get a SARSAT alert. Can you tell me which one that was?

WIT: That's the only tone that goes off.

Mr. Webb: That's the one that D7 uses for the initial notification?

WIT: Correct. That's the only tone that goes off when we receive a SARSAT alert. There's no different tones that are generally set up. Are you asking specifically how the signal gets to me?

Mr. Webb: No.

WIT: Okay.

Mr. Webb: I'm asking you, on the computer there's different audio sounds that are made when a SARSAT—when a SARSAT is received. Is that the initial one or the second alert after the first minute if you haven't acknowledged it?

WIT: No. That's the first one.

Mr. Webb: That's – you have it set up it goes to the emergency for the first?

WIT: Yeah, I don't not acknowledge them.

Mr. Webb: Okay. Who acknowledge the SARSAT alert?

WIT: I did.

Mr. Webb: Okay. And I would like to turn your attention to Exhibit 72.

WIT: 72?

Mr. Webb: 072. Okay. That – that is what document is that? Can you explain it?

WIT: Sure. This is actually the SARSAT information data sheet for the SS El Faro.

Mr. Webb: Is that a standard message that comes across the SARSAT?

WIT: Yes. So it contains, on the first line it tells you what type of alert it is. And this is 406 Beacon un-located first alert. It also gives the beacon's hexa decimal ID for that particular beacon. And then United States Mission Control Center assigns it site ID. On the next line you see, it should give you a probability would be if it was a split solution. It will give you a solution. It should provide a latitude, longitude and it will tell you the detect time, the satellite that detected it. And whose search and rescue region it's in. For this particular alert because it was un-located it would – the system defaults to the search and rescue region that the vessel's homeported out of. Since they were homeported out of Jacksonville, Florida the system automatically pushed the alert to me.

Mr. Webb: What would the reason be why the beacon alert would be un-located?

WIT: Are you talking un-located and remain un-located, or un-located on just like the first alert?

Mr. Webb: Just when you received the alert. What is the reason that it's un-located?

WIT: Because it's not GPS encoded. So if I receive an initial alert of a SARSAT ID and its GPS encoded I will get a GPS position from that particular alert. If it's not then I have to wait for the satellites to pass overhead again and determine a Doppler shift solution or a composite position based off that.

Mr. Webb: With an un-located beacon what satellite is picking up that signal?

WIT: This particular one it was G13.

Mr. Webb: And what is G13, do you know, do you have any idea what that means?

WIT: No I don't. I believe it's a geo stationary. But no I don't.

Mr. Webb: And geo stationary's, do they provide positions without GPS?

WIT: I don't know at this time.

Mr. Webb: Okay. So you received this alert and what is the normal time frame once you receive an un-located alert that you start receiving the other types of updates that you receive during SARSAT?

WIT: I would say there is no normal time. Sometimes it's within 5 minutes, other times it's up to one hour before you receive the next pass information.

Mr. Webb: So somewhere between 5 and an hour you would see some sort of update through – what type of information would come on an updated – an updated SARSAT alert?

WIT: Just the position. If it was able to determine a position.

Mr. Webb: Can you explain the hierarchy of the types of updates you get? There are different terms that are used.

WIT: As far as?

Mr. Webb: As ambiguity unresolved and so on.

WIT: So if it's an ambiguity unresolved it basically comes in again with another pass and it still hasn't located, that generally means that it will come in with some type of split solution which it will say – it will provide you two positions. And the satellite's saying that it can either be here or over here. And you're going to have to wait until the next pass to either find out conclusively or sometimes that's all you get is it could be here or over here. In which case under current policy we would look at both positions.

Mr. Webb: Under Coast Guard policy an un-located alert is considered what level in the emergency phase?

WIT: Distress.

Mr. Webb: Under Coast Guard policy in an Inmarsat C alert is considered what?

WIT: Distress. But that's barring no further information. That's just receiving the alert and going from there without knowing anything else about the particular details or the particular case.

Mr. Webb: With the information you had after you received the 406, what was your level of emergency phase that you felt you were in?

WIT: So after I received the 406 I believed that very rapidly we were shifting to the distress phase. I don't remember receiving any indication that they were going to light off their actual EPIRB through my phone call or through the email or the conversation with LANT Area. So that was a trigger to me, is receiving that EPIRB. Yes.

Mr. Webb: So that in your mind was a game changer then?

WIT: It was, it was in my mind, yes. I was not aware that they were supposed to at that time activate that.

Mr. Webb: Just for clarification when we were talking 406, what does that mean?

WIT: It's 406 megahertz, it's a frequency and their homing signal is 121 decimal 5 megahertz. For search and rescue responders that's how they would actually home in on that particular signal.

Mr. Webb: And the term EPIRB?

WIT: It's emergency position indicating radio beacon. It's one of three types. You also have emergency locator transponders which are on – generally on aircraft. And you

also have, they're generally newer, but they're called PLB's, or personal locator beacons. And they're generally held on life jackets and life vests.

Mr. Webb: And you also talked about hexa decimal code, what is a hexa decimal code and what does that mean in the SARSAT?

WIT: Sure. The hexa decimal code is a series of 15 numbers and letters and it's a unique identifier for each particular beacon that's out there.

Mr. Webb: And who holds all that data?

WIT: USMCC, or United States Mission Control Center.

Mr. Webb: And what agency runs that organization?

WIT: NOAA does.

Mr. Webb: So during this phase you're still collecting information. What tool did you use to collection additional information on the El Faro?

WIT: So I used a lot of different tools to try to gather information. One of which was it's called CG One View, which is a, well it's a conglomeration of things, but you can pull live satellite weather, you can pull AIS automated identification system, LRT long rant tracking satellite based AIS feeds as well as blue forces feeds from our AIS transponders that are – that only we can see. And you can also pull any numerous number of things from the Captain of the Port areas to ATON to a bunch of other things. I used that to look up the AIS feed or any satellite feed of the El Faro. I – at the initial time of receiving the initial report and plotting some positions down I wanted to know where the ship was in regards to Joaquin. I believed that initially I put a range ring scenario on SAR OPS. I don't remember specifically, but I think I put a 160 nautical mile ring around, because I believed that was about the swath of the hurricane. And

when I put that – when I put that ring down and I plotted the position I noticed that the position that was plotted was right in the middle of that – of that hurricane. I did this right after I tried to contact the ship. When I was still gathering that information I was – I thought that I was going to be able to contact the ship and maybe see what – get further details, collect you know the information at least the information on the QRC. I had some from MISLE already. But I wanted a better position. The EPRIB didn't provide me one. I had an AIS track that was different from the two other positions that were plotted. However, I knew the general area was right in the middle of Joaquin. After I was unable to establish communications with the vessel and then furthermore plotting the position of the vessel by the time, you know at the time we received the initial distress alert, I would say I was very alarmed and I would say that's why I kept Captain Coggeshall so involved and tried to brief him as much and as often as feasible.

Mr. Webb: Okay. You were using the AIS or the LRT, or the long rang tracking. Which position were you using with that program and what was the time link on the position? Do you remember? Was it earlier than the SSAS? Was it earlier than the Inmarsat C?

WIT: I don't specifically remember if it was earlier or after. It does provide a time stamp so you can see how time linked that position is.

Mr. Webb: Do you remember if that position, that AIS position was farther North or South or in the same vicinity as the two other alerts?

WIT: I believe it was farther to the North. But it was still within that circumference that I had drawn. It was still within ----

Mr. Webb: The 160 mile range?

WIT: Yes, sir.

Mr. Webb: At this point can you tell me when you had briefed Captain Coggeshall as SMC on the case?

WIT: Sure. I briefed him initially I believe right after I got the phone call from LANT Area and I said hey I've got something new that's coming up and I'm going to start working it. And I briefed him initially on – on, you know the phone call and the email. And then I briefed him again once I had a few minutes to – to, you know get everything plotted down in the system, pulled the weather. I wanted to get on scene weather from the Captain of the SS El Faro, but I was never able to establish communications with them.

Mr. Webb: In your brief was he aware that the EPIRB alert had gone off and you had received it in the command center?

WIT: Yes.

CAPT Neubauer: I have a question if you can recall would be critical to the investigation. Do you remember at that time doing the weather analysis specifically wind and sea state in the area? And when I say analysis just really just checking what that state was.

WIT: Umm at that time I don't think so. I believe the first indication of the weather that I got, besides the forecasted weather was when I spoke with the motor vessel Emerald Express.

CAPT Neubauer: What was the sea state provided by the Emerald Express, can you remember?

WIT: I believe it was in excess of 20 foot seas and 50 to 60 knot winds.

CAPT Neubauer: Thank you.

Mr. Webb: In the program the CG One View you said it had overlays for the national weather service. And did that information give you, besides the track of the storm any idea of the weather, the on scene weather in the area? Did it have that data available to you?

WIT: Yes. And it assisted me in making that determination. And making those kinds of calculations.

Mr. Webb: Okay. What steps were you taking to attempt to contact the El Faro? Can you explain what you – what steps you went through?

WIT: I contacted John Lawrence so I could get the Inmarsat satellite phone number to the ship so I could contact the ship. And then I just tried to direct dial those – that telephone number that he gave me through our phone system.

Mr. Webb: Was any other watch standers in the command center assisting you in attempting to contact the ship?

WIT: I honestly wouldn't – I wouldn't know. They could have been but I hadn't specifically directed anyone to or anything like that. I don't know.

Mr. Webb: Had you discussed the situation at that point with your command duty officer? Was he aware of where you were at with this case and your level of concern with the case?

WIT: Yes he was.

Mr. Webb: And that person was who?

WIT: Chief Webb.

Mr. Webb: Chief Webb. And Chief Webb is an Operation Specialist too?

WIT: He is.

Mr. Webb: At what point did you contact the port operating location in the OPBAT? And what information did you pass to them? What were you requesting from them?

WIT: So this was – this was very early on. I passed that I, I don't remember specifically what I said, but I did pass that I had a search and rescue case and I requested to know if the Great Inagua MH-60 Jay Hawks were even available to launch and I was told they were out of parameters.

Mr. Webb: And could they, the last part?

WIT: And I was told they were out of parameters.

Mr. Webb: And was that on the initial call or did they call you back with that information?

WIT: I don't remember if it was on the initial or if they called me back. Or if they put it in the communicator.

Mr. Webb: So at that point you – basically understood you didn't have any air assets that were available. Can you expand on then what you were thinking of using to possibly get out on scene?

WIT: Sure. So I tried to – I tried to do also, I tried to an AMVER SURPIC.

Mr. Webb: Explain what AMVER SURPIC is.

WIT: So it's a surface pictures. It's a voluntary ship reporting system that was developed by the United States Coast Guard. And it's generally larger ships that are involved in it. And again it's voluntary and it provides a dead reckoning position that the ship would update in our system. And it's a – we generally use it for farther off shore cases where they would – where the AMVER vessel would be the most appropriate and timely response or in a position to provide whatever assistance was required. And so I

tried to do that. I realized that I had to actually back AMVER out over 150 miles before I really found anything. When that failed I went back to the CG One View system and I turned on every feed I had. I then started picking out vessels and contacts that were possibly nearby and attempting to establish communications with those vessels. I was finally able to establish communications with the Emerald Express.

Mr. Webb: And it trailed off.

WIT: With the Emerald Express.

Mr. Webb: Okay. The AMVER – the AMVER program is that a standalone or does it reside in other programs? Or how do you access AMVER?

WIT: Through SAR OPS.

Mr. Webb: And does it show a display, a graphical display?

WIT: It does. It will show your ring, however big you make your circumference when you're looking for whatever specific area. And it should if there's anything, if there's any vessels within that ring it should provide an Inmarsat Charlie phone number or some type of satellite communications device so we can talk directly with the Master of the ship. And a brief description of what their capabilities are. So if they have a doctor on board, if they have any medically trained personnel or EMTs and a general description of their vessel.

Mr. Webb: So in this time frame you had talked with Captain Lawrence again and he stated he had not been able to get a hold of the ship. Can you elaborate more on that conversation? Do you remember what you talked about in the second conversation?

WIT: I actually don't.

CAPT Neubauer: Was there a second conversation?

WIT: I don't remember. I think things started happening very fast after that. And if there was a second conversation I don't remember speaking with Mr. Lawrence again.

CAPT Neubauer: Would that be in the command center log if there was a second conversation?

WIT: In the digital voice logger? Yes.

CAPT Neubauer: Yes.

WIT: Yes it should be.

Mr. Webb: Petty Officer Chancery would you like to take a break?

WIT: No I'm okay.

Mr. Webb: You're okay? Okay. You were attempting to get a hold of the vessel through Inmarsat. Did you try any other methods besides the Inmarsat telephone? Did you attempt any high frequency call outs or any other methods to try to get a hold of the ship that they may have on board?

WIT: Are you talking initially or later on?

Mr. Webb: Initially when you're trying to establish communications with the vessel. What were the different forms of communications that you were attempting to get a hold of them on?

WIT: Just the satellite phone. Initially I was attempting on the satellite phone.

Mr. Webb: There was no HF calls?

WIT: No.

Mr. Webb: High frequency. Did you issue an urgent marine information broadcast?

WIT: I did not issue an UMIB, I issued an enhanced group calling message. It's the equivalent of a UMIB for farther off shore cases or whenever the SMC would deem it

appropriate. We deemed it appropriate this time because we were dealing with a location inside the Bahamas. We couldn't issue UMIB through our local Sectors or through anyone else because it would have been out of their range and out of the effectiveness. So we issued an enhanced group calling, EGC.

Mr. Webb: How do vessels receive enhanced group calls?

WIT: I'm not actually sure of the specifics on how they receive it. I believe it's received on some type of automated system on board the ship and we put our phone number in the enhanced group calling message. So when we get replies to that they call us back directly.

Mr. Webb: Did you receive any responses to your enhanced group call?

WIT: No I did not.

Mr. Webb: At this point you had talked with OPBAT, were there any other Coast Guard units you identified that may be able to respond?

WIT: The – I believe that the closest thing was the Coast Guard Cutter Resolute and they were South of Guantanamo Bay in the Windward Pass area. I believe that would have been the closest thing, but you know as far as identifying, I mean I take a look at the blue forces whenever any type of incident happens and I want to look and see what's the closest and what the most appropriate response would be. But they were several hundred miles away. And that was the closest thing that we had. Besides Great Inagua.

Mr. Webb: Did the Northland – did you have their position?

WIT: We did. We had the Northland, the Resolute, we had any Cutter that was in an Alpha status that was underway in our AOR we had their – I wouldn't say real time up to date position, but we had their position within an hour or so.

Mr. Webb: Did you divert either of those Cutters at that point?

WIT: After I – after I spoke with Captain Coggeshall we made the determination to divert.

Mr. Webb: Which got diverted? Which Cutter got diverted?

WIT: I can't remember right now if it was the Resolute or the Northland but we diverted the Cutter that was South of Guantanamo Bay.

CAPT Neubauer: We heard testimony yesterday that it was the Northland.

Mr. Webb: So while this was all going on you continued looking for good Samaritan vessels in the AOR. And besides the Coast Guard assets what other Government agency assets or foreign assets were available or were you contacting to possibly use?

WIT: So we contacted the Royal Bahamian Defense Force through OPBAT. And I believe I was told that they had sent all of their boats to Key West, the Bahamian Defense Force had for hurricane avoidance. So as far as, are you referring to U.S. Naval vessels, warships or anything else?

Mr. Webb: U.S. Navy, Air Force, Air Guard.

WIT: Sure I didn't see anything else in the area. The closet ship that I found to any of the positions indicated into the general geographic area of the last known position for the El Faro was the Emerald Express. That's why I reached out to them.

Mr. Webb: And how did you identify the Emerald Express?

WIT: Off of the CG One View, off of AIS.

Mr. Webb: So they were pinging AIS?

WIT: Correct.

Mr. Webb: Okay. Can you explain what you did to contact and request assistance from the Emerald Express?

WIT: Umm I don't remember specifically how I got their phone number. I believe I had to dig into MISLE and I may have had to contact some other – a third party to get a phone number. But I don't remember specifically, but I did call them and the – when I spoke with that Captain and asked him what their on scene weather was and everything else he told me that he was in a lee on the other side of the Island for hurricane avoidance. That he couldn't move. So I requested that he at least do call outs on the radio for the SS El Faro and make reports back to me if he had heard anything. I never received any follow up phone call from him.

CAPT Neubauer: Do you remember the Island that he was obtaining a lee from?

WIT: The Acklins and Crooked Island. He was on the other side of those.

CAPT Neubauer: Thank you.

Mr. Webb: Did the Emerald Express have any concerns about their safety besides not absolutely heading out to look for the El Faro? What was their situation?

WIT: I would say that they were concerned. That's why they were where they were. They were trying – I believe they were trying to shelter in place. That's why they were on the other side of that Island and kind of sheltering their vessel from the storm.

Mr. Webb: From the record it shows that you were able to get a hold of the C-130's that were doing the hurricane hunting, the observations, can you explain how you obtained that information and how you got them to help you search?

WIT: Okay. So on one of the briefs Captain Coggeshall knew from his experience being a pilot himself that the U.S. Air Force flew these flights when there was expected tropical storms and hurricanes. So he wanted someone on the watch floor to reach out to the Air Force Base directly. I wasn't specifically tasked with doing that. I believe my CDO ended up calling the Air Force Base directly and getting communications with them and making the request that way. But I didn't specifically talk to them.

Mr. Webb: And what was the status of the hurricane hunter at that point? Were they airborne, were they getting ready to get air borne? Where were they at?

WIT: I believe they were over the hurricane at that point.

Mr. Webb: For clarification CDO stands for?

WIT: Command duty officer.

Mr. Webb: And that was Chief Webb?

WIT: Correct.

Mr. Webb: So they had an asset in the area. And what did you request them to do?

WIT: Over fly, Mr. Webb I didn't actually make that phone call. I think me actually testifying to what I specifically requested them to do wouldn't be ----

Mr. Webb: What did the Coast Guard request them to do?

WIT: I believe that Chief Webb requested call outs and to fly over the last known position and see if they could make any determination. As well as using their vessels, or their aircraft's radars to scan.

CAPT Neubauer: Can you clarify his position in the command center at that time?

WIT: Command duty officer.

CAPT Neubauer: Thank you.

Mr. Webb: They accepted the mission?

WIT: Umm ----

Mr. Webb: Did they conduct -----

WIT: They did. They did conduct what we had requested. As far as accepting the mission they were already on another mission. So we couldn't divert or direct them to do anything that they weren't willing to do for their own safety.

Mr. Webb: Did you receive a report back from the aircraft?

WIT: I did not specifically, no.

Mr. Webb: Do you know if a report was received by the CDO or SU or your situation unit controller or the SAR mission coordinator?

WIT: Sure. I believe it was and that was that there was no responses to the call outs and that they weren't able to see anything. I believe they didn't and weren't able to get anything lower than about 10,000 feet throughout the duration of their flight due to the weather.

Mr. Webb: During that flight do you know if they heard any other radio activity besides the call outs to the El Faro that they were making?

WIT: I don't know.

Mr. Webb: In the record it does note that the C-130 did hear the Emerald Express making call outs. Did you know that?

WIT: No.

Mr. Webb: During this period of time besides the El Faro did any other cases start or were ongoing?

WIT: I'm unsure.

Mr. Webb: You started your SAR OPS drift, or program, did you conduct a drift from the information you had?

WIT: When?

Mr. Webb: Any point during your watch, did you conduct any SAR OPS drift model?

WIT: Sure, but not until the Monday. I was unable to conduct any type of drift model simulation on the – on October 1st and October 2nd. The program requires that you enter in either on scene for forecasted weather so it can make its environmental data servers. So it can make it's EDS product and it can calculate that drift scenario, whatever scenario you put in. It wouldn't let me enter in the winds that were forecasted and the winds that were observed. It just wasn't an option for that – for that system. I couldn't conduct any type of drift model for the first two days because the hurricane sat in the general area for 48 hours.

Mr. Webb: So for clarification though during your first watch you did attempt to use SAR OPS as it's set out to – you attempted to make a drift but the program was out of parameters?

WIT: Yes. What I did is I opened up a case in SAR OPS, I labeled it you know in accordance with our policy, labeled it the MISLE number and I – anything that I plotted or any pertinent information was saved in that case. Now that case would then be utilized by the next watch and so on and so forth throughout the remainder of this case.

Mr. Webb: For clarification EDS stands for?

WIT: Environmental data servers. So SAR OPS takes in, pulls from various weather centers and it uses those data pulls to formulate a drift model scenario based on whatever particular object, it's hard to say specifically because there's hundreds of

thousands of different variations and options, but generally you tell it the approximate time of distress, what you think happened, what you're looking for and what the winds are and it will tell you where to look for that at.

Mr. Webb: In your experience using SAR OPS how reliable is SAR OPS as a tool for search and rescue?

WIT: As a tool for search and rescue I think SAR OPS is a great tool. As far as reliability, are you asking about like system stability, speed?

Mr. Webb: I'm asking more on reliability for providing you a good search drift and SAR plan, normal?

WIT: Sure under normal conditions I think it's the best system out there that's known right now for drift model analysis. For search and rescue planning I think it's hands down the top system used anywhere in the world.

Mr. Webb: But from this experience there is limitations?

WIT: There are limitations, yes.

CAPT Neubauer: I would like to explore a little further on the SAR OPS issue. Was there an upgrade done to SAR OPS prior to this incident?

WIT: Yes there was.

CAPT Neubauer: And what was the date of that upgrade?

WIT: I'm not sure of the specific date.

CAPT Neubauer: Was it close proximity, within a few days?

WIT: I believe it was the same month. Same thing with the MISLE system.

CAPT Neubauer: Was it done in conjunction with the MISLE 5.0 update?

WIT: I don't think that they rolled out at the same time. I believe SAR OPS 2.0 was rolled out first and then MISLE 5.0 followed on.

CAPT Neubauer: Were there any problems with SAR OPS 2.0 that were related to system malfunctions?

WIT: Yes there were. Throughout this case I believe the initial case that I had opened on that first day, I believe, and this is just my thoughts I have no way to conclusively prove what happened, but we lost files.

