

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.

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

2 Jacksonville, Florida held

3 19 May 2016

4 Volume 14

5 **CAPT Neubauer:** Good morning. This hearing will come to order. Today is May 19th,
6 2016 and the time is 9 O'clock. We are continuing at the Prime F. Osborn Convention
7 Center in Jacksonville, Florida. I am Captain Jason Neubauer, of the United States
8 Coast Guard, Chief of the Coast Guard Office of Investigations and Analysis,
9 Washington D.C. I'm the Chairman of the Coast Guard Marine Board of Investigation
10 and the presiding officer over these proceedings. The Commandant of the Coast Guard
11 has convened this board under the authority of Title 46, United States Code, Section
12 6301 and Title 46 Code of Federal Regulations Part IV to investigate the circumstances
13 surrounding the sinking of the SS El Faro with the loss of 33 lives on October 1st, 2015
14 while transiting East of the Bahamas. I am conducting the investigation under the rules
15 in 46 C.F.R. Part IV. The investigation will determine as closely as possible the factors
16 that contributed to the incident so that proper recommendations for the prevention of
17 similar casualties may be made. Whether there is evidence that any act of misconduct,
18 inattention to duty, negligence or willful violation of the law on the part of any licensed or
19 certificated person contributed to the casualty, and whether there is evidence that any
20 Coast Guard personnel or any representative or employee of any other Government
21 agency or any other person caused or contributed to the casualty. I have previously
22 determined that the following organizations or individuals are parties in interest to the
23 investigation. Tote Incorporated, ABS, Herbert Engineering Corporation and Mrs.

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1 Teresa Davidson as next of kin for Captain Michael Davidson, Master of the SS El Faro.

2 These parties have a direct interest in the investigation and have demonstrated the
3 potential for contributing significantly to the completeness of the investigation or
4 otherwise enhancing the safety of life and property at sea through participation as party
5 in interest. All parties in interest have a statutory right to employ counsel to represent
6 them, to cross-examine witnesses and have witnesses called on their behalf.

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

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

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

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

17 **CAPT Neubauer:** Thank you. We will now call our first witnesses of the day. Mr. Mark
18 LaRose with ABS.

19 **LCDR Yemma:** Could you raise your right hand, sir? A false statement given to an
20 agency of the United States is punishable by a fine and or imprisonment under 18
21 United State Code Section 1001, knowing this do you solemnly swear that the testimony
22 you're about to give will be the truth, the whole truth and nothing but the truth, so help
23 you God?

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1 **WIT:** I do.

2 **LCDR Yemma:** Please be seated, thank you. Sir, can you please state your full name
3 and spell your last name for the record?

4 **WIT:** Mark LaRose, L-A-R-O-S-E.

5 **LCDR Yemma:** And counsel can you also state your name and spell your last name?

6 **Counsel:** Jerry White, W-H-I-T-E from Hill Rivkins, LLP.

7 **LCDR Yemma:** Thank you Mr. White. Mr. LaRose can you please state where you're
8 currently employed and what your position is?

9 **WIT:** Currently employed for the American Bureau of Shipping, ABS here in
10 Jacksonville, Florida. I'm a senior surveyor.

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

12 **WIT:** Inspections of vessels both new construction and after construction. Class and
13 statutory related.

14 **LCDR Yemma:** Can you also describe some of your prior relevant work experience
15 please?

16 **WIT:** Yes. I sailed as Third Assistant Engineer for a couple years after school from
17 Mass Maritime Academy. I worked for Caterpillar as a service technician and also
18 Ingersoll Rand as a service technician. And I've been with ABS now for 8 years.

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

20 **WIT:** I have a Bachelors in Marine Engineering.

21 **LCDR Yemma:** Thank you, sir. Commander Odom will have some questions for you
22 now.

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1 **CDR Odom:** Good morning Mr. LaRose. I'm Commander Odom, I'm with the traveling
2 Marine Inspectors, U.S. Coast Guard Headquarters in Washington, D.C. Today I have
3 3 lines of questioning I would like to complete. One with regards to your experience,
4 training and qualification as an ABS surveyor and your general experience in the marine
5 industry. The second line, the second topic will be related to general survey knowledge
6 and the methodology behind certain types of surveys that were performed on the El
7 Faro. And the third topic and final topic will be very specific in the regards to the
8 equipment you surveyed on the 16th of June, 2015. In between topics I will stop and
9 open the topic for the Marine Board to ask questions in line with our discussion prior to
10 moving to the next topic. If at any time you feel like you need a break for any reason
11 just ask Captain Neubauer and he will consider your request. Do you understand or do
12 you have any questions?

13 **WIT:** Yes I understand, no questions.

14 **CDR Odom:** Thank you. So my first question is, could you please provide an
15 overview, a little bit of a more detailed overview of your employment history as it relates
16 to the marine industry including any time you have sailing on steam ships?

17 **WIT:** So I've been in the marine industry since college. Sailing on steam ships only
18 during college. Our training ship was a steam ship. So I had 3 sea terms in terms
19 onboard that vessel. Since I graduated I worked on container ships and platform,
20 they're diesel and diesel electric. Then working for Caterpillar was diesel engines, so
21 also marine diesel engines. And with ABS I worked in Houston for about 8 months
22 doing after construction on vessels and also vendor surveys for offshore equipment.
23 And then I transferred to Korea, I was in Korea for just over 5 years doing mostly new

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1 construction. Everything from steel cutting of a vessel to the final delivery, all
2 commissioning of all systems, structure, construction. And I was there for a little over 5
3 years and then transferred here to Jacksonville where I've also been doing new
4 construction as well as after construction.

5 **CDR Odom:** Thank you. And I also understand you were employed by Interocean
6 American Shipping on semi-submersibles?

7 **WIT:** Yes, that's correct.

8 **CDR Odom:** And that's the same Interocean that was – became Tote?

9 **WIT:** Yes, I wasn't aware of that until the NTSB hearing.

10 **CDR Odom:** Okay, thank you. And also you did a tour with ABS in Brownsville, Texas,
11 is that correct? What did you do during that tour?

12 **WIT:** Yes, that was, I grouped that into when I was in Houston. I was back and forth
13 between Brownsville and Houston. But I worked in a new construction yard building
14 jack up rigs.

15 **CDR Odom:** Thank you. At any time during your tenure with ABS have you ever
16 simultaneously employed by any other company in the marine industry outside of ABS?
17 For example did you perform work for any other classification society or engage in any
18 independent private consulting in the marine industry?

19 **WIT:** No.

20 **CDR Odom:** So given your past experience and your current position, do you feel you
21 were adequately trained and qualified by ABS to perform the survey on older steam
22 vessels such as the El Faro?

23 **WIT:** Yes.

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1 **CDR Odom:** Were you aware at the time that you performed the survey on the El Faro
2 in June of 2015 that it was enrolled in the Coast Guard's alternate compliance program?

3 **WIT:** Yes.

4 **CDR Odom:** And are you generally familiar with the alternate compliance program and
5 do you understand the roles and responsibilities of ABS surveyors who perform
6 delegated functions under this program?

7 **WIT:** Yes.

8 **CDR Odom:** With regards to the El Faro the survey you were assigned on June 15th,
9 June 16th of 2015 was a continuous machinery survey, is that correct?

10 **WIT:** That's correct.

11 **CDR Odom:** Did you meet all the ABS standards and qualifications to perform that type
12 of survey?

13 **WIT:** Yes.

14 **CDR Odom:** And although it's not within the scope of the survey in June, are you also
15 qualified to complete the annual machinery surveys that was applicable to the El Faro?

16 **WIT:** Yes.

17 **CDR Odom:** Had you done any previous – have you had any previous experience on
18 the El Faro prior to or after that survey?

19 **WIT:** No, that was the only time I was ever onboard.

20 **CDR Odom:** Can you describe the training you received from ABS in order to obtain
21 the qualifications needed to perform both the continuous machinery survey and the
22 annual machinery surveys?

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1 **WIT:** Yes. ABS has required classroom training that we take when we first get hired
2 on. It was about 3 to 4 weeks in the classroom and then it's a, which is documented,
3 then we have field training. Any particular tasks that could be added to a work order for
4 us you must do at least twice with another surveyor and the other surveyor will then
5 check, basically check off that you've completed it and that you're competent. And after
6 the two times if it's felt that you're competent then it's added to your training record and
7 you become certified for a particular task.

8 **CDR Odom:** So every individual task that would be on the checklist that you guys
9 perform has got to be observed twice, if I understood you correct? Or is it just the whole
10 survey is twice?

11 **WIT:** The survey task.

12 **CDR Odom:** The survey task.

13 **WIT:** Twice, correct.

14 **CDR Odom:** Okay, thank you. And so if you would please take a look at Exhibit 184.
15 In this exhibit, this exhibit is from the ABS Survey Manager for the SS EL Faro. It was
16 downloaded from the ABS Safe Net. If you would please take a look at the second
17 comment dated 22 December, 2010. It states this vessel is enrolled in the alternate
18 compliance program and as a result the surveyor is acting as an agent of the Coast
19 Guard. Are you familiar with this comment?

20 **WIT:** Yes.

21 **CDR Odom:** So what is your understanding of the meaning of this comment? And
22 does it change your approach when you conduct surveys on behalf of the Coast Guard?

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1 **WIT:** It – we act on behalf of the Flag State for more than just the Coast Guard with
2 other vessels as well. It's similar, but there's not a survey of the programs like this with
3 different flags, but so it doesn't really change our approach other than, you know we
4 have to make notification to the Coast Guard and if we find – have any findings that
5 effect the vessel in any way statutorily that the Coast Guard would be interested in we
6 would have to report that to them.

7 **CDR Odom:** Have you ever received any specific guidance or training from ABS or the
8 Coast Guard on what it means to act as an agent in the Coast Guard?

9 **WIT:** We do have a, I believe a module during our training in Houston from ABS that
10 includes a section on ACP.

11 **CDR Odom:** So it leads into my next question. What specific training have you had
12 with the alternate compliance program received, and you said you had a week module
13 during your initial training?

14 **WIT:** Well it was probably one module during that week of training. Probably a few
15 hours going over the supplement and requirements within that would need to be brought
16 to our attention.

17 **CDR Odom:** Is there any refresher training or as the supplement is updated that you
18 guys revisit? Or is that it, just the one time?

19 **WIT:** We, uh well they – the Houston office sends out updates to us via email
20 periodically whenever there are updates to the ACP program and any other statutory
21 item that we would need to know. We also attend basically a refresher course called
22 ESVT, experienced surveyor validation training every 3 years. And it's also brought up
23 again during that training.

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1 **CDR Odom:** Thank you. Since you mentioned the supplement, can you describe what
2 that is and how you use it?

3 **WIT:** Yes. It explains the – any differences between ABS rules and the Coast Guard
4 C.F.R. regulations and if there are differences where they lie and what becomes the
5 new precedent that you would have to follow.

6 **CDR Odom:** So when you conduct your inspections or surveys on these vessels that
7 are under ACP do you use the supplement? Do you have it with you and do you use
8 the checklist that are provided in it? Is it required for you to fill those out or use them?

9 **WIT:** We are required to review it, we're not required to carry it with us and have it with
10 us onboard.

11 **CDR Odom:** So would the supplement be applicable to the survey that you were
12 conducting on the El Faro on the 16th of June, 2015? For the continuous machinery
13 survey.

14 **WIT:** There may have been some aspects of it that were applicable depending on the
15 piece of machinery. I would have to go back and look. I don't recall exactly.

16 **CDR Odom:** So the current supplement version is dated 1 April 2011. And there have
17 been many policy and regulation changes since then. How does ABS provide you with
18 information in relation to regulation or U.S. Coast Guard policy changes as required by
19 the memorandum of understanding between the Coast Guard and ABS?

20 **WIT:** They're usually emailed to us like I said before. And then also brought up again
21 whenever we're in training, the ESVT training.

22 **CDR Odom:** Do you feel the current supplement is up to date and effective, or would
23 you say it is in need of a revision in your opinion?

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1 **WIT:** As far as I'm concerned it seems to be working fine.

2 **CDR Odom:** So would you agree that under the alternate compliance program, as a
3 surveyor you essentially have two clients? In this particular case would be Tote as the
4 owner/operator of the El Faro and the Coast Guard since you're acting as an agent of
5 the Coast Guard?

6 **WIT:** Yeah, I guess you could word it that way.

7 **CDR Odom:** So can you speak to in this role how – can you tell us how you manage
8 those competing priorities, one from the regulatory side and the other from the side of a
9 paying customer?

10 **ABS:** Is that question directed towards a particular survey or a particular requirement
11 where there may be a competing ----

12 **CDR Odom:** It's directed towards the alternate compliance program and the competing
13 challenges between the company and his obligations to the Coast Guard. So how do
14 you manage the competing demands if you have a particular issue on an ACP vessel
15 between what the company wants and your obligations to the Coast Guard?

16 **WIT:** Any rule requirements or statutory requirements come first, whether, you know if
17 the company has an issue we can discuss it, but if it was something that has to do
18 statutorily wise, then it would – it's our obligation to bring it up to the Coast Guard and
19 make them aware of it. And then it can be discussed further from there.

20 **CDR Odom:** Do you have experiences as it relates to performing audits applicable to
21 the International Safety Management Code? Are you a qualified auditor?

22 **WIT:** Not currently, no.

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1 **CDR Odom:** Not currently. Do you have experience? Are you working on becoming
2 qualified?

3 **WIT:** Yes, I was actually just in the courses the last few weeks. I just returned this
4 week.

5 **CDR Odom:** Can you describe the process of the training that you're going through to
6 perform the audits? What you need to become qualified?

7 **WIT:** It's classroom training. First ISO 9000 training then ISM come after that. Then in
8 order to become fully qualified you have to do a certain number, I think it's 4 observation
9 audits, initial or renewal at 3 of them and 1 can be an interim and 1 has to be a
10 company.

11 **CDR Odom:** Thank you. Can you tell us what your relationship is like with Sector, the
12 U.S. Coast Guard Sector Jacksonville Officer in Charge Marine Inspection?

13 **WIT:** I think it's a fine working relationship. We have open dialog back and forth.
14 Never seem to have any issues.

15 **CDR Odom:** Did you have officer in that office that is assigned as a point of contact for
16 your ABS surveyors for matters related to the alternate compliance program?

17 **WIT:** Yeah there's a domestic officer that we contact whenever we – if we have a
18 vessel that's in the ACP program we're required to notify them before we attend so we
19 send it to – Sector Jacksonville has a Jax domestic email address that we send those
20 notifications to.

21 **CDR Odom:** Do they normally respond to them in a timely manner when you send that
22 notification?

23 **WIT:** A lot of times they don't respond at all.

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1 **CDR Odom:** Do you ever interact or do any type of cross training with the marine
2 inspectors or the officers at Sector Jacksonville?

3 **WIT:** Nothing officially. I mean the most interaction we have is usually onboard vessels
4 together.

5 **CDR Odom:** Thank you. This concludes my line of questioning for training qualification
6 and your work experience. I would like to turn it back over to Captain Neubauer to ask if
7 the board has any questions related to this topic.

8 **CAPT Neubauer:** Mr. Roth-Roffy.

9 **Mr. Roth-Roffy:** Tom Roth-Roffy, NTSB. Good morning, sir.

10 **WIT:** Good morning.

11 **Mr. Roth-Roffy:** I would like to for you to discuss in more detail your experience and
12 training in steam plant surveying and operation, both at during your college years as
13 well as your ABS training and experience.

14 **WIT:** So in college we – I left college with a Coast Guard Third Assistant Engineer's
15 license steam and motor. So we took extensive courses during class for steam engines
16 as well a diesel engines. We had 3 sea terms in school that were conducted onboard a
17 steam ship. About 2 months each time. After school I didn't have a whole lot of steam
18 experience. I've been on a couple of steam ships in Korea. Did some boiler tube
19 repairs and things of that nature. But other than that before coming here to Jacksonville
20 I had not been on a steam ship in probably a couple of years.

21 **Mr. Roth-Roffy:** And please if you could provide information about the training you've
22 received since you've been working with ABS on how to survey steam plants, in
23 particular boilers and similar equipment that is different from a diesel ship?

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1 **WIT:** Well like I said before we have training that we have in the classroom and it's
2 brought up. And we do discuss it. We also have survey guidance notes in our
3 computer system that we periodically review, especially if you're going to be going to a
4 steam vessel that gives us instructions and guidance on what to do and what to look for
5 in particular.

6 **Mr. Roth-Roffy:** Is there a particular rating and qualification for boiler or survey with
7 ABS?

8 **WIT:** There is a task just like I was mentioning before. So if we go to a ship that has a
9 boiler there is a boiler task that would have to be associated on that work order. So we
10 need to be trained in the same way I was talking about before where – had at least two
11 attendances that would qualify you for doing that inspection.

12 **Mr. Roth-Roffy:** And have you – are you qualified as a boiler surveyor and have you
13 performed surveys as an ABS surveyor of marine boilers?

14 **WIT:** I believe I am, but I don't think I've ever done main steam boilers like. I've done
15 smaller like donkey type boiler, auxiliary boilers.

16 **Mr. Roth-Roffy:** You mentioned that prior to attending a vessel you had notified the
17 Coast Guard of an upcoming survey but sometimes you did not receive a response.
18 Could you give me an idea of how often the Coast Guard inspection would attend
19 surveyors jointly with you in the Jacksonville area?

20 **WIT:** That depends on the – what type of survey it is. It's really up to them whether
21 they want to or not. Probably like I said, most likely depend on what kind of survey.
22 Sometimes I think they come out a little bit more because it's also a training port. So
23 they'll – sometimes the inspectors will come out with trainees. But I mean it just

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1 depends on the type of survey that's going on whether or not they're going to attend or
2 not.

3 **Mr. Roth-Roffy:** And do you have an understanding or a recollection about the
4 frequency or percentage of attendances by Coast Guard on ACP vessels joining you?
5 Has it been half the time or less or more?

6 **WIT:** I don't think I could make a determination on that. A lot of my time spent with the
7 Coast Guard here on ACP vessels has been with new construction. The after
8 construction I've done here is not – has been very much ACP's. So I have done
9 inspections onboard ships with the Coast Guard before, but it's – I wouldn't be able to
10 make a good estimate I don't think.

11 **Mr. Roth-Roffy:** Thank you. That's all I have. Captain.

12 **CAPT Neubauer:** Mr. LaRose I have a follow up question. You mentioned that you
13 have to do 2 surveys under instruction before you're qualified for a survey task?

14 **WIT:** That's correct.

15 **CAPT Neubauer:** Do you remember for certain you had 2 surveys conducted under
16 instruction for steam for the steam tasks before you started conducting the inspection or
17 the surveys?

18 **WIT:** The only steam related task would be for boilers. And the other items that – I did
19 not inspect the boiler the day I was there. It was not one of the pieces of equipment that
20 needed an inspection. So the things that I inspected, yes, I'm fully qualified for.

21 **CAPT Neubauer:** Have you ever conducted a steam boiler survey?

22 **WIT:** Like I said not a main boiler. Again I've been onboard for repairs to boilers, for
23 main boilers, but I've never done a full main boiler survey, no.

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1 **CAPT Neubauer:** Thank you. Mr. Fawcett.

2 **Mr. Fawcett:** Just to follow up on your training and experience, sir. Looking at the EI
3 Faro and the main steam propulsion system, based on your training and experience
4 what would be the main vulnerabilities of that system?

5 **WIT:** There are many, many vulnerabilities. Or not vulnerabilities, but many things that
6 could happen. That's a difficult question to answer. I mean, I guess could you be more
7 specific. You want a better answer?

8 **Mr. Fawcett:** Well we talk about the boiler, but in terms of the propulsion system in the
9 course of your surveys, do you examine that complete propulsion system?

10 **WIT:** We would under an annual survey where everything would be examined.

11 **Mr. Fawcett:** So through your training has someone explained, or through your
12 experience what those vulnerabilities are for that type of propulsion system?

13 **WIT:** Yes.

14 **Mr. Fawcett:** Okay. Thank you, sir.

15 **CAPT Neubauer:** I would like to go to the parties in interest at this time. Tote do you
16 have any questions?

17 **Tote Inc:** No, questions, sir.

18 **CAPT Neubauer:** ABS?

19 **ABS:** Just one. Mr. LaRose with regard to the survey, the continuous machinery
20 survey you performed aboard the vessel in June 2015, did you provide notification to
21 the Coast Guard of your attendance?

22 **WIT:** Yes we did.

23 **ABS:** Did they attend?

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1 **WIT:** No they did not.

2 **ABS:** Did you receive any response to your email notifying them that you were going to
3 board the vessel in June 2015?

4 **WIT:** I'm not sure. I was not the one who sent the email. One of the other guys in the
5 office was actually supposed to attend the week prior. He was the one that sent the
6 email. I'm not sure if he ever received a response or not.

7 **ABS:** Nothing further.

8 **CAPT Neubauer:** Mrs. Davidson?

9 **Ms. Davidson:** No questions.

10 **CAPT Neubauer:** Herbert Engineering?

11 **HEC:** No questions.

12 **CAPT Neubauer:** Mr. LaRose if you're okay we'll start the next line of questioning, or
13 would you like to take a break?

14 **WIT:** We can keep going, sir.

15 **CAPT Neubauer:** Continue?

16 **WIT:** Yes.

17 **CAPT Neubauer:** Commander Odom.

18 **CDR Odom:** Captain with your permission. Mr. Venturella had a couple questions from
19 the last section, is that all right?

20 **CAPT Neubauer:** Yes.

21 **LCDR Venturella:** Good morning Mr. LaRose. This is Lieutenant Commander
22 Venturella. You did elaborate already a little bit on your steam experience. I would like
23 to get a little bit more specific. On the vessels that you have had experience surveying,

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1 either through training or post your training, can you tell me a little bit about the age of
2 those vessel if you recall?

3 **WIT:** There was a vessel, the Cape Jacob that I was on in Korea, I don't know how old
4 it was but it was pretty old. I think it's now been scrapped. And then I've been on some
5 other USNS type MSC prepositioned vessels that were, I don't know, I would say built
6 maybe in the early 90's or maybe earlier with like auxiliary type boilers.

7 **LCDR Venturella:** With your experience on some of the older steam ships did you ever
8 face any pressure either from an operator of a vessel to allow a vessel to jump over
9 economizer pipes or economizer tubes and so forth? Basically was there ever any
10 pressure because of the age of a vessel to allow a different condition than you would on
11 a newer vessel?

12 **WIT:** I've never experienced anything like that.

13 **LCDR Venturella:** In any way does your training prepare you to deal with those
14 pressures?

15 **WIT:** Yeah I would say so. I mean we're – if something like that came up then we
16 would, you know we would not back down we would have discussions and bring it up
17 higher up our chain of command if needed. We would never just back down based on
18 pressure like that.

19 **LCDR Venturella:** You also mentioned that you don't necessarily bring the supplement
20 out with you to your surveys under ACP, alternate compliance program. You're aware
21 of the standards for the alternate compliance program. What are the things that are
22 necessary for you to survey under the alternate compliance program in terms of the
23 standards?

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1 **ABS:** With regard to your question Captain, or Commander are you directing the
2 question towards a specific type of survey under ACP, or?

3 **LCDR Venturella:** It's actually ----

4 **ABS:** Give us a little more guidance.

5 **LCDR Venturella:** Yes, thank you. Just a general question. Under the alternate
6 compliance program you need international standards and you need what else?

7 **WIT:** You basically have international standards, the ABS rules and the Coast Guard
8 C.F.R.'s and if there's any differences that's aligned in the supplement.

9 **LCDR Venturella:** So in the case of not bringing the supplement out to a survey how
10 do you ensure that you're including those areas of a supplement that are part of that
11 survey?

12 **WIT:** Like I said we review the supplement before, usually before anytime we go out.
13 There was nothing, for the particular survey I attended, there was nothing in the
14 supplement that was going to force me to do anything different than I would normally
15 do.

16 **LCDR Venturella:** You also mentioned that you receive emails on occasions with
17 policy changes from the Coast Guard that might impact your surveys. Could you speak
18 to whether you've also ever heard whether these policy changes are going to be
19 incorporated in a future change to the supplement?

20 **WIT:** Can you kind of reword that question?

21 **LCDR Venturella:** On average how many emails do you receive about policy changes
22 related to Coast Guard policy on a yearly basis?

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1 **WIT:** I wouldn't be able to put a number on it. We get emails weekly for policy changes
2 on statutory items, not just the Coast Guard, but other Flag States as well.

3 **LCDR Venturella:** So it's fair to say you've received multiple emails in the past year
4 about potential Coast Guard policy changes that may impact your surveys?

5 **WIT:** Yeah, I'm sure we probably have.

6 **LCDR Venturella:** Have you ever noticed them being incorporated into your rules or
7 the supplement?

8 **WIT:** Well they wouldn't be incorporated into our rules, they're ABS rules. As far as the
9 supplement goes it would be updated, I'm not sure how often they physically update the
10 supplement. That's outside my scope.

11 **LCDR Venturella:** Are you aware of the last time the supplement was updated?

12 **WIT:** I would have to look at it to see when it was.

13 **LCDR Venturella:** Are you familiar with the procedural requirement 17 for the
14 international association of class societies?

15 **WIT:** Yes.

16 **LCDR Venturella:** Is that part of your training?

17 **WIT:** Yes.

18 **LCDR Venturella:** How often have you invoked the procedural requirement 17 as part
19 of your work?

20 **WIT:** I never have.

21 **LCDR Venturella:** Is that typical for an ABS surveyor to have never invoked the
22 procedural requirement 17, or is it more common than that?