CAPT Neubauer: Can you – you lost files?

WIT: Either the case got corrupted, was unrecoverable, later on in the case at certain times the system would just – when you were doing that drift analysis, when you were tabulating and calculating your search area, the entire program and sometimes even the entire workstation 3 would reboot or it would just close out mid scenario. So you would lose 15, 20 minutes or however long it took you to formulate that drift scenario, it wouldn't save and it would just be gone.

CAPT Neubauer: Was that the first time you encountered that type of problem since the SAR OPS 2.0 upgrade?

WIT: No I don't believe it was.

CAPT Neubauer: And when I mention that in the days previous to that, do you remember any similar type errors occurring?

WIT: Umm I can't think of any specific occurrences of that. But to my recollection with numerous search and rescue cases upon the roll out of SAR OPS 2.0 we did have these issues.

CAPT Neubauer: Would you say that was Coast Guard wide or just at your unit?

WIT: No I would say that was Coast Guard wide.

CAPT Neubauer: And how would you – how would you say it's Coast Guard wide?

WIT: Well on SAR OPS 2.0 to my understanding all the servers are locally migrated. So anyone in D7, in the Seventh Coast Guard District, at any of the Sectors or at the District command center is assigned a server and I believe that once you get that server assigned it then splits you off automatically into sub-servers. But you should be able to search for open, closed, do any type modifications or adjustments that you need to, any case within any District in the entire Coast Guard.

CAPT Neubauer: And just to clarify is that in case a case crosses boundaries from different Sectors or Districts?

WIT: Sure it could be. It could also be if you transferred a case. If for instance say a Sector initially assumed SMC of a case, prosecuted that case and then for one reason or another decided to shift the SAR mission coordinator duties up to the District level you could then in SAR OPS you could then take the case and transfer that case. And I don't believe on the old system that was an option. But you could then take that case, transfer that case and that way nothing was lost. You had all the previous unit's case details, assumptions and what their search objects were, what they were looking for.

CAPT Neubauer: So were there other cases where data was lost as the cases were transferred between units?

WIT: I can't think of any specific cases where data was lost during a transfer between units.

CAPT Neubauer: Under the new processes in SAR OPS 2.0 what type of training did you receive on the new functions you just testified to?

WIT: Umm before the system went live I believe we did a 4 hour video conference with some of the technical specialist. And also they provided us with over the shoulder training, on the job. So the SAR OPS technical specialist came to Seventh District and sat with us and kind of used the system.

CAPT Neubauer: When there were problems encountered, what mechanism was in place for you to report those problems?

WIT: So when there were problems reported we would report them directly to the SMC and also the Coast Guard technical support hotline, CGFIXIT. But also because it's SAR OPS and because it's our search and rescue planning system. There's also three individuals that are on call 24 by 7 to answer and assist any – with any issues.

CAPT Neubauer: And were you able to get those problems resolved immediately?

WIT: Within a reasonable amount of time. I don't think some things were just instantaneously fixed. But yes.

CAPT Neubauer: And how long did those issue persist after October 1st, would you estimated days that you encountered the same type of data issues? Or did you?

WIT: I don't specifically remember.

CAPT Neubauer: Do you remember this issue occurring again after the El Faro incident for other cases?

WIT: In – no, no. I believe that they just pushed out another update to 2.0 and I think that resolved a lot of the issues. And it's constantly undergoing testing and maintenance and tweaks.

CAPT Neubauer: So the SAR OPS 2.0 update you just mentioned, do you know approximately the date that was sent out or established?

WIT: No I don't remember when it was.

CAPT Neubauer: At this time I would like to – the hearing will recess and we'll reconvene at 1050.

The hearing recessed at 1038, 24 February 2016

The hearing was called to order at 1053, 24 February 2016

CAPT Neubauer: The hearing is now back in session. Petty Officer Chancery I just want to clarify a few points on the data systems. Because I think it's important. Were you – did you lose significant data from the first day or two that was unrecoverable and is now unavailable to the investigation?

WIT: I believe we did, yes. I believe the initial case file from the initial 2 days was unrecoverable.

CAPT Neubauer: Can you say that clearly, sir?

WIT: I believe that the initial data from the initial case file was unrecoverable. I was told that later on.

CAPT Neubauer: Can you briefly clarify also any issues you experienced with the MISLE 5.0 system?

WIT: I can't think of any specific issues with MISLE 5.0. The only thing that comes to mind is in the old system when you would type something and hit enter it would automatically save and update in the case file. On this new system you actually had to manually click the save button even after you put maybe 50 or 60 entries in. If you didn't click that save button nothing was saved from the time that you last clicked that save button. I don't think this issue has been remedied to this date.

CAPT Neubauer: And to clarify so that issue has been place since September 2015 when MISLE 5.0 was implemented?

WIT: If that's when it was implemented, yes, sir. Yes, sir.

CAPT Neubauer: In your opinion was MISLE 5.0 an upgrade from MISLE?

WIT: In my opinion it is an upgrade. It was a – it contains all of the same information. It's just arranged differently. But all of the general information and all of the data input and data entry, everything that you could do on the old system you can do on the new system.

CAPT Neubauer: And the new system is more efficient?

WIT: I believe it is, yes, sir. I didn't initially. But now, yes. I believe it's more efficient.

CAPT Neubauer: Did you have adequate training on 5 – MISLE 5.0?

WIT: I would say that yes I had adequate training on it. But until – until that training comes into practice you don't realize some of the issues that arise.

CAPT Neubauer: Was there a period of time when you did not have MISLE available at all?

WIT: Yes, there was a period of time when MISLE was down. I don't believe I was working during that time frame.

CAPT Neubauer: Was there a period of time when SAR OPS was down?

WIT: I do not know.

CAPT Neubauer: Going back to another subject. Do you know what type of EPIRB the El Faro had on board? And when I say that I mean like an older version or a new version like that could provide GPS position?

WIT: Well I knew that, and this is just based off of the alert that I received, I knew that it wasn't GPS encoded when I received the alert because it came in as a first alert un-located beacon. As far as the particular brand or style or old or new, no I don't. I don't know.

CAPT Neubauer: Thank you. At this time I'll pass the questioning to Mr. Furukawa with the NTSB.

Mr. Furukawa: Good morning Petty Officer Chancery.

WIT: Good morning, sir.

Mr. Furukawa: You said that the initial case files were – for the first 2 days were unrecoverable. Is that for SAR OPS or MISLE?

WIT: Correct. For SAR OPS.

Mr. Furukawa: For SAR OPS, okay. How were you able to reconstruct the 2 days?

WIT: I was not. I was not on watch at that point. If I had to make a determination on what happened I believe that the OU would speak with the SMC. They would discuss whatever issues that they had and they would create a new case file based on all the information that we had available. We already had GPS positions and times. So you could go from there.

Mr. Furukawa: Were you aware of the El Faro before the phone call from mission control?

WIT: The phone call from mission control?

Mr. Furukawa: Right. I'm sorry, U.S. Mission Command Center.

WIT: Oh, so, so the United States Mission Control Center doesn't actually call me. What was – when we played that phone call and we briefly discussed that sound bite

that comes up, it's all automated on the computer system. The satellite signal goes up from the beacon, it goes to the satellite, and then goes to United States Mission Control Center which then forwards the alert, if its Coast Guard based or Air Force based, forwards the alert to LANT Area or PAC Area. And then it gets forwarded from there down to the respective search and rescue region. Again this is all instantaneous and automated. USMCC doesn't have – they don't place a call directly for every beacon and say hey this is what's going on. It auto populates inside of SAR OPS.

Mr. Furukawa: Very well. With – you got the phone call from I guess it was LANT Area?

WIT: Yes. I got the initial phone call from Atlantic Area.

Mr. Furukawa: Okay. So were you aware of the El Faro being out there before that phone call?

WIT: Being out? No, no I was not.

Mr. Furukawa: Were you able to reach out to the El Faro by HF? Make an HF call?

WIT: No, no I was not.

Mr. Furukawa: Okay. Were you involved with the Manush rescue?

WIT: Yes I was.

Mr. Furukawa: Okay. And was that during the first watch, your first watch?

WIT: That was the morning of my second watch.

Mr. Furukawa: Okay. For the Emerald Express you said that you reached out request to do call outs on Channel 16. Did the Emerald Express ever report back either positive or negative being able to contact the El Faro?

WIT: No they did not.

Mr. Furukawa: The Emerald Express ended up grounding, going inland and grounding. Did she ever call a distress?

WIT: I never received any type of distress notification or any other type of notification from the Emerald Express in regards to the grounding or anything else. I didn't even become aware of them grounding until I believe a month later and that just happenstance that I was talking to someone at the LANT Area I believe.

Mr. Furukawa: And was the watch augmented? Were there workload issues? Were there extra personnel that came on watch?

WIT: There were extra personnel that came on watch. If you're asking workload issues, I guess it would depend on the person and how much they're capable of. But generally there's one search and rescue duty officer for that – for that huge area that they were talking about. So it really just depends on how many situations or how many emergencies that you're trying to manage at the same time. And because of – because of this case I think we recognized it early and made changes to the schedule and augmented the watch which is saw, I believe it was the 2nd day I had a 2nd – I had a 2nd OU watch, OU SAR watch stander in addition to the situation unit leader, the OULE and the CDO.

Mr. Furukawa: And did it last for the next 5 days or completion of the active search?

WIT: I believe it lasted until the 7th.

Mr. Furukawa: Thank you very much. That's all I have.

CAPT Neubauer: Mr. Roth-Roffy.

Mr. Roth-Roffy: Thank you Captain. Good morning Petty Officer. Tom Roth-Roffy, NTSB. Sir, you probably use a number of different software applications as you perform your duties as the operations controller, is that correct?

WIT: Yes I would say so.

Mr. Roth-Roffy: Would you say that SAR OPS and MISLE are two of the most important, or how would they rate in criticality to you doing – being able to do your functions?

WIT: I would say they were the top two, yes. I would say if I had to label those two in importance I would say SAR OPS first so I could direct my units on where to go and what search. And the documentation piece as well, but we could keep documentation in another way if we needed to.

Mr. Roth-Roffy: And sir, do you know when the Coast Guard rolled out these new applications, the MISLE and the SAR OPS upgrades? Did they do that on a pilot basis for certain Sectors, or District's, or was it a Coast Guard wide implementation of these applications?

WIT: So to my knowledge the SAR OPS 2.0 was rolled in the Seventh Coast Guard District before it was released to the rest of the Coast Guard. The Seventh Coast Guard District handles ¼ of all search and rescue cases in the entire United States Coast Guard along with ¾ of all law enforcement cases. So I believe it was a test bed for D7 to have that first. Umm as far as MISLE 5.0, I believe that went online Coast Guard wide at the same time.

Mr. Roth-Roffy: So in your command center you were facing the implementation of two critical software upgrades that – nearly simultaneously, is that fair statement?

WIT: That is a fair statement, yes.

Mr. Roth-Roffy: And you mentioned some of the problems you had with both of those systems. Can you say how big of an impact that had on your ability to effectively prosecute the SAR cases starting with the El Faro response?

WIT: Can you be more direct or more specific with that question? Because there's a lot of factors that would lead in to answering that.

CAPT Neubauer: I would like to know if time was lost due to database errors during the first 2 days of the response. And can you estimate the amount of time?

WIT: Would this be time was lost for units to get on scene? Or time was lost period?

CAPT Neubauer: This would be for me specifically your time in the command center spent trying to reconstitute data or reenter or rerecord critical data coming in.

WIT: Specifically my time, yes. As far as launching an asset, getting somebody out there, formulating the response, I don't think the loss of this system would affect that at all. And I believe it was even stated previously by Captain Coggeshall when we went back with paper charts and we, you know went to square 1 as far as maritime search planning for this particular case because the system wasn't allowing us to utilize it. So we went to other methods.

CAPT Neubauer: In your opinion were the paper charts as effective as SAR OPS would be?

WIT: No, I don't think so.

CAPT Neubauer: And how much time during that, the first 2 days, did you spend trying to just reenter or rerecord data that was coming in? Can you estimate?

WIT: As far as duplication of efforts maybe 2 to 3 hours per watch.

CAPT Neubauer: Thank you. Mr. Roth-Roffy.

Mr. Roth-Roffy: Thank you Captain. During these technical problems with the software applications, SAR OPS and MISLE, did you experience any feelings of frustrations in dealing with these problems?

WIT: Uh yes.

Mr. Roth-Roffy: And you mentioned the way you were able to seek tech support, was that the tech support that you reached out to were they responsive to resolving your problems? Did they work with you and understand your problems?

WIT: Yes, yes.

Mr. Roth-Roffy: And was there an option to roll back either of these applications to the previous version to restore functionality?

WIT: There was no option to roll back to our previous.

CAPT Neubauer: And just to clarify that would be at your disposal, correct?

WIT: There was no option at my disposal to roll back to any previous version. And I was told that it just wasn't possible. I believe they took the servers offline for the previous version.

Mr. Roth-Roffy: Thank you Captain. And there was some discussion about your means of reaching out trying to communicate with the El Faro. I believe you mentioned a couple of them and there was some questions about HF. Did you consider using HF and if not why not?

WIT: So we did consider using HF. We eventually did. It wasn't part of my initial actions though. We use, as I think has been previously testified to, we use all available means to prosecute active search and rescue cases. One of those was relying on the

assistance of the Bahamas waterways net that does high frequency broadcasts on the Coast Guard's behalf. And they issue those voice broadcasts when we're dealing with the Bahamas. Again this is a volunteer network. They could completely tell us no. But they've been great on every type of search and rescue case and every request for their assistance. They've done it and they've done what we needed them to do.

Mr. Roth-Roffy: In the case of the El Faro did they do something for you?

WIT: They did broadcast for us in the case of the El Faro. That wasn't part of my initial actions though.

Mr. Roth-Roffy: And how would you quantify the workload for yourself in the command center during the first 2 days of this? Considering not only the El Faro case but other ongoing SAR cases that you were prosecuting. Was it high, low, medium, average?

WIT: That's a very tough question to answer. I believe the OP tempo at the Seventh Coast Guard District is always a high. We're – to my knowledge I don't remember a day in my whole tour where I've gone in and had a slow day. There's always something that's going on and there's always something that we're doing. And we're always training as well, so.

Mr. Roth-Roffy: But in the case of the El Faro and other cases ongoing are you able to estimate whether it was about average or was it higher than average?

WIT: For this particular case I would say it was higher than average.

Mr. Roth-Roffy: And is it fair to say that in addition to the high workload you're also having to deal with frustrating problems with those two critical support applications that you were trying to use?

WIT: I would say that's fair to say, yes.

Mr. Roth-Roffy: Thank you, sir, that's all I have. Captain.

CAPT Neubauer: Commander Denning do you have any questions?

CDR Denning: Just two questions. Early in your testimony you describe the typical process when you come on to watch. And you described that you were briefed on proximity of Coast Guard assets to the storm, correct? Is there a, I'm sorry.

CAPT Neubauer: I don't believe the witness answered.

WIT: Correct.

CAPT Neubauer: Thank you.

CDR Denning: Is there a process where the watch would also try to attempt to ascertain the positions of other vessels besides Coast Guard vessels relative to the storm?

WIT: Are you asking if when coming on watch we would look for vessels that were potentially in heavy weather, or is that what you're?

CDR Denning: That's a – yes, that's essentially what I'm getting at but not limiting it to on watch. I'm looking for as a general sense of situational awareness when there is heavy weather, particularly a hurricane. Do – is it part of the Coast Guard's process in a command center to look at what vessels may be in harm's way due to a storm? Or do we counter to that, do we wait for vessels to report that they're in distress?

WIT: Generally we would be notified when someone enters into distress. Ultimately the navigation of the ship and the running of the ship is controlled by the Master of the ship, the route they take, everything is controlled. As far as the – as far as the role and general situational awareness I believe that would fall under the situation unit leader because their responsibility would be weather. However, the tracking of satellite AIS

based, all of that, if, no that's generally not turned on and that's generally not monitored throughout the watch. I wish I could show you a picture of the screen, but if you turn all of your feeds on and you zoom out to the Seventh District's AOR it would like you're looking through a snow storm. That's how cluttered that screen would be. With every single feed turned on. And I believe if you had to situational – if you had to be situationally aware and monitor that type of vessel traffic that you would have to zoom out to the entire AOR. Also the United States Coast Guard, I've never been told in my duties that I was supposed to monitor vessel traffic or be required to monitor vessel traffic in another country.

CDR Denning: Understand, thank you.

CAPT Neubauer: At this time we'll go to the parties in interest. Does Tote have any questions?

Tote Inc: No, sir.

CAPT Neubauer: Does ABS have any questions?

ABS: No, sir.

CAPT Neubauer: Does Mrs. Davidson have any questions?

Ms. Davidson: No, just one comment. Sir, on behalf of Teresa Davidson, the Davidson family want to thank you for all the efforts you made during the search and rescue. Thank you.

CAPT Neubauer: Thank you. Are there any final questions for Petty Officer Chancery?

Mr. Webb: I do have one.

CAPT Neubauer: Mr. Webb.

Mr. Webb: Going back to the problem with the SAR OPS and the SAR SAT, when you guys are conducting your SAR OPS drift modeling do you use the computer that's assigned at your desk or do you use the computer that SAR SAT is being displayed on?

WIT: We use the computer that SAR SAT is being displayed on through your SAR OPS. So if we were doing any type of drift model scenario or we were providing that oversight for a Sector case or looking at that drift scenario we would be doing that on the same computer that SAR SAT was logged onto because it's just me. I know that you could log on SAR SAT on another computer and that might improve performance, but I think that would affect my ability to respond in a timely manner if I had to go across the room to check the computer every time the SAR SAT went off.

Mr. Webb: Where is the SAR SAT computer located in reference to where your desk is?

WIT: No, it's whatever desk I'm sitting at. I'm logged in to that SAR SAT and it's in my SAR OPS.

Mr. Webb: Is there a common computer for SAR SAT?

WIT: No there's not a common computer for SAR SAT.

Mr. Webb: So you're logged into SAR SAT at your desk and you – so you're using that computer to do your drift modeling too, is that correct?

WIT: I'm using that computer for everything, yes, sir.

Mr. Webb: Okay, all right. Thank you.

CAPT Neubauer: I just have a few final questions. We've mentioned the HF on occasions. Were those available to you? Was it operable?

WIT: They were – yes, they're available to us, however it's a volunteer service that do that. So there are limitations with that. They have to be available.

CAPT Neubauer: Do you want to confer for a moment?

WIT: The Seventh District Coast Guard does not have VHF FM voice capability. We do not have rescue 21 capability and we do not have HF capability in the D7 command center. We have limited HF communications that's for a Coast Guard to Coast Guard only called HF ALE, or automatic link establishment and that's over HF. However, if you wanted to transmit a voice broadcast on HF you would be on 2182 kilohertz which is the internationally recognized hailing and distress frequency for HF. We don't have the ability to transmit on that or receive on that in the D7 command center.

CAPT Neubauer: Who covers your VHF communications?

WIT: We do not have any VHF communications. That would be handled by the Sector level.

CAPT Neubauer: So the Sector handles all of your standard radio communications?

WIT: Correct.

CAPT Neubauer: Does that ever create any disconnects for communications in your opinion? And I use the El Faro as an example.

WIT: No I don't think it does Captain. As far as – as far as us not having the ability to do HF broadcasts, yes I think that that would be an issue, but I know we can reach out to, it's called COM COM now. I know we can reach out to them, it's a HF equipped unit that could conduct those call outs. I'm not really familiar with what their capabilities are, where their high sites are, where their towers are, how far it ranges.

CAPT Neubauer: So in your opinion it would definitely add one additional step instead of you just making the call out? Is that a fair statement?

WIT: That is a fair statement, yes.

CAPT Neubauer: I would like to make a note for the record that all command centers received SAR OPS 2.0 upgrade by January 26, 2016 and D7 specifically had it by January 19, 2016. Also I would like to make a request through your counsel to provide the display example of the display you mentioned with the full area of operations display with all vessels and all the other inputs activated. Are there any final questions for Petty Officer Chancery? Petty Officer Chancery, you are released as a witness at this Marine Board of Investigation. Thank you for your testimony and cooperation. If I later determine this board needs information from you I will contact you through your counsel. If you have any questions about this investigation you may contact the Marine Board Recorder, Lieutenant Commander Damian Yemma. And I would like to personally thank you for the testimony today, sir. Do any of the parties in interest here have any concerns with the testimony that was provided by Petty Officer Chancery?

Tote Inc: No, sir.

ABS: No, sir.

Ms. Davidson: No, sir.

CAPT Neubauer: At this time the hearing will recess and reconvene at 1145.

The hearing recessed at 1125, 24 February 2016

The hearing was called to order at 1145, 24 February 2016

CAPT Neubauer: The hearing is now back in session. Before we begin with our next witness I have two announcements to make. I want to correct the record from the last

session that the upgrades for SAR OPS that were done for D17 in January 19, 2016 and the entire Coast Guard by January 26, 2016 was for SAR OPS 2.02. In addition Mr. Paul Webb who was the Coast Guard's search and rescue technical expert for the last few sessions is the Seventeenth Coast Guard District search and rescue specialist. The next two individuals to testify at this hearing are employees of Northrop Grumman Sperry Marine, the manufacturer and service provider of the simplified voyage data recorder (VDR) installed on El Faro. While not considered a causal factor in the sinking of the El Faro the voyage data recorder is an important source of information for investigators especially after a major marine casualty. For that reason the U.S. Coast Guard and National Transportation Safety Board have asked representatives of Northrop Grumman Sperry Marine to testify regarding the VDR certification process in general as well as specific details of the equipment installed on the El Faro. We will now hear testimony from Mr. John Fletcher, Northrop Grumman Sperry Marine Global Service Manager. At this time Lieutenant Commander Yemma will administer your oath and ask you some preliminary questions.

LCDR Yemma: Mr. Fletcher please stand and raise your right hand. Sir a false statement given to an agency of the United States is punishable by a fine and or imprisonment under 18 United States Code section 1001, and also subject you to discipline under the Uniform Code of Military Justice. Knowing this do you solemnly swear that the testimony you're about to give will be the truth, the whole truth and nothing but the truth, so help you God?

WIT: I do.

LCDR Yemma: Thank you, sir. Sir, can I please start by having you state your name and spelling your last name for the record?

WIT: My name is John Fletcher. Last name is F-L-E-T-C-H-E-R.

LCDR Yemma: Thank you, sir. And counsel could you please also state your name and spell your last name for the record?

Counsel: Yes, sir. Don Haycraft, H-A-Y-C-R-A-F-T.

LCDR Yemma: Thank you, sir. Mr. Fletcher can you please state your current position and your title?

WIT: My position is Global Service Manager for Sperry Marine.

LCDR Yemma: And what are some of your responsibilities in that position?

WIT: I look after Global Service team operationally, our product support and our training department.

LCDR Yemma: Can you please describe for the board some of your prior experience relevant to your current position?

WIT: I joined the company as a company apprenticeship and received my City & Guilds qualifications in electronics. I was a field engineer for 25 years in support of our marine radar products. I then became the UK service manager. My role increased to take on the product support and the training for Global team and then made Global Service Manager approximately 2 years ago.

LCDR Yemma: And what is your highest level of education you completed?

WIT: City & Guilds in electronics.

LCDR Yemma: And do you hold any licenses or professional certification?

WIT: No.

LCDR Yemma: Thank you, sir. The board will have questions for you.

WIT: Thank you.

CAPT Neubauer: Commander Denning.

CDR Denning: Good morning Mr. Fletcher thank you for being here, sir.

WIT: Good morning, sir.

CDR Denning: I would like to first have you describe for us the reporting structure at Northrop Grumman Sperry Marine, particularly the relationship between the management in the UK and the offices here in the United States.

WIT: Is this relating to service or the whole company structure?

CDR Denning: As it would relate to service and installation and maintenance on specifically to voyage data recorders.

WIT: So the voyage data recorder is a product that we market, we don't manufacture it. It is manufactured by a third party company. We batch it and sell it as a Sperry voyage master. So globally we have a service network that is made up of our own service team as well as global service partners. So we have an office in the UK, in Denmark, Norway, Belgium, Holland, Germany, that is part of the European operation. We have an operation in the U.S. that's under our U.S. service manager. We have a Canadian office. We have offices in Singapore, Hong Kong, and China. Where we do not have offices we have service partners that represent us on a contractual basis and they receive the same level of training on product support as our team do.

CDR Denning: So you described them as not – can you clarify that a little bit more for us, that they're not, when you say they're not offices of Sperry Marine but there's a contractual relationship?

WIT: Sperry Marine has a very large global service footprint and that is built up with our own offices as well as in places where we don't have office, we have people who represent us.

CDR Denning: And what offices might those – I don't want to get in to far into specifics, but in the U.S. you mentioned, the U.S. service manager. Would he be one of those – would that office be one of those offices that you described or is that more directly a part of the Sperry Marine organization?

WIT: So the U.S. service operation we have offices in 5 or 6 locations and they all report into our U.S. service manager. We also have a service partner in the U.S. who supports us in locations where we don't have offices, and that's Mackay Marine.

CDR Denning: Mackay Marine U.S.?

WIT: Yes.

CDR Denning: Thank you, sir. And the U.S. service manager is located where?

WIT: He's in the Houston office.

CDR Denning: Houston. And is it correct to say that the remaining service offices throughout the United States report to him and then he reports to you, is that correct?

WIT: That's correct.

CDR Denning: If you could describe for us please, sir, you duties at Northrop Grumman Sperry Marine. I think you touched on it when Lieutenant Commander Yemma introduced this line of questioning. If you could just go into a little bit more, more detail for us.

WIT: So my position is Global Service Manager. I have service managers as I've stated in the U.S., I have one in Europe and I have one in Hong Kong, Singapore and

China. Those individual managers take ownership of the service activity in those countries, regions. They are responsible for the day to day activity of that service business, their budgets, their revenues and their training.

CDR Denning: And do you support other products and services offered by Sperry Marine or is your focus specifically to voyage data recorders?

WIT: Sperry Marine are marine radar and navigation company. So we market a range of radar products as well as gyros, auto pilots, speed locks. We design and manufacture those ourselves.

CDR Denning: And in your role you handle those other products as well as VDR's?

WIT: Yes, sir.

CDR Denning: Approximately what percentage of the work is related to voyage data recorders as opposed to those other products?

WIT: As an estimate maybe 10 percent, or maybe slightly less.

CDR Denning: And that was specific to your work, correct?

WIT: That is specific to the global service team.

CDR Denning: So in terms of the range of those products, is that percentage similar if we were to ask that question in relation to the percentage of company business? Or is it simply the number of products?

WIT: Sperry Marine primarily are a radar and navigation company. So we specialize in integrated bridge systems which pulls together a complete portfolio of our products. There are times when the customers ask us to supply VDR with that compliment of products, which is primarily why we market the VDR to compliment a bridge system at the request of the customer.

CDR Denning: Could you estimate for us the number of vessels that are currently fitted with Sperry Marine voyage data recorders?

WIT: I would believe it's over 1500.

CDR Denning: 1500 you said?

WIT: That is based upon data from the manufacture who supplied us the product.

CDR Denning: And ----

WIT: And that is, I'm sorry. But that is over a number of years. So I wouldn't have the exact figure.

CDR Denning: Certainly.

WIT: If that's okay.

CDR Denning: Thank you for estimating. And within that estimate – estimate of 1500 how many of those would you estimate are U.S. vessels?

WIT: I wouldn't know.

CDR Denning: Who's authorized to service Sperry Marine VDR's? Is it only authorized, you know, Northrop Grumman, Sperry Marine representatives, or you mentioned another company that you partner with?

WIT: As part of our training any engineer who attends are training and passes the training receives a certificate. That can either be one of our own employees or one of our service partners. We have a training program that runs annually and in that training program we offer VDR training classes. So anyone who is a Sperry employee or an approved Sperry representative and has a valid VDR training certificate can support that product.

CDR Denning: And when non-Sperry Marine employees perform service on Sperry Marine equipment, what notifications are required to be addressed to Sperry Marine and also to ABS, the classification, or any classification society?

WIT: So Sperry Marine has recently introduced a new certificate of compliance procedure which came into place in September 2015. Prior to the first of September of 2015 Sperry Marine employees who were trained and certified were allowed to carry out an APT and if successful issue their certificate of compliance.

CDR Denning: And APT?

WIT: Sorry, it's an annual performance test.

CDR Denning: Annual performance test, thank you.

WIT: And an annual performance test is required annually for the class requirements. Our service partners who were trained and approved can also carry out the APT. But up until the end of August we're not allowed to give the certificate of compliance. They could leave the record of the APT on board and then they would download information from the caption that they would then send to our office in Holland who would verify the content of the information against the APT that was taken. It was in a period of 45 days between the engineer attending and the certificate being drawn to the vessel.

CDR Denning: So do I understand it correctly that prior to September of 2015 if a non-Sperry Marine representative performed the APT they had to send data ----

WIT: Electronically.

CDR Denning: Electronically before a certificate of compliance could be issued.

WIT: Yes, sir.

CDR Denning: But if a Sperry Marine employee were to perform the APT they could issue the COC immediately on the vessel.

WIT: Yes, sir.

CDR Denning: And how has that process changed? How did that process change in 2015?

WIT: The process changed working with the manufacture who is Danelec. And approximately 3 years ago in a conversation with their CEO they advised that they were introducing a self-test tool within the VDR. That allowed the test to take place during the APT. And as a process of improvement we worked with Danelec and they now verify and check independently all APT's for G2, 3 and 4 that take place on our vessels.

CDR Denning: And that is whether it's a Sperry Marine employee that conducts the APT or a different certified representative that's not part of the Sperry Marine?

WIT: Yes, sir.

CDR Denning: When that process takes place and the information is it no longer transmitted electronically to Danelec? Is it done via a laptop that they carried on board or how is that accomplished?

WIT: I'm not trained on the product. I understand that the data is taken to the laptop. Each trained engineer has a log in on the website that ties in with training certificates and they upload the information together with a copy of the completed APT form and that is then checked by Danelec on our behalf.

CDR Denning: I'm not sure I understand. Is it – can you explain then the time frame and APT takes place and they begin the process of reviewing the data. How much time transpires before a certificate of compliance can be issued currently?

WIT: I understand it's about a 5 day turnaround between the engineer uploading the information and the result of the test, whether it be pass or fail.

CDR Denning: And then what's the process of issuing the certificate of compliance to the vessel after that takes place?

WIT: That takes place through our administration.

CDR Denning: Thank you, sir. At this time I'm going to pass the final questioning to the NTSB. They're going to ask you some specific questions, sir.

CAPT Neubauer: Mr. Roth-Roffy.

Mr. Roth-Roffy: Thank you Captain. Tom Roth-Roffy, NTSB. I would like to pass the questioning to Mr. Doug Mansell from our office, research and engineering. He's a recorder specialist in that office. Mr. Mansell.

Mr. Mansell: Thank you. Good morning Mr. Fletcher.

WIT: Good morning, sir.

Mr. Mansell: Approximately how many marine service engineers does Sperry Marine have? I'm sorry that are qualified on voyage data recorders.

WIT: I don't have that information. But we do have a – our company has a – my department has a database that lists all the engineers who have been trained, who are certified and who are no longer trained. So we have an accurate record of the number who we have trained for this product.

Mr. Mansell: Thank you. Approximately how many other non-Sperry Marine employees, I believe you refer to them as service partners?

WIT: I think we have approximately 130 service partners globally. And I think it would be fair to say that 75% of them probably have an engineer who is trained and qualified to carry out an APT.

Mr. Mansell: To clarify that 130 number is individuals or?

WIT: It's a number of service partners we have globally and those service partners will have employees working.

Mr. Mansell: Okay, thank you. Prior to your recent change you recited, what was the data review process required on board before issuing a certificate of compliance for a voyage data recorder on the same day?

WIT: The trained engineer would attend the vessel and we have a procedure which is an APT form. And the engineer would go through the form completing the sections. If positive he would be able to sign it and he would have with him also his training certificate, his evidence that he was qualified. He would have to be class compliant, so for globally we are class compliant with the MVGL and in the U.S. I understand ABS. If the test was – if the APT was successful the engineer would then issue the certificate. He would leave a copy, or her would leave a copy on board with a copy of what we call the product service report, a PSR, which would list the vessel's information, the work carried out, the name of the engineer. And he would take a copy back for records to be held in the office and leave a copy on board. That I think explains the process.

Mr. Mansell: And the copies that are retained that includes what material is it?

WIT: It's a copy of the checklist. Which is the basis of our APT.

Mr. Mansell: Is the actual data that's recorded or sample data retained?

WIT: Yes.

Mr. Mansell: And where is that retained?

WIT: I understand it's retained in the offices.

Mr. Mansell: I would like to discuss training. Could you please describe the initial training and qualifications required for a marine service engineer to install and service voyage data recorders?

WIT: So we have 3 models of VDR. We perform training in our training centers in Hamburg, Germany, in New Orleans, Singapore, and Shanghai. All training courses are the same content. And they are delivered by a trainer who has been certified by the manufacture. We would call train the trainer. Depending upon the entry level of the MSC, the technician attending would depend on the length of the training course. So if an engineer who is not familiar with voyage data recorder, but obviously background knowledge he must understand the marine electronic business and he must have an understanding of electronics, that will be a 4 day training course. This covers the G2 and the G3 and the G4 models. If the training certificate that is given at the end of the course is valid for 3 years. Just to clarify slightly if it is a new engineer who has not attended training before we would offer a 1 year training certificate at the end of which they would submit 3 completed annual performance tests to our global supervisor who would verify the skill set was correct to extend that training certificate to 3 years. Since of the introduction of the G4 VDR and SVDR we carry – we offer additional training to those who are already trained in the earlier models which is a one day familiarization training course.

Mr. Mansell: So you referenced 3 models of voyage data recorders. Is the G4 one of those three?

WIT: Yes, sir, it is.

Mr. Mansell: So the initial 4 day training course is valid for the other two models?

WIT: If they have not been trained, yes, before. If they're from new, a new product to them 4 days would cover the version 2, 3, and 4.

Mr. Mansell: So all three including the newest model?

WIT: Yes. Because they would then have the legacy experience to work on the earlier models. Because there was a difference between the 3 and 4.

Mr. Mansell: Could you please describe the recurring or recertification training requirement for the marine service engineers to service voyage data recorders?

WIT: And engineer would attend one of our training classes. As I said depending upon the skill set would depend upon the course they were registered on. It is a combination of practical as well as theory where they're taken through the installation requirements, the commissioning, the repair and the certification. Which they would have to do on a new product, but also annually.

Mr. Mansell: So for an employee who has been with your company for 5 years and has already had the initial certification, are they required to attend an additional 4 day training course when their first certification expires?

WIT: No. They would – if after 3 years they have been actively performing APT's we would ask the same as we ask for the newly qualified technicians that they would submit record of their work allowing us to recertify. And we do that through an online test tool. And our global training supervisor monitors that and he decides on the quality of the returned information as to whether a certificate is renewed. If it's not renewed, technician engineer has to attend a training course at one of our training schools.

Mr. Mansell: Do you know approximately how many voyage data recorders are serviced per employee on average in any given one year period?

WIT: I believe greater than 3 because that is the level of information that we require to support the recertification.

Mr. Mansell: You don't have any idea of how much greater than 3?

WIT: I'm sorry, sir.

Mr. Mansell: Okay. Are service engineers expected to review a vessel's prior – a vessel's prior year's records and annual performance test before dispatching to a vessel to conduct a new annual performance test?

WIT: I think it would depend on whether the – who carried out the last AP – the annual performance test. But what the engineer would be able to do is review previous years which should be stored on board in the records of the maintenance of the electronic equipment on board.

Mr. Mansell: So they wouldn't necessarily, they're not trained or expected to review prior years records until they step foot on board the vessel?

WIT: No they are trained but sometimes you would not know where the last APT had been taken place. With the new system we have now with Danelec we have a complete record of all APT's as well as the feedback on the quality of the APT. And also the vision of when the next APT is due. Which is a way of improving service to customers. So we can plan it.

Mr. Mansell: So going back to a previous discussion if a service partner conducted the previous review there's – Sperry Marine would still know about it, but they wouldn't have the records, is that true?

WIT: If it was a service partner we would hold the records in our Dutch office because that is where they would have had to be certified – to give the certificate.

Mr. Mansell: So in the case of a direct marine service engineer employed by Sperry Marine if a different office conducted it that would be the case when the prior records would be unavailable?

WIT: The prior records would be held by that office. We don't have a global storage for APT's which is another reason we have gone for this new tool.

Mr. Mansell: What involvement do classification societies have in training, for providing guidance for the training?

WIT: As part of the approval process to represent class, we go through a routine period of audits with class to ensure that we're conforming to their requirements. So we have class approval with DNVGO for approximately 30 Sperry Marine offices globally. That certification lasts I think a period of 3 years. During which time they will randomly audit 3 locations, visit that location, checking training records and procedures.

Mr. Mansell: And is that process the same for each of the classification societies?

WIT: At the moment Sperry Marine only represents DNVGO. We're working on getting on working with other classifications societies. But in the U.S., or in the U.S. they are approved with ABS.

Mr. Mansell: So in the U.S. how does ABS audit your training for voyage data recorder systems?

WIT: They audit the offices and they carry out the audits, I believe in the Harvey office for the renewal of the certification.

Mr. Mansell: But they do not audit any of the other U.S. locations?

WIT: I don't know the ABS audit structure in the U.S. But I do know that we have approval of ABS in the U.S. And I do know there was an audit recently.

Mr. Mansell: Okay, thank you. Does ABS provide any written guidance to the trainers for voyage data recorders?

WIT: I can't comment on that.

Mr. Mansell: The recent change, I believe you said a few years ago went to the self-test tool that Danelec provided.

WIT: They include it in their software, yes.

Mr. Mansell: Was there – was that at Sperry Marine's request or was that – what was the reason for switching to the self-test tool?

WIT: There was a view within the industry that there could be some APTs that were not being carried out correctly, going through the correct process. Judging by the number of certificates that companies were giving against the number of equipment that is being sold. As a result of that they decided they would have this online tool which meant the only way you could get a certificate on a Danelec equipment was to – was to have the certificate given by the person who's verifying the APT. In discussions with them and my product support team we thought that was an opportunity that we should explore. It's taken slightly longer than we wanted because of the structure within our organizations. But we have that process in place now and the goal of that is to improve the quality of any performance test.

Mr. Mansell: Focusing a bit more on American Bureau of Shipping, could you elaborate on the relationship that Northrop Grumman Sperry Marine has with the American Bureau of Shipping?

WIT: I can't comment on that, sir. Other than that we are approved to – by ABS for VDR certification.

Mr. Mansell: Can you offer any details as to the vetting process to receive that approval from ABS?

WIT: No I can't. The process was put in place before I took this position.

Mr. Mansell: Does Sperry Marine have any quality management systems certifications such as ISO?

WIT: Yes we do. Yes we do.

Mr. Mansell: And do you know which certifications you have?

WIT: I should know. I'll have to pass on that.

CAPT Neubauer: Can we get those from you at a later time, sir?

WIT: Yes, yes you can. Yes, Captain.

CAPT Neubauer: Thank you.

Mr. Mansell: As it pertains to the relationship that Sperry Marine has with ABS do you know what triggers an audit? Or are they only scheduled audits? Are there impromptu or triggered audits?

WIT: I can answer that for DNV, I can answer it for class who do in case of DNV they insist on an annual audit. And a DNV audit is based upon a percentage of a number of offices that we have registered. And I think it's, I'm not – 10% which is why we have 3 audits a year. And they chose the locations of those audits.

Mr. Mansell: And speaking to that classification society, when they audit do they audit to the level of reviewing APT data sample files and configuration files?

WIT: Yes they do. They ask for examples of APTs and they review.

Mr. Mansell: And they have resident experts with voyage data recorders that are reviewing those files?

WIT: We would have an engineer who was in the location, trained who was able to answer all his questions.

Mr. Mansell: Do you know when the most recent ABS audit of Sperry Marine was for voyage data recorder offices, I believe you said Harvey?

WIT: I don't know the exact date, no.

Mr. Mansell: Do you know the general outcome, if there were any findings or recommended actions?

WIT: I don't know that. I can't answer that, sir.

Mr. Mansell: To what extent do ABS surveyors or Coast Guard inspectors accompany marine service engineers or authorized agents or service partners while conducting service on a voyage data recorder?

WIT: In the U.S.?

Mr. Mansell: In the U.S. or abroad.

WIT: Okay. So in the U.S. we are approved by ABS. Therefore the trained engineer who's certified and represents the class society. In other locations I understand we can attend maybe once with the surveyor of the class society as in attendance. But our service partners, many of who have gotten multiple class approvals, if we are unable to support it we would pass it to our service partners.

Mr. Mansell: In your opinion how effective has the reliance upon the manufacture service provider to ensure full compliance of regulations while the classification society does not have maybe a direct technical expert in that field?

WIT: Can you say the question again please?

Mr. Mansell: In your opinion how effective is it for a class society to rely solely upon delegated activities to ensure certification compliance?

WIT: I would say with our new procedure we have got a very solid procedure going forward in that not only are we – we have an electronic tool that would only allow you to complete the test. The complete test as long as each section of test has passed and that is verified by an independent check who happens to be the supplier who is checking also all the APTs for the products that they market themselves.

Mr. Mansell: Thank you. At this time I would like to discuss some more on specifically on the El Faro. Please refer to Exhibit 38. Exhibit 38 is the 2013-2104 annual performance test checklist and certificates of compliance issued to the El Faro. In 2013 and 2014 was it common practice and expected for annual performance test checklist to be conducted electronically versus manually pen and paper?

WIT: The – it can be done either way. It can be done either way but it is more accurate to have it done electronically. Especially when people are putting comments in, it becomes more legible and easy to understand.

Mr. Mansell: When it's done electronically does that – is it via laptop or tablet?

WIT: Yes it would be – it would be a document they have on their laptop they would complete electronically as they also complete their service report electronically.

Mr. Mansell: And that includes bringing a laptop wherever they go including up to the bridge deck to inspect the capsule and checking off each item as it's performed?

WIT: Yes. Because the engineer would need the laptop for the download of the data. So he would have a laptop for an annual performance test.

Mr. Mansell: The annual performance test conduct in December of 2014 used a checklist form that was dated the 14th of May 2013. The annual performance test conducted in December of 2013 used a different checklist. Do Sperry Marine processes require that the latest version of the annual performance test checklist be used?

WIT: Yes. We have a procedure whereby we release what we call service bulletins and this is a way we cascade technical information to the global team. So – is this an exhibit the 2013?

Mr. Mansell: Exhibit 38, contains the 2013 and the 2014 annual performance test in one document. Okay. That's the '13, '14 APT. This is '14, '15 APT.

Mr. Mansell: I'm sorry I didn't hear that.

WIT: So Exhibit 38, or maybe I misheard you is the '14, '15 APT.

CAPT Neubauer: The hearing will recess for 5 minutes so we can compare exhibits. And we'll reconvene at 1236.

The hearing recessed at 1231, 24 February 2016

The hearing was called to order at 1236, 24 February 2016

CAPT Neubauer: This hearing is now back in session. We were looking at Exhibit 38. And the NTSB is questioning.

Mr. Mansell: Thank you Captain. Now Mr. Fletcher, Exhibit 38 contains two annual performance test checklists, the two most recently conducted for the SS El Faro. The first form checklist is a different checklist than the second form checklist. Could you explain why there is a difference between the two checklists used when the revision date of the later checklist was still issued approximately a half year before the first?

WIT: So the second checklist is the correct checklist that should have been completed. And that is – was communicated to our service team in May '13 when we – through changing of company logos and our company, the way we present Sperry Marine Northrop Grumman, the checklist that took place previously was used on a very old Sperry Marine APT certificate. But the contents of the forms are very similar, there's some terminologies that are slightly different, but fundamentally it is – it was an alignment of our documentation. And that was why we released the service bulletin on the 14th of May 2013.