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1 **ABS:** Just to clarify. I'm assuming your question is premised on whether or not the
2 conditions to invoke those requirements are met?

3 **LCDR Venturella:** I'm just asking a general question in terms of the training of an ABS
4 surveyor on procedural requirement 17 and whether it's encouraged to be used?

5 **CAPT Neubauer:** Can you explain what procedural rule is for the record?

6 **LCDR Venturella:** Sure. Procedural requirement 17 is an International Association of
7 Class Societies document that's a way for a surveyor to bring something over to the
8 auditing side for safety management purposes. So in the case of Mr. LaRose as he's
9 not an auditor it's a way for him to communicate his concerns over to the auditors with
10 his class society.

11 **CAPT Neubauer:** So can you rephrase the question? Are you asking frequency that
12 he would use that procedure?

13 **LCDR Venturella:** Yes, sir. I was trying to gauge whether through training and actual
14 practice the IACS procedural requirement 17 is encouraged and used.

15 **WIT:** Yes it's encouraged to be used anytime it's deemed necessary. Personally I've
16 never had an experience where its – where I've needed to use it. But then again it
17 depends on the survey, the vessel, there's a lot of factors that are included in.

18 **LCDR Venturella:** Are you familiar with the alternate compliance program navigation
19 vessel inspection circular 2-95? That's for the Coast Guard guidance on the alternate
20 compliance program.

21 **WIT:** Yes, I believe so.

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1 **LCDR Venturella:** Are you familiar with the guidance within that document that
2 indicates that an ABS surveyor should in some cases recommend revoking of
3 international certificates if it's necessary?

4 **WIT:** Yes.

5 **LCDR Venturella:** Have you ever as an ABS surveyor recommended revoking an
6 international certificate to the Coast Guard?

7 **WIT:** Not that I can recall.

8 **LCDR Venturella:** Do you know of any ABS surveyors that you work with in the local
9 area that have recommended revoking of international certificates to the Coast Guard?

10 **WIT:** I don't know that would – I don't know everyone's history. I don't know every ship
11 they've been on, so.

12 **LCDR Venturella:** No further questions, thank you.

13 **CAPT Neubauer:** Are there any additional questions with that line before we move to
14 the next?

15 **Tote Inc:** No, sir.

16 **Ms. Davidson:** No, sir.

17 **ABS:** Captain, if it would be convenient could we just take a short break?

18 **CAPT Neubauer:** Yes, sir. The hearing will recess and reconvene at 9:50.

19 *The hearing recessed at 0940, 19 May 2016*

20 *The hearing was called to order at 0951, 19 May 2016*

21 **CAPT Neubauer:** The hearing is now back in session. Commander Odom can you
22 start the second line of questioning please?

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1 **CDR Odom:** Thank you Captain. Mr. LaRose the second line – the second topic will
2 be in regards to your understanding of some of the general processes with the assigned
3 survey on 16 June 2015. And your understanding of the U.S. Coast Guard ACP. And I
4 would just like to begin by asking can you describe the process of how various survey
5 jobs and tasks are assigned to an individual surveyor? For example how did you come
6 to be the surveyor assigned to the El Faro on this day?

7 **WIT:** The survey is requested by the owner or the owner's representative, it could be a
8 Port Engineer, perhaps the Chief Engineer. I don't recall exactly how this one was
9 requested. But we usually receive an email stating what – what they're looking to get
10 accomplished. Based on that we would create a work order and the assignment of a
11 particular surveyor would be based on whether or not the surveyor is qualified for those
12 particular inspections and also their availability.

13 **CDR Odom:** Do you recall approximately how much notice was given by ABS to Tote
14 by ABS, or to ABS by Tote on this particular survey?

15 **WIT:** I don't know. I wasn't the recipient of the email. So I don't know how much notice
16 was given.

17 **CDR Odom:** How much advance notice did you receive before you went out on the
18 survey?

19 **WIT:** I was asked to attend the day before the survey.

20 **CDR Odom:** So in a situation like that prior to attending the El Faro can you please
21 describe what was involved with preparing for the survey?

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1 **WIT:** A review of the vessel status. A review of the requested surveys. And any rule
2 requirements or process instructions that may need to be followed based on what was
3 requested.

4 **CDR Odom:** And did you follow up to ensure that notification to the Coast Guard had
5 been made?

6 **WIT:** The notification to the Coast Guard was made the week prior by the surveyor who
7 received the notification. So I had known that he had sent it. I don't know if there was a
8 response or what the response was.

9 **CDR Odom:** So based on that was anything discussed with the Jacksonville OCMI to
10 see if there were any outstanding Coast Guard deficiencies on the El Faro or issues
11 from previous exams completed by marine inspectors?

12 **WIT:** Not that – not that I'm aware of. Normally that – anything – if there's any Coast
13 Guard outstanding related items usually it would be also showing up in our system. And
14 there wasn't anything that I recall that was – that needed to be looked at.

15 **ABS:** Commander Odom, if it would expedite things we have produced the notification
16 to the Coast Guard by John Tinsley with a survey dated June 9th and the accompanying
17 correspondence. I could either give it to the witness to refresh his recollection
18 concerning the notification. Or I would be glad to provide it to you if it would help.

19 **CAPT Neubauer:** I have no problem with you providing it to the witness and we can
20 enter it as an exhibit also.

21 **CDR Odom:** So if there's anything in there you would like to expand on with your
22 answer go ahead.

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1 **CAPT Neubauer:** Are there any objections from the parties in interest to introduce that
2 as an exhibit?

3 **Tote Inc:** No objection, but if we could get a copy of it at some point.

4 **CAPT Neubauer:** Yes, sir.

5 **Ms. Davidson:** No objection.

6 **WIT:** So it looks like there was an email, it was probably a phone call from, or no sorry,
7 on June 8th Port Engineer Tim Neeson requested attendance for June 9th. And Mr.
8 Tinsley responded the same day on June 8th. And then a little while later the Port
9 Engineer replied back that they would like to postpone to the following week due to the
10 crew being up with the maintenance projects, so they wanted to postpone so the crew
11 could get rest. So rescheduled to the 16th. And then I was asked the day before the
12 email, I sent them an email the day before, a statement that I would be attending. And
13 the actual ACP notification was sent by Mr. Tinsley on June 8th. But I don't see any
14 response from the Coast Guard here. This is just correspondence between myself, Mr.
15 Tinsley and the Port Engineer.

16 **CAPT Neubauer:** And sir, to follow up on that. You said the notification to the Coast
17 Guard went out on June 8th?

18 **WIT:** Yes.

19 **CAPT Neubauer:** Did it have the revised date of June 16th?

20 **WIT:** Not on this one here. I don't know if another one was sent or not.

21 **CDR Odom:** So if I'm understanding you correctly you're saying that a notification went
22 out to you from Tote, from Mr. Neeson on June 8th to perform the survey originally
23 scheduled, is what he wanted was for June 9th?

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1 **WIT:** Yes. It was to our office, not to me personally.

2 **CDR Odom:** Right. So again your one day notification?

3 **WIT:** It appears that way.

4 **CDR Odom:** And then it was subsequently rescheduled for the 16th. Did you give a
5 reason? Was it rescheduled by ABS for the 16th because you couldn't attend, or was it
6 because of the maintenance problem with the crew?

7 **WIT:** No, they ----

8 **CDR Odom:** That they requested it.

9 **WIT:** They requested it. They didn't say a maintenance problem, they said they had a
10 maintenance project that had kept them up.

11 **CDR Odom:** Okay.

12 **WIT:** Late so they wanted to give the crew time for rest.

13 **CDR Odom:** So they essentially delayed it a week. And is this the normal fashion that
14 Tote would notify ABS a day or two before requesting the survey? Is that standard
15 operating?

16 **WIT:** We usually have a few days notice. We try to get more. But they could have
17 talked on the phone as well. You know a lot of times we'll talk to the Port Engineer's via
18 phone and then they'll send a follow up email so that we have it as a record. So I don't
19 know if they had spoken on the phone beforehand or not.

20 **CDR Odom:** And then ABS, Mr. Tinsley notified the Coast Guard also on June 8th for a
21 survey that was originally scheduled for the 9th?

22 **WIT:** Yes that's the notification.

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1 **CDR Odom:** And so going back to the NVIC it's very specific in requiring 14 day
2 notification. Has that ever happened on these vessels? Do you ever get the 14 day
3 notification?

4 **WIT:** Not for something like this, no.

5 **CDR Odom:** So you have very little time to prepare for these. With that notification
6 goes to the Coast Guard, do you guys ever – does ABS or any of the ABS surveyors or
7 yourself, do you ever discuss this or has it ever been a discussion with the Jacksonville
8 OCMI prior to going out? Do you follow up with a phone call to the point of contact that
9 you have to see if there's any outstanding issues or any dialogue about any issues the
10 Coast Guard might have with the vessel with such notification?

11 **WIT:** There's no requirement that I'm aware of for that, no.

12 **CDR Odom:** This is just not something you guys would normally do, contact the Coast
13 Guard to see if, in preparation for the exam with such short – with less than 24 hours,
14 which what this was originally scheduled for knowing that it's a busy office when you
15 guys follow up with a phone call to see if there was anything in the U.S. Coast Guard
16 database specific to the El Faro that you need to be made aware of?

17 **WIT:** Can you kind of rephrase that a little bit.

18 **CAPT Neubauer:** Commander Odom can I rephrase that?

19 **CDR Odom:** Yeah, absolutely Captain.

20 **CAPT Neubauer:** Do you ever do any notification beyond the standard email to the
21 Coast Guard to open up the dialogue especially in cases where the notification doesn't
22 meet the ACP guidelines? For 14 days of notice.

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1 **WIT:** The – not that I’m aware of. I mean we speak with the Coast Guard pretty
2 regularly, but on this particular one I don’t know there was any dialogue. Like I said
3 there wasn’t between me. So I’m not sure if they did speak with Mr. Tinsley (sic) or not.

4 **CAPT Neubauer:** But also in general. Like on a short notice request, do you see any
5 extra dialogue ever beyond the email notification?

6 **WIT:** There has been in the past. I think it’s a case by case basis. But again it’s not
7 necessarily a requirement. So it’s usually done as a show of good faith if it’s
8 determined that it may be necessary.

9 **CAPT Neubauer:** Yes, sir. Commander Odom.

10 **CDR Odom:** Thank you. So have you experienced a situation where you felt like the
11 Coast Guard did not provide you with access to information to effectively conduct an
12 ACP exam?

13 **WIT:** No. I mean I think if the Coast Guard doesn’t respond to me that means that they
14 don’t have any issues of what we’re doing and they don’t have any further input.

15 **CDR Odom:** Thank you. Shifting gears a little bit. When you discover not necessarily
16 to the El Faro, but this is just generally, a general question about ACP. When you
17 discover a material deficiency that you feel poses undue risks to the vessels, the crew
18 or the marine environment, how do you normally handle that situation on an ACP
19 vessel?

20 **WIT:** Well if it’s a safety management related issue then we would invoke a PR17, but
21 we would also notify the Coast Guard immediately and have discussions with them.
22 They may agree or disagree, or they may decide to come to the vessel to see for

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1 themselves. But notification onboard the vessel first with the Master then going to the
2 flag would be the first steps.

3 **CDR Odom:** Just in general also with ACP, does it give you any authority in your
4 experience to revoke any of the statutory certificates?

5 **WIT:** We would need to – I would think at least as a courtesy go through the Coast
6 Guard before we pulled a certificate and make sure that they are in agreement. But
7 ultimately it would be us pulling the certificate. But I wouldn't do that without contacting
8 them first.

9 **CDR Odom:** And does under the alternate compliance program do you have any
10 authority to impose operational controls over a vessel?

11 **WIT:** How do you mean?

12 **CDR Odom:** Like control vessel movement within the port or no sail on a vessel for a
13 particular item.

14 **ABS:** Aside from pulling the certificate?

15 **CDR Odom:** Right. Can you tell a vessel delay their schedule or, you know stop them
16 from going to sea?

17 **WIT:** No. We can pull the certificate but that's basically where our authority ends. That
18 would have to come, I mean the vessel – if the certificate gets pulled it should not leave
19 port, but you know we wouldn't be – I don't have the authority to do that. The Coast
20 Guard would certainly do that and that's why we bring the Coast Guard in if there was
21 an issue that was leading to that.

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1 **CDR Odom:** Thank you. In the past specific to the El Faro and any other ACP exam
2 where you ever surprised by a deficiency when you came onboard with the Master
3 presenting you with a Coast Guard 835 that you were unaware of?

4 **ABS:** For the El Faro?

5 **CDR Odom:** For the El Faro or any other ACP exam. Has it ever – have you ever
6 gone onboard and had the Master present you with an 835 that you were unaware of
7 and asked you to clear that 835 on behalf of the Coast Guard?

8 **WIT:** I mean there's been ones that we in our port where we're maybe unaware of, but
9 it was from a previous port, you know the ABS port office from the previous port would
10 know about it. We've been asked to come on and clear something from a previous port.
11 So it might have been news to us, but it's not news to ABS. I can't think of a time when
12 we were just surprised by anything.

13 **CDR Odom:** So have you ever conducted surveys on U.S. Flagged ships that held a
14 certificate of inspection that was not enrolled in the alternate compliance program?

15 **WIT:** Not that I can think of off the top of my head, no.

16 **CDR Odom:** We also refer to Coast Guard inspections and ABS surveys. In your
17 experience working with the Coast Guard is there a difference between the way the
18 Coast Guard inspects a vessel and between the way ABS surveys a vessel? And to
19 simplify the question do you think there's a difference between Coast Guard inspections
20 and ABS surveys?

21 **ABS:** As a matter of procedure or as a matter of qualifications?

22 **CDR Odom:** As a matter of procedure.

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1 **WIT:** I think in general it's pretty similar. The Coast Guard might have a little bit more
2 to do with the human side of things than necessarily we would. But other than that it's
3 pretty much the same.

4 **CDR Odom:** In the procedure for dealing with a material deficiency that's discovered
5 during the course of a survey that is unrelated to the scope of the assigned survey, for
6 example you attend a vessel to conduct a machinery survey and through the course of
7 your attendance you discover a life boat is inoperable. Can you please describe how
8 you would handle that situation or discuss ABS policy that you're aware of that is
9 specific to this scenario?

10 **WIT:** If there's a scenario like that and it was noticed that there was a problem with the
11 life boat then it would immediately be brought up being part of the safety systems to the
12 vessel. It would immediately be reported to the Coast Guard and we would have to see
13 what actions have been taken or have not been taken or would be taken by the owner.
14 So there's quite a few steps that we have to go through, but we would never ignore it. It
15 would be looked at and moved up the chain from there. And the Coast Guard would
16 certainly be notified and I'm sure if it was like a life boat for example then they would
17 definitely probably come out to the vessel.

18 **CDR Odom:** So while aboard an ACP vessel do you normally limit the scope to only
19 the survey you're performing or do you generally do an overall assessment of the
20 vessel's condition and the crew competency?

21 **WIT:** It depends on the survey. So it's difficult to answer I think.

22 **CDR Odom:** Can you just discuss, you know when you go onboard, use this particular
23 continuous machinery survey that you're with, and you have very specific items that

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1 you're there to survey, do you limit yourself to the scope of that or do you generally look
2 at the overall condition of the vessel as you're onboard and expand beyond the survey?
3 Can you discuss that or describe how you do that?

4 **ABS:** Are you asking about what else he may observe or what else ----

5 **CDR Odom:** Yeah, I mean what's the mindset of an ACP vessel? Do you limit it – do
6 you limit yourself to the survey or do you expand beyond the scope of the survey and
7 what you observe on the vessel?

8 **WIT:** I would be going on there to do the survey that was requested. If I happen to
9 observe something during the course of that survey then it would of course be brought
10 up if it was some sort of deficiency, but not necessarily go just walking around looking
11 for deficiencies. It would need to be something that was seen during that line of work.

12 **CDR Odom:** Thank you. Shift over to some questions that are more specific about the
13 machinery surveys. And try to understand the ABS surveys and how they applied to the
14 El Faro. And in the course of doing this I would like you to take a look at Exhibit 191.
15 This is a 5 year history of surveys performed on the El Faro downloaded from the ABS
16 Safe Net. Now looking – looking on page 1 under the section that's labeled
17 classification. I notice there are annual machinery surveys and also the continuous
18 special survey. Can you please describe the scope of the annual survey? Annual
19 machinery survey.

20 **WIT:** The annual machinery survey is a general survey of all machinery items in their
21 current state, their operational readiness or their – the fact that they're working would be
22 taken into account. The plant as a whole I think is the easiest way to describe that.

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1 **CDR Odom:** So also looking at the list there's annual machinery survey 1, moving up
2 the list from the bottom above statutory and then further up the list there's annual
3 machinery survey 2, 3 and 4. Is there a difference between 1, 2, 3, and 4? Or all they
4 all the same annual machinery survey?

5 **WIT:** The requirements are the same. That's just basically the year that it's being done
6 during the 5 year period. So it's annual 1 is the first year, annual 2 is the second and so
7 forth.

8 **CDR Odom:** So the scope of the survey from year to year is exactly the same?

9 **WIT:** Yes.

10 **CDR Odom:** Thank you. And then further we see special continuous survey machinery
11 8. What – how does that differ from the annual?

12 **WIT:** The special continuous machinery survey 8 is the 8th 5 year cycle. That's what
13 the 8 means. And that is a – some companies can choose to do their – a special survey
14 is every 5 years. And they would normally need to have all equipment inspected
15 individually at every 5 years. And special continuous machinery allows them to do a
16 certain percentage, basically split it up over the 5 years instead of having to do
17 everything at once at the very end. So it's – it allows everything to be looked at closely
18 during the whole 5 year period rather than right at the end.

19 **CDR Odom:** Okay. So looking at special continuous survey machinery 8 and then
20 annual machinery survey 3 I notice they were both completed on the 5th of March 2014.
21 Is that normal to do them on the same day and credit them on the same day?

22 **WIT:** If the surveyor goes for annuals and the ships has some specific items that they
23 would like to credit they could certainly do that. Like I said it's splitting up each

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1 individual item over the 5 year period. So if they had gone onboard and they had just,
2 say done maintenance and rebuilt something they could then credit it at that time. So it
3 would just depend on circumstances onboard.

4 **CDR Odom:** So you were there on June 16th, 2015 to do the continuous machinery
5 survey. And you briefly described what that is. Can you be a little bit more detailed in
6 that program and how a vessel is enrolled in it and what the particular requirements are
7 for ABS to accept a vessel under the continuous machinery survey program?

8 **WIT:** They – it's usually requested by the vessel to do that. Like I said it gives them an
9 opportunity to spread out – spread everything out over the 5 year period instead of
10 doing everything at the last, you know the very end. They would normally request it and
11 the request would be sent to our Houston office and they would review the vessel and
12 decide whether or not they agree to do that. So in this case they apparently agreed
13 because it's on this – that's the way it is. That's above me personally.

14 **CDR Odom:** Okay. So can you discuss or describe class notations that indicate
15 whether or not a particular vessel is enrolled in one of these program? And did the EI
16 Faro have one of these class notations?

17 **WIT:** I would need to look and see if there's any class – what specific class notations
18 were on this vessel. But the continuous machinery, I don't believe there is a specific
19 notation for that. It's just a different way of doing a survey.

20 **CDR Odom:** So what I'm trying to understand is there's two notations that I'm aware of
21 that are PMP minus and PMP plus. Are you aware of those notations? Have you heard
22 of them before?

23 **WIT:** Yes, I believe they're preventative maintenance.

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1 **CDR Odom:** Okay. So would that be a notation that would be given to the El Faro in
2 this program?

3 **WIT:** I don't know if that notation was given or not. That's separate. This is a – this is a
4 standard set of surveys. It doesn't require a special notation to – I mean this is their –
5 they have to do machinery surveys every 5 years. It's just a different way of
6 approaching it.

7 **CDR Odom:** So those notation are specific, if I understand it correctly to an approved
8 preventative maintenance program, is that correct?

9 **WIT:** Correct.

10 **CDR Odom:** So was the El Faro in an approved preventative maintenance program
11 with ABS?

12 **WIT:** Not a PM program, no I don't believe so.

13 **CDR Odom:** Okay. So in trying to understand the – how the continuous machinery
14 survey program works, and in my review of the ABS rules owners with – are required to
15 provide reliability centered maintenance analysis as a result of being in a preventative
16 maintenance program and may receive credit towards satisfying the requirements of the
17 special continuous survey of machinery. Can you describe how this credit process
18 works? For example does the owner or the Chief Engineer self-certify machinery under
19 proper working order and receive credit from ABS for completing survey items in the
20 machinery?

21 **WIT:** They could if they're enrolled in that particular program. That's not what this
22 program is on the El Faro.

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1 **CDR Odom:** Okay. So can you look at Exhibit 115 please? This is the previous
2 continuous machinery survey report dated 5 March 2014. And looking at page 2 of this
3 report, I'm trying to understand under main propulsion systems, it says line shaft thrust.
4 And it say inspected by Chief Engineer. And then further down the page it says steam
5 hydrant systems, steam strainer, Chief Engineer. And both are stating that they were
6 surveyed satisfactory. Can you explain that? Is this part of the self-certifying process
7 that is allowed under this program?

8 **WIT:** I mean this is not my report, I wasn't there, I don't know.

9 **CDR Odom:** As it applies to the continuous machinery survey. As a qualified surveyor
10 what does that mean? Is it just a, so we understand if this allowed in this program or
11 not.

12 **CAPT Neubauer:** Mr. LaRose can you testify to what that would mean if you wrote that
13 in those sections? What that would mean.

14 **CDR Odom:** Thank you Captain.

15 **WIT:** To me that would mean that they – these surveyors went onboard and probably
16 reviewed records that the Chief Engineer had and based on those records they
17 accepted that particular piece of equipment.

18 **CAPT Neubauer:** Is it your understanding that doesn't follow the program that the EI
19 Faro was enrolled in?

20 **WIT:** I would have to double check, but looking at the actual pieces of equipment that
21 they did that on, personally I don't see an issue with it. Because it's probably – probably
22 okay.

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1 **CAPT Neubauer:** So the pieces of equipment aren't essential or don't require the ABS
2 surveyor to do that?

3 **WIT:** All equipment on here is ABS equipment. But the, I guess severity of the piece of
4 equipment, the type of operation that it's in, like I said it's not my report. I don't know
5 why it was done like this. You would have to ask them.

6 **CAPT Neubauer:** If you were doing the report would you, like for a continuous survey,
7 would you mark that it was viewed by ABS for every item?

8 **WIT:** It would depend on how the survey was conducted.

9 **CDR Odom:** So in follow on to that, is there specific guidance or list of items that can
10 be self-certified by the Chief Engineer? Or under these survey programs that we're
11 discussing, are there any limitations and or specific equipment which may not be self-
12 certifying for credit towards the continuous machinery survey by the crew?

13 **WIT:** Yeah, there's a list in the rules I believe, or in our internal process instructions that
14 gives what items could be considered.

15 **CDR Odom:** What was the other? You said in the rules or?

16 **WIT:** Our internal process instructions.

17 **CDR Odom:** Your internal process instructions.

18 **WIT:** Correct.

19 **CDR Odom:** When accepting this from a Chief Engineer, is there – is it just accepted
20 based on the fact that the person doing the self-certification is a licensed Chief
21 Engineer? Or is there a particular certification process the individual or a certification an
22 individual has with ABS to allow them to do this?

23 **WIT:** Just as long as he's a licensed Chief Engineer.

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1 **CDR Odom:** Now I understand that the El Faro as a result of being enrolled in the
2 continuous machinery survey program used what's called conditioned monitoring as a
3 means to gain credit for various survey items, is that correct?

4 **WIT:** Yes they had condition monitoring on certain items.

5 **CDR Odom:** So condition monitoring – how does the performance of certain technical
6 tests at periodic intervals such as vibration analysis, oil sampling etc. allow credit of
7 certain survey activities? For example the performing of vibration analysis negate
8 certain survey activities that would otherwise be performed?

9 **WIT:** Not necessarily. It's used more as a tool to get a better idea of the condition of
10 the machinery.

11 **CDR Odom:** Now condition monitoring approval is contingent upon, if I understand the
12 rules correctly, it's contingent upon a preventative maintenance plan that is submitted
13 by Tote and approved by ABS engineering. So this would be a company plan for all the
14 Tote ships, or is it vessel specific?

15 **WIT:** I believe it's vessel specific. But if they have a fleet they might – I'm not sure
16 exactly. I don't do those approvals so, but. My understanding would be that it's vessel
17 specific, but if they have a fleet of the same vessels I'm sure that they – there's a way to
18 include all of them.

19 **CDR Odom:** So am I'm understanding that correctly for condition monitoring you guys
20 would have a plan approved by ABS Engineering for the El Faro on what would be
21 allowed in that program?

22 **WIT:** Yes, there should be.

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1 **CDR Odom:** And further reviewing the ABS rules it's my understanding that vessels
2 using condition monitoring are enrolled in a preventative maintenance program must go
3 on an annual confirmation survey. Is that part of the annual that we discussed earlier or
4 is that a separate survey for condition monitoring?

5 **WIT:** I believe that's part of the annual machinery survey.

6 **CDR Odom:** So would you review that approved ABS approved plan prior to your
7 survey? Would it be normal for you to look at that prior to attending the vessel for this
8 survey?

9 **WIT:** We would not have the plan, the plan would be onboard the vessel. So it would
10 need to be looked at when onboard. It's not something – we don't keep their individual
11 plans like in our computer system or anything like that.

12 **CDR Odom:** So you guys – ABS Engineering approves the plan but you guys don't
13 keep any record of the plan with ABS?