Mr. Mansell: Okay, thank you. And to clarify, marine service engineers employed by Sperry Marine as well as the service partners are all expected to use the same checklist?

WIT: Absolutely, absolutely.

Mr. Mansell: Thank you. Still on Exhibit 38 the most recent simplified voyage data recorders certificate of compliance was issued on the 2nd of December 2014. Consistent with the 2013 annual performance test the 2014 checklist indicates the acoustic beacon battery expiration date of May 2015. What is the policy regarding component expiration dates when conducting annual performance tests?

WIT: If we look at IMO, IMO has a standard that says that the beacon battery must be valid at the time of the annual performance test. Sperry Marine believes the battery should be compliant for the length of the annual performance test. So the APT that was given on the 2nd of December 2014 – the most recent APT should have had the beacon battery replaced.

CAPT Neubauer: Mr. Fletcher can you get a little closer to the microphone, sir? So just to confirm that last statement, sir. The APT that was issued on 2 December 2014 should have had, at that time, the battery should have been replaced, is that correct?

WIT: Yes, sir.

Mr. Mansell: And used an acronym IMO, could you please define that?

WIT: International marine – maritime organization.

Mr. Mansell: Thank you. And sorry to bring this – one more clarification. IMO regulation would have had the battery to be replaced at that time prior to issuance, is that a correct statement?

WIT: The IMO regulation would not have required it to be replaced.

Mr. Mansell: Sperry Marine policy would have required it?

WIT: Absolutely. In our product improvement we believe that the battery must be valid for the term of the APT that we're giving.

Mr. Mansell: Do you know if the battery was replaced prior to May of 2015?

WIT: No I don't know.

Mr. Mansell: After hearing news about the SS El Faro, to your knowledge when did someone at Northrop Grumman Sperry Marine first discover that the battery to the acoustic beacon had expired?

WIT: I understand that it was through contact through our IMO office and Ben Mark [sic] who is the office manager contacted me to advise me that there was an issue with a vessel that had – that had sunk and it had on board a G2 SVDR. At that point I escalated this to my boss the Global Operations Director and our contract manager internally.

Mr. Mansell: Do you know approximately the amount of time that had elapsed since the news – since October 1st that you were contacted about the discrepancy?

WIT: I can't answer that questions exactly, but it wasn't a very long time. I would suggest it was days.

Mr. Mansell: To clarify a pervious statement, when you were contacted that a vessel with Sperry Marine voyage data recording equipment had been lost, were you told at that time that the acoustic beacon battery had expired?

WIT: No, sir.

Mr. Mansell: Do you know when someone at Northrop Grumman Sperry Marine first discovered that the battery had expired?

WIT: I understand when the APT, the copy of the APT was found and reviewed it was at that point.

Mr. Mansell: And do you know what actions were taken upon that discovery?

WIT: Yes I took action myself and spoke with the engineer who had taken part in the APT and suspended their – suspended immediately their certification prior to retraining.

Mr. Mansell: Following reports that the SS El Faro was missing when did the NTSB or U.S. Coast Guard initially request copies from Northrop Grumman Sperry Marine of records associated with the recent annual performance test for the simplified voyage data recorder?

WIT: I would have to defer that to our legal department. Because they were collating on behalf of the company.

Mr. Mansell: After receiving that initial request for records can you estimate the elapsed amount of time it took for Northrop Grumman Sperry Marine to provide the requested annual performance test checklist, configuration files and sample data files?

WIT: I can't answer that question, sir. I would just like to say at all times Sperry Marine has been exceedingly cooperative in wanting to help as much as possible with information.

Mr. Mansell: Thank you Mr. Fletcher. How are errors or inconsistencies in a VDR certification processed identified and corrected?

WIT: In the case of this situation the ----

Mr. Mansell: In this situation you just explained the action that was taken, but in general, what is the policy, or what was the policy prior to the recent change to the self-test tool that if a discrepancy or error was discovered, how is that – what action is taken upon?

WIT: So we through our service documentation we remind our service team of the quality that needs to be achieved on what I consider a very important test. We have – we support training, we have very accurate training records to make sure as I've spoken earlier about how we recertify and grant extensions to certificates to ensure that we have the right caliber of people carrying out APTs. Unfortunately in this instance a mistake was made and we took the necessary action.

Mr. Mansell: Thank you. Since the first of October 2015 has Sperry Marine reviewed annual performance test records for voyage data recorders of other vessels to ensure similar discrepancies aren't present in the current operating fleet?

WIT: Our managing director, Gene Usher [sic] has got – has asked our mission assurance manager Mr. Ben Walters to carry out the review of APTs. And I did speak with him briefly before I left the UK and he is collating his report, but he says his initial inspection, what he has seen has been very positive.

Mr. Mansell: Thank you. So at this time you don't have the results for that?

WIT: Not at this time.

Mr. Mansell: Thank you.

WIT: It's work in progress and that's a verbal feedback.

Mr. Mansell: Have any other ----

CAPT Neubauer: I would just like to ask. Can we get the results of that when they're made available, sir?

WIT: Yes, sir, yes.

CAPT Neubauer: Thank you.

Mr. Mansell: Have any other actions been taken by Sperry Marine since the first of October to improve the VDR certification process and ensure that a certificate of compliance is not issued inappropriately? Or outside of policy I should say, I'm sorry.

WIT: I believe the process I hopefully outlined earlier working with Danelec most certainly puts a very good safety net in place to make sure that APTs are only issued if the data they are recording and the operation is correct.

Mr. Mansell: Thank you. At this time I don't have any additional questions specific to El Faro, but I do have a few more questions. How confident are you as Sperry Marine understands the frequency and type of discrepancies that marine accident investigators encounter with voyage data recorders and simplified voyage data recorders?

WIT: Do you mind repeating the question again please?

Mr. Mansell: How confident are you that Northrop Grumman Sperry Marine understands the frequency and type of discrepancies that the marine accident investigation community encounters with VDR and simplified VDRs?

WIT: I'm very confident on the basis that we have introduced this new tool. And this takes away any, in my view, any human error, human mistakes. Because it is somebody independently verifying it and the certificate will only be granted if that person has checked that the test has been successful. And we've done this because we're trying to drive the quality within our own organization to improve service.

Mr. Mansell: Could you perhaps elaborate on some of the problems that are encountered by marine service engineers or investigators upon servicing a voyage data recorder?

WIT: I referred earlier to the fact that there's a view in the business that not all APTs have been carried out correctly. And this stems from the manufacturer to whom we buy the product. So I would hope that what we are doing with this service tool, and I'm going to keep coming back to this service tool, is going to be the benchmark of how APTs should be performed. And if there have been errors in the past in the configuration or equipment not working correctly that's interfaced to either an SVDR or VDR this will be highlighted at this test. So I do believe that maybe globally that all manufacturers some errors in the past, but I think in this case we have quite a very good safety net to ensure that going forward we are compliant.

Mr. Mansell: Thank you for highlighting the significant changes that you're making with this self-test tool. Are you aware of any international efforts or forums within the marine

accident investigation community that are focused on improving operational and reliability issues associated with voyage data recorders?

WIT: Personally I'm not. But as we have a close relationship with Danelec and we speak on a regular basis we believe that by ensuring that this battery last, it's a first step, that the battery is there for the life of the APT, we believe that should be an industry standard.

Mr. Mansell: And this will be my last question at this time. How does Northrop Grumman Sperry Marine collect and act upon feedback from investigation authorities concerning issues encountered with certified voyage data recorders and simplified voyage data recorders?

WIT: Northrop Grumman Sperry Marine only deal with one model of supply which is the voyage master. So any incidents that result in having our equipment on board are investigated to the highest level. And following the El Faro is why our managing director put the – an internal audit in place to – to establish how good our process was. Sperry Marine don't sit on, we don't have anybody actively involved in voyage data recorders. Our business is primarily radar navigation and we do have people who sit on those IMO counsels lobbying to make improvements for radar which is where we produce in the UK and gyros and pilots which we produce in Germany as part of our product range.

Mr. Mansell: Thank you Mr. Fletcher. I have no more additional questions at this time.

CAPT Neubauer: Mr. Roth-Roffy.

Mr. Roth-Roffy: Yes, sir, thank you Captain. Good afternoon, sir, Tom Roth-Roffy, NTSB.

WIT: Good afternoon.

Mr. Roth-Roffy: Sir, regarding your relationship and that is the Sperry Marine relationships with the third party supplier, manufacturer, could you name that company please, I'm not sure it's been actually identified?

WIT: It's Danelec.

Mr. Roth-Roffy: Yes, sir. And is Sperry Marine engaged in any product development efforts, or is that left to the – for the responsibility of the third party?

WIT: We market what we call an OEM product, which is other equipment manufacture. And we badge the Danelec product as a Sperry voyage master.

Mr. Roth-Roffy: Sir, are you aware of any product development that would perhaps result in better methods to relay recorded information to accident investigation authorities or vessel managers?

WIT: In the marine world and I think this would go for radar as well as for VDR, bridge equipment would have to be linked to a communication system on board that will allow an office, a third party, to be supplied on board information. Sperry Marine at this time don't have this facility. With our radar product we're looking opportunities there. Customers are looking for remote diagnostics to help improve first time fix. But the customers who are cautious about having third party equipment included in their network. I think it's an opportunity for the future. I do understand that there are companies who market communication packages and Sperry Marine is not a communication company that allow interfacing of some third party products which allows some remote diagnostics. Sperry Marine is looking at this in future development of our products certainly. But at the moment with the voyage master, coming back to the VDR, this is not an option that we have at this time.

Mr. Roth-Roffy: Sir, could you describe the technical challenges that might be faced in development of – that would be able to transmit recorded data back to shore?

WIT: I think Danelec already has this as a company. Sperry Marine is not able to take – dock the opportunity that is there. Some of the challenges going forward may be the networks of the vessel, interface to third party and the concerns in viruses. That is a big concern. And some of the larger companies are very strong about what they will allow suppliers to interface to.

Mr. Roth-Roffy: Sir, regarding the battery life, if you can describe some of the technical details of the acoustic ping battery that was apparently expired sometime in 2014, sorry correction, 2015. Do you have any information about the expiration date and the life of the battery? I'm sure you – Sperry Marine does not manufacture those batteries, is that correct?

WIT: We're not the manufacturer, it's a third party product and we were, would refer any technical questions to the manufacturer.

Mr. Roth-Roffy: Yes, sir. Sir, you may be aware that the NTSB with its partners was engaged in a fairly extensive search for the voyage data recorder capsule from the El Faro after it's sinking. And we spent some time searching for the signal from the acoustic device. Sir, when you identified that the battery had expired in May of 2015, did you notify the NTSB or Coast Guard that it was possible that the battery was no longer effective in activating the acoustic pinger?

CAPT Neubauer: Mr. Roth-Roffy I believe you said when they identified in May of 2015.

Mr. Roth-Roffy: That the battery expired in May 2015.

CAPT Neubauer: I think they would have identified that later, sir.

Mr. Roth-Roffy: Yes, sir. I'm referring to after the NTSB had commenced it search efforts.

CAPT Neubauer: I just want to clarify when they had determined. What month. What month did you determine that it was expired?

WIT: The annual performance test as far as IMO is concerned only asks for that battery to be valid at the time of the test.

CAPT Neubauer: I guess my question, and I just want to clarify and make sure that I understood before you answer. When did you become aware that the El Faro's battery was expired, or could have been expired?

WIT: Personally?

CAPT Neubauer: Yes, sir.

WIT: When I was given a copy of the APT.

CAPT Neubauer: And do you remember that date, sir?

WIT: I would think it was – it was – I can't remember the exact date, but it was definitely in 2015.

CAPT Neubauer: Was it prior to the El Faro sinking?

WIT: No, it was post the accident.

Mr. Roth-Roffy: Yes, sir, but again the NTSB had become engaged in the search for the capsule on October 20th, 2015. Sir, do you have any understanding of whether Sperry Marine became aware of the battery expiration date before or after the commencement of that search effort?

WIT: The engineer who attended was aware of the expiration date.

Mr. Roth-Roffy: But the management in Sperry Marine technical support department which you had globally, beyond just the service engineer and service, upon your review of the records were you able to – when did you actually identify?

WIT: After the incident when we saw the APT. It was at that time that we identified that the expiry date was May ’15.

CAPT Neubauer: So sir, there’s no way to give an exact date when Sperry Marine management knew that information?

WIT: It was after the accident.

CAPT Neubauer: Was it after October 20th when the search for the pinger was going on?

WIT: I would say yes, sir. In 2015 after the accident, yes. But I couldn’t put an exact date on it.

CAPT Neubauer: Okay. So you can’t say if it was after the NTSB search which started on October 20th, 2015?

WIT: I would say it was after that, sir. Because it’s only 5 days, is it not between the vessel and the search starting? The vessel ----

CAPT Neubauer: The vessel sank on October 1st, 2015.

WIT: Oh I beg your pardon. I’ve got the 15th, my mistake, my apologies.

CAPT Neubauer: So there was a 19 day period, sir.

WIT: I can’t answer that question.

CAPT Neubauer: Mr. Roth-Roffy.

Mr. Roth-Roffy: Yes, sir. Sir, can you tell us about the approximate market share that Sperry Marine has in voyage data recorders? You mentioned how many vessels have them.

WIT: I can't, I could give you an estimate. I can't give you ----

Mr. Roth-Roffy: Yes, sir.

WIT: I would say we are a very small section of that business. It must be – there are several suppliers in the industry. And we generally only sell a G4, which is a current model as part of a bridge package where a customer is asking for us to provide a bridge set. Or where we are retrofitting the first generation G1 VDR which is no longer, we can no longer support. So our market share is quite small.

Mr. Roth-Roffy: Sir, regarding the simplified voyage data recorder, when they're installed aboard a vessel are they expected to last for the remaining life of the vessel? Or do these sorts of systems have a renewal or a requirement to be changed out periodically?

WIT: I don't know specifically with the VDR. But I would suspect the manufacturer would be able to recommend a life span of the external components. Wherever you have computers and hard disks there is a life expectancy. So I would have to defer that back to the manufacturer.

Mr. Roth-Roffy: My one final question, sir. The NTSB is considering resuming search for the VDR which is believed to be submerged in a depth of about 15,500 feet. Sir, are you able to provide any technical information regarding likelihood or probability that the data that perhaps was recorded on the recording media, is able to survive at that depth for a period of time that we are currently looking for?

WIT: I understand that the capsule is safe to 20,000 feet. That is from the capsule supplier. The capsule is designed I understand to survive underwater, that's it purpose. And the other part of the VDR would be of absolutely no use at all because if the DAU or the BAU which are part of the system would have been damaged by salt corrosion.

CAPT Neubauer: Sir, can you define those acronyms please?

WIT: Sorry. The DAU is data distribution unit. And the – and the other BAU is the bridge alarm unit.

Mr. Roth-Roffy: Yes, sir. Just to readdress the survivability you mentioned that it should at a certain depth. But what's the duration of that survivability expected or required to the performance requirements or performance standards?

WIT: We would have to refer that to the manufacturer. Because the data I've given you is just something we have taken from their technical specification.

Mr. Roth-Roffy: Yes, sir. Thank you very much. That's all I have. Captain.

CAPT Neubauer: Thank you. Sir, I just have a few questions if we can press on before lunch.

WIT: Yes.

CAPT Neubauer: Under the old system of APTs was the service provider – was there policy in place to have the service provider check the old record? Were they encouraged to do that, sir?

WIT: As part of our training we ask all people whether, all engineers whether they're our own engineers or service partners to be prepared when they go back to the vessel so that if there are parts needed due to life expectancy of, for example batteries they're prepared at the time.

CAPT Neubauer: But it didn't specifically say you would go back and check at another office that was different than the office they were out of, is that correct?

WIT: If Sperry Marine had coordinated the service, so the customer has come to Sperry Marine and asked us to arrange service, we would and has done on an annual basis we would have access to those records because our engineers or our service partners would have sent the copy of the documentation. If it is a third party service partner who's trained, he's gone on board, he's carried out the APT and he has then sent that data to certification in Holland, we do have those records in Holland for class requirements, but we don't have a service process by which – there's a gap in our process.

CAPT Neubauer: Was that the old system, sir, that had the gap?

WIT: That was the old system, yes.

CAPT Neubauer: And the new system does not?

WIT: The new system does not.

CAPT Neubauer: Have you ever seen the results of an ABS audit on the VDR?

WIT: Not an ABS audit, no. I have seen results on a DNV NGL audit.

CAPT Neubauer: Do you know why you would have DNV NGL audits and not ABS?

WIT: Primarily because the ABS is only in the U.S. and I haven't been in the U.S. when the ABS audits taken place.

CAPT Neubauer: Who would we talk to, to see who is monitoring the ABS audits here in the U.S. for Sperry?

WIT: This should be through the mission assurance in New Orleans. And that's Joe Monfrey [sis] who is the mission assurance representative in New Orleans.

CAPT Neubauer: Yes, sir. Could you spell his last his last name?

WIT: I think it's M-O-N-F-R-E-Y. But can I confirm that?

CAPT Neubauer: Oh yes, sir. I can get it from you after. Is there a role for ABS to play in ensuring that the battery does not expire? Is that part of an audit would you expect? Or even the Coast Guard?

WIT: If the audit, if the auditor has selected and they do select at random and annual performance test and that mistake is in the annual performance test then that is their role to audit. But from a quality point of view we are trying to drive quality and improve which is why we have come to work with Danelec.

CAPT Neubauer: So sort of clarify, under the old system it would have had to had been a random audit to catch that issue, is that correct?

WIT: Yes. But as part of training we are – we are identifying how important the APT process is similarly to the GMDSS certification how important it is and making the team, the service team globally aware that we cannot have mistakes. It must be correct before we give that certificate.

CAPT Neubauer: And sir, I would like to just briefly discuss the differences between the simplified VDR and a VDR. And just for the record the El Faro had the simplified VDR. In your experience what is the percentage of simplified VDR to full VDR's in the fleet that has VDR to date?

WIT: The requirement for a SVDR or VDR is based upon a class requirement with the vessel. And I'm not totally familiar with all the requirements of what type of vessel would require which of those equipment's. A simplified VDR has less inputs, but there are mandated inputs that must be there. And that's what makes up for the requirement

of an SVDR. A VDR has an additional unit that takes another set of inputs. I'm not trained on the products so I'm cautious about given too much information.

CAPT Neubauer: Safe to say the full VDR would be more useful to an accident investigation?

WIT: Yes, sir.

CAPT Neubauer: Thank you. Sir, do you have an idea of the percentage in the existing fleet of vessels that have the simplified VDR versus a full VDR?

WIT: I would ----

CAPT Neubauer: Just an estimate.

WIT: My personal opinion.

CAPT Neubauer: Yes, sir.

WIT: I would say there were vastly more SVDR's than VDR's. If you were to take passenger ships, any passenger, I understand, any passenger carrying vessel has to have a VDR. Whereas vessels which are carrying cargo and freight, I believe, and it also has a tonnage requirement can just have a SVDR.

CAPT Neubauer: Thank you. At this time I would like to go to the parties in interest. Tote, do you have any questions?

Tote Inc: No questions.

CAPT Neubauer: ABS do you have any questions?

ABS: Yes. Good afternoon, sir, my name is Jerry White, we represent ABS – based on your testimony this afternoon it is my understanding that the training of Sperry's engineers who service the VDRs is done by Sperry, correct?

WIT: That's correct.

ABS: It's my further understanding that based on the testimony this afternoon that you were aware of an ABS audit process in place for Sperry, correct?

WIT: In America.

ABS: Okay. But as far as the details of that audit process and when the last audit was performed or what the outcome of that audit was, sitting here today you have no personal knowledge?

WIT: Could you say the last bit again?

ABS: Sitting here today you have no personal knowledge as to any audit by ABS for Sperry's operations here in the U.S.

WIT: Personally I don't.

ABS: And based on your understanding as far as the requirements for VDR cert isn't it true that the VDR is required aboard the vessel due to SOLAS requirements and not class requirements?

WIT: Yes. I think I referred to SOLAS requirements earlier. Actually I referred to IMO requirements.

ABS: Thank you, sir.

WIT: And it is also in SOLAS as well. The life expectancy of the battery.

ABS: Thank you. Captain I have no further questions.

CAPT Neubauer: Does Mrs. Davidson have any questions?

Ms. Davidson: No questions.

CAPT Neubauer: Commander Denning.

CDR Denning: Sir, just a couple of very brief follow up questions. Regarding the service tool that you described in which APT data is sent to Danelec for analysis, does

that data that they analysis include any type of function test or indication of the battery expiration of the acoustic locator beacon?

WIT: I can't answer that question.

CDR Denning: If it did not include that would it still be true that that improvement that has been made to the process might still allow the circumstance which we had with the El Faro in which the locator beacon expired without knowledge?

WIT: I need to retract that last comment. Because Danelec would know because we send, we not only send a snapshot of data from the capsule and that was my thought process which is the – it's how we ensure that the capsule is recording data. And we also send a copy of the completed APT form. And the completed APT form would indicate whether the battery was batted – the battery would last the life of the APT. So I misunderstood the first question.

CDR Denning: Thank you, sir, that clarification is helpful. Is the APT form also sent to the classification society for review? Or is it only sent to the manufacturer?

WIT: No, it is part of the NVGL approve – approve and APT form.

CDR Denning: For DNVNGL.

WIT: DNVNGL.

CDR Denning: Is it the same process for ABS?

WIT: I cannot answer definitely, but it should be.

CDR Denning: And then one last time if I may, and please bear with us. You've been asked several questions about when you personally became aware of the APT form which indicated to you that the battery had expired. You've said you became aware of that after the El Faro sank, after this incident occurred around October 1st. You also

indicated that it was in 2015. Are you able to estimate whether it was in October, November, we still have 3 months and I'm just – I know it's hard to give an exact date, but can you estimate an approximate time frame even if it's just a month?