14 **WIT:** They may have it in engineering, but not that ----

15 **CDR Odom:** So you wouldn't have access to it until you were onboard the vessel?

16 **WIT:** Probably not, I mean with you know keeping things company confidential they
17 don't – we don't necessarily have access to everything.

18 **CDR Odom:** So looking at Exhibit 177. This exhibit is your survey report for the EI
19 Faro from June 16th, 2015 for a continuous machinery survey. In this survey report
20 there's a column and certain items have a, as you listed in your survey, items have an
21 ABS, another ABS program column that says CM. Does that mean that piece of
22 equipment is under the condition monitoring program?

23 **WIT:** Yes.

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1 **CDR Odom:** So also it's my understanding from reading the rules that as part of the
2 annual confirmation survey if the owner, or in this case Tote would be required to do an
3 annual preventative maintenance report, can you describe the contents of that report
4 specifically? And you know generally what is the purpose of that report?

5 **WIT:** That report would basically say what they have done as far as preventative
6 maintenance over the past year. But that would be again checked at an annual survey.
7 This is not what I was onboard for.

8 **CDR Odom:** Understand that. I'm just trying to understand what this report is and what
9 is required to be in it, what the scope of the report is. And is that – are those reports,
10 this says it's the 8th cycle, or is this something that ABS would keep on file in the vessel
11 records? Or is it again just something that you review during the annual confirmation
12 survey?

13 **WIT:** It's the vessel's report. It's kept onboard the ship.

14 **CDR Odom:** In your opinion do you believe that the continuous machinery surveys and
15 condition monitoring and preventative maintenance programs like this are as effective
16 and as thorough as the traditional survey model?

17 **WIT:** Yes and in some cases probably more so.

18 **CDR Odom:** Thank you. And shifting gears a little bit, are you familiar with the, I know
19 you said you never done boiler surveys so this might be a little outside of what you can
20 speak to, but are you familiar with the requirements in the Code of Federal Regulations
21 for a steam ship such as the El Faro to conduct boiler steam piping hydrostatic testing,
22 bolt and stud and mounting inspections at specific intervals? If you need to see this it is

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1 Exhibit 199 page 2, is a table that shows the intervals and the requirements from the
2 Code of Federal Regulations for propulsion boilers. Are you familiar with that at all?

3 **WIT:** Yes I'm familiar with it.

4 **CDR Odom:** So with that can you please describe how ABS class rules require a
5 similar level of testing of steam systems as required by the regulations in this table or
6 how the supplement identifies or provides guidance on how these rules are applied?

7 **WIT:** The supplement refers to our rules as the standard to be used during – in the
8 ACP program. So we would turn to our rules to determine how to test a boiler.

9 **CDR Odom:** Do your rules require any of these tests that are in this table, specifically a
10 5 year hydrostatic test of the piping and the boiler or the twice in 5 tests that are
11 required? Ten year mounting inspections?

12 **WIT:** I don't recall. I mean yeah, there are requirements in there. I don't recall exactly
13 what they are off the top of my head. I would have to look.

14 **CDR Odom:** And to discuss a little bit about ABS, did you have any fatigue limit policy
15 for hours worked in a single day for an ABS surveyor?

16 **WIT:** We have a safety manual that describes those – that type of instance, yes.

17 **CDR Odom:** Do you know what they are? What's the most hours an ABS surveyor
18 can work in a single day?

19 **WIT:** Not off the top of my head, but I don't think it would be more than 10 or 12.

20 **CDR Odom:** Did you often exceed that?

21 **WIT:** No, not usually.

22 **CDR Odom:** Thank you Mr. LaRose. That completes this line of questioning for policy
23 and guidance. The next line will be specific to the survey you completed on the El Faro

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1 on the 16th of June and the results of your test on the equipment from that day. But
2 before I go on to the next topic I would like to turn the questioning back to Captain
3 Neubauer and allow the board to ask any questions they have on the previous topic.

4 **CAPT Neubauer:** Lieutenant Commander Venturella.

5 **LCDR Venturella:** Sir, what is the typical response time when you send an email to
6 Sector – Coast Guard Sector Jacksonville on any routine issue? When would they
7 normally get back to you on that email?

8 **WIT:** It varies depending on what the email is.

9 **LCDR Venturella:** If you had to plan for a response from the Coast Guard would you
10 believe you would get a response within 1 day of sending them an email?

11 **WIT:** I would think so. But based on, based on what? What sort of email?

12 **LCDR Venturella:** What I'm trying to get at is based on the volume of emails that a
13 Coast Guard Sector in this area, do you normally see a response within less than 1 day
14 on any email?

15 **WIT:** Yes, I guess. I mean it would completely depend on the nature of the subject of
16 the email.

17 **LCDR Venturella:** How often given 1 day email advance notice does the Coast Guard
18 attend your surveys?

19 **WIT:** It depends on the type of survey that's being conducted and whether or not the
20 Coast Guard feels that they need to attend.

21 **LCDR Venturella:** In your belief if you give the Coast Guard 14 days advance notice
22 because you got similar notice, do you believe they would be more likely to come out?

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1 **WIT:** No. I think they would come out based on what the actual survey or attendance
2 was.

3 **LCDR Venturella:** You mentioned in your testimony that the Coast Guard seems more
4 concerned with the human side of the inspection or survey. Can you explain what you
5 meant by human side?

6 **WIT:** The – for example the Coast Guard will conduct drills, fire drills, safety drills,
7 things like that. We don't do that. That's not part of our scope. So a lot of times if we
8 attend with the Coast Guard we might be spending more time with the ship itself while
9 the Coast Guard would be maybe conducting drills or things of that nature.

10 **LCDR Venturella:** In your testimony when you talked about many types of machinery
11 surveys, we talked about the annual machinery surveys, we talked about special
12 surveys. We also then spoke about the continuous machinery surveys and so forth.
13 Can you just break it down for us in terms of how much of the machinery is actually
14 operationally tested every year?

15 **WIT:** In the annual survey like I said is an operational survey more generally for the
16 entire plant each year. The special surveys are where you can dive deeper into each
17 individual piece of equipment. And then a special continuous is just a different version
18 of a special where you can spread it out over the 5 years. Like I said instead of, you
19 know at 5 years you have to physically have to inspect every single piece of equipment.
20 You can spread it out. You can never exceed 5 years. If you test something in the first
21 year it's good for 5 years, you have to test it in the first year of the next cycle. But it's
22 just a way to spread it out over the time.

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1 **LCDR Venturella:** Is it accurate to say based on a continuous machinery survey
2 process that it's 20 percent that's operationally tested each year?

3 **WIT:** That's the target, but that could change.

4 **LCDR Venturella:** How is the 20 percent determined to make it consistent from – so
5 that all machinery is tested within 5 years?

6 **WIT:** It's just purely determined on 100 percent divided by 5 years.

7 **LCDR Venturella:** I guess what I mean is, do you do every annual machinery survey or
8 does the surveyor switch from year to year?

9 **WIT:** Personally you mean? I don't understand the question.

10 **LCDR Venturella:** Does the same surveyor do every annual machinery survey or
11 continuous machinery survey on one vessel?

12 **WIT:** No, not necessarily.

13 **LCDR Venturella:** So how is it communicated from one surveyor to the next what 20
14 percent was covered last year and what 20 percent is covered this year?

15 **WIT:** It's in our report.

16 **LCDR Venturella:** So how do you track an individual piece of equipment to ensure
17 that it does not past 5 years between being operationally tested?

18 **WIT:** In our computer system there's a machinery tree, a list of all the items onboard
19 the vessel. When you do a report, the work order the list comes up with the dates and
20 there's basically buttons that you can click off for items that you inspected during that
21 particular attendance which will then reset the date 5 years from the day you looked at
22 it, wherever you credited it. So then it would be in the system so the next time someone
23 came on they could look and see right away what stuff is due and when.

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1 **LCDR Venturella:** Based on your explanation of the annual machinery survey you
2 mentioned that it's an overall picture during the annual, is that correct?

3 **WIT:** Yes.

4 **LCDR Venturella:** Okay. But you don't operationally test the equipment during the
5 annual because that's taking place through the special?

6 **WIT:** We do certain pieces of equipment, yes. Operationally test.

7 **LCDR Venturella:** What equipment gets tested during the annual?

8 **WIT:** We would test, fire pumps are always tested, different alarms are tested. There's
9 quite a few things that are done.

10 **LCDR Venturella:** Are you aware of how much of the equipment would be tested if this
11 was under a Coast Guard certificate of inspection every year?

12 **WIT:** No, I don't know what their standards are.

13 **LCDR Venturella:** And that's not part of your training?

14 **WIT:** Not Coast Guard specific inspections, no.

15 **LCDR Venturella:** Moving on to a different topic, sir. You mentioned before that you
16 were given 1 day of notice for this survey that we're about to talk about. How many
17 surveys did you perform the day before that survey? Or how busy were you that day
18 before?

19 **ABS:** Just to clarify the question. The notice to the Coast Guard went on June 8th, the
20 vessel was expected on June 9th, and the survey was conducted on the 16th of June, 7
21 days later.

22 **LCDR Venturella:** So ----

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1 **CAPT Neubauer:** Just to clarify though, didn't, Mr. LaRose you said that you
2 personally only received 1 day of notice before you went on the 16th, is that correct?

3 **WIT:** Yes, I was asked the day before to attend.

4 **LCDR Venturella:** Thank you. So following up on that 1 day of notice can you tell me
5 how busy you were the day before that survey?

6 **WIT:** I don't recall. It was almost a year ago.

7 **LCDR Venturella:** How about the day of the survey? Did you have other surveys or
8 other obligations that day?

9 **WIT:** I don't remember. I may have gone to something else, but I don't remember
10 exactly what it would have been. I would have to go back and look at my time card to
11 see if and what if there was anything.

12 **CAPT Neubauer:** Do you still have that timecard, sir?

13 **WIT:** It's in our system, yeah.

14 **CAPT Neubauer:** Can we get that just for the week around the El Faro survey Mr.
15 White?

16 **ABS:** Yes, sir.

17 **LCDR Venturella:** How long would you have been onboard for the actual survey that
18 you did?

19 **WIT:** I think I was onboard for about 5 hours, 5 to 6 hours, something like that.

20 **LCDR Venturella:** And is it possible that you were busy enough that you weren't in the
21 office where you would have the supplement available? Did you actually have time to
22 review the supplement before you went out?

23 **WIT:** I don't recall if I did or not.

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1 **LCDR Venturella:** Did you see the preventative maintenance plan before or the day of
2 when you went to the survey?

3 **WIT:** This vessel does not have a preventative maintenance plan.

4 **LCDR Venturella:** But it's enrolled in continuous monitoring?

5 **WIT:** Yes, but it's not enrolled in PM, the preventative maintenance plan.

6 **CDR Odom:** Sir, I would like to clarify on that. So preventative maintenance reports
7 and plans and all that stuff is not a condition of being enrolled in continuous monitoring
8 or the equipment being enrolled in that? And that's a little confusing when you read the
9 rules, but it appears that there is a requirement for condition monitoring for the vessel to
10 provide a preventative maintenance plan to ABS for approval, ABS Engineering. Can
11 you clarify on that a little bit please?

12 **WIT:** My understanding is that the vessel, there was a preventative maintenance plan
13 submitted years ago, I don't know exactly when, in 2005 they said. But the implement –
14 and there was an implementation survey carried out, but beyond that I'm not sure what
15 was done.

16 **LCDR Venturella:** No further questions.

17 **CAPT Neubauer:** Sir, I have a follow up question on the special continuous surveys.
18 You mentioned that the target is about 20 percent for each of those surveys for the – to
19 cover the different types of machinery. Of that 20 percent does the company present
20 the equipment to be surveyed or does ABS select things randomly?

21 **WIT:** It depends on the due date of the equipment. And when the company contacts us
22 for this type of survey they may say we have these specific items that we would like to
23 get credited and then we would take a look and see if there's anything due, also due

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1 based on the 5 year date. If there is we could ask them if they wanted to do it then and
2 there or if they would perhaps want to wait depending on when the due date is. But
3 everything must be done by the due date.

4 **CAPT Neubauer:** Is anything ever tested out of cycle from the due date? Especially
5 from like a random inspection?

6 **WIT:** Well there's, like I said there's some items that would be tested during an annual
7 survey. So it would be seen multiple times, but it doesn't necessarily mean it's going to
8 be credited for the special survey.

9 **CAPT Neubauer:** So in general are the special continuous survey items mostly driven
10 by the company and the due date?

11 **WIT:** I would say it's driven by the due date primarily. But if – but the company's – it's
12 their right to say what they want to do and when as long as it's done by the due date.

13 **CAPT Neubauer:** Thank you. Commander Denning.

14 **CDR Denning:** A few follow up questions on this line. When speaking with
15 Commander Odom about the notification to the Coast Guard, I have a few follow ups on
16 that. Specifically who is emailed at the Sector? Is it an individual person, is it a shared
17 mailbox, or what's the procedure there?

18 **WIT:** Here in Jacksonville they have a Jacksonville domestic email address. And that's
19 where we normally send these to. So I assume it's a shared inbox. I don't know their –
20 the details of their in house system.

21 **CDR Denning:** So is that shared mailbox always what's used or do surveyors
22 sometimes email individual inspectors?

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1 **WIT:** The JAX domestic email address would be used, but there may be copies. There
2 maybe someone might be copied. But I think it depends on the nature of what's
3 happening and who's conducting it.

4 **CDR Denning:** And you said that's here in Jacksonville. Does it vary from port to port
5 from OCMI zone to OCMI zone?

6 **WIT:** Outside of Jacksonville I don't have a lot of experience with it, so I could not
7 speak to that.

8 **CDR Denning:** Understand. Commander Odom asked you earlier about, or I think it
9 was Commander Odom, it may have been Lieutenant Commander Venturella, when
10 you pull a certificate you used the word as a courtesy you would notify the Coast Guard.
11 What type of documentation would you issue when that occurs and how is that – how
12 specifically do you notify the Coast Guard?

13 **WIT:** We would – I think before we actually pulled the certificate we would notify the
14 Coast Guard, or we attempt to call the Coast Guard. If it comes to the point where a
15 certificate is going to be pulled that's a pretty serious issue. And so we would want to
16 get a hold of the Coast Guard as soon as possible. So if that issue had come up then
17 personally I would probably call someone immediately.

18 **CDR Denning:** So you're using words like should and would probably, what are the
19 procedures, specific procedures, specific requirements for that?

20 **WIT:** The requirements are the Coast Guard be notified. And that would be through,
21 normally through our contact office which would be Houston in this case with the Coast
22 Guard being the flag state.

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1 **CDR Denning:** And how is that requirement documented? What procedure would that
2 be?

3 **WIT:** It's in our process instructions that details what we would need to do.

4 **CDR Denning:** Back to the preventative maintenance program in answering the
5 questions just a few moments ago you said you weren't sure if that was done, or you
6 didn't believe that vessel was in the program. You weren't sure what was done from it's
7 inception. I would like to drill more into what are the requirements. Is it a requirement
8 to be in the approved – to have an approved preventative maintenance program in
9 order to be enrolled in the special continuous survey? I'm looking more in the
10 requirements, not what – rather than what actually occurred. Does that make sense?

11 **WIT:** Yes. I think it is based on the rules. My assumption would be yes, but it's hard to
12 say I wasn't a part of that original decision making process, so.

13 **CDR Denning:** So you think it's required, but that this vessel did not have it, yet was
14 still enrolled in the program?

15 **WIT:** Yeah, I guess.

16 **CDR Denning:** Thank you. That's all my questions on that line.

17 **CAPT Neubauer:** Mr. Fawcett.

18 **Mr. Fawcett:** Just two brief clarifying questions. Commander Odom asked you about
19 your knowledge of Coast Guard regulations and he referred to the C.F.R. At the time of
20 your survey in June were you aware of those Coast Guard regulations?

21 **WIT:** In general did I know that the C.F.R. exists?

22 **Mr. Fawcett:** No, no. Did you know the specific requirements for the steam inspection
23 that Commander Odom referred you to?

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1 **WIT:** I did not do a steam inspection.

2 **Mr. Fawcett:** I know. But the question was did you have knowledge of those
3 requirements as outlined in the C.F.R.?

4 **WIT:** Yeah, I'm aware that there are C.F.R. requirements relating to boilers, yes.

5 **Mr. Fawcett:** And just for clarity we've been talking about certificates. If a certificate is
6 pulled what is the ramifications or repercussions for a vessel?

7 **WIT:** There are quite a lot. They could lose their charter. I'm sure there's probably
8 some civil penalties that may incur depending on the reasoning behind it. There's a lot
9 of things depending on what certificate and the reason for it being pulled.

10 **Mr. Fawcett:** Could it impact their ability to conduct a voyage or depart the dock?

11 **WIT:** Yes if the Coast Guard deems that they're not allowed to leave, yes.

12 **Mr. Fawcett:** Okay. Could your actions alone in pulling a certificate, depending on the
13 certificate mean that the vessel couldn't depart?

14 **WIT:** Yes it could, but we have no authority to tell the vessel they can't leave. If the
15 vessel were to leave then obviously there would be a big problem with the Coast Guard.
16 But we as a company do not have the authority to tell someone they can't stay there.
17 We can pull the certificate, from there it's up to them. If they decide to leave there's
18 nothing we can do.

19 **Mr. Fawcett:** Right. But the practicable ramifications are that it may impact the ability
20 of a vessel to leave the dock, is that correct?

21 **WIT:** Yes.

22 **Mr. Fawcett:** Thank you, sir.

23 **CAPT Neubauer:** Mr. Roth-Roffy.

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1 **Mr. Roth-Roffy:** Tom Roth-Roffy, NTSB. Sorry to be going back to the same issue
2 again regarding notification time periods from the owner of the vessel and to the Coast
3 Guard. I believe one of the questionnaires asked about, or stated that the time period of
4 1 day is too short to prepare, to conduct a survey under the ACP. Would you agree with
5 that or not?

6 **WIT:** No, not necessarily.

7 **Mr. Roth-Roffy:** So but what is a reasonable time period for notification for you as a
8 surveyor to prepare to attend a vessel survey of the type you did on – in June of last
9 year?

10 **WIT:** We look for notification normally with at least a few days notice more for the
11 scheduling purposes. A lot of times we're busy and we just simply don't – can't attend
12 based on not having the people to attend necessarily when they want. So we like to get
13 notification to come a little bit sooner than that just so that we can purely schedule it.
14 But as far as prepping for the survey, no issue there.

15 **Mr. Roth-Roffy:** So you could receive a notice to attend a vessel and just walk on the
16 vessel 10 minutes later without any preparations? Is that correct?

17 **WIT:** It could happen, yes.

18 **Mr. Roth-Roffy:** what about the Coast Guard. Do you have an understanding of their
19 requirements for preparing for attending ABS surveys? Is 1 day adequate notice for the
20 Coast Guard inspectors to prepare to attend a survey?

21 **WIT:** That would be up to them. I can't answer for them.

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1 **Mr. Roth-Roffy:** Do you have an understanding of, as was stated previously, the ACP
2 requirements for 14 day notice? Were you aware of that previously before it was
3 mentioned today?

4 **WIT:** Not 14 days. That seems a little excessive, but it could be, I'm not sure.

5 **Mr. Roth-Roffy:** Were you aware of any requirements in the ACP for notification from
6 the vessel owner and to ABS regarding surveys?

7 **WIT:** Not that I can recall specifically off the top of my head. No, I would have to look
8 at it again.

9 **Mr. Roth-Roffy:** Looking now again at the continuous survey requirements and kind of
10 the averaging of 20 percent per year, is there any attempt to maintain some kind of a
11 balance on the percentage of equipment that's done per year? For example if there's
12 stuff done early then it would kind of reallocate the balance. Do you look at the
13 balancing or could you be doing 40 percent one year and 10 percent the next? Any
14 attempt to balance that continuous survey schedule?

15 **WIT:** Like I said it's based on the due date. So if they chose to do something early that
16 would then down the line throw it out of balance. That's a decision that the owner would
17 have to make. But if they, for whatever reason had opened up a piece of equipment
18 and you know done maintenance on it, then they would want to credit it then. So that –
19 those kinds of things can affect, you know further down the line. But again that's kind of
20 their decision.

21 **Mr. Roth-Roffy:** So ABS has no concern for the approximate balancing or the
22 percentage of equipment that's surveyed each year under this continuous survey?

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1 **WIT:** Yeah the target is 20 percent and we guide them or advise them that that is the
2 target. But like I said depending on actual functional requirements of the machinery that
3 might not always be the case. And that's just kind of the nature of ----

4 **Mr. Roth-Roffy:** If a piece of equipment is not done by the due date in the continuous
5 survey plan, what is the consequences to the ship owner or to the vessel?

6 **WIT:** They would be notified and there is the possibility for their class certificate to be
7 pulled.

8 **Mr. Roth-Roffy:** In your recollection have you ever had to notify the vessel El Faro or
9 any other vessels under Tote management of an exceeding of requirements, for due
10 dates for continuous surveying items?

11 **WIT:** Those notification would come from Houston, not from us. So I don't know if they
12 had ever had any or not.

13 **Mr. Roth-Roffy:** And sir, I would like to revisit again the annual machinery survey. You
14 mentioned that there's operational testing of all equipment. And I just want to make
15 sure I understand how that works. Is that your understanding or is that the correct
16 situation that all equipment in the machinery is operationally tested at each annual?

17 **WIT:** Not necessarily all equipment. But like the engines, generators would all be run,
18 alarms would be tested. Basically the equipment that's vital equipment I guess you can
19 say is what's checked.

20 **Mr. Roth-Roffy:** So do you have a list of vital equipment to be tested at each annual
21 survey, machinery survey?

22 **WIT:** It's in our rules.

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1 **Mr. Roth-Roffy:** In your rules. So you take a copy of the rules with you so that you
2 know which equipment to test annually?

3 **WIT:** Yeah, we have copies of the rules on our check sheets. It's all there.

4 **Mr. Roth-Roffy:** What about other equipment, for example bilge pumps, feed pumps,
5 condensate pumps, is that sort of equipment tested annually?

6 **WIT:** It depends on the type of ship and the age of the ship, but yeah some of it could
7 be, yes.

8 **Mr. Roth-Roffy:** Could be. Is it specified in your rules?

9 **WIT:** It would be specified which pieces need to be absolutely run, yes.

10 **Mr. Roth-Roffy:** So if there were two bilge pumps would you test both pumps or one?

11 **WIT:** That would be up to the determination of the surveyor that went onboard.

12 Depending on what they looked at when they were onboard. But if they're required to
13 run them then they should be run, yes.

14 **Mr. Roth-Roffy:** Again would it be both if they're required to run, say fire pumps, would
15 they run all the fire pumps?

16 **WIT:** Yes.

17 **Mr. Roth-Roffy:** And just so I'm clear, is the PMP cert -- I'm sorry notation, what
18 additional benefits does that accrue to the vessel owner or operator if they have that
19 PMP notation?

20 **WIT:** It would allow them to -- it would allow them to basically conduct maintenance
21 more on their schedule rather the schedule of trying to bring in a surveyor every time
22 they did maintenance. They could handle the maintenance as needed or it comes up

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1 based on their own internal measurements. And then that in turn could be used to – as
2 a tool for when we come onboard to credit the machinery.

3 **Mr. Roth-Roffy:** Used as a tool, but it would not automatically give them the ability to
4 credit?

5 **WIT:** Certain items they would be able to credit, yes.

6 **Mr. Roth-Roffy:** Thank you very much. That's all I have.

7 **CAPT Neubauer:** Before we go to the parties in interest I just have a couple additional
8 follow ups, sir. Does the local Sector Jacksonville have any limitations for time
9 notifications that you're aware of? And I mention that if you had an immediate request
10 to attend is it your understanding that you could send an email to Sector Jacksonville
11 and attend that survey?

12 **WIT:** Yes. There's no – nothing in particular that I know of that requires specific
13 notification.

14 **CAPT Neubauer:** Or a certain time period is what I'm looking for.

15 **WIT:** Not that I'm aware of, no.

16 **CAPT Neubauer:** And I believe that you testified that there is a draft PMP program
17 plan for the El Faro, is that correct?

18 **WIT:** My understanding is that there was a plan submitted, but quite a long time ago. I
19 think maybe like 2005 or something like that. But other than that I have no knowledge
20 of it.

21 **CAPT Neubauer:** You've never seen that plan?

22 **WIT:** No.

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

3 **Tote Inc:** No, questions, sir.

4 **CAPT Neubauer:** ABS?

5 **ABS:** Yes, just a few. Mr. LaRose we discussed preparation for a survey and the
6 response to one of the questions as far as timing you indicated that 24 hours was
7 sufficient for you in order to prepare for a continuous machinery survey, correct?

8 **WIT:** Yes.

9 **ABS:** And can you tell the board and explain to us how you would prepare and how
10 you did prepare for the continuous machinery survey number 8 aboard the El Faro for
11 June 2015? What did you look at, what did you do before attending?

12 **WIT:** We reviewed the survey status for the vessel to check which items would have
13 been due for that inspection and discussed with the Port Engineer what they wanted to
14 do. Then checked any rule requirements, specific rule requirements for any of the
15 specific pieces of machinery. Discussed it generally in the office with the other
16 surveyors in the office. And went from there pretty much.

17 **ABS:** Okay. Is it fair to say that the process instructions, the check sheets, and the
18 report format indicate to you what would need to be done on that particular survey?

19 **WIT:** Yes.

20 **ABS:** And the status, the survey status with regard to that vessel would provide any
21 particulars that may warrant further attention?

22 **WIT:** Yes it would tell us for this specific type of survey which pieces of equipment are
23 required to be looked at based on the dates that – based on their due dates.

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1 **ABS:** And again there were discussions with the Port Engineer before you boarded?

2 **WIT:** Yes.

3 **ABS:** Did you feel that you were adequately prepared when you boarded the vessel in
4 June 2015 to do a continuous machinery survey?

5 **WIT:** Yes.

6 **ABS:** There were questions regarding the Code of Federal Regulations. And again for
7 an ACP vessel with regard to boiler repairs or boiler inspections can you explain to us
8 what an ABS surveyor would look at as far as rules in order to determine what governed
9 a boiler inspection or test?

10 **WIT:** We would go by the supplement and by the rules. Which I believe in the
11 supplement it refers to the rules. So we would be basing our – any decision making on
12 a boiler survey based on our rules.

13 **ABS:** And so that would not depend on the Code of Federal Regulations, correct?

14 **WIT:** Yes.

15 **ABS:** We discussed notification and you indicated that there was a written notification
16 given to the Coast Guard concerning their attendance. And then there was further
17 dialogue concerning the possible – with the possibility of pulling the certificate of
18 inspection. In the event that you needed to pull any certification of inspection on any
19 particular vessel here in Jacksonville would you have the contact information for the
20 Coast Guard office to call and do you have that level of dialogue to speak with
21 someone?

22 **WIT:** Yes we do.

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1 **ABS:** And who is the person in the Coast Guard in Jacksonville that you might call in
2 the event there was a problem with a certificate of inspection?

3 **WIT:** If it was a U.S. flag ACP vessel then it would be the officer in charge of the
4 domestic side.

5 **ABS:** Nothing further.

6 **CAPT Neubauer:** Mrs. Davidson?

7 **Ms. Davidson:** No questions.

8 **CAPT Neubauer:** Herbert Engineering?

9 **HEC:** No questions.

10 **CAPT Neubauer:** We have one more line of questioning. At this time the hearing will
11 recess and reconvene at 11:20.

12 *The hearing recessed at 1108, 19 May 2016*

13 *The hearing was called to order at 1120, 19 May 2016*

14 **CAPT Neubauer:** The hearing is now back in session. Commander Odom can you
15 proceed with the last line of questioning?

16 **ABS:** Captain Neubauer if I may I'm just looking to clarify three things from the last line
17 of questioning if that's alright?

18 **CAPT Neubauer:** Yes, sir.

19 **ABS:** Mr. LaRose with regard – based on the discussions of continuous machinery
20 survey you described at approximately 20 percent of the machinery would be up for
21 survey each year. We also discussed condition monitoring and preventative
22 maintenance. Does a vessel need to be enrolled in continuous monitoring or
23 preventative maintenance in order to be enrolled in a continuous machinery survey?

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1 **WIT:** No.

2 **ABS:** We also discussed the pulling of a certificate in inspection or a statutory
3 certificate and you described the notice that you would give to the Coast Guard. Does
4 ABS have the authority to pull or remove a statutory certificate from a vessel?

5 **WIT:** No it would have to be done by the Coast Guard after notification. We would
6 have to be given permission specifically by the Coast Guard to do that.

7 **ABS:** And lastly with regard to the continuous machinery survey you talked about the
8 scheduling of machinery and the potential for overdue items. If an item or machinery
9 item is overdue can you describe how that would be addressed if a specific machinery
10 item is in fact overdue?

11 **WIT:** Like I said the company would receive notice that the items are coming to be
12 overdue and then actions would be taken to complete the item. And annual surveys
13 can also serve that purpose. They would have to – it wouldn't just be – nothing would
14 be canceled right away based on that. There's steps that would be taken to make sure
15 that those items are actually cleared.

16 **ABS:** Okay. So the fact that one particular machinery item is overdue doesn't result in
17 the pulling or suspension of class, correct?

18 **WIT:** That's correct.

19 **ABS:** Nothing further.

20 **CAPT Neubauer:** Thank you for those clarifications.

21 **HEC:** Mr. Chairman I have a follow up question to Mr. White's if I may while we're on
22 the subject.

23 **CAPT Neubauer:** Yes.

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1 **HEC:** You talked about pulling certificates. ABS is not authorized to pull statutory
2 certificates, is that correct?

3 **WIT:** We would have to go through the Coast Guard to get authorization.

4 **HEC:** Exactly. The Coast Guard can do it, but ABS can't.

5 **WIT:** Correct.

6 **HEC:** But ABS can suspend class is that correct?

7 **WIT:** Yes.

8 **HEC:** That's all I wanted to clarify.

9 **CAPT Neubauer:** At this time I'll go to Commander Odom for the next line of
10 questioning.

11 **CDR Odom:** Thank you Captain. Mr. LaRose for this line of questioning we're going to
12 be using Exhibit 177 which is available to you. That's your continuous machinery
13 survey report for which you performed on the El Faro. It's my understanding this is the
14 last machinery survey that was performed on the El Faro prior to the casualty. Is that
15 correct?

16 **WIT:** I would have to look, I'm not sure.

17 **CDR Odom:** Okay. So as we go through this is what I would like to do is discuss the
18 systems that you surveyed. And as we go through it please describe the scope of each
19 item and how you completed your survey of the equipment in detail and also explain
20 your entries on the associated checklist that goes along with your report. They're both
21 Exhibit 177. In the book it's Exhibit 177 page 22. So and also in our discussion if you
22 would if you could please describe the competency of the crew in their ability to test and
23 perform the test that you prescribed for that particular piece of equipment and how

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1 competent they were in the use of it. So to begin in general when you do a continuous
2 machinery survey when you do have a deficiency what are the different ways that ABS
3 documents that through a – it's my understanding there's a condition to class, alternate
4 requirements, observations, findings and then also discuss what's a PR 17. To kind of
5 set this up can you tell me what the difference is between all of those and also what the
6 ramifications are to the owner of the vessel for each one of those items if they're
7 assigned as a deficiency is found?

8 **CAPT Neubauer:** That was kind of a long question. Can you cut it down?

9 **CDR Odom:** Break it down. So ----

10 **ABS:** Can I suggest in the event of a deficiency Mr. LaRose can you describe how that
11 would be presented to the owner or otherwise presented in your report?

12 **WIT:** Yes. If there is a deficiency noted during the course of the survey we would bring
13 it up to the vessel's representative that I was with, whether it be the Chief Engineer, in
14 this case it would have been the Chief Engineer and discussions would be made as to
15 what the deficiency is and how to go about correcting it. Whether it could be corrected
16 on the spot or if it required new parts to be brought in or, which may not allow them to
17 correct it initially on the spot. And depending on the piece of equipment also the sever
18 – it would depend on the severity of the deficiency. So if a deficiency were to be found
19 and it was corrected on the spot normally we would write an observation of what we
20 saw, what happened. Or we could also, depending on the actual piece of equipment if it
21 was class related we could write an outstanding but also close it out at the same time.
22 That way it's in our – in the system. If it was something that couldn't be fixed at the
23 time, at that time we could write an outstanding and give them a certain amount of time

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1 to complete it. If it was something that was statutorily related also then we would have
2 to go through the Coast Guard and get permission or authorization to move forward
3 with, depending on what the plan was on how to fix that certain deficiency.

4 **CDR Odom:** Thank you. And just to be clear of the different kind of level of severity of
5 each one of these items, can you just, I'll ask you one at a time to make it easy. What is
6 a condition of class and what are the ramifications to the operator of the vessel as a
7 result of being assigned a condition of class.

8 **WIT:** It would be something that effects the vessel's ability for propulsion or the vessel's
9 ability to float basically. Or something that would pose an imminent pollution risk.

10 **CDR Odom:** So if a condition of class is assigned is there any, like a point scenario or
11 a consequence to a company's ability to charter the vessel as a result of that?

12 **WIT:** Could you repeat the question please?

13 **CDR Odom:** If you assign a condition of class is it made public through a system like
14 EQUASIS (sic) or something like that and does it affect an owner's ability to charter their
15 vessel as a result of a condition of class being assigned?

16 **ABS:** I think the question is how a condition of class is recorded or what, what
17 conditions result in a condition of class as far as whether or not the commercial
18 ramifications are probably not something within the scope of this surveyor's attendance.
19 But I think you can address what a condition of class is and what that – how it might be
20 recorded. Would that respond to your question?

21 **CAPT Neubauer:** And also is it publically available to be viewed?

22 **WIT:** As far as publically available I don't know. That would go beyond me. I – we
23 would, if I was the surveyor onboard and had to issue something like that it would be

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1 recorded, we would most likely seek guidance from our divisional survey office if it's
2 something serious. And the decision on how to move forward would be done with their
3 guidance. And if notifications to the Coast Guard were necessary they would be made.
4 And the subsequent way to clear the deficiency would be determined at that time.

5 **ABS:** Would it be fair to say Mr. LaRose, if I may, a condition of class would be written
6 up to provide a specific repair within a specific time frame that the owner might need to
7 – must maintain or accomplish within a set period of time?

8 **WIT:** Yes. And that would be part of the discussions with the divisional survey office as
9 to how much time would be given. Again it would depend on exactly what it – what the
10 problem or issue was. And also it would depend on the – how the fix needs to be
11 accomplished. All of that would be taken into consideration.

12 **CDR Odom:** Thank you. And the ARs or additional requirements, can you explain that
13 to us? What that means, an AR?

14 **WIT:** It's a less severe, not severe but an item that might not be, I'm trying to think of
15 the best way to word it. Something that doesn't affect necessarily the class of the
16 vessel. It doesn't have a direct effect on propulsion or a pollution incident or anything
17 like that.

18 **CDR Odom:** And then an observation, you briefly mentioned that when that – how
19 severe is that, when would that be assigned?

20 **WIT:** It would depend on the situation, but basically it's more used as a note in your
21 work order. An observation doesn't require any follow up. It's just a narrative of stating
22 something.

23 **CDR Odom:** And then what's a finding? Is that assigned?

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1 **WIT:** A finding is what you said before, an outstanding recommendation or an
2 additional requirement, it's the same thing.

3 **CDR Odom:** Okay, thank you. So my understanding so is if you're conducting a
4 survey with a Coast Guard marine inspector which was not present on this day, but if
5 they felt the need to write a Coast Guard 835 how – how would you handle that? Would
6 that automatically be turned into a condition of class?

7 **WIT:** It would depend on the reason for the 835. But yes we would write it up as either
8 an outstanding class recommendation or an outstanding statutory deficiency, depending
9 on what it was. And then it should be written up in our system under the ACP program.
10 They shouldn't actually be writing an 835. It should be coming through us.

11 **CDR Odom:** But if they wrote the 835 then you would have the authority to clear that
12 835, is that correct?

13 **WIT:** If that's the way they wrote it, yes.

14 **CDR Odom:** Okay, thank you. And so in preparation for this exam when you went
15 onboard the El Faro and started this exam do you look at the – what's called AMOS
16 which stands for asset management operating system which is my understanding what
17 the El Faro used for preventative maintenance tracking? Is this something you would
18 have reviewed prior to commencing your survey while onboard?

19 **WIT:** I'm not sure what that is.

20 **CDR Odom:** It's their computer system that they use to track maintenance on the
21 machinery. So it would tell you if something was overdue or if they had had a deficiency
22 or a failure or anything. Is that something that you look at? Do you look at the

1 preventative maintenance system on the vessel to see what machinery is due or is
2 deficient or past due prior to commencing your survey? It's the equivalent to NS5.

3 **WIT:** Yeah, I don't know their specific computer program. Prior to the survey we go
4 through our system, our ABS program. We don't look at the program that the owners
5 have, no.

6 **CDR Odom:** Do you look at anything in the records or the logs onboard the vessel to
7 see if they've had any major machinery maintenance or failures prior to starting your
8 survey?

9 **WIT:** Yes when we're onboard. But not normally prior to unless there's something that
10 they report to us ahead of time. In this instance there was not.

11 **CDR Odom:** All of these questions are in context of being onboard for your survey and
12 prior to actually going down to the engine room. I'm just trying to find out what kind of
13 dialogue you have with the Chief Engineer. You know what kind of things you look at
14 before you actually commence the survey onboard the vessel. You know what other
15 records and types of things would you look at before you actually start testing
16 machinery and what types of things would you ask the Chief Engineer or the crew about
17 the survey?

18 **CAPT Neubauer:** I want to make one clarification. You're asking directly what did you
19 observe this survey?

20 **CDR Odom:** Yes, sir. You know what did you do to prepare for this survey that day
21 onboard the El Faro? The types of things did you discuss with the Chief Engineer?
22 And also do you remember which Chief Engineer you were dealing with on that day?

1 **WIT:** I don't recall which Chief Engineer it was. But as far as when I got onboard the
2 vessel we – I met with the Chief Engineer, I met the Port Engineer, I went onboard with
3 him. We're probably at the Chief Engineer's office, we sat down and reviewed the items
4 from our system that were coming up due, compared it with them and what they wanted
5 to credit. They have access to our system as well so they know ahead of time what's
6 due and when. We compared the lists and what they wanted to accomplish that day.
7 And then from there I went through all of the Chief Engineer's records with him including
8 his preventative maintenance records. He had pictures of items that they had opened
9 up, records for all of it. He had condition monitoring, vibration analysis readings for all
10 his equipment. We checked that. We probably spent about, I would say at least an
11 hour in his office going through all of that stuff for the pieces of equipment that they
12 wanted to credit that day. Once we were finished with that then we went down below
13 and actually physically ran the pieces of equipment so we could run them, see them run
14 with my own eyes. You know make sure that their records that they had matched with
15 the condition of the machinery was down below.

16 **CDR Odom:** Was that the case? Did everything match?

17 **WIT:** Yes.

18 **CDR Odom:** Yes. And for the record was there anything in your system on that day
19 that was overdue for the 5 year date that we discussed for the continuous machinery
20 survey? Was everything within the due date required?

21 **WIT:** I don't believe so. My report doesn't show what the original due dates were of the
22 equipment. I would have to go back and see what the status was at that time. But I
23 don't recall anything being overdue.

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1 **CDR Odom:** Thank you. So starting with the first item in your report, which is listed as
2 ballast system. I think we can combine the first two, it's ballast and bilge system if you
3 want to. Starting with this item could you describe your actions you took to give credit
4 for the survey? And also show us the corresponding entry on the checklist associated
5 with those items and the entries you made and describe those please.

6 **WIT:** Okay. For pretty much everything my answer's going to be almost exactly the
7 same. Like I said I reviewed the records that the Chief Engineer had, all his
8 maintenance records, I don't recall specifically what he may or may not have had for
9 each individual item. But the records that he had included vibration analysis readings.
10 It included pictures and maintenance reports from both the crew and service
11 technicians. If they had opened anything up he had extensive pictures of any
12 equipment that they had opened. And we went through all of that like I said prior to
13 going down below to the engine room. Once we were in the engine room we went to
14 each piece of equipment, ran it, checked it, put hands on it, put eyes on it to make sure
15 that it, you know vibration analysis was – came back, you know clean which everyone
16 did that the actual piece of equipment wasn't you know overly vibrating once we actually
17 ran it to prove that, you know that it was – everything was in the condition that they
18 stated. As far as – and we did that with all the pumps and machinery that could be run.
19 Piping systems like the ballast piping, I went in and traced out sections of the piping
20 looking for any types of corrosion or anything like that. Or leaking gaskets or fittings or
21 anything like that. Didn't notice anything. So based on all of that is what led me to credit
22 these items.

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1 **CDR Odom:** So specific to the bilge system and the ballast system that would
2 correspond to entry number 2 on your checklist, is that correct?

3 **WIT:** Correct.

4 **CDR Odom:** I mean you stated observations underneath that item.

5 **WIT:** Correct.

6 **CDR Odom:** Is that – am I understanding that correct?

7 **Tote Inc:** Sir, could we refer to what page of the exhibit we're?

8 **CDR Odom:** This is page 22 of Exhibit 177.

9 **Tote Inc:** Thanks.

10 **CDR Odom:** Of the report it's page 1 of 8 of the checklist for special continuous
11 machinery survey 8.

12 **ABS:** And we're looking at item 2 and you would like to ask – you would like Mr.
13 LaRose to address the observations he had with regard to item 2?

14 **CDR Odom:** It starts on page 23, I'm sorry. His report starts on page 23 and continues
15 from there. And what we're talking about right now is on page 24 for where he gave
16 credit to the ballast system and bilge system. And then if you go into that further there's
17 a checklist behind it that has corresponding entries.

18 **Tote Inc:** Thank you.

19 **CDR Odom:** You're welcome. Go ahead.

20 **WIT:** Okay. So the checklist is a – is supplementary for us for doing our job, right. So
21 in this case normally the checklist would not be a part of the report that's submitted to
22 the owner. Okay. So it's more of an internal document once – we use it to help us do
23 our job and then it's kept in our system for record. This being a continuous machinery

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1 survey this checklist is – takes 5 years to complete. Okay. So if you notice like on item
2 2 I did not click yes or no. I didn't check off any of the check boxes because if I did then
3 that would close out the entire item. That's evident for pumps and pumping
4 arrangements, I didn't look at every single pump. I only looked at ones that were due.
5 So this actual checklist itself would be completed at the end of the 5 year cycle. The
6 items themselves are credited individually in our system which can be seen in the
7 report. I put observations on the checklist items just for future reference if anyone
8 wanted to go back and look. The next person who did a continuous machinery survey
9 can just confirm that those are the items that I did based on this.

10 **ABS:** So would it be fair to say the checklist for item 2 included those pumps that you
11 would have watched one, but you didn't close out the item because of the additional
12 pumps or arrangements that may need to be looked at before the item was fully
13 credited?

14 **CAPT Neubauer:** Understand.

15 **WIT:** Yeah the item meaning that checklist item. So that would require every pump
16 onboard to be completed before that particular item on that checklist could be checked
17 off.

18 **CDR Odom:** So the next surveyor to attend the vessel would review this, it would be in
19 your system and they would understand, continue to build on it and at the end of the 5
20 year we would expect to see all the blocks checked yes?

21 **WIT:** Correct.

1 **CDR Odom:** Alright. So would this test of the bilge and ballast system where it says
2 piping and bilge suction valve, would that included any check valves that were in the
3 system?

4 **WIT:** Check valves would be a different – would be separate.

5 **CDR Odom:** Okay. So that would be at a different survey that would ----

6 **WIT:** Yeah they might not – every valve is not listed in our system. Only suction
7 valves, skin valves, valves like that. We don't list every single valve on the vessel. It's
8 too ----

9 **CDR Odom:** But for the bilge and ballast system you look at the piping but you
10 wouldn't exercise the valves? For example if there was a valve that had a reach rod
11 associated with it, do you exercise that to verify that the reach rod was connected and
12 that the valve was properly operating? Would that be a part of your survey?

13 **WIT:** Yeah, we actually ran the system and we tested it and that's how we tested it.
14 But your question was asking – we don't have every single valve is not listed in our
15 status. There would be hundreds of them.

16 **CDR Odom:** And in running the pumps, I know further down you tested the emergency
17 generator. And would you have tested the pumps to ensure that they were powered by
18 the emergency generator on that circuit? Is that something that would have been a part
19 of your test?

20 **WIT:** No not necessarily. We would test the emergency generator to make sure that
21 it's feeding to the board, but I would – didn't require them to specifically run it off of that
22 board.

1 **CDR Odom:** And continuing down the list. I see the lead steam arrangements. Can
2 you explain that and what you surveyed?

3 **WIT:** Again that's piping. So it's look at the piping and making sure that the lagging
4 protection is there, there is no leaking, leakage or anything like that.

5 **CDR Odom:** What about the hangers supporting the pipe? Would you have looked at
6 that and their condition?

7 **WIT:** Yes.

8 **CDR Odom:** Do you recall any issues with any of the steam piping hangers?

9 **WIT:** Not that I can recall.

10 **CDR Odom:** And moving on down through the boiler feed water system, can you
11 elaborate or describe that test a little bit?

12 **WIT:** Again it's the same as everything else. We ran the pumps. They had one pump
13 already running when I go onboard, you know because the boiler was running. And we
14 switched pumps, ran the other pump. And also reviewed all the records, their
15 maintenance records.

16 **CDR Odom:** Would that have included the electric feed pump or just the steam driven
17 feed pumps?

18 **WIT:** Uh this was just the steam driven feed pumps.

19 **CDR Odom:** So the electric feed pump is excluded from this particular survey, or when
20 would that be tested?

21 **WIT:** I would have to look at the status. But it was, yeah it was not one of the items
22 that was due for this survey.

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1 **CDR Odom:** Okay. But it would be a part of the continuous machinery survey at some
2 point?

3 **WIT:** Yes.

4 **CDR Odom:** Okay, thank you. And looking at the compressed air system, can you
5 kind of explain to me, if I understand this correctly the compressed air system and the
6 things you list and then reading item number 6 on the checklist, can you tell me – it says
7 air reservoirs and associated piping are to be examined. It says air reservoirs cannot
8 be – if air reservoirs cannot be examined internally they are to be hydrostatically tested.
9 All relief valves and safety devices are to be proved operable. How does that
10 correspond with what you did? Is that what should have been done this day or is that
11 what we would expect this item to be surveyed as by doing a hydrostatic test or internal
12 examination?

13 **WIT:** The air receive is their own item. They weren't due at this time.

14 **CDR Odom:** Okay.

15 **WIT:** So yes when they were due they would have to be tested.

16 **CDR Odom:** Alright, but they weren't due again?

17 **WIT:** No.

18 **CDR Odom:** They weren't a part of this survey? Okay, thank you. And then the next
19 item being the emergency power distribution system. Can you go into detail specifically
20 on what your test of that system was?

21 **WIT:** We went to the emergency generator room. They have – they had a standard
22 procedure they have for testing the generator. We started it, put it on line, transferred
23 power to the bus, ran it with a load for a little while not too long. They do I think bi-

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1 weekly 2 hour load test anyways, it's a part of their procedures so, we ran it. They had
2 done that recently so we just ran it for, I don't recall exactly how long, a little while to get
3 a feel that it was holding, there was no issues with it. And then we did a – we tested a
4 couple of the shut downs on the engine itself. And we tested – also tested the alternate
5 methods of starting the generator.

6 **CDR Odom:** We heard earlier from Chief Engineer Robinson about their ability to use
7 the emergency generator to back feed the main board in the engine room in the event of
8 a loss of power. To use the power to restart the boilers. Is this something that you're
9 aware of or anything that ABS would ever verify operated properly?

10 **WIT:** I don't know the details of their electrical system.

11 **CDR Odom:** So the next item on your list is the fire main system. Can you describe
12 what you did on that?

13 **WIT:** Again the same as everything else. Reviewed records, reviewed – they had
14 condition monitoring, vibration records and then we went down below and physically ran
15 the pumps.

16 **CDR Odom:** Okay. So condition monitoring I see listed next to the emergency fire
17 pump and the fire pump. And I'm going to go to Exhibit 200 at this time. And if you
18 would look at Exhibit 200 which is an enormous exhibit, it's page 544 for the parties in
19 interest of Exhibit 200. So specifically looking at this section 15.1 on this page which is
20 titled general 2014. It says, and this is the section on condition monitoring, and in my
21 attempts to try to understand how this program works in reading this it says owners may
22 conduct condition monitoring on any items of equipment, however, the following
23 equipment cannot be enrolled into condition monitoring plan and credit will not be given

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1 towards periodic surveys. And specifically about midway down it says fire pumps. So
2 can you explain how the fire pumps on the El Faro are under a condition monitoring
3 program when it appears, if I'm understanding this correct and I might not be, that's it's
4 not allowed by the rules that were in place at the time of the El Faro. This is the 2015
5 rule from July. Understanding that it changed in July and this is the July change and
6 you were on in June. Looking back at the January updates to the program there was
7 nothing in this section that changed in the list of effective changes that I could find. So
8 can you speak to that please?

9 **WIT:** Yes. It's correct those items should have probably not been listed as CM, that
10 would come from Houston would be the ones that would do that. I believe there was a
11 mistake in that. They should have not been listed as condition monitoring. That being
12 said I did not base my crediting of those items based solely on condition monitoring.
13 We ran, we physically ran it, we checked other records. So condition monitoring if they
14 were fully enrolled in condition monitoring then by that standard you could review the
15 records and say okay and credit it based on that. I went beyond that and physically ran
16 the pumps, build pressure, whatnot.

17 **CDR Odom:** Thank you for that clarification. Captain?

18 **CAPT Neubauer:** Mr. LaRose did you do that because you knew that was labeled
19 incorrectly as condition monitoring, or is that just something you do with the fire pumps
20 in general?

21 **WIT:** It's something I do with the fire pumps in general. It's a safety item and I would
22 never, personally I would not base something solely – I want to see those run every
23 time.

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1 **CAPT Neubauer:** Thank you.

2 **CDR Odom:** So in follow on to kind of what the Captain is saying, specific to fire
3 pumps, and we've had a lot discussion about the supplement, there are specific
4 requirements for running the fire pump in the supplement. Is that what you based your
5 test on going beyond the condition monitoring program what was required in the
6 supplement for running the fire pump and the emergency fire pump?

7 **WIT:** Yes. The supplement, our rules, yes.

8 **CDR Odom:** What test does the supplement require? What did you do with the fire
9 pump? I mean did you check the discharge pressures as required by the supplement or
10 anything along those lines?

11 **WIT:** Yes. Part of running it requires, you know the gauge was right next to the pump.
12 You could see the discharge pressures. Of course I want to make sure there was a
13 discharge pressure. That proves that the pump is intact, it's not slipping or anything like
14 that.

15 **CDR Odom:** Okay. But the pressure at like a nozzle you would not have checked the
16 pressure at a fire nozzle with pitot tube or gauge or anything?