WIT: An approximate time frame when I received a copy of the APT and in that form it documented that the battery would expire in 2015?

CDR Denning: Yes, sir.

WIT: I would say it was October. And the reason for that is I got my date wrong here from, I thought it was the 15th and it was the 1st.

CDR Denning: So you became aware in October and then what actions did you take?

WIT: As I said, I think I mentioned earlier, we identified the Sperry employee who had taken – who had carried out the APT and I spoke with that person and suspended their certification for further APTs. Asked if there had been others that had been involved and for that person to arrange to attend a training course for recertification.

CDR Denning: Thank you, sir. Mr. Fawcett do you have any follow on questions?

Mr. Fawcett: Yes, please.

CAPT Neubauer: Mr. Fawcett.

Mr. Fawcett: I just have one question for you, sir. Mr. Fawcett from the Coast Guard. Thank you for your time Mr. Fletcher. Based on your background and extensive experience in the marine electronics field, in your knowledge that you've expressed here today on the voyage data recorders, is it more likely that the voice recordings that took place on the bridge the ship's navigational data would be available if the VDR was a float free type pod where the information was contained in a floating capsule?

WIT: In my experience, yes.

Mr. Fawcett: Thank you, sir.

CAPT Neubauer: Mr. Fletcher I just have one question. When you were – when you became aware that the battery had likely expired for the El Faro and you made notification to suspend the certificate of the training rep, did you also in a timely manner notify the NTSB or the Coast Guard? And in timely manner I mean within 24 hours.

WIT: No, sir, I didn't.

CAPT Neubauer: Do you know – can you estimate how many days after you notified the NTSB or Coast Guard?

WIT: The El Faro case was passed to our legal department representing the company and I'm unable to comment on any of the document – any of the correspondence that went between the parties.

CAPT Neubauer: So is it your understanding that the legal department notified somebody eventually?

WIT: I can't comment, sorry, sir.

CAPT Neubauer: So you never made a notification, is that true?

WIT: Me personally?

CAPT Neubauer: Yes, sir.

WIT: No, sir.

CAPT Neubauer: Are there any final questions for Mr. Fletcher? Mr. Fletcher, we are now complete with your testimony for today. However I anticipate that you may be recalled to provide additional testimony at a later date. Therefore I am not releasing you from your testimony at this time and you remain under oath. Please do not discuss your testimony or this case with anyone other than your counsel, the National Transportation

Safety Board or members of this Coast Guard Marine Board Investigation. If you have any questions about this, you may contact my legal advisor, Commander Jeff Bray. And thank you for your testimony, sir. Do any parties in interest have any concerns with the testimony provided by Mr. Fletcher?

Ms. Davidson: No, sir.

ABS: No, sir.

Tote Inc: No, sir.

CAPT Neubauer: At this time the hearing is recessed and we'll reconvene at 2:15.

The hearing recessed at 1324, 24 February 2016

The hearing was called to order at 1418, 24 February 2016

CAPT Neubauer: The hearing is now back in session. For the record Mr. Fletcher checked his emails and determined that he learned of the El Faro battery expiration issue on November 19th, 2015. Mr. Haycraft will be following up to provide those emails to the MBI and those will be entered as exhibits.

Counsel: Thank you Captain.

CAPT Neubauer: Yes, sir. Do any of the parties have any comments on that?

Tote Inc: No.

ABS: No, sir.

Ms. Davidson: No, sir.

CAPT Neubauer: We will now hear testimony from Mr. Jerry Michel, Northrop Grumman Marine Services Engineer. Mr. Michel, Lieutenant Commander Yemma will administer your oath and ask you some preliminary questions.

LCDR Yemma: Please raise your right hand, sir. A false statement given to an agency of the United States is punishable by a fine and or imprisonment under 18 United States Code section 1001. Knowing this do you solemnly swear that the testimony you're about to give will be the truth, the whole truth and nothing but the truth, so help you God?

WIT: Yes.

LCDR Yemma: Thank you, please be seated. Sir, could you please state your full name and spell your last name for the record?

WIT: It's Jerry Michel, M-I-C-H-E-L.

LCDR Yemma: And counsel would also state your name and spell your last name?

Counsel: Certainly, Don Haycraft, H-A-Y-C-R-A-F-T

LCDR Yemma: And Mr. Michel could you please state your employment and position?

WIT: I work for Northrop Grumman Corporation. I'm the lead MSC.

LCDR Yemma: And what are some of your responsibilities for that position?

WIT: I install, repair, maintain navigation communications equipment on ships.

LCDR Yemma: And could you describe some of your prior work history or experience relevant to your current position?

WIT: Are you talking about going back to maybe like my first job up until I started with Sperry?

LCDR Yemma: Sure, just related to what you do now, yes, sir.

WIT: I got a – got a diploma for in electronic communications. I have a FCC first class radio telephone license with the radar endorsement. I have a GMDSS maintainer's license. There's probably one more, but that's about what I could think of.

CAPT Neubauer: Sir, could I ask you to just speak a little closer to the microphone please?

WIT: Sure.

CAPT Neubauer: Thank you.

LCDR Yemma: And what was your highest level of education completed, sir?

WIT: Yes it was.

LCDR Yemma: What was it again?

CAPT Neubauer: Highest level of education completed?

WIT: Completed.

LCDR Yemma: What was it, sir?

WIT: Education, I completed high school.

LCDR Yemma: Thank you. And do you hold any licenses or professional certifications?

WIT: Yes, first class FCC license, radar endorsement. GMDSS maintainer's. And a few more certificates, but those are the main ones.

LCDR Yemma: Thank you, sir. The board will ask some questions.

CAPT Neubauer: Commander Denning.

CDR Denning: Good afternoon, sir. You stated that your position is the lead MSC, that stands for marine service engineer, correct?

WIT: Yes.

CDR Denning: And if you could just go into a little bit more detail for us on what the duties of your job entail as the lead marine service engineer?

WIT: Basically I'm a marine service engineer. I still work out in the field. But as the senior technician in the office I've been given the duties to makes sure that the – my district is run with the best – the best that I can do as far as maintaining parts and liaison with customers.

CDR Denning: And you said that you service and maintain other equipment besides voyage data recorders. Can you give us a percentage of, approximate percentage of how much of your activities are specific to voyage data recorders as opposed to the other equipment?

WIT: Voyage data recorders would be probably about 25 percent.

CDR Denning: How many voyage data recorders have you personally installed or been involved in the installment of?

WIT: 60 or so.

CDR Denning: And that's over a span of time. And approximately how many of those per year on average?

WIT: I would say about 6 a year.

CDR Denning: And then service, you service in addition to installing equipment, you also service the equipment. Can you give approximate numbers on servicing as well?

WIT: Servicing VDR's and SVDR's?

CDR Denning: Yes, sir.

WIT: Well I would say that the servicing part of it would be maybe 6 or 7 within the last 2 years.

CDR Denning: Can you describe for us the various components of a voyage data recorder including the various inputs that are recorded in a VDR?

CAPT Neubauer: Commander Denning can you clarify special VDR or VDR in this question?

CDR Denning: Let's start with a simplified VDR such as the one that was on El Faro.

WIT: Do you want the, excuse me, do you want the units and then what they accept?

CDR Denning: Yes, sir.

WIT: Okay. You have the, of course you have the capsule. You have the data acquisition unit. You have the bridge alarm unit. Umm and then you have the beacon. The inputs would normally be AIS, GPS and possibly two GPS's if you wanted. You would have to have gyro, speed log, wind, anemometer if it's available and depth. Well yes going back to the VDR, SVDR the microphones are a part of the system.

CDR Denning: So you mentioned anemometer, do you – is it within the scope of an APT, an annual performance test to validate whether the anemometer itself was working, or simply that the VDR is taking that input? Can you describe for us the process of just validating the data that the VDR accepts?

WIT: Yes. Anything hooked up to the data acquisition unit has to be there and it has to be valid. So if there's an anemometer hooked up to the VDR and later on, I'm sure that the anemometer started to come out using a serial sentence, which is recordable. So in the earlier days it wasn't and you probably wouldn't have it connected.

CDR Denning: So if a VDR accepts certain data, let's use the anemometer as an example, if the unit – if the VDR unit itself will accept the data and you were to find through your APT that the information from the anemometer or any other equipment is – the VDR is working properly and is accepting the data but the data itself is bad is it

within the scope of the APT to ensure that the equipment itself is functioning properly prior to issuing the COC, or do you simply verify that the VDR itself is functioning?

WIT: The purpose of the survey is actually that. It's a survey. So repairs can be done with permission from the owners or the Captain and that's when the progress goes to get the VDR up and running. If we don't sell the anemometer and don't have parts for it they may have to call in another company, radio company or whatever to fix it before I could validate the VDR or SVDR.

CDR Denning: So all the inputs need to be, not only the VDR inputs working properly, but the equipment that feeds those inputs also need to be working properly in order to certify the VDR?

WIT: Absolutely. There's one I left out, sir.

CDR Denning: Please.

WIT: Was the BAWU, bridge alarm watch unit. It just recently became mandatory.

CDR Denning: Can you describe that for us a little bit more please?

WIT: It's a timer from anywhere from 3 to 12 minutes. And if the bridge was left without any personnel on board there would be alarms going off. So it has to be pressed and there's buttons in certain areas that have to be pressed at least every 12 minutes. So it's not – it's sort of like a dead man alarm. If this is not pressed then there's an alarm that goes out and then after that there's a general alarm that goes out. So the second alarm goes to the Captain, third alarm goes out to a general alarm. So it's very important.

CDR Denning: And is that – that equipment is required on SVDR's as well as ----

WIT: Yes, sir.

CDR Denning: All VDR's. Thank you for that clarification. Can you tell us a bit about your personal history with the voyage data recorder on the El Faro? Did you participate in the installation of that particular equipment?

WIT: Yes I did.

CDR Denning: Can you describe for us the process of installing a VDR including the selection of the position of the voyage data recorder capsule itself?

WIT: The capsule is actually the first thing that you want to locate. Once that's located then you would look for a place put a data acquisition unit. Next step would be finding the place for the speakers or microphones and then the bridge alarm unit and then the cable runs. After that you have to do an APT for a COC which means that this is all guaranteed functional.

CDR Denning: So how is the site location on the bridge chosen for the capsule itself? What factors go into that decision?

WIT: The factors that go into that decision is if it was a new build you have a lot, lot space on the top of a new build and unless an antenna guy came onboard and starting using up all the space. So you use the maximum space that you can to locate the capsule in a sturdy – sturdy area that can be welded on, but you have to take into consideration that a remote ROV has to be able to recover this capsule.

CDR Denning: So you essentially need to make sure that you have enough room for a ----

WIT: An ROV to get there.

CDR Denning: For the ROV to gain access to the equipment and retrieve it?

WIT: Yes, sir.

CDR Denning: Did you, in addition to installing the equipment onboard the El Faro, did you also service that particular VDR over the course of its life? I realize you weren't the most recent APT technician, but did you service it at some point in its life?

WIT: No, sir.

CDR Denning: So the last time you were onboard was when you installed it?

WIT: That's correct.

CDR Denning: And your recollection when you installed the equipment, of course everything was in good working condition, correct?

WIT: That's correct.

CDR Denning: Lieutenant Commander Yemma is going to display Exhibit 1, page 22 which is some photos of the VDR on the El Faro. And you also have a copy of this, sir, in your binder. From your personal experience servicing the equipment, or installing the equipment onboard El Faro and while you didn't personally perform servicing in the annual performance test, folks in your office did and you're the lead SME, do you have any reason to believe that the capsule onboard the El Faro itself, besides the battery issue that we discussed with the last witness, do you have any other reason to believe that there's anything non-compliant with the VDR capsule itself? Or the VDR equipment on the bridge.

WIT: No. No, sir.

CDR Denning: Thank you, sir. At this time NTSB is going to have some additional questions for you, sir.

CAPT Neubauer: Mr. Mansell.

Mr. Mansell: Thank you. Good afternoon Mr. Michel. Regarding training, can you describe your initial qualification training for voyage data recorders that you experienced as a marine service engineer at Northrop Grumman Sperry Marine?

WIT: That particular model right there I was trained in Denmark by the manufacturer. The generation 2 I was trained in Denmark, generation 3 that was done in Charlottesville, Virginia and then again in our training center in Harvey, Louisiana.

Mr. Mansell: So your training for voyage data recorders you received dedicated training for each generation of equipment, is that correct?

WIT: That's correct.

Mr. Mansell: And for each generation of voyage data recorders for your training that you received, the initial training, it was specific to only a single generation of equipment at that time, or was it combined with other generation equipment?

WIT: The G1 full blown VDR was something that I had walked into when I first started with Sperry, so I wasn't involved in that VDR. The G2 I think became mandatory in 2002. And I attended school in Copenhagen at that time. That was a single class on that particular unit on everything that's involved in maintaining it, APTs and you know just upgrades, everything that can possible be done. The training in Charlottesville was a 2 part, G2 and G3. And then the training in New Orleans was recert for G2 and G3.

Mr. Mansell: Okay, thank you. And have you received training for the G4?

WIT: No, sir.

Mr. Mansell: For each of the initial training that you received, approximately how long in duration were the training courses?

WIT: You have to be recertified every 3 years.

Mr. Mansell: Every 3 years was the valid ----

WIT: Right, your certificate was good for 3 years and you would receive an email when it was fixin to expire. The expiration date would come up, you would be put in a class as soon as possible before it expired of course because then you would have to be taken out of the field or you would go straight to radar or steering and doing other – other repairs.

Mr. Mansell: Okay, thank you. But the training class itself, how long did that training class last for each of the?

WIT: It was 2 weeks in Denmark. It was 2 weeks in Charlottesville and it was approximately 4 days in Harvey.

Mr. Mansell: Would you – would you mind identifying the approximate years when those trainings were received?

WIT: Umm well my certificate is coming up for renew within the next month, so you can go 3 years back from that. And then you can go 3 years back, or 6 years back and then the Denmark training was in 2002, which is quite a bit back.

Mr. Mansell: And to clarify, we're using terms G2, G3, and G4, would you describe or explain what each of those stand for and identify what type of equipment was installed on SS El Faro?

WIT: The Faro had a, it was a G2 simplified. It fit the description, it was a cargo ship, it was already built, it mandatory needed a VDR and it fitted a S2, I mean a G2, a G2 was perfect for the vessel.

Mr. Mansell: And a G2 compared to a G3 could you explain the terminology there please?

WIT: A G3 is – can go a grade higher. A 3 can become an actual VDR with extra modules. So if you wanted to make an extension on a G2 whereas you want to look at other information onboard besides just what's happening on the bridge, then you can buy another serial interface unit which gives you the right to add more inputs. And now you're starting to grow. The G3 with the right units that are additional, you can go full blown VDR with it.

Mr. Mansell: And the initial installation of the simplified voyage data recorder for El Faro, what was the date when that was installed?

WIT: 2009 and I can really remember the day.

Mr. Mansell: Thank you. What preparation is expected of a marine service engineer at Sperry Marine prior to arriving at a specific vessel to perform an annual performance test?

WIT: Most of us during the years have a collection of annuals that we do and we keep in a folder. That is one resource that we can use to go back in time and find a vessel and between the MSC's and the office we can share our folders to see if any of us were every on that vessel to check battery dates. That means that when you get on the ship you're not going to, you know you're going to have everything you need to do this in the time that's allowed. So yes. And then we do have – we do keep a file cabinet with the extractions and the config files available to us and for people who want to know the same information.

Mr. Mansell: In your experience it was common for marine service engineers to prepare in advance of the day of servicing by reviewing prior years records?

WIT: Absolutely.

Mr. Mansell: What equipment, spares and supplies are expected to be on hand when performing an annual performance test?

WIT: We have a list and actually we have, you have to have a laptop, that's number one. They expect you to have a volt meter. You have to have a beacon tester. You have to have our test kit which is a Danelec product which allows you to interrogate the capsule with your laptop rather than doing it through the actual data acquisition unit.

Mr. Mansell: And regarding the spares, what equipment spares are typically?

WIT: We have problems sometimes with backup disks that have, you know the backup disk sometimes will – it's a hard drive also, so it may get spaces in it and it may cause some issues. So I would say that would probably be something that you want to carry, but a lot of times it's just because people turn them off and on and off and on and it creates too many tracks.

Mr. Mansell: What guidance does Sperry Marine provide regarding the acceptability of the audio recordings of voyage data recorders?

WIT: Could you put that in a – could you repeat that please?

Mr. Mansell: Yes. What guidance is provided to marine service engineers regarding the acceptability of the audio recording, audio quality during an annual performance test?

WIT: Well when you boot the – when you boot the unit up it cycles all the speakers and sets the levels. So if you have a smaller wheelhouse or a bigger wheelhouse it sets its levels and it checks that every so often. You'll hear the speakers fine tuning on a regular basis.

Mr. Mansell: To clarify, you the service engineer will hear that when you do a playback of the audio, or is that heard over ----

WIT: No that's, that's a different story. When I go into the actual web extractor I can go into the config file and I can go into microphone or audio page and I can do a test on single individual mics or I can do the whole group at one time. And if it does not make it, it automatically self-diagnostics tells you what mic failed. And at that time you can either look at the audio board or you can go to the microphone and one of the two will be the problem unless there's a broken wire.

Mr. Mansell: Is for an annual performance test of the voyage data recorder, is the audio or samples of the audio recording listened to prior to issuance of certificates of compliance?

WIT: Absolutely. This unit can play live. You can actually skip the recording session and walk right up to the unit, plug your computer into it and set it into a live condition where it's just like we're talking now. So you can go to every speaker if you want and – so you can actually see radar pictures, you can actually see AIS, everything is there on the live recording. It is sound protected though with a password. So the sound, I would have to do that on a basis that it would be a private thing. But when you extract you get everything that's going on without any restrictions.

Mr. Mansell: Thank you. As part of the annual performance test is it correct that extractions of data and audio are required?

WIT: Yes, oh absolutely.

Mr. Mansell: And the performing service engineer, do they review that data and audio on site?

WIT: They would have to. I mean there's no rhyme or reason why you walk away from a VDR without seeing it play and 100 percent doing – 100 percent of what it can do.

Mr. Mansell: For the audio playback are periods of time selected specifically when all the ship's machinery is running namely the engines and any other noise making machinery to – to identify audio clarity that is being recorded?

WIT: The only problem that we've had with that is one you mount them on bridge wings, if there's controls out on the bridge wings then they have to have microphones. And if it's available it's nice to have them sort of covered when they're not using the controls because wind has an effect. You know wind will come over and start creating problems of sound distortion. But normally the next time it checks the mic it will set the level. However, if it's too bad it will fail it in its self-test and it will come up with an alarm. But other than that there's really no noise on the bridge that ever affects those microphones.

Mr. Mansell: So in your experience when you review historical or extracted audio to play back the audio is typically clear, is that correct?

WIT: Well when you do an extraction you play back everything. You don't get to choose, you can turn the speakers off if it bothers you while you're watching all the serial inputs working, the AIS picture up, the radars up, the depth sounder up, all the little widgets that are showing the rudder movement, all of that's all – that's all there once you play back the extraction just as if you were playing live, except of course it's delayed from the time that the capsule has.

Mr. Mansell: To the best of your knowledge for the simplified voyage data recorder that was installed on SS El Faro were there bridge wing microphones installed?

WIT: Yes.

Mr. Mansell: How common is it for an ABS surveyor or Coast Guard inspector to identify a deficiency with a certified voyage data recorder installation?

WIT: There – our checklist gives you guiding – guidance of what to look for in a normal installation or a good installation. If class was on board more than likely they'll walk up to you, greet you and take a look at what you're doing. After the fact the paperwork is normally handed to them and being that you're a professional you are audited and you are a member of the class. It's more of a, you know this guy's been around, he does a good job thing. But I've been questioned several times in different states about am I qualified and will I show my paperwork and I do. And it never failed, so. The paperwork that we issue it could be two – two types of paperwork. You've got your Northrop Grumman paperwork and on ABS's side you can use ABS's paperwork. So this paperwork is given and signed off and stamped to class or the Master of the ship to be handed to class where class will review it. He has the right to ask you to play it back and you do so. I don't think they just walk away from it. In some cases we have to use Sperry paperwork and on MARAD ships they want Sperry paperwork and they want ABS paperwork because they never know what ABS will be looking for. So just to keep you from coming back they accept both, Sperry and ABS APT checklist.

Mr. Mansell: Thank you Mr. Michel. Could you briefly describe the playback capability and how it is depicted to the operator for a voyage data recorder?

WIT: To the operator?

Mr. Mansell: To the service engineer or the person who is using the playback capability of the equipment. Could you describe how the data – what data's presented, how it's presented and how it's configured?

WIT: Okay. You can build tabs. One is a CID page which is a normal CID. It's what I call widgets. If you have a speed log it will draw a picture of the little speed log. And it will show the speed, forward speed and aft speed and number which you're going. With the radars you have choices of picking one or the other and it will bring the radars up big, whereas on the CID page they are small. You have a serial tab if you hit that tab then you can see all of the serial inputs coming on the proper ports, that's constantly. And it's – you just build tabs as the config file is how you get there after you completely install it you need to configure the explorer program, the playback program and then you just build it for whatever you had onboard connected to it.

Mr. Mansell: Thank you. And is that configuration file saved for the next user who operates the playback functionality of the voyage data recorder, will receive the same configuration?

WIT: If you – if you do not grab the config file in any case, the playback config file or the regular VD – the config file for the machine itself so that you are wired into, if you lose the firm ware something happens, you're going to be there a long time recreated those config files. So it's proper to say I'm going to save the config files very first thing I do. And those are downloaded to your laptop. They're there for emergency purposes. If you lose the config files that are already built, then you can just come back in and upload them. It's a good practice.

Mr. Mansell: And for an accident investigator who is replaying data from a voyage data recorder, where and how would they acquire the config file?

WIT: The – what is seen on the street for people to play back is not quite what you need to get into the configuration. So you would need an explorer program that are given to trained engineers. Your software to play back would be different because you wouldn't have any permissions. You would just upload it and click on the screen where it says play and then you'll have everything there, but you don't have any permissions so you can't go and upset the config file and case – create problems. So that's kind of proprietary.

Mr. Mansell: So earlier you referenced CID. Could you identify what that stands for?

WIT: It's a conning information detailed, it's a conning page. It's more or less basically the instruments that normally you would see, gauges or whatever would be presented as such. So you would see everything moving as per the sensor that's feeding it.

Mr. Mansell: So for, I believe you also referenced them as widgets.

WIT: That's one of my words.

Mr. Mansell: Understood. For an investigator, accident investigator playing that data, what widgets if they didn't have the proper configuration file that you mentioned was important to have, what widgets by default for conning information and gauges would be displayed to the investigator?

WIT: You would have the serial – all serial ports would be active. That tab would be open and that is not touched. So the CID page if it – the config file didn't agree with it you may get a time out on that widget. So say you were looking for UTC time from GPS and that GPS was coming on port 2 and some reason it got to port 3 then you would

have an UTC time timeout, which means that's not available. But when you go into the serial portion of it and look at the port you see it. So now you know that it's over here, it's not the actual recordings message that's coming in that failed, it's the widget that's been transferred to another port. Which means the sentence coming in is not intelligent for it to just pick up and say it's a GPS.

Mr. Mansell: Is it safe to say that if an investigator arrived to try and play back data and they did not have – if they didn't arrive with a configuration file that they would be required to spend a lengthy amount of time to configure the conning information and other data to be meaningful to the specific ship?

WIT: No. When it's save, when it's actually saved, the abstraction's taken, your software will play it back no problems. You do not have to get into the config file. You don't. That's what I said previously. The best thing for you to do servicing them is to grab the config files in case you have a software problem.

Mr. Mansell: If a marine service engineer or authorized representative encounters a voyage data recorder with an incomplete or incorrect configuration setting are they expected to update the default configuration setting during an annual performance test?

WIT: Yes they are. Yes they are. With the new tool it actually tells you as the tool's working what's not there, what should be there. So that could be done as the test is being done, as the test is being performed by the tool it will come up with a page telling you your header on that sentence is not quite complete, you need to add 2 alphabets to it. Things like that start occurring so you have a clean system at the end of the day. Yes you want – you want everything to be perfect.

Mr. Mansell: In your experience prior to the recent change to using Danelec's self-test tool, how common was it for you as a service engineer to arrive on a vessel and have to reconfigure the settings and find a new configuration?

WIT: It was very uncommon. The installation manual actually puts together a wiring diagram which puts the sensors on certain ports constantly on certain ports. So if you wire it like the manual, then the config file it's just about there. Then all you would have to go back and do is the calibration of the radar pictures and small corrections.

Mr. Mansell: Do you consider the provided checklist and performance of annual performance test sufficient to ensure compliance?

WIT: Yes.

Mr. Mansell: In your opinion if an ABS surveyor or Coast Guard inspector were tasked to take a closer look at the voyage data recorder installation beyond the manufacturer issued certificate of compliance, how often do you think they would identify discrepancies with the VDR installation and configuration?

WIT: I know of any – I don't know of any.

Mr. Mansell: Prior to use of the self-test tool, did you or other marine service engineers that you know of experience excess pressure to issue the certificate of compliance on the same day?

WIT: Sometimes money is a problem. But I'm not there and my co-workers are not there to judge the vessel. The proper thing in that situation is the checklist can be left onboard and at the end of the checklist there's a note, a notation page. Deficiencies should be written up and the COC should not have been – should not be written, shouldn't be given. The deficiency has to disappear before the COC can be issued.

That would happen in a period of 45 days. If they have to go to their flag state or have to go to class to do any, you know like we need to leave the port, we're going to be going, they can go there and get waivers. Us we're just telling you that this is not good, I can't write the COC, but you do have the paperwork which is -- you're about 90 percent of the way there. But if that's only if the repairs are not available to be made there, or the parts are not available.

Mr. Mansell: Thank you Mr. Michel. At this time I don't have any questions.

CAPT Neubauer: Mr. Roth-Roffy.

Mr. Roth-Roffy: Tom Roth-Roffy, NTSB. Good afternoon, sir. I would like to return to Mr. Mansell's discussion of the audio recording quality. Sir, are you required to review 12 hours of saved data, specifically audio data before you issue a certificate of compliance for the VDR?

WIT: Yes, sir, and we're also required to record 12 hours of data of everything that's being recorded we connected to it. So it's all in one picture.

Mr. Roth-Roffy: Yes, sir. But specifically considering the audio. How do you judge the intelligibility of the audio recorded in terms of voices being heard? Do you do that through an onboard test? Do you have someone speak into the microphone and listen to it, or do you actually go back and listen to the recorded audio over that was recorded during the previous 12 hour period?

WIT: We do both. Normally we play live, okay. And then that's going on you can hear everybody in the boat talking and everything and you can – that's when you can tell when everything is – you can go and say this config file says this microphone is here, yes it is.

Mr. Roth-Roffy: So you tap the microphone?

WIT: Yes.

Mr. Roth-Roffy: What about the intelligibility of voices recorded?

WIT: This is not a toy. The quality is – it's great. There's never been a problem with understanding any words coming out of a recorded audio.

Mr. Roth-Roffy: What about underway, sir, with the vessel – underway machinery operating, movements of the vessel, rafters and whatnot, are you able to assess the quality of recordings made during that period?

WIT: The only problem like I said in the beginning was, we call them barbeque pits, normally that's the covers over the bridge wing controls and normally if they're closed with the speaker in there, beautiful. If the speaker's out in the open it's possible you're going to get wind and you're going to have constant tuning.

Mr. Roth-Roffy: The speakers located out on the bridge wings are they on a separate channel from the rest of the speakers on the bridge?

WIT: They're done in pairs. So what you want to do is keep them as far as apart as you can. So putting one on the port bridge wing and putting one on the starboard bridge wing is about as much separation as you can get. So when you do the GMDSS station, or the chart table or the starboard bridge, you kind of place them to where they're not right next to each other where they'll start to, you know have harmonics. So the placement of them is usually the farthest you can get them apart because they are individual inputs, they're not sharing wires. So you can go to any port you want out of the available six.

Mr. Roth-Roffy: And the placement of the speaker is that determined by the installer or is that specified by designed that the installer uses?

WIT: It's in the Sperry install book of that unit. The book is the bible. It tells you exactly where to mount the speakers and how to handle the unnecessary duplication or ringing. So it's what we go by and guidance. The – sometimes if you have a vessel that doesn't have bridge wings those speakers may not be there.

Mr. Roth-Roffy: Sir, regarding the mounting of these microphones, are there any special precautions taken to avoid vibrations and other hull transmitted, sounds in the microphones?

WIT: Yeah they're really built for that reason to keep away oscillation fans or oscillating fans or whatever that may be on the bridge creating high frequency tones or whatever. The speakers are really, really high – high technology.

Mr. Roth-Roffy: Sir, is it fair to say that you've never received any feedback from accident investigation agencies about the poor quality of Sperry Marine microphones, recordings, audio recordings?

WIT: No, no feedback.

Mr. Roth-Roffy: Sir, can you tell me if the engine orders response and the rudder order response were connected to the El Faro voyage data recorder?

WIT: No they were not.

Mr. Roth-Roffy: And could you please explain why they were not connected?

WIT: The reason for that goes back to the cost of the installation. And the – say you have a tanker, a huge tanker at so many gross tons that might be a problem. But if you have a cargo ship that's not of high tonnage it's not necessary, SOLAS doesn't require

it. It's when you get up into bigger ships. Now if you want it and you've got some where to pick it off, then it's up to you if you want to buy that option. But on a cargo ship of low tonnage it's – I've never seen it in writing saying that it was mandatory.

Mr. Roth-Roffy: So you would consider the 790 foot long El Faro low tonnage cargo vessel?

WIT: That and its age.

Mr. Roth-Roffy: Sir, while the vessel is at sea underway and there is a failure of an input sensor or connection of a recorded, a required recorded item, would the crew be alerted to that loss of signal and loss of the recording?

WIT: More than they want to.

Mr. Roth-Roffy: Yes, sir, meaning what? They would get some kind of alarm?

WIT: Yes. It would prevail.

Mr. Roth-Roffy: Sir, do you in your annual performance test were you able to detect the incidents of alarms to the crew that have occurred between APT's? Is that something that's recorded?

WIT: The alarms can be purged. If the alarms are purged then they go away because they – they were cured on their own for some strange reason. And it may have been they docked and it turns the depth sounder off and they've got that alarm. And once they acknowledge it, it would stay up there. And once the depth sound is turned back on then the alarm would go away. So and if it doesn't go away it could be purged especially when it's ID exactly what is the problem. So it will stay until you purge it.

Mr. Roth-Roffy: So there's no permanent record of the alarm having sound if it clears this out, is that correct?

WIT: You can go into the actual program and you can look up the alarms that happened.

Mr. Roth-Roffy: Sir, regarding the mounting location for the VDR capsule, you mentioned that you have some requirement to mount it in an open area of the bridge.

WIT: That's correct.

Mr. Roth-Roffy: That's correct? What about the mounting foundation for the capsule itself, is that specified by Sperry Marine installation documents, or how is that mounting arrangement actually determined?

WIT: In the shipyard I would be the one to place the capsule. In doing so the shipyard, of course the owner's rep would be involved and then the shipyard, the guy in charge of the ship's repairs would probably either give me a fitter and a welder and then most of the time it's done by a flat – angle iron and you can take two pieces of angle iron and cut them to the length of the cradle, bore holes, two holes in each one. After they're welded to the deck then you bolt the cradle with the capsule and that's – that's the way. Or you can sit there and build whatever you want to build, but bottom line is the ROV has to be able to get it.

Mr. Roth-Roffy: Sir, could you refer to that image, it was on the screen. Could you show that to the witness please? You were involved in the installation of that capsule onboard the El Faro. Is that mounting arrangement to the top of the bridge, is that something that you specified in a group?

WIT: Yes, sir.

Mr. Roth-Roffy: Did Sperry Marine have any guidance to you on the strength of that mounting requirements for resisting forces of any kind?

WIT: There's no restriction on that. The only restriction that would be in play would be what's underneath, what is underneath. So the ceiling pulled down may show you steam pipes, air conditioning vents, places that can't be welded to and this would become the spot that's the ultimate spot of what you can do with what you've got. So the I beam is the strongest – is the strongest thing that's around there. There's radar mast, I can't see any place that I could get both RV here or here. So if I looked at the installation manual they want 18 square feet and that's impossible. And then the kick pipe, if I'm remembering right, the kick pipe was put here because below it this was obstruction. And it got worse as you moved around, up in the ceiling it got worse. And the actual capsule was put above the flat deck for the ROV and maybe perhaps at the time they had mentioned something about standing water. But as far as my experience goes with mounting capsules, this capsule is in a place that would have never been a problem. It should have been no issues with anybody, with any class issues or our company issues or even my own.

Mr. Roth-Roffy: Sir, given the fact that the capsule from the El Faro was not found in its mounted location. Has Sperry Marine initiated a review of mounting guidance for the capsules on top of the bridge?

WIT: Sir, the mast in front of it and the I beam were missing. I don't know how much stronger it could have been.

Mr. Roth-Roffy: Sir, were you involved in the VDR installation on the El Yunque?

WIT: No, sir.

Mr. Roth-Roffy: And I've just got one more question, sir. The simplified voyage data recorder, have you had occasion to have to change out the entire system for any reason on a ship that has already had a SVDR installed?

WIT: Would you repeat that again?

Mr. Roth-Roffy: Yes, sir. Just kind of the expected life of these SVDR systems. Have you been involved or have any knowledge of these systems having a limited life or any reason to change them out?

WIT: I believe these G2's are running out of time because of upgrades and the fact that they're running out of parts and they are looking at the new generations. So I don't think the parts are going to be there much longer. And if they were to swap that one out more than likely they would have to go to another generation. So we haven't – we see these all the time and we haven't had to just replace one because it was broken. We've, as a request by the customer we're getting to a point where we know we're going to go to a port where they're not going to have spares and then we're going to be taking off a charter and all of this. So some people look ahead while I have a little cash and they will upgrade to the next unit. It gives them more, you know they get more space for recording more. So it's just a, if you want to upgrade. But no we haven't changed them.

Mr. Roth-Roffy: Actually I have one more question, sir. The radars, you also periodically inspect those and issue a certificate compliance on those units, is that correct?

WIT: The radars?

Mr. Roth-Roffy: Yes, sir.

WIT: Radars are most important, yes.

Mr. Roth-Roffy: So if the COC expired is the vessel able to get underway with an expired COC for a radar system?

WIT: Oh we don't issue COC's for radars. The only time a radar comes in effect is during GMDSS surveys. And that's when we look at the radars, unless it's pretty obvious to the operator the radar's not functioning.

Mr. Roth-Roffy: Right, sir, but when you do look at the GMDSS system the radar's not working, are you able to issue a COC? And really my question is the vessel able to get underway with an inoperative radar?

WIT: GMDSS purposes, we don't issue COC's. That's done by class. We only do the checklist and all the testing that needs to be done. That paperwork was turned over to class and class writes the SOLAS certificate.

Mr. Roth-Roffy: What about the voyage data recorder system if it's inoperative, or if it does not have all the required invoice, is the vessel able to get underway with an invalid certificate of compliance? In your knowledge.

WIT: No, that's why we went to – went to the fact that you can go to the flag state and to class and see if you can get waiver. If things wasn't going your way where they didn't have parts, they didn't have a technician or somebody available, that would be up to the flag state or class whether or not that ship could sail.

Mr. Roth-Roffy: Understood. Thank you very much, sir. That's all I have. Captain.

CAPT Neubauer: Good afternoon Mr. Michel. Thank you very much for that explanation, that was very helpful. Who can change out the battery on the VDR if it died within cycle? Does that have to be a servicing technician?

WIT: The battery?

CAPT Neubauer: I mean the pinger battery.

WIT: The beacon battery through experience we don't change just the battery, we change the beacon. The – we look at the fact that once that unit is opened the integrity of watertight integrity is not there anymore and we have no way to test that on a vessel. So for the extra few dollars we install a new one. And it doesn't mean that the beacon has failed because of the battery. The beacon may just have failed. So to kill two birds with one stone it's better to go ahead and install the complete new beacon.

CAPT Neubauer: And sir, how would the crew know if the beacon battery was dead?

WIT: The crew actually can measure the voltage with a regular meter, with a regular digital meter. They have the water point where it's centered – center pin on the beacon and it makes continuity through the case of the beacon which you can measure from those two points. And if you have – you should have – they should have the information on the beacon. The G2 is 6 volts. So you can see the 6 volts and you already know the battery is in good shape.

CAPT Neubauer: Are there any audible alarms or indicators, anything that will to a positive indication rather than ----

WIT: Yes, we have a, from Ducane [sic], we have a little generator, a little receiver made especially for you to take and – you can actually just put a clip lead across the center pin in the case and you can hear the 37.5 kilohertz pinging.

CAPT Neubauer: But if it was just and were underway would you have to do the test with the other piece of equipment? There's no like alarm that the crew would hear without doing some kind of test, is that correct?

WIT: Unless you can hear 37 kilohertz, if your hearing is that good then you could possibly hear it when it got wet.

CAPT Neubauer: Do the parties in interest have any questions? Tote.

Tote Inc: No questions, sir.

CAPT Neubauer: Does ABS have any questions?

ABS: No questions, sir.

CAPT Neubauer: Does Mrs. Davidson have any questions?

Ms. Davidson: No questions.

CAPT Neubauer: Mr. Mansell.

Mr. Mansell: Thank you Captain. A few additional questions I would like to go through really quick. Mr. Michel could you please explain the relationship that Sperry Marine has with the American Bureau of Shipping and perhaps how – perhaps you can explain how ABS vets Sperry Marine as an external specialist for voyage data recorders?

WIT: We're uh, we're audited by ABS. They come into the building. We have to get my – my engineers will put up each 3 of their APT's that's in one pile. The mission assurance guy he'll get the rest of the paperwork done, because he places the call to ABS requesting the audit otherwise we'll get shut off. So as soon as the certificate is running towards the end of its date we go ahead and order a new audit. And that audit's done. The last one we had no deficiencies, we were 100 percent. We work with ABS in New Orleans side by side, most of the guys that work out of New Orleans ABS see us constantly so we have a relationship. If we do have a vessel coming in that is ABS and we want – we want some numbers, associated numbers or class numbers we can call ABS and find out who's going to do the survey. And the survey guy will give us

all the information we want. We tell them we're going out at a certain time. And they'll say okay I'll meet you there, when are you going to be ready. So we have both relationships with business wise and friendship and professional.

Mr. Mansell: And you mentioned your most recent audit there were no deficiencies or recommended actions. Did you mention when that was? Your most recent audit.

WIT: The most recent audit was June 20th, 2013.

Mr. Mansell: 2013, thank you. And one last question. From your understanding if an accident investigator encounters issues with the voyage data recorder or the data or audio extracted from the voyage data recorder, how would they provide such feedback to Northrop Grumman Sperry Marine?

WIT: There's quite a few ways. You can go online and give feedback through our website. Most of the time we have to, we're very careful with extractions being given just to anybody on the street. So more than likely that extraction will stay onboard if it was an incident that was just a collision. It would stay onboard and the Master would receive it. We would get a receipt stating, first of all we would get a signed certificate stating that if the extraction something is corrupt in it that you've given us permission to extract it. Once it – once the Captain gets the extraction in his hand he can get it to his law firm, to his port superintendent or whatever. And if it's not something that's clear it could come to our shop via them and they can sit there and witness on one of our computers. But through the years that I've been doing this we've never had to do one of our Danelec's. We've had Coast Guard come in with other – other manufacturers and radar pictures were not calibrated, things like that. Which in the sense it can be recalibrated, we can't do it, we can only work on what we are trained on.

Mr. Mansell: Thank you. And one more question. Does – do Sperry Marine, marine service engineers respond at the request of owner operator to a vessel to recover data post-accident prior to an investigation authority arriving to a vessel?

WIT: We normally get those provided by lawyers. In other words we're probably the second or third person to hear about it.

Mr. Mansell: Okay, thank you. I have no further questions Captain.

CAPT Neubauer: Mr. Michel you mentioned the barbeque pit microphone protection type on the bridge wings for some vessels. Did El Faro have that?

WIT: I'm not sure. It was a while back.

CAPT Neubauer: And then a little bit of – I would like a little bit of extra information on the bridge alarm watch units. I think you mentioned that as the latest upgrades to the VDR, is that right?

WIT: No.

CAPT Neubauer: Did I get that right?

WIT: The bridge alarm unit is the central portion of the VDR. This is where your – your UTC time is displayed and your amount of incident – incident uh, you have left, how many incidents you can record you have left. And then you have your brilliance and your alarms that come up are going to come up there. And it's just a monitor for everything that's going on in the AU.

CAPT Neubauer: Okay. So there were no upgrades made to the El Faro's SVDR as far as you know?

WIT: As far as I know, no.

CAPT Neubauer: Does anyone have any final questions? Commander Denning.

CDR Denning: Just two follow ups, sir. Thank you for your time today. So you described a method by which the crew of a vessel can test the voltage of the acquisition of the hanger. Did – is that also part of the APT process as well to test that voltage or do you simply look at the battery expiration?

WIT: No, no, no, it's in the – you have to do it. And not only that it's no guessing because they give you the figures.

CDR Denning: And then my final question. You stated that the certificate of compliance is not issued by the Sperry marine service engineer, but instead by the class society, is that correct?

WIT: GMDSS. And now with the new tool we have no rights to write the COC unless it's approved by Danalec, they write it and they send us a report on the results. So the owner gets a report plus the COC and I get a report back and that's the end of that story. If it doesn't pass then we have to go out there and get it right.

CDR Denning: Just for clarification that's based on the new procedure, correct?

WIT: Right.

CDR Denning: The procedure that was in existence as of the last APT performed on the El Faro the COC was issued directly from the marine service engineer, correct?

WIT: That's correct.

CDR Denning: Thank you. That's all of my questions.

CAPT Neubauer: Are there any final questions for Mr. Michel?

ABS: Just as a point of clarification from ABS, we would like to note that the FCC issues certificates, or issues a radio certificate for the GMDSS for commercial vessels in the United States. And class is not authorized to issue those certificates.

CAPT Neubauer: Thank you Mr. White. That clarification is noted.

WIT: May I comment on that?

CAPT Neubauer: Yes, sir.

WIT: I used to issue cargo safety certificates. What I called those was FCC vessels. And the reason I call them FCC vessels is because – because of the fact that I have the license to write the COC only on certain vessels. Normally it was always American ships. I wasn't aware that the FCC did any more maritime certificates. Is that happening again?

CAPT Neubauer: We'll uh – do you have any comment on that Mr. White. Should we just note it for the record?

ABS: It's noted for the record. But class is not authorized to issue those certificates in the United States.

CAPT Neubauer: I understand, thank you, sir. Are there any other final questions for Mr. Michel?

Tote Inc: No, sir.

CAPT Neubauer: Mr. Michel, you are now released as a witness at this Marine Board of Investigation. Thank you for your testimony and cooperation. If I later determine this board needs additional information from you I will contact you through your counsel. If you have any questions about this investigation you may contact the Marine Board Recorder, Lieutenant Commander Damian Yemma. At this time do any of the parties in interest have any concerns with the testimony provided by Mr. Michel?

Tote Inc: No, sir.

Ms. Davidson: No, sir.

ABS: No, sir.

CAPT Neubauer: This hearing will recess and reconvene at 3:50.

The hearing recessed at 1537, 24 February 2016

The hearing was called to order at 1531, 24 February 2016

CAPT Neubauer: The hearing is now back in session. We will now hear testimony from Mr. Brian Vagts, Chief Mate of the El Faro. Mr. Vagts if you could please come forward to the witness table and Lieutenant Commander Yemma will administer your oath and ask you some preliminary questions.