17 **WIT:** I didn't at this inspection. But that's done every annual.

18 **CDR Odom:** So that would have been done at the annual?

19 **WIT:** Correct.

20 **CDR Odom:** Okay, thank you. Moving on down your list from the fire main, we see the
21 fresh water system and the distilling plant. Can you describe that system on the El Faro
22 and what test you would have completed on that? Also I see the evaporator pump
23 would have been condition monitoring also.

1 **WIT:** Yes. Again we checked the records, the vibration records that they had. We
2 checked their maintenance records. And when we were down below we ran that
3 particular distillate pump and inspected the piping.

4 **CDR Odom:** And can you just continue to go down the list and kind of describe your
5 test that you did on these items and what they are to us?

6 **ABS:** On the fresh water system?

7 **CDR Odom:** On the fresh water system and then when you get down, I think it's alright
8 to go ahead. If I have a question I'll ask you. Go on into the field oil servicing system,
9 fuel oil storage and transfer system. And describe your test and what you did on these
10 particular systems.

11 **WIT:** Like I said before the testing was all basically the same. It was a physical run test
12 of everything that they had. Other than really the emergency generator there's not
13 much – not much difference. I mean it was a physical run test of everything.

14 **CDR Odom:** Okay. But what about the steering gear system. What was your test of
15 the steering gear system?

16 **WIT:** The same thing. We went back to the steering gear room. We – I had them
17 control the steering from the bridge and from local controls. We swung the propeller
18 hard over, both – the rudder, swung the rudder hard over both directions using all
19 pumps and all control stations.

20 **CDR Odom:** And did you test any alarms in the steering system?

21 **WIT:** I think we spot checked a couple. I think we checked, normally I always check
22 the power available alarm. So we'll shut the breaker to make sure that they get the
23 alarm on the bridge. Things like that.

1 **CDR Odom:** Did you test local control?

2 **WIT:** Yes.

3 **CDR Odom:** And did you test the communications? You said that the phone with the --

4 --

5 **WIT:** Yes, but not – not as part of this survey. I mean that's how we communicated
6 with the bridge to know what we're doing. So it was tested, but it wasn't necessarily
7 tested as part of the survey.

8 **CDR Odom:** And were all the indicators properly aligned in sync with the bridge?

9 **WIT:** Yes.

10 **CDR Odom:** Thank you. At the completion of your report I see there's a review of the
11 report listed. Can you please describe the process once you complete this report and
12 you submit it, how does that review process work for the purpose of quality and to
13 ensure that everything was properly tested?

14 **WIT:** Yeah, we – all reports have to be reviewed before they can be credited. So when
15 I complete my report I will sign it off, but then it will be flagged for review. And then we
16 have people that are qualified to do reviews. So Mr. Tinsley who did the review of my
17 report he's been authorized to do reviews by our divisional survey department. So once
18 I complete the report and sign it off and then it has a certain amount of time that it's
19 supposed to be reviewed and if there's someone available to review it they'll review it.

20 **CDR Odom:** As just one quick follow up. Can you provide us with your overall
21 evaluation of the engineering department and the officer and the crew, how they worked
22 together with each other, how their knowledge was of the machinery that you tested?
23 Can you provide us an assessment of that?

1 **WIT:** Like I said I was onboard for 5 to 6 hours that day. But in that time that I was
2 onboard every question that I had was answered promptly and well. Every piece of
3 equipment I asked to be tested was tested right away. The crew whether it was the
4 Chief or there's a couple of other engineers at certain times helped out, they knew
5 exactly where to go to start a pump for example. They knew where the start button
6 was. I mean nothing was really that complicated, but they were able to do everything
7 that I asked while I was there. I had no issues with anything.

8 **CDR Odom:** And as we discussed before and you were on there for this specific
9 survey, but looking beyond that can you give us an assessment of the overall condition
10 or conditions in the engine room? And did you see anything that you would consider a
11 concern? Beyond the scope of your survey.

12 **WIT:** I did not see anything that was a concern and if I did I would have definitely
13 reported it. But just as I recall I remember it being a very clean engine room. I felt like
14 that they – that the engineers took pride in their engine room. It was quite clean. And
15 when an engine room – when you go into a ship and an engine room is very clean it's
16 kind of an indication of how they're treating it. And so as a surveyor if you see that it's –
17 it helps you make a determination on how you feel things would go. My recollection
18 was that everything looked pretty good.

19 **CDR Odom:** When you conduct these surveys on a ship like the El Faro particular to
20 its age, does that change any way that you approach the vessel and conduct these
21 tests based on the age of the vessel? Change your approach?

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1 **WIT:** Not really. We're checking to make sure that the vessel meets the rules, meets
2 the rule requirements. And whether or not the vessel is brand new or not they still need
3 to meet the same rules. So that's how we approach all of our surveys.

4 **CDR Odom:** Was there any particular, in your discussions with the crew did you over
5 hear or did you hear of any complaints about the condition of the ship or the condition of
6 any machinery on the ship?

7 **WIT:** No.

8 **CDR Odom:** Mr. LaRose I would like to thank you for your cooperation with me today.
9 And at this time I would like to turn the questioning back over to Captain Neubauer for
10 follow up.

11 **CAPT Neubauer:** Lieutenant Commander Venturella.

12 **LCDR Venturella:** During your review of the condition monitoring that was credited on
13 your continuous machinery survey, did you witness the Chief Engineer data collection
14 on a quarterly basis and also a representative specialist of an ABS recognized condition
15 monitoring company, what ABS recognized condition monitoring company was involved
16 with that condition monitoring review?

17 **WIT:** I don't recall the specifics. They had records that were done by an outside
18 company. I don't remember the name of the company. But like I said nothing I did –
19 the crediting of the items I credited were not based solely on condition monitoring.
20 There's a lot more put into it. So I mean you can take that what you will, but.

21 **LCDR Venturella:** On the day of this survey did you review the condition monitoring
22 plan?

23 **WIT:** No, other than the items that were listed on our service status.

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1 **LCDR Venturella:** On the day of the survey were you aware that the fire pump may not
2 have been properly approved as part of a condition monitoring plan?

3 **WIT:** I was not. But again like I said I did not credit the fire pump based solely on
4 condition monitoring.

5 **LCDR Venturella:** Are you aware whether the fire pump remains in the condition
6 monitoring plan for the El Faro or its sister vessel the El Yunque?

7 **WIT:** I have no idea.

8 **LCDR Venturella:** In your narrative for this survey there isn't a, actually there really
9 isn't a narrative that I see. Did you provide the text somewhere else where you
10 described some of these things besides beyond the checklist? Like for instance you
11 just told us about you tested further beyond the required condition monitoring. Did you
12 document that anywhere?

13 **ABS:** Other than the report?

14 **LCDR Venturella:** Yes, other than the report that we have. Because those details
15 aren't in there.

16 **WIT:** No the report is what it is. That's the way our system works.

17 **LCDR Venturella:** Do you believe that a surveyor that, besides yourself would be
18 required in any way to go beyond as you have?

19 **ABS:** Go beyond what?

20 **LCDR Venturella:** Go beyond the required crediting for condition monitoring.

21 **ABS:** For what?

22 **LCDR Venturella:** For the fire pump or for any individual piece of equipment.

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1 **WIT:** Like everything else in our rules it's left to the satisfaction of the attending
2 surveyor. So it would be up to them.

3 **LCDR Venturella:** Did you mention the potential issues with the condition monitoring
4 plan to the reviewer Mr. Tinsley?

5 **WIT:** At the time we didn't – we weren't aware of any problems with it.

6 **LCDR Venturella:** Do you normally speak with your reviewers? Or is the review
7 process independent?

8 **WIT:** If they find an issue that something needs to be changed or adjusted then we talk.
9 But at this time there wasn't.

10 **LCDR Venturella:** Did you consider reporting the issue to ABS's engineering offices to
11 require a correction of the plan?

12 **WIT:** Like I said at the time we did not – at the time we didn't know that this was like
13 this. This has come to light since then because of this hearing.

14 **LCDR Venturella:** And is it being corrected now?

15 **WIT:** That's above me, I don't know.

16 **LCDR Venturella:** Okay. But you've corresponded or someone in your office has
17 corresponded with the engineering offices?

18 **CAPT Neubauer:** Just to clarify, sir, when did you become aware of this issue? Was it
19 before this hearing?

20 **WIT:** Yes.

21 **CAPT Neubauer:** Are you aware of any actions being taken or any notifications higher
22 up the chain on this issue?

23 **WIT:** I know that they're aware of it. So it's up to them. That's their decision.

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1 **CAPT Neubauer:** When you say they, which office do you mean, sir?

2 **WIT:** The divisional survey department.

3 **LCDR Venturella:** No further questions, thank you.

4 **CAPT Neubauer:** Commander Denning.

5 **CDR Denning:** So, sir, along the same lines what Lieutenant Commander Venturella
6 was just asking, if you could turn to back to Exhibit 177 on page 27.

7 **ABS:** Commander Denning our exhibit isn't marked. Can you just give an indication,
8 page 2 of 4 or 3 of 4?

9 **CDR Denning:** Page – it says page 1 of 8 at the bottom.

10 **ABS:** Okay. We're with you. Checklist?

11 **CDR Denning:** The checklist. So item number 2 on the checklist, and this is back to
12 the documentation of whether the pumps were run versus simply examined. You stated
13 several times during your testimony that they were run. Under item number 2 it says
14 the following pumps were, the word you used is examined, right? But you're stating to
15 us today that you did run the pumps, correct?

16 **WIT:** That's correct.

17 **CDR Denning:** Okay. Now I would like to go to another page and it will take me a
18 second to find it. I see the word examined used several times. And then go to page 4
19 of 8, item number 23. And the word you used there is auxiliary generators number 1
20 and 2 were functionally examined. Is there a difference between examined and
21 functionally examined? Does functionally mean something else?

22 **WIT:** Not really. I think I was just – the writing quite a few items I added that in. But the
23 only other difference would be that these were tested actually on the board. They were

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1 producing electricity and they were – whereas the pumps were more just – were run,
2 but not as part of – not as part of the system itself running. The generators were run
3 with the load of the hotel load from the ship on.

4 **CDR Denning:** Is there a reason, any specific reason you don't indicate when you
5 actually run a pump versus simply examining it?

6 **WIT:** No. But again this an internal document that's not normally shown. This is for
7 surveyors down the line to know what we looked at in this specific survey. Our normal
8 report would be the other section that you can see where we actually credited the items.

9 **CDR Denning:** Okay. Different topic. So back to what Commander Odom was asking
10 you about earlier as far as documentation of deficiencies. You stated that some
11 deficiencies that are corrected on the spot are documented as an observation, correct?

12 **WIT:** Yes depending on what it is.

13 **CDR Denning:** And could you go into a little bit more detail on that, depending on what
14 it is factor? Because I don't think we really got into a lot more detail on that. I would like
15 you expand on that for us please.

16 **WIT:** If it was something that should have been written up as an outstanding, I would
17 write it up as an outstanding but rectify it right away. The statement observation if it's
18 something that was just noted onboard that would not result in an outstanding then we
19 usually write it up in an observation format, just a narrative.

20 **CDR Denning:** Can you give us a few examples of something that would result in an
21 outstanding?

22 **WIT:** For example like if they had steel that they had to crop and renew, something like
23 that would be an outstanding.

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1 **CDR Denning:** So something like that would not be written up as an observation?

2 **WIT:** No.

3 **CDR Denning:** And then a little bit later when discussing conditions of Class you used
4 words like the Coast Guard, quote unquote the Coast Guard would be notified. But I
5 don't think you were specific as far as who conducts that notification and how. Because
6 in the same context you were also describing some of the things that are done by you
7 and some of the things that are done by, I think you said the division office. Can you
8 clarify for us who makes what recommend – notifications for conditions of Class?

9 **WIT:** The contact office for the Coast Guard is our divisional survey office. So by our
10 process instructions we are to go through them first. There are instances where if we're
11 onboard with the Coast Guard or we have a good working relationship with the Coast
12 Guard we might notify them on our own. But the official way in what would also always
13 be done is go through the divisional survey office and then they would contact the flag in
14 this case the Coast Guard.

15 **CDR Denning:** So you would say that it's not typically common for a surveyor onboard
16 to contact a marine inspector? Is that true?

17 **WIT:** We would, again it would depend on the situation, but in what it was, but we
18 would normally go through the divisional survey office first. If the Coast Guard happens
19 to be onboard and you're there talking to them then you're there talking to them.

20 **CDR Denning:** So how do you communicate those deficiencies to the division survey
21 office?

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1 **WIT:** Usually with a phone call and a follow up email is usually the fastest way.

2 Especially if we're onboard we want to try to speak with them as quickly as possible. So

3 we usually start with a phone call and then follow up with an email afterwards.

4 **CDR Denning:** And is that process documented in the – you said process instructions
5 is what you use?

6 **WIT:** Yes, it says we are to contact them. It doesn't necessarily say by phone or email.

7 **CDR Denning:** And that same instruction outlines how they're instructed to notify the
8 Coast Guard, is that correct?

9 **WIT:** Correct.

10 **CDR Denning:** Thank you.

11 **CAPT Neubauer:** Mr. Fawcett.

12 **Mr. Fawcett:** Just a follow up on the process. On the day of that particular survey Mr.
13 Neeson showed you aboard and you were shown to the Chief Engineer's office, is that
14 correct?

15 **WIT:** Yes, that's correct.

16 **Mr. Fawcett:** In your conversation today you said that you were prepared to provide
17 the scope of work that they wanted you to carry out, is that correct?

18 **WIT:** Can you reword that please?

19 **Mr. Fawcett:** Well in other words they sat down and they talked about the items they
20 wanted to credit for, you had a specific scope of work when you began that day,
21 correct?

22 **WIT:** I had the list of what machinery items were coming up due from our system, from
23 our survey manager. So when I went onboard I confirmed with the Chief Engineer and

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1 with Mr. Neeson exactly which items they wanted to go through. I don't recall the exact
2 due dates. There may have been some things that were due within a couple of months
3 that they wanted to do then and there, or there might have been some that they wanted
4 to wait to do. I don't – this report doesn't show the actual original due dates of
5 everything. So that's why we sat down and went through what stuff was coming due
6 and what we were going to try to accomplish.

7 **Mr. Fawcett:** So the original visit was scheduled for earlier in June. Did they discuss
8 with you in the course of that initial conversation or at any time you were aboard the
9 ship that they had conducted a boiler inspection on the 7th of June and discuss with you
10 the findings of that boiler inspection?

11 **WIT:** No, not with me, no.

12 **Mr. Fawcett:** Do you keep personal records or notes of your visit outside any official
13 report? Do you have a green book or a pocket book where you jot down notes as you
14 do your work?

15 **WIT:** I do. I don't use it necessarily always. But I do have notebooks that I use.

16 **Mr. Fawcett:** Did you do that that day?

17 **WIT:** No. I just used the printed out survey manager as basically a check sheet for the
18 items that we were looking through.

19 **Mr. Fawcett:** Do you recall where the emergency fire pump was on the El Faro?

20 **WIT:** I believe it was in cargo hold just forward of the engine room.

21 **Mr. Fawcett:** And just my final question. So if you report to the Chief Engineer a
22 deficiency uncovered during the course of your activities what happens next before you
23 leave the vessel?

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1 **WIT:** It would depend on what it was. But I would contact, again depending on what it
2 actually is I would contact my boss, the senior surveyor in charge of my office or
3 perhaps the divisional survey office for guidance.

4 **Mr. Fawcett:** Would you interact with any other shipboard personnel before you left the
5 ship at the conclusion of your activities aboard?

6 **WIT:** Based on if there was deficiency or just in general?

7 **Mr. Fawcett:** Deficiency.

8 **WIT:** If there was a deficiency I would make sure that the Master is aware.

9 **Mr. Fawcett:** Would you give him written communication?

10 **WIT:** Yes.

11 **Mr. Fawcett:** Thank you, sir.

12 **CAPT Neubauer:** Commander Odom.

13 **CDR Odom:** Mr. LaRose I just have a quick follow up to something that Lieutenant
14 Commander Venturella had talked about. For the condition monitoring third party
15 company, it's my understanding that these are known as a condition monitoring
16 companies and these third party companies are approved to do this by ABS, is that
17 correct?

18 **WIT:** Yes, that's correct.

19 **CDR Odom:** And they're required to take and keep records of annual or semi-annual
20 vibration signatures on the vessel, is that correct?

21 **WIT:** Yeah. Well there's a couple different options in the rules for that, but.

22 **CDR Odom:** It could be quarterly, it could be semi-annual, it could be annually?

23 **WIT:** Correct.

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1 **CDR Odom:** Depending on what ABS approved in their monitoring program?

2 **WIT:** Yes, that's correct.

3 **CDR Odom:** And they would keep those records and provide them at the request of
4 ABS. How often does ABS review those records? Or is it just if the condition
5 monitoring company notices something that is out of range, would they then report it to
6 ABS? And outside of that you guys would never hear from them? Or how does that
7 interaction between the condition monitoring company or between the required
8 surveys?

9 **WIT:** The condition monitoring company is working for the vessel. So unless
10 something came up that would require our attention they would normally just be dealing
11 with the vessel, not with us. We would be reviewing their records when we went
12 onboard.

13 **CDR Odom:** So they're working for the owners or working for the vessel, but they're
14 approved by ABS to perform condition monitoring?

15 **WIT:** That's correct.

16 **CDR Odom:** Okay. Thank you very much.

17 **CAPT Neubauer:** Mr. Roth-Roffy.

18 **Mr. Roth-Roffy:** Good afternoon, sir. Tom Roth-Roffy, NTSB. Just a couple of follow
19 up questions. You mentioned that on the fire pump for example you had an observation
20 of the pump running and you verified operation by referring to a discharge pressure
21 gauge?

22 **WIT:** That's correct.

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1 **Mr. Roth-Roffy:** And I believe you said you did not observe the discharge at a hydrant
2 and performing, a pitot pressure test, is that correct?

3 **WIT:** That's correct.

4 **Mr. Roth-Roffy:** So relying on the discharge pressure gauge how do you – do refer to
5 the calibration of the gauge or how do you know that indication of discharge pressure is
6 correct?

7 **WIT:** Yeah, the gauge was calibrated, so based on that.

8 **Mr. Roth-Roffy:** So you would look at the calibration sticker and verify that it had been
9 recently calibrated?

10 **WIT:** Correct.

11 **Mr. Roth-Roffy:** And going back to the test performed on the emergency generator you
12 said, as I noted you tested a couple of the shut downs for the engine.

13 **WIT:** Yes, that's correct.

14 **Mr. Roth-Roffy:** What guidance do you have regarding the number of tests to be
15 performed on shut downs? If there's more than a couple how many would you test?

16 **WIT:** Depends on what is practicable at the time. If they don't have the, necessarily the
17 equipment to test say low lube oil pressure, I'm not going to make them run the engine
18 with lube oil and I have to test it. So it depends on what we can – what's practicably
19 there that we can actually test.

20 **Mr. Roth-Roffy:** So if they don't have the means to test the level of lube oil pressure it
21 would not be tested by ABS at any time?

22 **WIT:** Normally that would be tested in the shipyard. That's the easiest time to do it.

23 **Mr. Roth-Roffy:** And witnessed by ABS in the shipyard?

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1 **WIT:** Yes, normally, yes.

2 **Mr. Roth-Roffy:** So the, you said you tested a couple of the shutdowns. Is there an
3 indication in your report which shutdowns were tested?

4 **WIT:** No there's not.

5 **Mr. Roth-Roffy:** So at the next survey of the engine the surveyor would not know
6 which ones had been tested and which ones should be tested to kind of test them all
7 over a period of time?

8 **WIT:** The surveyor has the right to test which ever ones he wants. So it wouldn't – in
9 that case it wouldn't matter which ones I tested. He could retest the same ones if he
10 wanted, he could test different ones, it's up to him.

11 **Mr. Roth-Roffy:** Is there any guidance from ABS on how many shutdowns should be
12 tested? I think we've heard it called a sampling of certain observations. How many are
13 you required to test, or is it up to your own discretion?

14 **WIT:** It's up the discretion of the attending surveyor.

15 **Mr. Roth-Roffy:** Thank you. That's all I have.

16 **CAPT Neubauer:** At this time I would like to go to the parties in interest. Tote do you
17 have any question?

18 **Tote Inc:** No questions, sir.

19 **CAPT Neubauer:** ABS?

20 **ABS:** No questions, sir.

21 **CAPT Neubauer:** Mrs. Davidson?

22 **Ms. Davidson:** No questions.

23 **CAPT Neubauer:** Herbert Engineering?

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1 **HEC:** No questions.

2 **CAPT Neubauer:** Does the board have any final questions for Mr. LaRose? Mr.
3 LaRose you are now released as a witness at this Marine Board of Investigation. Thank
4 you for your testimony and cooperation. If I later determine that this board needs
5 additional information from you I will contact you through your counsel. If you have any
6 questions about this investigation you may contact the Marine Board Recorder,
7 Lieutenant Commander Damian Yemma. The hearing will now recess and reconvene
8 at 1:15.

9 *The hearing recessed at 1226, 19 May 2016*

10 *The hearing was called to order at 1317, 19 May 2016*

11 **CAPT Neubauer:** The hearing is now back in session. We will now hear testimony
12 from Ms. Jamie D'Addieco, ABS.

13 **LCDR Yemma:** Ma'am, could you please stand and raise your right hand? A false
14 statement given to an agency of the United States is punishable by a fine and or
15 imprisonment under 18 United State Code Section 1001, knowing this do you solemnly
16 swear that the testimony you're about to give will be the truth, the whole truth and
17 nothing but the truth, so help you God?

18 **WIT:** Yes.

19 **LCDR Yemma:** Please be seated, thank you. Can you please start by stating your full
20 name and spell your last name for the record?

21 **WIT:** Jamie D'Addieco, D-'-A-D-D-I-E-C-O.

22 **LCDR Yemma:** Mr. White?

23 **Counsel:** Jerry White, W-H-I-T-E, Hill Rivkins, LLP.

1 **LCDR Yemma:** Thank you, sir. And ma'am, can you please state where you're
2 currently employed and what your position is?

3 **WIT:** Currently employed in Jacksonville for ABS as a senior surveyor.

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

5 **WIT:** Conduct surveys for new construction after construction as well as vendor
6 equipment.

7 **LCDR Yemma:** Can you also describe some of your prior relevant work experience
8 please?

9 **WIT:** With ABS?

10 **LCDR Yemma:** Please, yes.

11 **WIT:** With ABS, I started with ABS as an engineer in Houston in the SED department
12 for ship's systems and equipment. I was there for 13 months and then I went to Tampa,
13 Florida as a surveyor for after construction, new construction as well as vendor
14 equipment.

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

16 **WIT:** Bachelors in Science and facilities environmental engineering as well as a
17 Bachelors in Science in marine engineering.

18 **LCDR Yemma:** Thank you, ma'am. Lieutenant Commander Venturella will have
19 questions.

20 **LCDR Venturella:** Good afternoon, ma'am.

21 **WIT:** Good afternoon.

22 **LCDR Venturella:** This interview will be broken into two separate lines of questioning.
23 The first line of questioning will explore you general training and experience as a

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1 surveyor for ABS focusing on specific training related to the Coast Guard's alternate
2 compliance program and deep draft steam propulsion vessels like El Faro. The second
3 line of questioning will include questions related to the scope of typical ABS surveys on
4 vessels like El Faro and will specifically examine those surveys you conducted between
5 January 2015 and the El Faro's sinking. If you need a break at any point please let us
6 know. Do you have any questions before we get started?

7 **WIT:** Nope.

8 **LCDR Venturella:** Ma'am, can you please describe the background training and
9 education that you have that prepares you to serve as an ABS surveyor?

10 **WIT:** So as I previously mentioned a Bachelors in Science in marine engineering,
11 Bachelors in Science and facilities environmental engineering. I also completed the FE
12 EIT for general and then I also have a third assistant engineer's license for steam gas
13 turbines and motors.

14 **LCDR Venturella:** What specifically qualifies you to survey steam propulsion vessels
15 like El Faro, were you provided any specific training by ABS on steam propulsion or
16 boilers?

17 **WIT:** Steam propulsion boilers Mass Maritime Academy we take, as Mark previously
18 said, we take classes for steam and gas turbines as well as boilers. I also took a
19 commercial boilers class for the facilities side.

20 **LCDR Venturella:** Have you had any time underway on a steam vessel?

21 **WIT:** With Mass Maritime you have to do three sea terms. All three of those were on a
22 steam plant. A training ship actually.

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1 **LCDR Venturella:** At any time during your tenure with ABS have you ever been
2 simultaneously employed from any marine industry sources outside ABS?

3 **WIT:** No.

4 **LCDR Venturella:** Do you conduct surveys for any other classification societies or
5 conduct private consulting?

6 **WIT:** No private consulting, but ABS may on occasion conduct surveys for another
7 classification society. But that's an agreement that they have.

8 **LCDR Venturella:** Were you provided any specific training by ABS on cargo loading for
9 container ships or roll-on roll-off vessels?

10 **WIT:** So as Mark previously said we get training, we get new hire orientation phase 1,
11 we get new hire orientation phase 3, we get in the field training, specific to cargo loading
12 we're not involved with cargo loading.

13 **LCDR Venturella:** Ma'am, do you consider cargo loading to be part of the operations
14 of a ship?

15 **WIT:** Yes.

16 **LCDR Venturella:** Is operations covered by the international safety management
17 code?

18 **WIT:** ISM focuses on the – so the safety management system that the company would
19 have in place. Yes for operations side.

20 **LCDR Venturella:** So how would you tell if there was a safety issue with the operations
21 of a vessel if you have no training on operations?

22 **ABS:** Commander Venturella are you interested in what specific safety issues she
23 might have training for?

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1 **LCDR Venturella:** How to observe safety issues with the operations of a vessel.

2 **ABS:** Okay. But operations I guess is a pretty broad topic. Can you sort narrow ----

3 **LCDR Venturella:** Cargo loading.

4 **ABS:** What operations you're talking about?

5 **LCDR Venturella:** Cargo loading.

6 **WIT:** That would be more from an auditing standpoint for verifying operations. And if
7 they are conducting operations at the time of an audit onboard that's something that we
8 would observe. For a survey side of it unless we see significant safety risks to
9 personnel we may bring that to the attention of the Captain, but to consider that as a –
10 we're there for survey, we're not there for auditing.

11 **LCDR Venturella:** Is part of your annual hull survey to evaluate the stability instrument
12 onboard?

13 **WIT:** Part of an annual hull survey includes the annual load line survey. We look at the
14 loading, if they have the loading manual, the approved stamped approved loading
15 manual. If they are using a loading program we'll go back and witness test conditions
16 based on what they have in the stamped approved procedure.

17 **LCDR Venturella:** Are you trained to go beyond the initial test conditions to observe an
18 actual loading condition versus the booklet or the stability instrument?

19 **ABS:** Are you asking how the cargo program is tested?

20 **LCDR Venturella:** No, sir. I understand that they evaluate a couple test conditions.
21 I'm asking if we go further than the test conditions to evaluate an actual load condition
22 on occasion.

23 **WIT:** Can you repeat that one more time?

1 **LCDR Venturella:** Perhaps I can be specific. On the El Faro there would have been a
2 CargoMax loading computer that was approved for the stability aspect by ABS. So
3 going aboard the El Faro you would normally test the test cases for the stability
4 instrument. Would you ever also ask the Chief Mate for the printout of his last load case
5 in CargoMax so that he can show you that he runs it in the program?

6 **ABS:** To do what though? Are you looking to verify the drafts? Or what are you
7 looking to verify? You said go further than using the test cases. So to the extent they're
8 going to look at an actual loading, what are you asking with regard to what she's looking
9 at?

10 **LCDR Venturella:** Verify that they're complying with their trim and stability book
11 guidelines.

12 **WIT:** For the El Faro while I was onboard part of it was for the annual hull. But the only
13 part that I was on for the annual hull was just for examination of the spaces. The two
14 number 1 double bottom tanks.

15 **LCDR Venturella:** And it's okay to say no to this, but I'm just asking in general in a
16 general survey do you ever do that, or is that part of your training?

17 **WIT:** We look at the test conditions and make sure that they meet.

18 **LCDR Venturella:** Were you provided specific training by ABS on the alternate
19 compliance program?

20 **WIT:** Yes. And my first introduction with that was in design review for when a vessel is
21 designed to meet the ACP requirements. But also at the same point for NVIC 10-82. In
22 the survey field yes we are trained on ACP and that's followed in the supplement. You
23 can see that at new construction and you can also see that after construction.

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1 **LCDR Venturella:** Are you familiar with the memorandum of understanding between
2 the U.S. Coast Guard and the American Bureau of Shipping concerning delegation of
3 vessel inspections and examinations and tonnage measurement? Have you seen the
4 memorandum? I can refer you to Exhibit 111 if that helps. Exhibit 111 is the January
5 12th, 1995 memorandum of understanding between the Coast Guard and ABS.

6 **ABS:** You want – would you like a certain section reviewed or?

7 **LCDR Venturella:** Yes, I just want to make sure you got there first. But turn to page 5
8 please. Okay, and then on page 5 refer to paragraph 3i. In this paragraph it says in
9 carrying out the delegated functions and services outlined in paragraph 3(a)(1) the ABS
10 will also ensure it's employees engage in the performance of functions delegated under
11 this MOU. Are familiar with and require compliance with applicable laws and
12 regulations and Coast Guard policies, interpretations and instructions provided to the
13 ABS by the Coast Guard. Interpreting and applying those applicable laws and
14 regulations including SOLAS and where authorized other applicable international
15 conventions to which the United States is a party. United States Statutes, Federal
16 Regulations, ABS rules and the U.S. Supplement to the ABS rules. The key I wanted to
17 highlight there is it mentions policies interpretations and instructions provided to the
18 ABS by the Coast Guard. When was the last time you were provided training on any
19 Coast Guard policies by ABS?

20 **WIT:** Our internal process instructions that we have for flag administrations will give us
21 guidance and instructions for how to move forward with certain surveys or any
22 additional requirements that the flag state has put out. Those get updated quite often

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1 and we get updates via email every Thursday for all of the process instructions that are
2 updated.

3 **LCDR Venturella:** Have you noticed after those notifications that any of those policy
4 changes have been incorporated into ABS rules or suggested as a change to the
5 supplement?

6 **ABS:** Are there any specific policy or instructions you're concerned?

7 **LCDR Venturella:** No not exactly. I'm being very general. But anything in the last 5
8 years.

9 **ABS:** So does she know whether the policy changes are incorporated into the process
10 instructions? Is that your question?

11 **LCDR Venturella:** And specifically with the alternate compliance program I'm
12 concerned with either the rules, the supplement. Because those are what we
13 incorporate, right?

14 **ABS:** You know I think we're here to speak to the survey concerning their knowledge of
15 the rules and the supplement. If you're looking for more policy guidance on the
16 memorandum of understanding I think we may need a separate witness. But I'm sure
17 Ms. D'Addieco could address what training she has with regard to ACP, but for her to sit
18 here and describe what policies she's seen over the last 8 years is a little broader than
19 what the subpoena is directed.

20 **LCDR Venturella:** I understand. The question is actually very general in something
21 that she can answer, which supplement is part of her job to know as a surveyor, is that
22 correct? So have you seen any changes to the supplement that you used on vessels
23 like the El Faro?

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1 **WIT:** So with regards to changes in the rules and the ACP supplement, based on
2 testimony from earlier, May of 2011 is the last time the supplement has been updated,
3 correct?

4 **LCDR Venturella:** That's correct.

5 **WIT:** So for any updates to the supplement obviously there hasn't been any since May
6 of 2011. With regards to the rules I don't know if ABS, or if Coast Guard policies get
7 brought into ABS rules. That's not a question I will be able to answer.

8 **LCDR Venturella:** Okay. Thank you, that answers my question. I appreciate it. Have
9 you been trained on the Coast Guard navigation and vessel inspection circular 2-95 with
10 the subject alternate compliance program?

11 **WIT:** You're talking about change 2?

12 **LCDR Venturella:** Yes, change 2.

13 **WIT:** Yes.

14 **LCDR Venturella:** And it's Exhibit 82 if that helps if you need to look at it.

15 **CAPT Neubauer:** Lieutenant Commander Venturella can you bring the microphone up
16 closer?

17 **WIT:** I have read this publication. I've also read the NVIC 10-82 as well.

18 **LCDR Venturella:** Are you familiar with the authorized classification society
19 responsibility to notify the local Officer in Charge Marine Inspection whenever a
20 certificate is recommended for revocation or withdraw?

21 **ABS:** Is there a specific reference in the NVIC you're referring to?

22 **LCDR Venturella:** Yes. If you would like to see it in the NVIC it's page 21 and 2.6
23 notification requirements.

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1 **WIT:** So whenever I'm onboard a vessel and I see an issue that affects a statutory
2 certificate, if in my judgement I think that it needs to be repaired right away or the
3 severity of which it can affect the vessel I do – I contact one of the local Coast Guard
4 first to give them a heads up. And then once I have a repair plan from the owners rep I
5 proceed to contact the Coast Guard via email formally to ask for issuance of a short
6 term certificate if they so grant it. I have not had a need to revoke a certificate. We just
7 – we look at other means of maintaining what they have and proceeding further with a
8 short term.

9 **LCDR Venturella:** Is this practice encourage by the training of ABS surveyors?

10 **WIT:** Which practice?

11 **LCDR Venturella:** The practice of following NVIC 2-95 and directly communicating with
12 the OCMI?

13 **WIT:** Yes.

14 **LCDR Venturella:** For these recommendations?

15 **WIT:** Yes.

16 **LCDR Venturella:** Satisfactory. Overall do feel that the ABS surveyor training program
17 is preparing you for conducting alternate compliance program surveys on the Coast
18 Guard's behalf?

19 **WIT:** Yes.

20 **LCDR Venturella:** That's all I have for the first line of questioning. Pass it back to
21 Captain Neubauer.

22 **CAPT Neubauer:** Commander Odom.

23 **CDR Odom:** Just for clarification you said on Thursday's or you get emails for -----

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1 **WIT:** We get emails every Thursday's with regard to update to process instructions.

2 **CDR Odom:** Okay, thank you. So for process instructions, and those could or could
3 not include policy changes that the Coast Guard has had. How do you consolidate
4 those over the years? I mean you have to get a lot of these emails. How are they –
5 how do you ensure that you keep up with them and follow them and ensure they're
6 applied as they age and time goes by? Do they get folded into policy or something with
7 ABS? Do you understand what I'm trying to say? I mean how do you keep up with the,
8 there's so many of them?

9 **WIT:** The process instructions is what we go back to and those are the ones that get
10 updated.

11 **CDR Odom:** Okay.

12 **WIT:** We will review those before we conduct a survey.

13 **CDR Odom:** So each one you get on Thursday is an update to the previous one? It
14 just kind of builds on each other?

15 **WIT:** So the process instruction doesn't change, they add to it or they revise it or
16 modify as deemed necessary.

17 **CDR Odom:** Okay, understand. Thank you very much.

18 **ABS:** And Ms. D'Addieco the process instructions are maintained on a computer data
19 base, correct?

20 **WIT:** Yes.

21 **ABS:** And you access them through your individual computer?

22 **WIT:** Yes.

1 **CAPT Neubauer:** Go to the parties in interest at this time. Tote do you have any
2 questions?

3 **Tote Inc:** No questions, sir.

4 **CAPT Neubauer:** ABS?

5 **ABS:** No questions, sir.

6 **CAPT Neubauer:** Mrs. Davidson?

7 **Ms. Davidson:** No questions.

8 **CAPT Neubauer:** And Herbert Engineering?

9 **HEC:** No questions.

10 **CAPT Neubauer:** At this time we'll transition into the questions more directed at the
11 last El Faro survey. Lieutenant Commander Venturella.

12 **LCDR Venturella:** As discuss for the second line of questioning we're going to have a
13 little bit of discussion about general scope of ABS surveys, but mostly talk about your
14 specific surveys you did since January 2015 on the El Faro. One thing we didn't get
15 from the last testimony, who is your principal surveyor in this area?

16 **WIT:** Mike Mllar.

17 **LCDR Venturella:** How does a vessel modification like conversion from container load
18 on load off vessel to load on load off only or RO-RO only get handled from a survey
19 standpoint? Does one surveyor manage the entire modification and act as a project
20 manager?

21 **ABS:** Is this question directed in connection with a particular vessel? As you can
22 appreciate each vessel and each project has different oversight and involves different
23 surveyors. She was not involved with any modification or conversion of the El Faro.

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1 **LCDR Venturella:** Right. This is a still a general question, not specific to any of her
2 surveys. But just going off of her training and experience how, we're looking for her
3 opinion or knowledge about the way ABS manages projects like that. So in the case of
4 the El Faro it was undergoing a modification. It was being modified from container and
5 RO-RO carriage to RO-RO only.

6 **CAPT Neubauer:** Ms. D'Addieco I want to also clarify. If your answer is you're not the
7 best person to answer that or you don't have knowledge of it that's a perfectly
8 acceptable answer.

9 **WIT:** In an ideal situation for major modification and new construction there's one
10 person assigned to the vessel who would be the lead. That's for an ideal situation that's
11 in a shipyard though. That's not conducted during voyages. Does that?

12 **LCDR Venturella:** Yes, that's a good answer. So once again a general question. In
13 the case of a modification of a vessel, any modification that involves multiple plans,
14 electrical, structural, stability, so forth, how does the surveyor ensure that all plans that
15 are required have been reviewed and approved when they're supervising the
16 modification surveys?

17 **WIT:** For the modification side, I can tell you how we do it for new construction, I don't
18 know if that might help you.

19 **LCDR Venturella:** It may.

20 **WIT:** But I don't – I haven't seen major modifications. I've seen small modification, but
21 nothing major where maybe a mid-body section has been added or anything like that.
22 For new construction the drawings are monitored by engineering. Prior to delivery of
23 the vessel we have to ask for pre-delivery check sheet. They go back through and

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1 verify that all drawings have been submitted and approved. And if anything is
2 outstanding they indicate it on that and they inform the owner's rep or the shipyard for
3 whoever's the contact for the contract.

4 **LCDR Venturella:** That does help, thank you. I would like to bring Exhibit 201 up on
5 the screen Damian. Exhibit 201 has 2 pages and it includes pictures of the hold 3
6 exhaust ventilations on the starboard side of the El Yunque, not the El Faro. These
7 pictures were taken during attendance to El Yunque by ABS and the Coast Guard
8 during the first week of February 2016. The – I'll wait for it to come up. Okay. On the
9 first page you see 2 pictures. There's – the top picture on page 1 is just showing what
10 the exhaust ventilation trunk looks like from the outside. And then the picture on the
11 bottom is actually a picture of some wastage and holes in the baffle plate internal to that
12 exhaust ventilation trunk. And then we can go ahead and go to page 2 Damian. On
13 page 2 we have the exhaust ventilation trunks, a large opening around a longitudinal
14 that was just at the top of the opening from the hull. Did you see this issue on the El
15 Yunque?

16 **WIT:** Yes.

17 **ABS:** What issue?

18 **LCDR Venturella:** The issues in the pictures.

19 **WIT:** Yes.

20 **LCDR Venturella:** What is the purpose, to your knowledge of that inner enclosure in
21 the baffle plate that are in compromise there?

22 **WIT:** Can you repeat that?

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1 **LCDR Venturella:** The baffle plate that we showed corroded with some holes, what
2 would be the purpose of that baffle plate?

3 **WIT:** To the point of carryover for Load Line Convention. Is that what you're referring
4 to?

5 **LCDR Venturella:** Just general for the public's knowledge. What is the purpose of the
6 baffle plate inside that ventilation trunk?

7 **WIT:** So for Load Line Convention to meet the ventilator requirements they have to
8 have a certain point of carryover. The baffle plate is, for the general public, the way that
9 the ship's designed is it's almost like a trunk within a trunk. So the inner trunk is
10 connected to the side shell where there's an opening to allow air to get down to the
11 cargo hold. It comes in through the side shell, travels up, goes over the baffle plate and
12 down into the cargo hold.

13 **LCDR Venturella:** Was the condition seen here systemic for the ventilation trunks
14 aboard El Faro and El Yunque?

15 **WIT:** I can't comment on the El Faro. All we can go off is what we see on the El
16 Yunque, for the condition.

17 **LCDR Venturella:** Was this issue seen beyond just the one ventilation trunk we saw
18 here?

19 **ABS:** This is the only photo we have. Do you have any photos with any other
20 conditions?

21 **LCDR Venturella:** I do not. This is the only one that the Coast Guard saw.

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1 **WIT:** So after this was discovered we looked at the port side as well and then we
2 sampled other trunks to verify that it was in good condition. This one that you have
3 pictures of is the only one that was found in this condition with regards to the corrosion.

4 **LCDR Venturella:** Okay. Can you turn your attention to Exhibit 200? And within
5 Exhibit 200 page 154. Exhibit 200 is the 2015 ABS rules for survey after construction.
6 That would have applied to the surveys of El Faro.

7 **ABS:** Is there a question?

8 **LCDR Venturella:** Yes, I'm just getting to the page myself, I apologize. On page 154
9 there is 1.1.9K which is the closing arrangements dated 1 July 2004. Do you see that?
10 This talks about a portion of the annual machinery survey that requires examination of
11 the closing arrangements of openings and funnel sky lights, ventilators, doorways and
12 tunnels. Ventilator ducts are to be opened to verify satisfactory condition and operation
13 of dampers. Does ABS on vessels like the El Faro and the El Yunque open the
14 internals of these ventilation trunks and related fire dampers to survey them?

15 **WIT:** Yes.

16 **LCDR Venturella:** To your recollection were the fire dampers on El Faro watertight or
17 weathertight?

18 **WIT:** I wasn't on the El Faro for annual machinery.

19 **LCDR Venturella:** Okay. On the El Yunque do you recall?

20 **WIT:** The El Yunque I was only called out for the damage repair.

21 **LCDR Venturella:** Okay. Are you aware if El Faro had any ventilation failure alarms?
22 Is that something you would be aware of?

23 **WIT:** I wouldn't know.

1 **LCDR Venturella:** Okay. Did you ever have any experience testing El Faro's bilge
2 alarms?

3 **WIT:** I wasn't on the El Faro for the annual machinery.

4 **LCDR Venturella:** Okay. Are you aware of any ABS policies to enable a surveyor to
5 set a timeline for a condition of Class of an extended period like beyond a month, two
6 months? Is there any policy on the amount of time that you can extend a condition of
7 Class out?

8 **WIT:** To extend a condition of Class there – I believe you have to go the ACS office for
9 authorization to extend an existing outstanding.

10 **LCDR Venturella:** Okay. I probably used the wrong word. What I mean is when you
11 initially issue a condition of class, if you want to issue it to go to the next dry dock or
12 something like that, would that be something the surveyor could determine on their
13 own?

14 **ABS:** Are you asking what time frame is incorporated with condition of Class to effect a
15 repair?

16 **LCDR Venturella:** That's correct. I'm just trying to understand how timelines like that
17 are set and if there are when it's you have to call somebody.

18 **ABS:** And who decides the time frame?

19 **LCDR Venturella:** Yes.

20 **WIT:** It's at the discretion of the attending surveyor depending on the severity and what
21 the item is that's found to be deficient. So to give you an example if we found an area
22 of substantial corrosion that would be listed as an outstanding going at every annual
23 until it meets the wastage requirement. If we found an area that was holed, depending

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1 on the location, depending on the size of the area that is wastage or holed would
2 determine whether something is prompt and thorough or would determine if it needed to
3 be repaired right away or if it could go to the next dry docking. It's a case by case basis.

4 **LCDR Venturella:** Thank you. Now we're going to start going through the surveys you
5 actually did conduct. Please turn your attention to Exhibit 177 page 1. Page 1 of
6 Exhibit 177 is the ABS Class survey report for the 27 January 2015 annual hull survey
7 for specifically number 1 port and starboard double bottom ballast tank survey. Can you
8 please explain why the number 1 port and starboard double bottom ballast tanks were
9 required to be internally examined?

10 **WIT:** So we were contacted by the owner's rep to come out and examine the number 1
11 port and starboard double bottom ballast tanks as a requirement of the annual hull
12 survey based on the coating condition of the ballast tank. And if you look in seal vessel
13 rules under the annuals you'll see that we have certain requirements for the age of the
14 vessel and the coating condition. So for this particular vessel because it's listed as poor
15 coating condition gets examined every annual survey. So for them to get credit for their
16 annual these have to be examined.

17 **LCDR Venturella:** Were any other ballast tanks required to be examined for the same
18 reason?

19 **WIT:** There could have been. I would have to go back and look at the survey status to
20 see what the other ballast tanks were indicated for coatings.

21 **LCDR Venturella:** On page 2 of this exhibit, the second page of your survey it
22 mentions some checklist items to complete the annual hull survey for. It mentions
23 specifically 30, 31, 32 and 76. Now please go to page 6. On page 6 several of these

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1 items are there. Some of the items are on page 11 as well. But they remain unchecked
2 and I'm just trying to understand that. Can you help us?

3 **WIT:** So there may have been more ballast tanks that needed to be examined. And if
4 there is more that needs to be examined as Mark previously said similar to the pipes
5 and the piping, if not all of them are examined we will not mark off on the checklist.

6 **LCDR Venturella:** Okay. Can you describe the condition of the tanks that you did
7 survey including any findings related to weld and structure?

8 **WIT:** So ----

9 **ABS:** On this report?

10 **LCDR Venturella:** Yes. If it would help you could go back to the beginning of the
11 report where the narrative is.

12 **WIT:** So when I attended the vessel we had to go through the number 1 port and
13 starboard double bottom ballast tank. The Chief Engineer went with me and we started
14 on the number 1 starboard forward side working our way aft inside the tank in a zig zag
15 pattern because there was a non-tight longitudinal bulkhead. We're looking for anything
16 – any indentations, any deflection, any set ins, any areas of isolated pitting, any holes,
17 any knife edges on steel structure. We're looking for stuff like that when we're going
18 through the ballast tank. In the number 1 starboard I didn't see anything that wouldn't
19 have met the requirements for crediting of the annuals. So when we got out of the tank
20 we got on the aft side and came out the aft manhole. Then we went into the port one
21 through the aft end, same thing working our way through a zig zag pattern through the
22 tank. While inside the port ballast tank frame 51 and 50 we noted where the fillet weld
23 detachments to the tank top for the frame had fractured, meaning the frame detached. I

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1 wrote it up because it obviously it needs to be repaired. To be repaired at this moment
2 wasn't considered necessary since there was no means of propagation for these areas.
3 And to define why I didn't think that it needed to be repaired for the propagation, on the
4 side shell where the frame attaches that tank top there's a rat hole. Going inboard
5 along the tank top there's a longitudinal butt seam during the construction so it would
6 have had another rat hole right in the way of that one. And that was over a 2 foot span.
7 That entire weld was detached. The two – the forward and aft side fillet welds were
8 both fractured leaving the frame detached. So I didn't see a need to do a permanent
9 repair at the time.

10 **LCDR Venturella:** And is it correct that it was due by the special periodical survey hull
11 8 on 26 February 2016?

12 **WIT:** Yes.

13 **LCDR Venturella:** So would it be correct to say those fractured welds weren't
14 repaired?

15 **WIT:** They were not repaired.

16 **LCDR Venturella:** Please turn your attention to page 12 of Exhibit 177.

17 **ABS:** Just as a point of clarification if I may. Ms. D'Addieco could you explain where
18 their fillet weld is in relation to the tank top and the shell?

19 **WIT:** So the fillet weld was the frame connection to the tank top. Starting at the side
20 shell traveling inboard to the rat hole where they had the longitudinal butt seam where it
21 has another rat hole.

22 **LCDR Venturella:** If you could turn to page 12 of the Exhibit 177? Page 12 includes
23 the ABS Class survey report for a 10 March 2015 survey for compliance Class repair.

1 Can you provide just brief detail on your survey on the starboard steering gear pump
2 repairs and if you have confidence that the problem was fully repaired?

3 **WIT:** So we were contacted by the vessel rep that the, well it was reported by the Chief
4 Engineer that they were overshooting in follow up mode for the steering gear. They
5 brought a technician on, trouble shoot, they discovered that the potentiometer needed
6 to be replaced. After they replaced the potentiometer they fixed it, they provided us the
7 technician report and we proceeded to test the steering gear at every location on each
8 pump. At that time it was considered satisfactory.

9 **LCDR Venturella:** Do you have a high level of confidence in the repair being a good
10 one? Yes?

11 **WIT:** Yes.

12 **LCDR Venturella:** If you could turn to page 20 of the Exhibit. Page 20 is an ABS Class
13 survey report for the 14 April 2015 repair survey Class that you conducted. Can you ----

14 **WIT:** So this one was also reported by the Port Engineer that they had found holes and
15 wastage in the forepeak space. When I went out there to examine it we determined the
16 area that was going to be inserted. I didn't see a need to take any gauging, the pitting
17 and the holes were isolated. So the area which we identified as to be inserted it was
18 going to crop out those areas. So they proceeded to crop out and renew the deck. At
19 that point they had a repair company come onboard to conduct those repairs that did –
20 they had all ABS welding – approved welding procedures, welder certifications and
21 material certs. Examined the repair, looked at the welding, I was satisfied with it. We
22 didn't do any testing on it because it's a non-tight deck. So it's not watertight, there's no
23 requirement to do testing on it.

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1 **LCDR Venturella:** Just for clarification, because I was not sure about that myself,
2 that's good information is the non-tight deck. So it was not the forepeak tank overhead,
3 it was the deck above the Boatswain's store, is that correct?

4 **WIT:** Yes. The ladder came up and the ladder, the opening that they had for ladder
5 well was flush with the deck. So they had a hatch right there that came up and that was
6 flush mounted with the deck.

7 **LCDR Venturella:** Are you aware of how long the deck was in that condition?

8 **WIT:** I am not.

9 **LCDR Venturella:** Was this something you would consider normal wear and tear for a
10 ship of this age?

11 **WIT:** I can't attest to whether this is normal wear and tear based on the age of the
12 vessel. At the time of our survey the repairs were to the satisfaction of Class.

13 **LCDR Venturella:** Did you feel in general that the crew and company were adequately
14 addressing it?

15 **WIT:** The fact that they notified us outside of an actual attendance for annuals or
16 anything like that, they were taking the necessary steps to correct the situation.

17 **LCDR Venturella:** Okay, thank you. Please turn your attention to Exhibit 55. Exhibit
18 55 is an email from Chief Engineer Pusatere to several Tote Services and Sea Star Line
19 shore side employees regarding the need to carry out repairs on a superheated steam
20 line and the port boiler economizer between August 24th and 25th 2015. This email was
21 sent on August 23rd at 1754. Please take a moment to read this if you haven't seen it
22 before.

23 **WIT:** Okay.

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1 **LCDR Venturella:** Okay, thank you. Were you or anyone from ABS notified of these
2 repairs so you could attend on August 24th and 25th?

3 **WIT:** We were notified of the economizer.