LCDR Yemma: Sir, could please your right hand. A false statement given to an agency of the United States is punishable by a fine and or imprisonment under 18 United States Code section 1001. Knowing this do you solemnly swear that the testimony you're about to give will be the truth, the whole truth and nothing but the truth, so help you God?

WIT: Yes, sir.

LCDR Yemma: Thank you, please be seated. Sir, could you please state your full name and spell your last name for the record?

WIT: Bryan C. Vagts, V-A-G-T-S.

LCDR Yemma: And counsel?

Counsel: Jules Massee, Hamilton, Miller and Birthisel, M-A-S-S-E-E.

LCDR Yemma: And Mr. Vagts can you please state your current employment and position?

WIT: I currently work for Tote and I am the Chief Mate Isla Bella.

LCDR Yemma: Is that Tote Services?

WIT: Yes, sir.

LCDR Yemma: And can you describe some of your general responsibilities in that position?

WIT: I'm head of the Deck Department and everything that entails.

LCDR Yemma: And can you describe some of your work experience relevant to your current position?

CAPT Neubauer: Sir, could you get a little closer to the microphone.

WIT: Sorry.

CAPT Neubauer: Thank you.

WIT: Work history?

LCDR Yemma: Yes please.

WIT: I started sailing in 2007 as a Third Mate on a chemical pioneer, it was a chemical tanker. I worked there for about 2 ½ years, spent another 2 years on heavy lift ships as a Second Mate and Chief Mate. I spent 3 years on the USNS Victorious as Chief Mate and Captain. And I sailed 24 days on the El Faro. And 3 months on the Isla Bella.

LCDR Yemma: What's your highest level of education completed?

WIT: I graduated from the Merchant Marine Academy in 2007.

LCDR Yemma: And do you hold any licenses or professional certification?

WIT: Limited Master.

LCDR Yemma: Thanks, sir. The board will have some questions.

WIT: Thank you.

CAPT Neubauer: Commander Denning.

CDR Denning: Afternoon Mr. Vagts.

WIT: Afternoon, sir.

CDR Denning: Provide a little bit of context for your testimony today, you mentioned that you spent 24 days on El Faro, correct?

WIT: Yes, sir.

CDR Denning: And that was from August 25th to September 18th, 2015, does that sound correct?

WIT: I believe it was the 26th of August, but yes.

CDR Denning: And at that time you were relieved by Steven Schultz, correct, who remained on board El Faro?

WIT: Yes, sir.

CDR Denning: Even – so even though you weren't on board for the regular rotation on El Faro, your observations as the most recent Chief Mate prior to the accident voyage is what's going to be helpful for us today. Prior to your time on El Faro had you applied for the position that you're currently in?

WIT: Yes.

CDR Denning: And was your time on the El Faro essentially to prepare you for that?

WIT: Yes.

CDR Denning: What experience did you have prior to the El Faro on ro-ro ships and container ships? You mentioned the Victorious, what type of vessel was that?

WIT: That's an ocean surveillance.

CDR Denning: So you go ocean surveillance and chemical tanker. What were the other vessel types that you sailed on?

WIT: Heavy lift.

CDR Denning: Heavy lift.

WIT: Heavy lift and break hulk. I did cadet time on car carriers, chemical tankers and prepositioning ships.

CDR Denning: So back to the El Faro, during your time on El Faro how many load outs did you perform in Jacksonville?

WIT: Three or four.

CDR Denning: So can you describe for us please the – basically the training program, how did you become familiar with the vessel and how were you trained on that cargo operation and stability calculations?

WIT: Boarded the vessel in Jacksonville. I was trained by Chief Mate Stith. We went through the daily operations just as far as the load out, what responsibilities a Chief Mate had, just kind of how he went about his business. We – what else did you want, I'm sorry?

CDR Denning: Yeah, you can keep going on that same line. Essentially how you were trained on cargo operations, stability calculations and the overall process for the duties as Chief Mate on the El Faro.

WIT: So we got on board. We went over just the general vessel layout during that time when they were loading the ship – when the stevedores were loading the ship. Just you know safety, you know where you go for your muster station. Your responsibilities, your duties in the event of an emergency. You know your muster station. We then went into just general loading operations, what he has observed, what information he could pass on to me that I would find pertinent. We then observed you know cargo operations. I stood a couple hours of watch with one of the Mates on watch. I watched the Chief

Mate go through the departure stability procedures from receiving the paperwork to informing the Captain that it was adequate. We untied, we went to sea, stood a four hour watch from 4 to 8 in the morning, 4 to 8 in the afternoon.

CDR Denning: Can you just clarify what you mean by "we", we stood watch?

WIT: I stood watch, Chief Mate Stith also stood the watch so I was observing at that time.

CDR Denning: So you were on board, essentially two Chief Mates on board at that time?

WIT: Yes. So we, Chief Mate Stith and I stood the watch with AB Ham. We took the ship down to Puerto Rico. I observed daily operations as far as cargo rounds ensuring that cargo was securely lashed, lashing inspections. We went through other Chief Mate responsibilities ranging from AMOS requisitions to how to prepare the vessel for port, for arrival and departure including stability. We arrived in San Juan, he went through with me the general procedures on how to get the vessel from arrival to ramp down meeting the San Juan personnel down there, Chemo. Exchanged paperwork and just kind of talked about any information that needed to be passed along as far as if any cargo positions need to be blocked out for ongoing work or if any other kind of information. Then we would – that cargo would start, he got off that afternoon.

CDR Denning: So he rode with you essentially half of a voyage from, one voyage from Jacksonville to San Juan and then he departed and flew back to the States?

WIT: He departed the vessel but I believe he stayed in San Juan to take command of the El Yunque.

CDR Denning: Do you know how much experience he had on board El Faro prior to training you?

WIT: If I recall it was a few weeks.

CDR Denning: According to our records it shows about 3 weeks on board El Faro, does that sound about right?

WIT: Yes, sir.

CDR Denning: Do you know how he received his training in that 3 week period?

WIT: No, sir.

CDR Denning: Were there any relief notes utilized in the training?

WIT: Yes.

CDR Denning: Whether from Stith or another Chief Mate?

WIT: Yes, sir.

CDR Denning: Do you have those relief notes still yourself? Do you still have copies of them?

WIT: I believe so.

CDR Denning: We had previously requested those and we haven't received them yet so we would like to restate that request to receive those relief notes. So considering the limited amount of time you had on board the El Faro, can you describe for us the level of involvement that Captain Davidson, you sailed with Captain Davidson, correct?

WIT: Yes, sir.

CDR Denning: Can you describe your interaction with him and did he participate in training you as well?

WIT: He wasn't shy about checking up on me. He would often ask how I was doing, if everything was going alright, if there were any issues he needed to know about. So in my brief experience he was hands on. He wanted to know that I had everything under control.

CDR Denning: Did you have specific discussions with Captain Davidson about the stability of the vessel, calculations, GM margin, utilization of CargoMax? How detailed were you conversations with Captain Davidson?

WIT: Well after we would receive the cargo paperwork I would call the Captain whether it be on the bridge or in his office and just go through with him the numbers, GM, bending moments, shear and torsion, just to make him aware. He would ask me if I was comfortable with their accurateness. And I would say yes I'm comfortable with – but no other exchanges beyond that.

CDR Denning: So you provided Captain Davidson with the final numbers, he asked you if you were comfortable with them. Was there an attempt to val – you essentially – tell me about your process of validating the numbers that were provided to you? As we understand it the shore side folks from Tote Maritime Puerto Rico provide you with a thumb drive with a load files, the location files on it as well as paper records regarding the cargo and you go through a process of validating that equipment – that data. Can you tell me about your process?

WIT: After the last piece was – after the last cargo piece was put on board I would, and the ramp taken up, I would get drafts, departure draft marks and using the salinity that was read off to me by the Mate on watch I would compare calculated drafts in the program that they provided with observed drafts. I would go through the load plan and

ensure that the number of containers was accurate. The total weight based off the stow plan was lined up with what was in CargoMax. And I would ensure the salinity was updated and any other kind of fuel figures, ballast, fresh water numbers, I would make sure all of those were up to date. And just make sure there were no errors, there was nothing that's kind of glaringly obviously wrong.

CDR Denning: How long prior to sailing did you actually receive that data from shore side?

WIT: It depends. Captain Davidson had to, not delay the ship but we finished cargo we had the gangway up, the pilots were on board, the tugs were standing by and we would be occasionally waiting for the paperwork to receive, but the vessel would not depart until I had gotten the numbers and I looked at the numbers. And Captain Davidson would always tell me to go up to my room, take my time make sure it's right, let him know when I finished and then we would move forward from there.

CDR Denning: How long did your review take?

WIT: Uh no less than 15 minutes.

CDR Denning: Some time as much – did it sometime take longer than 15?

WIT: Occasionally if I had to you know track down you know a number from an engineer. Or obviously it took a little bit longer when I first got on the El Faro. But by the end it was down to about 15 minutes.

CDR Denning: Did you ever find any errors regarding cargo or stability calculations?

WIT: Not that I recall.

CDR Denning: Did you ever find any errors after sailing reviewing it closer?

WIT: Not that I recall.

CDR Denning: You mentioned drafts. How were they specifically on the off shore side, the port side?

WIT: You would check the in shore side, shore side.

CDR Denning: And were the off shore drafts taken as well?

WIT: No. The – I would not take the drafts until the list was zero. So if there's no list on the ship the port and starboard side drafts would be nearly identical.

CDR Denning: How did you verify there was no list?

WIT: We used an inclinometer on the bridge.

CDR Denning: So only when the inclinometer would show exactly zero you would take the starboard drafts and then you didn't take the port side drafts?

WIT: Correct.

CDR Denning: Could you have taken the port draft dockside if you wanted to?

WIT: We could have looked over the side of the bow to get the off shore. The only other way to take an off shore draft would be to use a sounding tape.

CDR Denning: I'm sorry say that again.

WIT: Well to lower a sounding tape and take it from the rail.

CDR Denning: That would be your alternative. What would be your primary method? Can you say it again I had a hard time hearing you.

WIT: When I was on the El Faro we never took the off shore draft. So I would just take the in shore. But if I wanted to check the off shore drafts I would have – I could have looked over the starboard bow, or excuse me the off shore bow and I could have read the forward draft mark. But to get the aft and mid ship I would have had to lower a sounding tape.

CDR Denning: So you could not take the mid ship draft from the deck?

WIT: Visually, no.

CDR Denning: Were those – are the drafts and salinity recorded in the ship log?

WIT: I'm sorry?

CDR Denning: Are the drafts and salinity recorded in the ship's logs before sailing?

WIT: The drafts yes. I don't know if they record the salinity.

CDR Denning: You mentioned comparing the observed drafts with the predicted drafts in CargoMax. How accurate did you find the calculated drafts?

WIT: I would have to refer to – refer to CargoMax printouts. I honestly don't recall.

CDR Denning: You don't recall in general how close they were?

WIT: No, sir. I don't want to speculate.

CDR Denning: So this may actually a good time. Doctor Stetler from our Marine Safety Center is going to ask you some more specific questions and you mentioned looking at some of those records. I believe he's going to pull up some of those records for you and discuss some of those in detail.

WIT: Yes, sir.

Mr. Stettler: Good afternoon Mr. Vagts.

WIT: Good afternoon, sir.

Mr. Stettler: To get a better picture of the loading and stability assessment process on the El Faro I would like to ask you a few more detailed questions. Specifically dealing with the Chief Mate responsibilities. And you've provided a good overview to Commander Denning, thank you. Some specific questions. Do you recall, I know you were only on board the El Faro for a few weeks, do you recall the condition of the draft

markings, mid ship draft markings? Was there anything irregular about them? Do you remember?

WIT: No, sir.

Mr. Stettler: You also mentioned obtaining salinity readings. Could you describe in a little more detail, a little more detail how you acquired those?

WIT: I never took them on the El Faro, the Mate on watch would. But you have a hydrometer and you take a bucket of water from wherever whether it be Jacksonville or San Juan. Fill the bucket up, put the hydrometer in and wait for it to kind of settle out.

Mr. Stettler: Okay. And what would the hydrometer actually provide to you? What information?

WIT: The water density, salinity.

Mr. Stettler: Okay. And what kind of units?

WIT: 1., it would be ranked anywhere from 1.01ish to a 1.025, somewhere in that vicinity.

Mr. Stettler: How does the Chief Mate use that information? Can you describe that?

WIT: You use that to – you can change the value in CargoMax and it changes your available dead weight. If I wanted to use it by hand I would go in take my mean draft, or my forward aft draft, get my mean draft, go into the hydrostatic tables using the specific gravity of the water I could get my available dead weight. So it would change how deep you could load the vessel to.

Mr. Stettler: Okay. And I believe Commander Denning asked you about documenting that whether or not that went on the ship's logs and you weren't sure that it always went on, but it sometimes did, correct?

WIT: And I honestly don't know. It should be in the CargoMax paperwork though that's printed out and stapled to each log book.

Mr. Stettler: While you were aboard the El Faro did you notice discrepancy, you mentioned the draft readings and going into CargoMax with the draft readings and salinity, did you notice discrepancies between the observed condition of the vessel and the drafts and the list specifically and the CargoMax predicted list and draft?

WIT: Yeah, yes, sir. We would usually apply a correction based off of what we observed and what was calculated on departure and then we would use that same correction for – to predict our arrival drafts. Usually that was pretty accurate.

Mr. Stettler: What – could you describe that correction?

WIT: It – again I honestly would have to, I would have to refer to some pages and I don't recall.

Mr. Stettler: Do you – can you explain or describe, have any insight as to why they were different, the CargoMax predicted conditions and the observed conditions?

WIT: I could not.

Mr. Stettler: I would like to call your attention to Exhibit 088. And this is a signed CargoMax trim and stability summary. It's for voyage El Faro voyage 178 South, which was August 11th, and I do understand that you were not on board for that voyage. But I would just like to use it for an example so that we could better understand the roles of the Chief Mate in assessing the vessel loading and stability. First if you could just describe just basically what this is, what this page is and specifically if there are any parameters on that page that are of – that the Chief Mate considers most important in evaluating the condition of the vessel.

CAPT Neubauer: Doctor Stettler could you provide some background on this document?

Mr. Stettler: Yes, thank you. Actually Lieutenant Commander Yemma, we could certainly put it up on the screen. But I will describe it. It's, Mr. Vagts you mentioned Mr. Matthews would go down to the ship once he's completed his loading preparation and meet the Chief Mate with the stow plan and the loading documentation and I believe this is part of that documentation provided. As well as, and Commander Denning mentioned the flat scribe. So this is the simply the first page of that documentation that comes out of CargoMax which provides a summary of the condition of the vessel at departure. So I would him to describe a couple things.

CAPT Neubauer: I just want to say for the record this was printed at 2128 on 11 August, 2015.

Mr. Stettler: Thank you. So I guess firstly you mentioned assessing the condition of the vessel and that Captain Davidson asked you, you know how you felt about the condition and you said, I don't remember your exact words, but that you felt good about it or something like that. Could you just describe how you assess whether or not the condition of the vessel is satisfactory for departure?

WIT: I would start with the observed drafts compared to the aft, mid ship and forward marks. So here it's about a 3 inches difference from the aft mark, which pretty close. The mid ship draft looks like it's about 1 inch difference, which is also very – it's pretty good. The forward mark looks like it is about 10 inches, observed draft is 10 inches deeper than the forward mark. So I would start with that. The reason it would take me a little bit longer the first couple of times is I would pull up old printouts. The Chief Mate

has in his office every single trim and stability, all of the voyage paperwork which would include stability. So I would pull up previous departure Jacksonville, arrival Jacksonville, in this case it would be departure Jacksonville. And I would compare the correction to previous ones just because I -- it's – you could call it a vessel experience factor if you will. So that's what I would start with and if everything looked close I would – I also look at the shear and the bending moments and in this case you have a 56 and 61 percent which are both very good. I would go to the GM, GM corrected required in the GM margin. It looks like here it's a .479. I would make sure the specific gravity was whatever the Mate on watch told me it was, in this case it's a 1.023. And on mine I was trying to write the roll period on my sheets also. That's one thing that has been identified as lacking on this cargo printout.

Mr. Stettler: Just while we're on that, do you recall what typical roll period was on the El Faro?

WIT: I do not. So looking at this I would definitely inform the Captain that the GM margin was a .479. I don't recall what his – what he would ask for. But I would make him aware of .479.

Mr. Stettler: Okay. So my follow up questions was going to be are there any standard targets or limitations that are applied. So one would be GM margin which you just mentioned. Could you just briefly explain, there's – you mentioned several GM criteria, GM measurements, one I believe you called the GM corrected which is on this page.

WIT: Yes, sir.

Mr. Stettler: GM required and a GM margin. Could you just for the record just – what's the difference between those?

WIT: So it starts with the GMT then you have a free surface correction and that takes into account all of the free surface on the ship, free surface being slack tanks specifically. So after it takes into account all the free surface on the vessel you get to your GM corrected. Your GM required that comes off of your trim and stability booklet and that's based off, I believe its draft. So that gets your GM required and then you have a GM margin, so.

Mr. Stettler: And the GM margin is? How is that acquired?

WIT: How, sorry?

Mr. Stettler: How is that achieved or how is that calculated?

WIT: The GM margin? By subtracting the GM corrected – it's the difference between the required and the corrected GM.

Mr. Stettler: Okay, thank you. Are there any other limitations that you, you mentioned drafts for example one of the first things you look at is drafts. Could you describe or discuss the – what you're looking at in terms of draft limitations? Are there any draft limitations?

WIT: We had the load line which you know goes very closely with your dead weight. So that would be your limiting factor.

Mr. Stettler: So what would you look at on this sheet to determine whether or not you've exceeded your load line?

WIT: I would look at the mean draft.

Mr. Stettler: You mentioned GM margin and here it's .479, what happens to the GM margin during the voyage? So for example in the voyage between Jacksonville and San Juan? What would you expect to happen to the GM margin during that voyage?

WIT: It decreases slightly with the burn off of fuel.

Mr. Stettler: In your experience with the El Faro, you mentioned you had sailed a little bit on the El Yunque as well.

WIT: No, sir.

Mr. Stettler: Not on the El Yunque, on the El Faro then. During those weeks on board was a higher GM margin ever requested or did the Captain ever tell you he would like something more than maybe what was on the sheet? Did you ever discuss that GM margin requirement with the Captain?

WIT: No, sir.

Mr. Stettler: You mentioned drafts. Is there any limitation on the trim of the vessel?

WIT: They – I believe it is written somewhere that you want to keep the vessel trim within a certain amount. I don't recall. You don't want it to be excessive. And I would use the word excessive where the Captain isn't comfortable with. So if the Captain was not comfortable with the trim we would adjust ballast to make is so.

Mr. Stettler: Do you know what the Captain might be concerned with if he's concerned with excessive trim?

WIT: I don't recall.

Mr. Stettler: You mentioned you look at shear force and bending moment. What changes or what affects those numbers? What does that – you mentioned that 61 percent seems good or is good. Can you describe what it is that that represents on the vessel?

WIT: The bending, it represents the stresses on the ship. Things that will affect that is where you load the cargo. So if you have a lot of cargo up front and nothing back aft

the ship is going to bend. So what the shear and the bending moments are is a way – it's a prediction on the stresses that are on the hull.

Mr. Stettler: Other than what's on this CargoMax trim and stability summary sheet are there any other vessel parameters that the Chief Mate should be concerned with in terms of loading the vessel? And that might be something that's included in CargoMax or it might be something that's found elsewhere. Could you maybe describe a few of the other things that the Chief Mate might be concerned with in terms of the conditions, the loading of the vessel? For example are there any limitations associated with the weight of the containers, the sat weights or the specific weights of containers, their arrangements, the weights of ro-ro cargo, perhaps decks loading or something like that? Does the Chief Mate do – is that something that you as a Chief Mate would review and how would you find that information?

WIT: Yes it is. One of the pages will have the weight of each hold. And if you exceed a tier weight, or not a tier weight, but a, yeah tier weight, you'll have a tier weight violation. And in the top right hand corner you will have an alarm, it will be a big red box and it will say alarm. It just identifies that there is a problem. I don't recall ever seeing any of those on the El Faro though.

Mr. Stettler: What – could you state where along the way, I know you've been sailing for quite a few years, where along the way have you received training, formalized or documented training on the CargoMax software?

WIT: I think most of it was on the job, at the star center, the AMO union school, I do not believe they use CargoMax as a training tool. So, but every vessel I've ever been on

has always been CargoMax. So they're pretty similar, except obviously the vessel itself. So once you've worked with one all of them are pretty similar.

Mr. Stettler: How, just one last question, how did you just in general learn about ship stability?

WIT: At school.

Mr. Stettler: Okay. Undergraduate degree?

WIT: No, while at Kings Point and then again at the star center. It's a required, stability for the management level I believe. It's a required class to take before you sit for your Chief Mate's exam.

Mr. Stettler: Was that something that was a day or two of classroom time, do you recall?

WIT: It was 5 days.

Mr. Stettler: 5 days. No further questions. Thank you.

WIT: Thank you, sir.

CAPT Neubauer: Commander Denning.

CDR Denning: So the questions so far have focused on shore side activities and stability calculations. Now we're going to move along to underway duties. Can you just describe for us the duties of the Chief Mate underway?

WIT: Are you asking for like a daily routine?

CDR Denning: Sure.

WIT: Okay. So again I would stand the 4 to 8 in the morning, so 04 to 08. At 0800 I would meet the Deck Department at the boatswain's locker on the starboard side and get a run down on what the Boatswain had the unlicensed guys doing that day. My first

day out of port I would usually have the unlicensed guys do a quick round just to check lashing, make sure there's nothing obvious. And then I would later go on and check everything by hand anyway. So that was – I would do that every day. Following a daily round, that would usually take me to about 10 O'clock, I would then clean up paperwork from the previous port, whether it would be putting garbage log paperwork away or STCW hours, overtime, things like that. I would also start, I tried to keep a good eye on what requisitions in AMOS we needed. So I would go to the Boatswain ask him if there was any supplies that he needed, any PP – personal protective equipment that was required that we didn't have or we're running low on. So I would make sure that we were doing that. I would check with the Third Mate and the Second Mate while they were on watch. A lot of times it was kind of, especially the Third Mate, since I was new to the ship and the Third Mate and the Second Mate both had been then for many years, so I would pick their brains on how previous Chief Mates kind of stayed in touch with what they had going on. So if there were any issues they would let me know. I would – that would usually take me to about lunch. After 12 I would try and kick my feet up for a little while and just kind of take a nap for rest hour, rest period. Sometimes I would end up doing – just kind of keep working through preparing for port, reading the SMS getting familiar with company policy and procedures, that was usually the big one because I was new to Tote. So that's pretty much it at sea.