4 **LCDR Venturella:** I will get to your survey of the economizer which was on the 8th of
5 September. But were you notified for the August 24th and 25th repairs?

6 **WIT:** At this time I can't remember when they made the request.

7 **LCDR Venturella:** Would ABS normally require or expect notification for repairs like
8 this in a timely manner?

9 **WIT:** During our annual hull and our annual machinery survey there's a first line item in
10 all of our checklist that we are to be notified of any failures, deteriorations, repairs,
11 temporary repairs that have been conducted.

12 **LCDR Venturella:** You did not attend the vessel for these repairs until September 8th
13 as we said. Is it unusual for a vessel to sail for a couple of weeks with repairs to a boiler
14 and a steam line that have not been surveyed or tested?

15 **ABS:** For the sake of the record at some point we'll locate the emails but we did
16 receive notification of the repairs to the port boiler economizer coincident to with our
17 attendance. But again the super heater steam line repair was not subject to notification
18 to ABS.

19 **LCDR Venturella:** Thank you. Please turn your attention to Exhibit 62. Exhibit 62 is
20 an ABS Class survey report for repair survey Class boiler economizer tube leak dated 8
21 September 2015. Your survey report indicates that you witnessed repair and testing for
22 the starboard boiler economizer. Was it actually the port economizer you surveyed?

23 **WIT:** It was the port. I got turned backwards heading down to the engine room.

1 **LCDR Venturella:** Thank you. Can you please explain the method of repair testing
2 and the results of the post repair testing that you saw on your survey that day?

3 **WIT:** They contacted us for attendance. I do believe it was a week prior that we were
4 contacted, I can't recall why we weren't able to make it out at that time. But they had
5 sailed on the repair for a week. By the time we got out there we witnessed that they
6 had jumped 7 of the economizer tubes and they, during the attendance we went down
7 through the house into the upper part of the engine room just above the second deck.
8 Back between the two boilers they dropped one of the panel off the back – they dropped
9 a panel off of the port boiler so we could examine these tubes. When I examined them I
10 didn't see any rework that needed to be done. I didn't see any signs of undercut
11 porosity, any pin holes anything like that. The tubes were also not leaking and they
12 were tested at 800 psi which were able to verify on two separate gauges. At that time
13 we considered the repairs to be satisfactory.

14 **LCDR Venturella:** Is it standard practice for ABS to allow jumpers on something like
15 the economizer? And is there a limit to the amount of tubes that can be jumped?

16 **WIT:** So the economizer as you know is only there to improve efficiency of a plant.
17 They could bypass it and still run. To the number of jumpers that they wanted to put
18 into it, being able that they can bypass it.

19 **LCDR Venturella:** I understand, thank you. Am I correct in saying that you were not
20 made aware of the repairs to the superheated steam line even during that attendance?

21 **WIT:** We were not, no.

22 **LCDR Venturella:** Can you turn your attention to Exhibit 114? Exhibit 114 is the
23 specification and boiler data from El Faro's Babcock and Wilcox's boiler. This

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1 document shows the economizer design pressure is 1200 psi. And the economizer
2 hydrostatic test pressure is 1815 psi. Would you have been confident in these repairs
3 without a pressure test?

4 **ABS:** Ms. D'Addieco has pointed out or asked a question, the steam ship Kainoku
5 that's listed on the exhibit, could you describe what relation if any that has to the El
6 Faro?

7 **LCDR Venturella:** This was part of the boiler manual that was provided as part of the
8 investigation. It was just an excerpt from it. So this is apparently El Faro's manual.

9 **ABS:** Is your question whether or not she saw this or?

10 **LCDR Venturella:** No. I'm just – I just wanted to reference it in terms of this is what we
11 were provided as the specification for that boiler. So despite there being a different
12 name sketched happening the top, I do see that. I assume it's the same boiler. Is that
13 – do you have a difference of opinion on the design pressure or the hydrostatic design
14 pressures?

15 **ABS:** Ms. D'Addieco hasn't seen the exhibit.

16 **LCDR Venturella:** Okay.

17 **ABS:** I don't think she saw it. You can ask her when she was aboard. So when you
18 ask her whether or not she disagrees with the design pressures it's difficult for her to
19 answer because she didn't see the exhibit, it wasn't presented to her while she was
20 aboard.

21 **LCDR Venturella:** Okay. I can work without the exhibit. Would you have been
22 confident in the repairs to the economizer without pressure testing it?

23 **WIT:** We pressure tested it to 800 psi.

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1 **LCDR Venturella:** Right. And I understand that. But you felt the need to pressure test
2 it to verify the repairs?

3 **WIT:** Given that it was a pipping system and it's subjected to a test – that it's subjected
4 to pressure, then yes they should test it to verify that welds are sound.

5 **LCDR Venturella:** What would be the normal ABS standard hydrostatic test for
6 certification of boilers, not for in service but certification of boilers in terms of maximal
7 allowable working pressure of the boiler?

8 **ABS:** She would like to refer to the rules for that. Are you referring to new installations
9 or?

10 **LCDR Venturella:** Yes, new installations of boilers.

11 **ABS:** You want her to refer to the rules?

12 **LCDR Venturella:** If she needs to I guess. I mean do you know that off the top of your
13 head?

14 **WIT:** I don't know that off the top of my head. I haven't been involved with any new
15 construction boiler surveys.

16 **LCDR Venturella:** Okay.

17 **WIT:** Or any vendor boilers.

18 **LCDR Venturella:** Well have you been involved in any other hydrostatic tests of boilers
19 in service or?

20 **WIT:** No.

21 **LCDR Venturella:** Okay. Was this the first time that you pressure tested anything in a
22 boiler?

23 **WIT:** Yes.

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1 **LCDR Venturella:** Okay. So do you have the, we heard in previous testimony that you
2 need two repetitions of each task to get certified to survey something. Did you have two
3 repetitions of the necessary tasks for boilers?

4 **WIT:** For repair surveys. Because this isn't a boiler survey. This was a repair survey.

5 **LCDR Venturella:** Okay. So you don't – so ABS doesn't consider the economizer part
6 of the boiler, is that correct?

7 **ABS:** I think the clarification was that the task was a repair survey, it wasn't a boiler
8 survey. So in response to your question whether she had two opportunities to fulfill a
9 requirement on a checklist, her correction was this was a damage survey or a repair
10 survey.

11 **LCDR Venturella:** Okay.

12 **CAPT Neubauer:** I have a follow up question on that. Is the – this survey task that
13 we're referring to is it specific to a boiler repair survey?

14 **WIT:** So the task is just repair. Repair surveys from piping to machinery to structure it's
15 the same survey task.

16 **CAPT Neubauer:** So theoretically you could be onboard to repair, oversee the repair of
17 a boiler but never had seen a repair to another boiler previously? I can re-ask that.

18 Prior to this repair on the boiler had you ever done a boiler repair under instruction?

19 **WIT:** Prior to this I attended one other vessel and that was to witness superheated
20 tubes that had been plugged.

21 **CAPT Neubauer:** Did that involved a hydrostatic test?

22 **WIT:** Not when you're plugging tubes.

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1 **LCDR Venturella:** If you can't answer any of these questions that's okay, I understand
2 now the situation. But are you aware of any in service hydrostatic test requirements for
3 boilers that ABS uses?

4 **WIT:** I would have to go back and look at rule requirements or internal process
5 instructions and see what guidance is provided.

6 **LCDR Venturella:** So how did you determine personally that an operational test at 800
7 pounds would be sufficient for this economizer?

8 **WIT:** Since they had sailed on it for a week already at whatever their operating
9 conditions were, they didn't indicate any signs of leakage or anything else. I considered
10 800 to be satisfactory at the time of my survey.

11 **LCDR Venturella:** And I know you haven't had a chance to verify it, but if the
12 specification and boiler data is correct then the design pressure or maximal allowable
13 working pressure is 1200 pounds, would ABS normally accept a hydrostatic test under a
14 maximal allowable working pressure?

15 **WIT:** Can you repeat the question again?

16 **LCDR Venturella:** For boiler repairs or economizer repairs as part of the boiler system
17 what does ABS accept for after repair hydrostatic test? Specifically with regard to the
18 maximal allowable working pressure.

19 **ABS:** Can we refer to the rules with regard to the test?

20 **LCDR Venturella:** I don't have it as an exhibit. But if there's a way we can do that.

21 **CAPT Neubauer:** I recommend we take a brief recess. The hearing will recess and
22 reconvene at 2:25.

23

1 *The hearing recessed at 1415, 19 May 2016*

2 *The hearing was called to order at 1426, 19 May 2016*

3 **CAPT Neubauer:** The hearing is now back in session. Lieutenant Commander
4 Venturella will continue with the line of questioning.

5 **LCDR Venturella:** Thank you Captain. I would just like to go back to the hydrostatic
6 test discussion. Did you have a chance to look up the ABS hydrostatic test
7 requirements?

8 **WIT:** I did. And in Part 7, Chapter 7, Section 1, number 9 it talks about hydrostatic
9 testing. And going back on this it talks about after repairs and or modification to
10 pressurized parts or when considered necessary by the surveyor the boilers and super
11 heaters are to be subjected to a hydrostatic test pressure. So that test pressure can be
12 at the discretion of the attending surveyor. Given that they had operated the vessel for
13 a week after the repairs had been conducted, 800 was considered satisfactory.

14 **LCDR Venturella:** Are you aware of the Coast Guard regulation for hydrostatic testing
15 at 1.5 times the maximal allowable working pressure after extensive repairs?

16 **WIT:** I am. But the ACP supplement would take precedence. The C.F.R's ----

17 **LCDR Venturella:** Yes.

18 **WIT:** Wouldn't be applicable in this case.

19 **LCDR Venturella:** In determining that 800 psi operational test would be sufficient were
20 there any factors that may have made that more acceptable to the crew than a
21 hydrostatic test above maximal working pressure? What would be impacted if you
22 required a hydrostatic test above maximal allowable working pressure?

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1 **ABS:** Could you rephrase the question as to what pressure you wanted the test to be
2 performed at and why?

3 **CAPT Neubauer:** Yes, sir. Did the hydrostatic level, was that recommended by the
4 crew to you or did you recommend that level?

5 **WIT:** That was the pressure that they had on it at the time of the attendance.

6 **CAPT Neubauer:** Did you request a higher pressure?

7 **WIT:** I didn't see a higher pressure as being necessary.

8 **CAPT Neubauer:** Were there any discussions before you made that decision with the
9 Chief Engineer or any of the engineer's?

10 **WIT:** No.

11 **LCDR Venturella:** If you had required a hydrostatic test above maximal allowable
12 working pressure would it require a slowdown in operations for the vessel?

13 **ABS:** When it was alongside the dock?

14 **LCDR Venturella:** Yes. Like would you have had to held up the vessel, hold up the
15 vessel to conduct a hydrostatic test above maximal allowable working pressure?

16 **WIT:** Given the age of the vessel and for a boiler that had been in service this long,
17 going above the operating pressure may not be a safe way of testing it.

18 **LCDR Venturella:** Thank you for that. But if you did believe that a hydrostatic test at
19 the maximal allowable working pressure or above was necessary, would that have the
20 potential to slow down the vessel's schedule?

21 **WIT:** I don't know.

22 **LCDR Venturella:** Did you have any pressures related to your own schedule, other
23 surveys that you had to do or fatigue setting in, anything like that?

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1 **WIT:** No.

2 **LCDR Venturella:** How many surveys had you completed that day before this?

3 **WIT:** I wouldn't be able to tell you that off hand.

4 **LCDR Venturella:** Were you informed by the crew of any other boiler or steam issues
5 such as steam line or hangers or anything?

6 **WIT:** They did not bring anything to my attention while I was onboard.

7 **LCDR Venturella:** What was your impression of the crew's overall competence in the
8 maintenance of the plant that you did see?

9 **WIT:** For the limited areas that I did see the plant was clean. The crew seemed happy.
10 I didn't get any complaints.

11 **LCDR Venturella:** Going back to an earlier discussion we did briefly talk about when
12 ABS was notified prior to this survey about the tube leaks. Were you able to locate that,
13 sir?

14 **ABS:** No I haven't. We'll submit those at another time.

15 **LCDR Venturella:** We would like to get that. Also I want to revisit one more issue.
16 When we spoke of the ventilation trunk issue with the longitudinal stiffener gaps and the
17 corrosion in the baffle plate, you mention specifically when you entered the other
18 ventilation trunks that you didn't see the corrosion issue any more. Did you see the
19 openings around the longitudinal?

20 **ABS:** Again we're on the El Yunque not the El Faro.

21 **LCDR Venturella:** That's correct, sir.

22 **ABS:** Okay.

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1 **WIT:** So the same trunk on the port side it didn't have the corrosion issues, but the side
2 shell longitudinal that went through the baffle, the opening it did have the openings. I
3 should add that we did attend after the U.S. Coast Guard travelers had identified this.
4 And the company made permanent repairs prior to leaving. So they took necessary
5 steps to correct the situation once it was identified.

6 **LCDR Venturella:** Can you tell us how many of the ventilation trunks were impacted by
7 that issue?

8 **WIT:** Those were the only two of that design. The rest of them were right up along the
9 side shell. And the way that they carried over it was up against the side shell as well.
10 So it wasn't the same trunk within a trunk.

11 **LCDR Venturella:** So to clarify was it just the 3 hold exhaust port and starboard?

12 **WIT:** Yes.

13 **LCDR Venturella:** Okay. And do you know or know of a surveyor that would have
14 surveyed the same ventilation trunks on the El Faro?

15 **WIT:** I don't know that off the top of my head.

16 **LCDR Venturella:** Okay. That's the end of my questions.

17 **CAPT Neubauer:** Commander Odom.

18 **CDR Odom:** Thank you. Sticking with the ventilation trunks real quick can you just tell
19 us on the number 3 ventilation trunks what the result of a failure of those trunks would
20 be? Is there – they supply air, they're exhaust. So if the integrity was compromised
21 what would be the result of that? Could it cause downflooding in the vessel?

22 **WIT:** I wouldn't be able to give you a definite answer on that without looking at that
23 further. To where the opening is in relation to the load line, to the water line, to where

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1 the failure would be indicated, whether that's an inboard or whether it's inside the inner
2 trunk. I wouldn't be able to give you a definite answer on that.

3 **CDR Odom:** Would you say it compromises the watertight integrity in the vessel in any
4 way?

5 **WIT:** It would not meet the Load Line Convention.

6 **CDR Odom:** Thank you. Going back to your statements on the board condition
7 determination on some of the tanks. What constitutes that determination? What
8 triggers that determination?

9 **WIT:** So we're back on the El Faro with the number 1 port and starboard double bottom
10 ballast tank?

11 **CDR Odom:** Yes, Ma'am.

12 **WIT:** So the coating condition is based on the failure of the paint coating on the steel.
13 And we have guidance to determine the extent of which we downgrade from good, to
14 fair to poor.

15 **CDR Odom:** Thank you. So the El Faro was poor. And what other, other than outside
16 of doing an annual look at the tanks is there any other mitigating measures that Tote or
17 ABS require to help slow the condition of the coating?

18 **ABS:** Just as a point of clarification Ms. D'Addieco could you explain the difference
19 between a coating or the coating of -----

20 **CDR Odom:** It's not the steel, I understand that. It's the coating.

21 **ABS:** The paint that's applied --- and what if any relationship that has to corrosion or
22 wastage.

23 **CAPT Neubauer:** That question talked over. Can you ask it again Mr. White?

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1 **ABS:** When a tank coating is designated as poor does that – what does that mean?

2 **WIT:** So for the downgrading and the coating condition, obviously if you have a good
3 coating condition all surfaces in the tank are still coated most of the time. When you
4 have – there's a certain percentage of breakdown, it goes to fair which leaves exposed
5 steel in the ballast tank. When you go down to poor you have more steel that is
6 subjected to corrosion based on saltwater inside the tank. Back to the question that you
7 had. I know in previous discussions with the NTSB Tote had mentioned that they were
8 not using saltwater ballast in those tanks. I can't comment exactly what it is that they
9 are using in the tanks, but I'm sure a Tote representative might be able to answer that
10 for you.

11 **CDR Odom:** Thank you. But there's nothing that ABS requires ----

12 **WIT:** No.

13 **CDR Odom:** For the coating of the tanks to repair the coating of the tanks. Not
14 necessarily that's regulated?

15 **WIT:** We cannot enforce a client to repair the coating in the tanks. All we can do is
16 enforce the requirements of the rules for the examination at annual surveys.

17 **CDR Odom:** Thank you. Since ABS does not require any type of narrative in your
18 reports or anything like that, you had talked about requiring on the spot repairs of
19 certain items. How do you document that if you find something and an on the spot
20 repair occurs, is there a requirement to write a condition to class or a finding or an
21 observation of some type to document that?

22 **WIT:** You say on the spot repair. Are you talking about prompt and thorough repairs?

23 **CDR Odom:** Yes, any repair that you find.

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1 **WIT:** We do a narrative. We will indicate it as an outstanding recommendation. And if
2 they do permanent repairs at that time it will be closed out in the same report.

3 **CDR Odom:** Okay, thank you. So it does get documented?

4 **WIT:** Yes.

5 **CDR Odom:** That something occurred.

6 **WIT:** Correct.

7 **CDR Odom:** Thank you. And also when you were talking to Lieutenant Commander
8 Venturella you had stated, you talked a little bit about the scope of your survey and
9 things being beyond the scope of your survey. As a representative of the Coast Guard
10 onboard a vessel that's under the alternate compliance program do you generally do an
11 overall assessment of the general condition of the vessel beyond the requirement of the
12 survey that you're assigned to do when you're onboard?

13 **WIT:** Let me give you an example. I attend the vessel, I'm walking up to the vessel, I'm
14 looking at the side shell for what I can see. I'm walking up the gangway looking at the
15 gangway for every step that I'm taking. At the same point I'm cognizant of what I'm
16 looking at. If I see any issues of the area of which come into view while I'm going
17 onboard the vessel or going to the area which needs to be examined, I bring those to
18 the attention of whoever's with me. Now if it's something I see that needs to be repaired
19 or has the potential to affect a certificate I inform the necessary personnel. Whether
20 that's Coast Guard, the Captain, the Port Engineer, Chief Engineer. If it affects a
21 certificate and it has to be a short term certificate the Coast Guard is notified because I
22 have to get authorization to issue a short term.

1 **CDR Odom:** Thank you. Going back to the statement that was made about the
2 notification and when the notification came in on the economizer. I believe Mr. White
3 had made a statement about the super heater repair not being a subject of a required
4 notification. Can you clarify, had you known about that is that something that ABS
5 would have been required to test and certify as a proper repair?

6 **WIT:** If we had been notified, yes.

7 **CDR Odom:** Thank you. I just wanted to clear that up. And also going back to the 800
8 psi and what you stated in the rule, is it normal for ABS surveyors to use a test pressure
9 that is less than the working pressure of a system for a test?

10 **WIT:** Not normally.

11 **CDR Odom:** Thank you. That's all I have Captain.

12 **CAPT Neubauer:** I just have one follow up question on the economizer repair. Do you
13 remember having knowledge before you dispatched to that survey that the vessel had
14 already been operating with that repair done?

15 **WIT:** We were contacted to attend a week prior. I cannot recall why we did not attend
16 the vessel. But that they were doing the repairs. We finally made it onboard on
17 September 8th when we were able to witness the repairs to the economizer tubes.

18 **CAPT Neubauer:** So to your knowledge ABS was aware of it, a temporary repair would
19 be done and the vessel would be operating with that repair before the surveyor was
20 onboard, is that correct?

21 **WIT:** I would have to go back to the email correspondence to see if they indicated that
22 the repairs were already conducted.

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1 **CAPT Neubauer:** And we would like to get copy of that email correspondence Mr.
2 White.

3 **ABS:** Yes, sir, we'll provide that.

4 **CAPT Neubauer:** And can we also get the time card around the week period just as
5 well as the other surveyor?

6 **ABS:** Certainly.

7 **CAPT Neubauer:** Mr. Roth-Roffy.

8 **Mr. Roth-Roffy:** Good afternoon. Tom Roth-Roffy, NTSB. I hate to revert back to the
9 boiler hydro test pressure issue, but just a couple of things just to clear up in my mind
10 that might be helpful to others as well. Is there any reason that you could not have
11 applied a working pressure hydro to the economizer repairs? And why you selected
12 800 as opposed to the working pressure? For example was the other boiler online at
13 the time?

14 **WIT:** The other boiler was online at the time.

15 **Mr. Roth-Roffy:** Okay. So was there any reason you could not have applied full heat
16 water pressure to that economizer?

17 **WIT:** I can't recall if they were using the economizer on the other boiler while it was
18 operating. But if they put too much pressure on it, it creates sulfuric acid in the stack for
19 the level of cooling of the exhaust.

20 **Mr. Roth-Roffy:** So you're suggesting that the other boiler was online, had the
21 economizer ----

22 **WIT:** I don't know if the economizer was operating. I can't recall at this moment.

1 **Mr. Roth-Roffy:** Is it customary to cut out the economizer when a vessel come into
2 port?

3 **WIT:** I don't know what Tote's normal operating procedure is for the boiler.

4 **Mr. Roth-Roffy:** You mentioned a hydro pressure above maximal allowable working
5 pressure would not be safe for a boiler of that age. And you referred back to the rules, I
6 believe. I'm sorry, my question is, is that covered in the ABS rules to not subject a
7 pressure vessel or a boiler to beyond maximal allowable working pressure based on
8 age of the equipment?

9 **WIT:** Boilers or pressure vessels?

10 **Mr. Roth-Roffy:** Let's stay with boilers. You said it wouldn't be safe. And I'm just
11 curious. You know more information about that statement and if it's covered in the
12 rules.

13 **WIT:** Can you repeat the question one more time please?

14 **Mr. Roth-Roffy:** Yes. I'm just referring back to a response that you gave regarding
15 testing of boilers above max allowable working pressure. And I wrote in my notes, and
16 if I noted it wrong then please let me know. You said that it would not be safe to test a
17 boiler of that age to above MAWP. So my question is why would it not be safe? If
18 there's an allowance for older equipment for reduction in hydro, normal hydro test
19 pressures and where in the rules that might be addressed?

20 **WIT:** We already discussed the rule requirements with regards to hydro after repairs.
21 And it doesn't indicate any specific. So given the economizer repair 800 was
22 considered satisfactory. The economizer is only there to increase efficiency of the

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1 plant. Now based on the age of the vessel and the age of the boiler would I have
2 wanted to test it above operating pressure, probably not.

3 **Mr. Roth-Roffy:** Okay. And I believe your statement was that it would not be safe to
4 do so. And my question is why would it not be safe? And is there an allowance for
5 reduction in test pressures in ABS rules based on the age of the equipment?

6 **WIT:** So based on no specific requirements in the rules for the hydro it's my opinion
7 that it would be unsafe to test it above the operating. Keep in mind that new equipment
8 that hasn't been in service for over 40 years, a test pressure in excess of operating
9 would be satisfactory. But for a vessel that's been operating – for a boiler that's been
10 operating over 40 years, in my opinion it could lead to an unsafe situation. Keep in
11 mind that a lot of things that I see are for testing. Whether it's testing of tanks, hydro
12 test, piping.

13 **Mr. Roth-Roffy:** So is it – am I understanding you correctly that there is some
14 allowance for age of equipment to the standards to which the equipment is tested to?
15 Older equipment is less, a lower standard perhaps, is that what you're saying?

16 **WIT:** I'm not indicating that the age of the vessel will decrease the requirements. But
17 based on current, or the steel vessel rules at the time of the survey at my discretion 800
18 psi was satisfactory for the testing of the economizer.

19 **Mr. Roth-Roffy:** Okay. Thank you very much. That's all I have.

20 **CAPT Neubauer:** At this time I would like to go to the parties in interest. Tote?

21 **Tote Inc:** No questions, sir.

22 **CAPT Neubauer:** ABS?

23 **ABS:** No questions, sir.

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1 **CAPT Neubauer:** Mrs. Davidson?

2 **Ms. Davidson:** No questions.

3 **CAPT Neubauer:** Herbert Engineering?

4 **HEC:** No questions.

5 **CAPT Neubauer:** Commander Odom.

6 **CDR Odom:** Just one follow up question with regards to the pressure. Do you know
7 what the operating pressure of the boiler was? Are you aware, can you tell us that?

8 **WIT:** I can't remember right now. I attended the vessel in September 8th.

9 **CDR Odom:** Long time ago, I understand. But you would have tested it to the
10 operating pressure is what you're saying, is what would have been a satisfied test by
11 your statement, is that correct?

12 **WIT:** They had operated the vessel at to and from San Juan, Puerto Rico for a week.

13 **CDR Odom:** Right.

14 **WIT:** At the operating pressure. So given that they operated the vessel ----

15 **CDR Odom:** So you were not aware of what the operating pressure was of the boiler?

16 **WIT:** I can't recall right now.

17 **CAPT Neubauer:** Just please be careful, let the witness finish.

18 **CDR Odom:** Yes, sir. Yes, sir, I understand. I'm good Captain, thank you.

19 **CAPT Neubauer:** Are there any final questions at this time. Mr. Fawcett.

20 **Mr. Fawcett:** Regarding your visit to the ship on the 27th of January for the ballast tank
21 inspection, as you prepared for this inspection did you get any information from your
22 colleagues that in mid-January they had discovered outside the scope of their
23 inspection that there were some holed steel and they didn't document it but they

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1 requested those repairs to be made to the vessel so that you could validate those
2 repairs when you went aboard?

3 **ABS:** For the sake of the record I'm not sure if there are undocumented repairs. I think
4 that was addressed in a prior hearing. So I'm not sure about the foundation for your
5 question.