CDR Denning: Earlier you mentioned the trim of the vessel. What ballast tanks would you use to adjust the trim? And did that – did you have to adjust it underway typically?

WIT: We had to do it once. I don't know if we had to, but the Captain asked me to so we did. And that was 1A centerline. Typically we depart Jacksonville with 1A centerline

at 150 tons and we depart San Juan with 550. In this instance there was some trim, I don't recall what it was and the Captain asked me to run the numbers on what the trim of the vessel would be if we filled up 1A centerline. Again I don't recall what it – what the numbers were, but he asked me to go ahead and fill up 1A centerline so we did actually fill up 1A centerline on a trip South bound.

CDR Denning: Was it frequently necessary to leave some of the ballast tanks slack?

WIT: That was just common practice.

CDR Denning: During your time on the El Faro how much familiarity did you – were you able to gain you know the propulsion plant, electrical power generation and the equipment and operations handled by the engineering department?

WIT: Very, very little.

CDR Denning: Very little you said? What about bilge pumps, did you ----

WIT: No, sir.

CDR Denning: Operate the bilge pumps? Did you help test the bilge alarms?

WIT: Not while I was on board.

CDR Denning: How were they tested? You didn't particularly test them, but ----

WIT: I couldn't even tell you.

CDR Denning: I'm sorry?

WIT: I honestly don't know.

CDR Denning: Do you know if there were bilge alarms on the bridge or only in the engine room?

WIT: I don't recall.

CDR Denning: Do you know if the bilge alarms would work if the vessel was on emergency power?

WIT: I'm unsure.

CDR Denning: So you mentioned the safety management system operations manual for vessels and the emergency preparedness manual for vessels. You said you were able to gain some familiarity on those manuals during your time on board.

WIT: Yes, sir.

CDR Denning: What were the procedures for, in those manuals, as far as when the vessel would lose propulsion in heavy weather?

WIT: In heavy weather?

CDR Denning: Do you recall what those procedures?

WIT: I would have to refer for the exact wording. But I believe there is a checklist for loss of power. But I'm – I don't know if there's anything for loss of power in heavy weather.

CDR Denning: Talk to me about weather predictions on board, how you obtained weather information on the bridge.

WIT: We received the bon voyage weather files via email and that was the most utilized, from my standpoint, the most utilized piece of information for weather information, weather routing. We also received SAT C messages and NAVTEX.

CDR Denning: Can you go into a little bit more detail on the bon voyage system for me?

WIT: With regards to what?

CDR Denning: How you obtained the information, how you utilized the information?

WIT: The – we would receive an email. We would open up the file and it would automatically upload into the bon voyage system. In the bon voyage system you could set up various routes, so you could use – you could jump forward and anywhere from 6 to 12 hour increments. And you could predict weather based off that file. You – with the route overlays you could then predict which route might be the safest or have the best ride, whether, you know you'll having riding – or following seas or head seas, beam seas, things like that. It would give you information as far as wind, swell, current, give you pressure, 500 millibar. I think it even gave perception. It has everything.

CDR Denning: You mentioned the data package that's received by email. How often is that data package received?

WIT: I honestly don't recall.

CDR Denning: Do you recall, there's a – based on some previous testimony on board El Yunque a separate copy was sent to the bridge and to the Master, do you recall if it was that way on the El Faro? Or if it only went to the Master?

WIT: As I understand it, it went – I know it went to the bridge, I don't know if it also went to the Captain.

CDR Denning: So you received on the bridge computer on El Faro an email directly from BVS themselves, it didn't have to be forwarded from the Master?

WIT: I don't believe so, no.

CDR Denning: Are you aware within the BVS system any settings that would allow you to receive the data package more frequently for tropical weather updates?

WIT: I'm not sure.

CDR Denning: How did you observe the, observe and log the observed wind on the El Faro?

WIT: In the Beaufort scale, so it would be the direction and then the force.

CDR Denning: So you did it visually from observing the sea state?

WIT: Sea state yes.

CDR Denning: Did you also utilize the anemometer?

WIT: I tried to.

CDR Denning: Tried to.

WIT: As I recall there were two and I can't remember if one or both worked.

CDR Denning: And then my final question is if you can just describe for us the overall safety culture on board the El Faro including you know the vessel itself, the crew and especially Captain Davidson personally?

WIT: It was promoted. Captain Davidson when we were going fore and aft to dock or undock he would always say on the radios to make sure that nobody had their cell phones, make sure everybody had a hard hat and proper PPE and he said that every single time we were going to undock or dock. The SMS requires certain safety steps, near misses, job hazard analysis, things like that. And the vessel was conducting those, so the safety culture is there and myself, the Captain, I can't speak for the engineers, but the deck department we did a pretty good job of following that.

CDR Denning: How about communication flow? Was it a free flow of communication? Were there any barriers to communication in terms of interpersonal relationships or just challenges with overall communication on board?

WIT: I didn't witness any. I know that the Chief Engineer, the Captain in my experience were both very approachable and I'm not a very shy person so I'll – I went to them frequently to ask questions if I needed something. Everybody was willing to help so I didn't experience any of that, no.

CDR Denning: Thank you. I have no further questions.

CAPT Neubauer: Mr. Fawcett.

Mr. Fawcett: Good afternoon Mr. Vagts.

WIT: Good afternoon, sir.

Mr. Fawcett: The following questions I'm about to ask you deal with the human performance issues related to the decision making at Tote Services and aboard the El Faro. So the first one you said you had been aboard the Victorious for 3 years, is that correct?

WIT: Yes, sir, approximately.

Mr. Fawcett: And you sailed as Chief Mate and Master?

WIT: Yes, sir.

Mr. Fawcett: So could you describe the Victorious please?

WIT: It's ocean surveillance, twin hull, operates in the East and South China Seas. We tow a – engage in towing operations for the U.S. Navy.

Mr. Fawcett: What's the length overall?

WIT: If I recall it was 293 feet.

Mr. Fawcett: How about in general terms the propulsion system?

WIT: Diesel electric.

Mr. Fawcett: Did the vessel carry cargo or utilize CargoMax?

WIT: CargoMax yes. Our cargo was Navy people.

Mr. Fawcett: So discounting life saving appliances and navigation equipment, was the operation of the Victorious similar to the operation of the El Faro?

WIT: With regards to?

Mr. Fawcett: It's intended purpose.

WIT: Well I mean the purpose of any vessel from my standpoint is just to make sure it's run safely and nobody gets hurt. So from that standpoint, yes.

Mr. Fawcett: Okay. So could you describe in the briefest of terms the hiring process that you went through for employment at Tote?

WIT: I submitted a resume to Melissa Clark. I was contacted by her, we had a conversation via phone. I was asked to come in for an interview for the Captain's position on the new Marlin class LNG container ships. I was offered the Chief Mate position on the Isla Bella, which I accepted. One of the assignments they wished for me to do before going to the vessel was to board the El Faro to learn the Tote way. Learn the person – learn the people involved in the San Juan, Jacksonville group and the cargo.

Mr. Fawcett: As a licensed officer had you served on a vessel similar to the El Faro which is a lo-lo ro-ro vessel?

WIT: No.

Mr. Fawcett: Had you served on a vessel that carried wheeled vehicles like on chassis that needed to be chained down and secured?

WIT: Yes.

Mr. Fawcett: And what ship was that?

WIT: On the Greendale and then on the Second Lieutenant John P. Bobo.

Mr. Fawcett: Okay. Were they regular commercial trade or were they prepositioned type ships?

WIT: The Greendale was a car carrier. And the Second Lieutenant John P. Bobo was a preposition.

Mr. Fawcett: So would it be fair to say that the Chief Mate's job is to be able to take over for the Master if the Master is incapacitated in any way?

WIT: Yes.

Mr. Fawcett: And so the Chief Mate's position is the second in command?

WIT: In a roundabout sort of way, yes.

Mr. Fawcett: So we have talked about in this testimony that you were trained by another Chief Mate and you mentioned he had been aboard El Faro for approximately 3 weeks, is that correct?

WIT: Uh I said he was on for a few weeks and then you clarified, yes.

Mr. Fawcett: Do you know how much previous experience that Chief Mate had aboard the El Faro or the El Yunque?

WIT: Say that one more time.

Mr. Fawcett: I said the Chief Mate who conducted your training, how long had they been aboard the El Faro, you mentioned a few weeks, but was there another time period to your knowledge they had been aboard El Faro?

WIT: No.

Mr. Fawcett: As Chief Mate?

WIT: No. I was unaware.

Mr. Fawcett: So for your training did you follow a formal written training plan or procedure?

WIT: For the length of the turnover, no.

Mr. Fawcett: Was there some other kind of formal process that you followed?

WIT: Not that I recall.

CAPT Neubauer: Mr. Vagts can you clarify how long your training program was on the El Faro?

WIT: It was 3 days.

CAPT Neubauer: Thank you.

Mr. Fawcett: So when you signed off El Faro did Captain Davidson, was he the Captain?

WIT: Yes, sir.

Mr. Fawcett: Did he conduct an evaluation of your performance?

WIT: I don't know.

Mr. Fawcett: Well you don't know if he actually sat down and had a conversation with you about your performance?

WIT: He told me that I did well, but I don't know if he did a formal evaluation.

Mr. Fawcett: During your time on El Faro can you give me an estimate of how many, this is at sea, how many times you saw Captain Davidson on deck checking the security of the cargo, watertight integrity, and condition of the vessel?

WIT: More than once.

Mr. Fawcett: And ----

WIT: I saw him – I would see him on deck occasionally. I don't know if he checked watertight integrity. I couldn't tell you what he checked on deck. I've seen him on deck.

Mr. Fawcett: When you were not in a training mode did he ever walk the deck with you and talk about his expectations for your performance as a Chief Mate on the vessel?

WIT: Not while we were walking the deck.

Mr. Fawcett: Did he walk the deck with you?

WIT: I don't recall.

Mr. Fawcett: So you were on the voyage – what time, what date did you get aboard?

WIT: August 26th.

Mr. Fawcett: On that particular voyage the vessel took an alternate route from its typical, what they describe as the Atlantic route. What were the conversations that took place between you and the Master about the use of that route?

WIT: None.

Mr. Fawcett: Did you know that was the typical route that the ship would take? Or was it a deviation route? What did you know about that voyage?

WIT: That was my first and second day on board so I knew very little. When we got out to sea I learned you know usually the vessel will depart Jacksonville and just run line straight for San Juan. I couldn't tell you if we – scratch that. So if you're asking if it was a deviation for weather then it was, if that's what you're asking.

Mr. Fawcett: While you were in, you just said you were in a training mode so to speak under the watchful eye of the Chief Mate. So how was that discussed? In other words what you were doing, how you were deviating from your normal route, any particular regards to the securing of cargo, the checking of lashings, stability? You know what

was talked to you about by the Chief Mate about that voyage where you were sailing down in the vicinity of Erika and Danny, the hurricane?

WIT: The – as the storm if I recall was originally supposed to go North of Puerto Rico and it ended up not doing that at all. It ended up going I believe South of Puerto Rico and then coming up between Puerto Rico and the Dominica Republic which meant that we hit it because we had also gone Old Bahama. So before the weather started to get worse the Captain discussed with the Chief Mate and I to ensure that all the cargo lashings were tight. He secured the deck, he didn't want anybody on the second deck or the weather decks. And that was the conversation we prior to I believe the 28th, so I think that was like on the 27th.

Mr. Fawcett: So prior to departure on that voyage was there a meeting of the bridge officers or the – in conjunction with the Engineering Officer, perhaps the Chief Engineer where you discussed the hazards of the voyage so you could reduce the risk to that voyage?

WIT: No.

Mr. Fawcett: Thank you, sir.

CAPT Neubauer: Good afternoon Mr. Vagts. Sir, I just have a couple more follow up questions.

WIT: Yes, sir.

CAPT Neubauer: Were you aware of the preferred minimum GM margin? I'm sorry, preferred, yes minimum GM margin?

WIT: I honestly don't recall what the Captain requested.

CAPT Neubauer: What was your impression of the overall material condition of the vessel compared to other vessels you had served on previously?

WIT: First glance that she was old. But very sturdy, thick steel. She rode really well.

CAPT Neubauer: Was it typically like long rolls? Did you get the sense that it was – the GM might have been, there wasn't a lot of reserve righting them?

WIT: No.

CAPT Neubauer: Does that include during Tropical Storm Erika?

WIT: Yes.

CAPT Neubauer: Did you ever get a sense of commercial pressures coming to the vessel from external shore side sources by email or any other type?

WIT: No.

CAPT Neubauer: Did Captain Davidson ever mention receiving feedback from shore to you?

WIT: No.

CAPT Neubauer: Or did you overhear him?

WIT: No, sir.

CAPT Neubauer: Did you ever hear any dissension on board, especially including hiring for new position on the LNG vessels?

WIT: I had been asked, might be the right word, the Third Mate Jeremie Riehm had let me know that there were some hard feelings about some of the crew members on board that they hadn't been selected for the new vessels so he recommended that I not tell everybody that I was going to be going on the new ship. But everybody knew anyway.

CAPT Neubauer: Everybody knew you had received a position?

WIT: Yes, sir.

CAPT Neubauer: Did you feel any, or did you sense any resentment at all from any crew members because of that?

WIT: No.

CAPT Neubauer: Did you observe any other interactions between crew members that might have been related to the positions being given out? And what I mean by that is any altercations or difference of opinion?

WIT: No, sir.

CAPT Neubauer: In your estimation how was the morale on the vessel compared to other vessels you've been on?

WIT: Very, very good. Everybody got to go home every week.

CAPT Neubauer: While you were underway serving as the primary Chief Mate, how many hours of rest did you get each day?

WIT: Adequate for the – per STCW.

CAPT Neubauer: How many continuous hours of sleep?

WIT: I would usually go to sleep around 9 O'clock in the evening and then I wouldn't be up until about 3:30 the next morning.

CAPT Neubauer: When you were on board the South bound voyage towards Tropical Storm Erika, was it your impression that the Master was trying to avoid the storm?

WIT: Yes.

CAPT Neubauer: Was he able to avoid the storm?

WIT: No.

CAPT Neubauer: Why do you think that occurred?

WIT: You can't predict the weather.

CAPT Neubauer: Is it true that the vessel could have outrun the storm?

WIT: No.

CAPT Neubauer: Are you aware of any pressure to enter San Juan after the port reopened, after Tropical Storm Erika passed by?

WIT: From the company?

CAPT Neubauer: Yes.

WIT: No.

CAPT Neubauer: Did the Master mention that?

WIT: No.

CAPT Neubauer: Thank you, sir. Mr. Roth-Roffy. I'm sorry, Mr. Young.

Mr. Young: Good afternoon Mr. Vagts.

WIT: Good afternoon, sir.

Mr. Young: A few operational questions please. While you were aboard the El Faro as Chief Mate we understand there was an avoidance voyage for the storm Erika. Was there ever a heavy weather checklist in the SMS that was referenced or completed?

WIT: Not that I know of.

Mr. Young: Subsequent to the accident in your current position is there a heavy weather checklist available to you now?

WIT: Not that I'm aware of.

Mr. Young: You mentioned risk analysis throughout the SMS system, could you describe if there were any risk analysis done by yourself as Chief Mate?

WIT: With regards to any job?

Mr. Young: Any formal risk analysis for jobs, yes.

WIT: On the El Faro I don't recall.

Mr. Young: During your time aboard the ship, El Faro, was there ever a loss of propulsion while you were on board?

WIT: I don't recall.

Mr. Young: As Chief Mate aboard the ship did you ever depart a port with only one of the two boilers operational?

WIT: Yes.

Mr. Young: Could you talk about that please?

WIT: I don't know much. All I know is what I had heard that we were going to be departing on one boiler for I believe testing and the Captain was required to get permission to do so and he received it.

Mr. Young: Thank you. And can you please just describe your duties as Chief Mate in terms of fire, life boat drill and abandon ship drills?

WIT: The Chief Mate is responsible for conducting drills and training. So for a life boat drill I'm responsible for life boat number 2. And I'm in command of that boat. So I would be in charge of the entire evolution. For fire drills I report to the muster station as part of the quick response team and the on scene leader. And I am responsible for relaying information on scene to the Captain on the bridge.

Mr. Young: And during your time aboard the El Faro was the supernumeraries for the polish riding gang involved with the drills?

WIT: I don't recall.

Mr. Young: Was there ever a time that you inspected the watertight doors and hatches throughout the cargo hatch, or cargo holds?

WIT: No.

Mr. Young: Was there ever a time that those hatches and scuttles or watertight doors were checked for being closed at sea?

WIT: We would – I would check them, you know on my daily rounds. If there's a watertight door open you would want to know why. The Second Engineer I believe was, or one of the engineers for that matter, I don't recall which, he was in charge of maintenance on the large watertight doors.

Mr. Young: And during your daily rounds of the watertight doors and hatches did you ever find any of the engine room watertight doors to be opened?

WIT: Yes.

Mr. Young: Was there a policy to have them closed during heavy weather?

WIT: Not that I know of.

Mr. Young: Thank you.

WIT: I'm going to change that to I honestly don't know. Not that I know of, to I don't know.

Mr. Young: Understood. Thank you.

CAPT Neubauer: Does Tote have any questions?

Tote Inc: No questions, sir.

CAPT Neubauer: Does ABS have any questions?

ABS: No questions, sir.

CAPT Neubauer: Does Mrs. Davidson have any questions?

Ms. Davidson: No questions.

CAPT Neubauer: Sir, I just have a couple questions, last questions.

WIT: Yes, sir.

CAPT Neubauer: Did you ever hear the Master or Captain Davidson talking about the Polish riding gang?

WIT: No, sir.

CAPT Neubauer: Did you ever observe the Polish riding gangs on board?

WIT: Yes.

CAPT Neubauer: What kind of work did you observe them doing?

WIT: When I was on board as I understood it they were, they were running wires and cables for various pieces of equipment to prepare for the Alaska run. I saw them working on installing motors and winches for the starboard mid ship ramp. And that was really about it.

CAPT Neubauer: Was that – were those installations done underway?

WIT: Yes.

CAPT Neubauer: How was the – how were the winches secured prior to installation, do you remember? Were they just kept on deck?

WIT: I don't recall. They weren't – they weren't not secured.

CAPT Neubauer: Do you remember what they were contained in?

WIT: No.

CAPT Neubauer: Do you remember is those winches were included in cargo or somehow accounted for, for loading?

WIT: They were not.

CAPT Neubauer: Did you ever have any verbal interactions with the Polish riding gang or at least one member of that group?

WIT: Briefly.

CAPT Neubauer: What was your impression of their ability to communicate with you in English?

WIT: Challenging.

CAPT Neubauer: Would you say that for every member of the riding gang?

WIT: No.

CAPT Neubauer: But the person you communicated with?

WIT: The one I did it was – he could understand what I was saying and with some work I could understand what he was saying. But we were just having a conversation, we were on the second deck talking about a T-shirt.

CAPT Neubauer: Can you assess the morale of that riding gang?

WIT: No I couldn't.

CAPT Neubauer: Are there any further questions for Mr. Vagts?

Tote Inc: No, sir.

ABS: No, sir.

CAPT Neubauer: Mr. Fawcett.

Mr. Fawcett: Yes, sir one brief question Mr. Vagts. If you could think for a moment. When did you leave the El Faro?

WIT: September 18th.

Mr. Fawcett: So take a moment to think about it. Could you accurately describe the stowage position and location of the life rafts on board the El Faro?

WIT: Yes. I can – I know what they are.

Mr. Fawcett: Could you please explain that to us?

WIT: We had two life rafts that were in cradles secured via hydrostatic release, one on the port, one on the starboard side at the life boat deck. We had, at my departure we had an additional one life raft at also the port and starboard sides, but we had not welded the brackets into place yet. So they were secured via ratchet straps to the rail. And then there was one life raft on the port bow that was secured via hydrostatic release.

Mr. Fawcett: And to the best of your knowledge were the hydrostatic releases attached and affixed to those rafts the proper and required ones, with regard to the expiration date and functioning properly?

WIT: When I got off, yes.

Mr. Fawcett: Thank you, sir.

CAPT Neubauer: Are there any further questions? I just have one final question. Are you aware of any issues with either of the El Faro's davits? Any concerns or issues?

WIT: No, sir.

CAPT Neubauer: Are you aware of any scheduled maintenance that was going to occur on those davits?

WIT: I recall – I know that there was scheduled some maintenance. I don't recall what it was, I don't recall when it was scheduled.

CAPT Neubauer: Do you know if that was preventative maintenance? Or was there a reason?

WIT: I don't recall.

CAPT Neubauer: Are there any final questions? Mr. Vagts you are now released as a witness at this Marine Board Investigation. Thank you for your testimony and cooperation. If I later determine this board needs additional information from you I will contact you through your counsel. If you have any questions about this investigation you may contact the Marine Board Recorder, Lieutenant Commander Damian Yemma. At this time do any of the PII's have any concerns with the testimony provided by Mr. Vagts?

Tote Inc: No, sir.

Ms. Davidson: No, sir.

ABS: No, sir.

CAPT Neubauer: I have a couple changes to announce for tomorrow's witness schedule. Captain Bryson will be moved to the next hearing session. And Lieutenant Beisner will be moved to the second witness testimony tomorrow. At this time the hearing's adjourned and we'll reconvene at 9 O'clock tomorrow morning.

The hearing adjourned at 1701, 24 February 2016.