6 **Mr. Fawcett:** I'm talking about the preparation that your surveyor did as they went to
7 the vessel to conduct the scope of the inspection for the mission, for the job and had
8 they in that preparation found out that there were other, a request made to get some
9 other holed steel repairs made that originated in mid-January.

10 **ABS:** Are you aware of any other requests for repairs concerning holes in that space or
11 other spaces that were made by the owner?

12 **WIT:** I wasn't aware of any other repairs. If it wasn't listed in the survey status I would
13 not know of any additional repairs that need to be done.

14 **Mr. Fawcett:** Okay. These would have been requested by ABS and not documented.
15 And I draw your attention to Exhibit 5 page 1. I don't want to go into the scope of the
16 email, but the content related to the request by ABS to make repairs and the fact that
17 those weren't documented. That would be Tote's understanding of that situation. So
18 what I'm asking you is as you left to go for this job did someone draw your attention
19 within ABS so you could validate the repairs were complete?

20 **WIT:** I don't know what repairs these are in reference to.

21 **Mr. Fawcett:** Thank you very much.

22 **ABS:** Just to follow up Mr. Fawcett, I think the prior hearings and based on the
23 testimony of Mr. O'Donnell and the time frame in that email we provided an ABS survey

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1 concerning that email and the repair in January, the opening of the report by Steve
2 Hohenshelt on the 15th of January. And the subsequent repair. And we'd be happy to
3 provide that for you.

4 **Mr. Fawcett:** Okay, thank you. But you know baseline for the question was did the
5 surveyor that went out on the 27th of January know about that repair or that process so
6 that she could help validate that those repairs were complete.

7 **WIT:** There was nothing outstanding in the status and it wasn't communicated to me.

8 **Mr. Fawcett:** Thank you very much.

9 **CAPT Neubauer:** Are there any final questions at this time. Commander Odom.

10 **CDR Odom:** Captain. Can you take a look Exhibit 115 please? This is a ----

11 **Tote Inc:** Commander, did you say 115?

12 **CDR Odom:** 115, one fifteen. So this is an ABS report for the El Faro Class report
13 dated 31 January 2014. It's for an annual hull survey 3 annual machinery survey 3 and
14 a continuous – special continuous survey machinery 8. And we used this as an earlier
15 exhibit. And I see you did the review on this report. So also in the report there's a
16 couple of items that are self-certified by the Chief Engineer. Can you please explain in
17 your review of this report what your understanding of this is whenever it says Chief
18 Engineer in the inspected by column on page 2 of 3?

19 **WIT:** It would appear that the surveyor credited the items based on the Chief
20 Engineer's inspection.

21 **CDR Odom:** And that would have been allowed on the El Faro?

22 **WIT:** Yes.

23 **CDR Odom:** Thank you.

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1 **CAPT Neubauer:** Are there any final questions at this time? Ms. D’Addieco you are
2 now released as a witness at this Marine Board of Investigation. Thank you for your
3 testimony and cooperation. If I later determine that this board needs additional
4 information from you I will contact you through your counsel. If you have any questions
5 about this investigation you may contact the Marine Board Recorder, Lieutenant
6 Commander Damian Yemma. The hearing will now recess and reconvene at 3:10.

7 *The hearing recessed at 1458, 19 May 2016*

8 *The hearing was called to order at 1512, 19 May 2016*

9 **CAPT Neubauer:** The hearing is now back in session. At this time we’ll hear testimony
10 from Mr. Thomas Gruber, the former group head for ABS load line and stability.

11 **LCDR Yemma:** Please stand and raise your right hand, sir? A false statement given to
12 an agency of the United States is punishable by a fine and or imprisonment under 18
13 United State Code Section 1001, knowing this do you solemnly swear that the testimony
14 you’re about to give will be the truth, the whole truth and nothing but the truth, so help
15 you God?

16 **WIT:** Yes.

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

19 **WIT:** Thomas Gruber, G-R-U-B-E-R.

20 **LCDR Yemma:** And counsel.

21 **Counsel:** Jerry White, W-H-I-T-E, Hill Rivkins, LLP.

22 **LCDR Yemma:** Thank you. Mr. Gruber can you please tell the board where you’re
23 currently employed and what your position is?

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1 **WIT:** I'm currently employed by the American Bureau of Shipping and I work in the
2 Chief Engineer's office as the Assistant Chief Engineer for statutes.

3 **LCDR Yemma:** And can you describe some of your responsibilities in that position
4 please?

5 **WIT:** As the Assistant Chief Engineer for statutes I routinely answer questions from
6 around the world in our different technical offices for decision regarding the different
7 statutory instruments. I also work as a liaison with the Coast Guard for stability, load
8 line and some tonnage matters. And I also monitor the workings of IMO to see what
9 comes out of the Maritime Safety Committee to see what has to be incorporated in the
10 ABS rules.

11 **LCDR Yemma:** Can you also describe some of your prior work history please?

12 **WIT:** I started working with ABS in September of 1988 in New Jersey in load line
13 stability group. A year later I spent 6 months in the small vessel structures group. And
14 then returned back to the load line and stability group. After moving to Houston with
15 ABS in 1992 I took over running the load line and stability group. I did that through
16 2009. At such point I was transferred to the Naval Engineering Group, Naval
17 Engineering Department. 2010 I moved up to the ABS office in Washington, D.C. And
18 at the end of 2012 I transferred into the Chief Engineer's department.

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

20 **WIT:** I have a Bachelors of Engineering in Naval Architecture.

21 **LCDR Yemma:** Thank you, sir. Doctor Stettler will have some questions for you now.

22 **Mr. Stettler:** Thank you. Good afternoon Mr. Gruber. Please describe, let me back up
23 a second. First Lieutenant Commander Venturella and I are going to ask you a series

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1 of questions in several different topic groupings. At the end of the first group we'll take
2 a break and allow an opportunity for the board and the NTSB and the PII's to ask some
3 additional questions and then we'll return. The topic groupings are, the first group will
4 be general roles and responsibilities. Load line certification and general stability
5 matters. The second grouping will be stability and loading software. And a few
6 miscellaneous stability and load line related issues. Could you please describe in a little
7 more detail the positions you held? You mentioned you began at ABS in 1988. Discuss
8 a little bit those positions that relate to load line and stability work and specifically if you
9 will also mention to the extent that you were involved in review of load line and stability
10 matters for the El Faro and sister vessels or similar vessels to the El Faro.

11 **WIT:** Okay. When I first started with ABS I worked in the load line stability group and
12 that group is responsible for calculating the load line assignment for the vessel, for
13 vessels and performing intact and damage stability reviews prior to the issuance of a
14 load line certificate. I did that for 3 years. We move – as an engineer we moved to
15 Houston. The year later I took over running the group when my boss retired. Along the
16 way I was promoted to senior engineer and then principal engineer. At the same time
17 we were just continuing doing those standard reviews.

18 **Mr. Stettler:** Could you discuss a little bit the extent of your experience without getting
19 into details on the types of vessel similar to the El Faro, you know large RO-RO and
20 container vessels, how much experience you have reviewing load line and stability
21 matters on those types of vessels?

22 **WIT:** Over the 22 years I was in the group we reviewed stability on anything from small
23 tug boats all the way up to super tankers, passenger ships and large cargo ships and

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1 everything in between. I would say literally thousands of vessels that we performed
2 reviews on.

3 **Mr. Stettler:** Would you say at least hundreds of vessels, large cargo carrying vessels
4 similar to the El Faro?

5 **WIT:** Large cargo carrying vessels, yes.

6 **Mr. Stettler:** Thank you. I would like you to explain a little bit more detail about how
7 the load line stability group fits into the ABS organization and also mention you know if
8 it's changed over recent years. Please discuss that as well.

9 **WIT:** Okay. Load line stability group is part of the ship engineering group in ABS
10 Houston. We are one of several different groups. There's machinery group and a
11 structures group. The load line stability and the tonnage group. As far as the changes
12 over the years there's been engineers that have moved in and out of the group. There's
13 been different group heads. What kind of changes?

14 **Mr. Stettler:** Just interested in has the load line stability group maintained its basic
15 name and its basic spot in the organization or has it moved around within the
16 organization over the years?

17 **WIT:** No we've been constantly at the place we've been for as long as I've been there.

18 **Mr. Stettler:** Thank you. Please explain just in general terms the authorities under
19 which the load line and stability group reviews and approves documents, specifically
20 documents delegated by the U.S. Coast Guard.

21 **WIT:** Okay. The U.S. Coast Guard has designated ABS as a load line signing
22 authority. That can be found in subchapter 46 C.F.R. load line section. As far as

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1 reviewing stability on behalf of the Coast Guard we conduct those reviews at this point
2 under NVIC 3-97 as well as under the ACP NVIC.

3 **Mr. Stettler:** Could you explain what a NVIC is?

4 **WIT:** A NVIC is a navigation and inspection circular issued by the Coast Guard.

5 **Mr. Stettler:** Is it basically a procedure or a guideline?

6 **WIT:** Yes.

7 **Mr. Stettler:** Earlier in the hearings we've discussed the alternate compliance program,
8 are there any differences in the way that the load line stability group works regarding
9 doing work on the Coast Guard's behalf under the NVIC and under the ACP program?

10 **WIT:** Under the NVIC we apply the Coast Guard regulations and C.F.R.'s. Under the
11 ACP program we apply the ABS rules, which do include some stability requirements
12 and the international requirements. And then for whatever – there are several issues
13 such as lifting and towing that are not covered under the international rules as of yet
14 that the supplement calls out we apply from the C.F.R.

15 **Mr. Stettler:** Thank you. Lieutenant Venturella will have some questions on load line
16 certifications.

17 **LCDR Venturella:** Good afternoon, sir. Can you describe the purpose of an
18 international load line certificate?

19 **WIT:** The international load line certificate indicates on the front what the actual
20 freeboard is and the freeboard's calculated in accordance with the convention. Those
21 set the maximum load marks that the vessel can operate at. In addition to that there are
22 several different factors that go into it. First off the load line calculation as I mentioned.
23 There's the condition of assignment which are to secure the watertight and weathertight

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1 envelope of the vessel. There's a stability requirement in Regulation 10. And then
2 there's also -- the vessel also has to meet a structural requirement which refers back to
3 Class requirements. The last requirement is the required bow height and reserved
4 buoyancy at the forward end of the vessel.

5 **LCDR Venturella:** How are those requirements you just described typically
6 demonstrated and by whom would they be demonstrated?

7 **WIT:** They start off with the load line calculation. That's done by the load line and
8 stability staff based on the drawings from either the shipyard or the owner of the vessel.
9 It's a physical calculation based upon a geometric particulars of the vessel. The stability
10 requirement is either satisfied for a U.S. Flag vessel by ABS on behalf of the Coast
11 Guard or by the Coast Guard Marine Safety Center. The structural requirement is done
12 through the Class society, through compliance with Class rules. The reserve buoyancy
13 at the forward end and the condition of assignment are all verified by the engineers
14 when they do the load line calculation.

15 **LCDR Venturella:** Can you describe the load line certification history for the El Faro
16 since the early 1990's?

17 **WIT:** Starting before the modification the vessel was originally issued a load line by
18 ABS on the basis of stability reviews that were done by the Third Coast Guard District in
19 New York. I don't have the dates of that off hand. When the vessel was lengthened in
20 1992, '93 the Coast Guard deemed that to be a major modification. The freeboard
21 calculations were redone based upon the new as built dimensions of the vessel. The
22 conditions of assignment were re-verified. The stability was re-verified in accordance
23 with the guidance, the major modification guidance issued by the Coast Guard. And the

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1 Class requirements were done through our structures group. And at that point the
2 reserve buoyancy at the forward end was not a requirement in the convention, that
3 didn't come out until 2005. And the bow height requirement was checked at that point.
4 When they – then the vessel was modified again in 2000, I believe 2006 the stability
5 was re-checked. There was an inclining experiment. Stability was rechecked and the
6 draft was increased by 2 feet I believe at that point. And a new load line assignment
7 was calculated and issued to the vessel. After that there was some revisions to the trim
8 and stability booklet and there was a CargoMax stability instrument approved for use on
9 the vessel.

10 **LCDR Venturella:** Was there any difference in the requirements for the load line
11 certification for the El Faro following the 1992, 1993 conversion and following the 2005,
12 2006 conversion?

13 **WIT:** Well as I mentioned ----

14 **LCDR Venturella:** Sorry, I just want to clarify. Just trying to find out were there
15 different criteria applied to the El Faro's load line review post the two different
16 conversions? 1992, 1993, and 2005, 2006, were the same criteria applied?

17 **WIT:** Yes.

18 **LCDR Venturella:** Is approved stability and loading information a requirement under
19 the international Load Line Convention?

20 **WIT:** Yes.

21 **LCDR Venturella:** How does the minimum freeboard from the approved stability
22 information impact the load line related freeboard assignment and placement of the
23 Plimsoll mark?

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1 **WIT:** The placement of the Plimsoll mark is dependent upon several factors. One is
2 the actual calculation of the freeboard numbers through the convention. The second
3 draft we look at is the draft that's approved for stability. And the third draft is the draft
4 that's approved for the strength by the strength – structures department. So we would
5 assign the draft of the lessor of those three drafts.

6 **LCDR Venturella:** Are there any statements typically placed on the international load
7 line certificate with regard to the stability review or review of stability and loading
8 instruments?

9 **WIT:** Yes. The Coast Guard requires either a stability letter be issued to the vessel,
10 and that's in 46 C.F.R. 170.110 and that has to be referenced on the load line
11 certificate. That stability letter can be omitted if the guidance, the stability guidance can
12 be placed on either the certificate of inspection or the load line certificate. In most
13 cases with a T&S booklet we would just refer to the approved T&S booklet and omit the
14 stability letter in accordance with that C.F.R. cite.

15 **LCDR Venturella:** How would the international load line certificate be impacted if
16 vessel modifications were made that materially affected the approved stability and
17 loading information?

18 **WIT:** If the stability information has to be revised then that – we would require, or the
19 Coast Guard would require the information to be re-approved and referenced on the
20 new load line certificate.

21 **LCDR Venturella:** Please turn your attention to Exhibit 202, specifically page 38 within
22 Exhibit 202. Exhibit 202 is Chapter 3 of the U.S. Coast Guard's Load Line Technical
23 Manual dated December 1990. Chapter 3 specifically addresses conditions of

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1 assignment of a minimum freeboard. Page 38 includes types of ventilator closures that
2 will be deemed weathertight. It specifically states fire dampers of the normal type are
3 not considered as meeting the minimum requirement unless they are strongly
4 constructed, gasketed and capable of being secured weathertight. Mr. Gruber, surveys
5 of the sister vessels hold 3 exhaust ventilation trunk, that's El Yunque showed that the
6 fire dampers were not gasketed within the exhaust ventilation trunks. Do you know if
7 that would have been the case on the El Faro?

8 **WIT:** I believe that the exhaust trunks were not gasketed on the El Faro based on the
9 drawings that I have seen.

10 **LCDR Venturella:** Were the fire dampers on El Faro deemed weathertight by the load
11 line certification?

12 **WIT:** Yes.

13 **LCDR Venturella:** Is the Load Line Technical Manual guidance I just read something
14 that's at odds with ABS guidelines?

15 **WIT:** No. The Load Line Technical Manual was written by ABS for the Coast Guard in
16 1988 and provided to the Coast Guard in 1989 and republished in 1990. So this was a
17 document that was requested and written due to the fact that there were no, unlike
18 many other IMO documents the Load Line Convention could not be revised or updated.
19 So the Coast Guard had requested all the different decisions that were made over the
20 years to be consolidated into one document and that was done by a gentlemen at ABS
21 for the Coast Guard. This was issued well after the vessel was built and constructed.
22 So the decision for the holds, the exhaust holds, fire dampers not having gaskets was
23 something that was done when the vessel was built. And it was agreed to by ABS and

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1 the Coast Guard. The surveyor in his report noted them as weathertight, from what I've
2 been able to see. And neither the ABS or Coast Guard inspections since then have
3 questioned it. So I assumed that it was accepted that way.

4 **LCDR Venturella:** Based on that determination that they were weathertight despite the
5 contrary guidance in the Load Line Technical Manual that happened after, what impacts
6 would that determination have had on the load line certification or stability review if they
7 had been deemed not weathertight?

8 **ABS:** Just to be clear and you realize the Load Line Technical Manual wasn't in
9 existence or used with the approval of the vessel in 1975?

10 **LCDR Venturella:** I do, sir. I'm just asking, it's just a technical question.

11 **WIT:** When the vessel was built the applicable stability regulations were only the Coast
12 Guard weather criteria in 46 C.F.R. 170.170. There was no downflooding requirement
13 in that stability criteria. When the vessel was modified and the SOLAS probabilistic
14 criteria was applied in 1993 these exhaust openings were treated as unprotected
15 downflooding points. So it would have had no effect on the stability calculations that
16 were conducted.

17 **LCDR Venturella:** What about the load line certification given the guidance in the Load
18 Line Technical Manual, if it had been brought up to that standard like where it would not
19 be considered weathertight? What would have been the impact on the load line
20 certificate?

21 **WIT:** The Load Line Convention, if you look one sentence down below the section you
22 read from that portion of Load Line Technical Manual it said, steel dampers, steel
23 louvers I'm sorry are acceptable where they can be shown they are capable of being

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1 closed weathertight and remain tight under all sea conditions with no – there's no
2 recommendation for a gasket there. So it is not – it wasn't – the acceptance of a non-
3 gasketed cover is permitted by the Load Line Technical Manual.

4 **LCDR Venturella:** Are you saying that the fire dampers within the exhaust ventilation
5 trunks are steel louvers?

6 **WIT:** No. I was saying that the Load Line Technical Manual does provide other options
7 for closures without gaskets.

8 **LCDR Venturella:** But do you agree that they are not steel louvers inside the exhaust
9 ventilation trunks?

10 **WIT:** Yes.

11 **LCDR Venturella:** So does it really provide another option if they're fire dampers not
12 steel louvers?

13 **WIT:** I think a decision was made back in 1975 which is long before I was involved with
14 the vessel, I wasn't even in college at that point. To understand what that decision was
15 made I can't tell you. Evidently it was deemed to be weathertight. Our surveyor
16 apparently tested it and noted it as weathertight. So it was accepted.

17 **LCDR Venturella:** Sir, are you familiar with the internal structure of the exhaust
18 ventilation trunks on the El Yunque and El Faro including the baffle plate and the
19 longitudinal that run through the inner enclosure that we discussed in previous
20 testimony?

21 **WIT:** Is this on the El Yunque?

22 **LCDR Venturella:** Yes.

23 **WIT:** Yes.

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1 **LCDR Venturella:** On the El Yunque there was a large opening on the 3 hold port and
2 starboard around that side longitudinal. Can you discuss how that opening would have
3 impacted the load line?

4 **WIT:** It would have had no impact on the load line calculations or load line assignment.

5 **LCDR Venturella:** Okay.

6 **WIT:** The load line, the Load Line Convention requires 35 ½ inch coaming height on
7 the freeboard deck, the 2 deck is a freeboard deck. That coaming height was, that
8 longitudinal was somewhere 7 to 8 feet above the deck. So it met the coaming height.
9 The dampers were accepted as weathertight closures, which is the other requirement in
10 the Load Line Convention for ventilators. Therefore, it fully met the Load Line
11 Convention even at the reduced height.

12 **LCDR Venturella:** Alright, I'm going to pass it back to Jeff Stettler.

13 **Mr. Stettler:** Thank you. Mr. Gruber we'll come back and discuss a little bit more about
14 the fire dampers and downflooding shortly. Before we get there I would like to walk into
15 the overall general stability concepts of the vessel. You mentioned a few things,
16 discussed stability criteria. So I would like to start by asking you to discuss ship stability
17 in kind of general terms for the public. We've been throwing around some terms, GM
18 and some other terms that people may not understand. So I would like to ask you to
19 provide a brief explanation or description of ship stability in the context of what we're
20 discussing here, specifically the concept of GM, you know metacentric height which
21 we've been using. As well as righting arms, understanding that there was no righting
22 arm criteria that applied directly for the El Faro. And then discuss a little bit about
23 stability criteria. And then we'll get into some more specifics.

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1 **WIT:** Okay. The basics of, sorry, the basics of stability start out with the lightship
2 values of the vessel. That's the weight and vertical center – the weight and vertical
3 center of the ship itself. That's where your "G" comes in in GM. Okay. Your
4 metacenter is the point at low angles of heel as the vessel heels from one side to the
5 other. The center of buoyancy that's holding the ship up will shift and stay under one
6 specific point on the center line of the vessel, that's the metacenter. Your GM is your
7 difference between your metacenter and your center of gravity. And that's your
8 metacentric height. Now that's in a lightship condition. Now when you load the ship
9 everything that you put onboard the ship, your fuel oil, your ballast, your fresh water,
10 your cargo, your crew and effects, that changes your center of gravity and that will alter
11 your GM, either increasing or decreasing it.

12 **Mr. Stettler:** Okay, thank you. So you had mentioned initial, so just to be clear for the
13 public, that's a measure of the initial stability of a ship. Could you discuss a little bit
14 more the overall stability idea of righting arms?

15 **WIT:** Okay. As you – as the vessel heels over and the center of buoyancy shifts to one
16 side the distance between that vertical plane and your center of gravity becomes your
17 GZ value. Those are your righting arms and that's very specific for a certain center of
18 gravity. As a GM increases your righting arms will increase. As your GM decreases
19 and gets smaller your righting arms will also decrease. And then your righting arms are
20 then plotted out as – for each increase in angle your righting arms are plotted out based
21 on the shift and the center of gravity – the shift in the center of buoyancy and the weight
22 in the center of the ship.

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1 **Mr. Stettler:** So is there a connection between those two, this GM value and the
2 righting arm?

3 **WIT:** Yes. For very low values the GM, the GZ value, your righting arm is your GM
4 multiplied by the sine of the angle of heel.

5 **Mr. Stettler:** Is it – would it be true to say that the GM being a measure of the initial
6 stability of value of the ship you can't necessarily tell anything about the overall stability
7 and ability of the ship to right itself from large angles, is that true?

8 **WIT:** Correct. You need to plot out the righting arms and look at the righting arm curve.
9 The GM value will affect the righting arm curve. But it doesn't set the righting arm
10 curve.

11 **Mr. Stettler:** Thank you. Now could you discuss a little bit about the criteria for stability
12 specifically what applied to the El Faro and perhaps why in terms of its age or its initial
13 construction? And then how that might be a little different than modern criteria that are
14 used.

15 **WIT:** Okay. When the vessel was built the vessel had to meet a straight GM criteria
16 based on the wind heel criteria. What that applies is a wind speed that's determined
17 based upon the vessel's length, applied to the wind lateral profile area of the vessel.
18 And then it allows the vessel to heel over to a maximum of either 14 degrees or half the
19 freeboard. And that's – that straight GM value is then input into a curve in a trim and
20 stability booklet for the full range of drafts. And that was what was required from 1975
21 when the vessel was built until 1993 when the vessel was modified. Other vessels,
22 smaller vessels the Coast Guard only requires a righting energy criteria for vessels
23 under 100 meters in length. And that's in 46 C.F.R. 170.173. And that's, in there

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1 there's a minimum GM value and then there's certain areas under the righting arm
2 curve between zero and 30 degrees, 30 and 40 degrees to make sure that there's
3 adequate stability out to a certain point.

4 **Mr. Stettler:** Are there any limitations on the righting arm or righting energy criteria in
5 terms of what angle of heel the vessel should be able to reach before capsizing? For
6 other vessels, other than the GM criteria.

7 **WIT:** Well for other vessels the amount of area under the righting arm curve has to be
8 obtained up to a certain point. Now there's area up to 30 degrees, there's area between
9 30 and 40 degrees as well. So – for the downflooding point. So it has to go up to that
10 point.

11 **Mr. Stettler:** Okay, thank you. So we'll get back to discussing the concept of a
12 downflooding here shortly. But for now Lieutenant Venturella is going to discuss
13 another area of stability and that is probabilistic or damage stability.

14 **LCDR Venturella:** Sir, the El Faro was also subject to SOLAS probabilistic damage
15 stability criteria. Please explain what this means.

16 **WIT:** The probabilistic damage stability criteria was entered into SOLAS and became
17 effective in 1992. It differed from stabil – damage stability up to that point where they –
18 to develop the criteria they looked at historical damage cases on different vessels. And
19 this was done by IMO not the Coast Guard so this was a worldwide issue. Worldwide
20 investigation, not just U.S. Flagged vessels. It sets a probability factor for damaging –
21 where you damage the vessel along the vessel's length. Obviously you know damage
22 up in the forward end is more likely to happen than damage to the stern. So the
23 probability is higher for damage up in the forward end, towards the middle and then it

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1 drops off towards the stern. The probabilistic damage stability looks at damaging
2 compartments, one compartment, two compartment, three compartment, different
3 damage cases. It also looks at different damage extents that go all the way to the
4 centerline of the vessel, which was very unlike deterministic stability criteria of the day.
5 So you run each case of damage, each compartment damage, singly then you do two
6 compartment damage, three compartment damage, for each condition that meets the
7 right criteria as set forth in the convention you get an attained index associated with that
8 condition. If the vessel fails to meet the criteria or sinks you get zero attained index for
9 that condition. The calculations have to be run at two different drafts to meet the
10 required index as set forth by the convention. So you keep running intact, your damage
11 cases for one, two and three compartment damage at your light load draft and at your
12 full load draft and then a combination of those, half of your attained index from the
13 partial, half full load has to either meet or exceed the required index. And then you pass
14 the criteria. You do not have to meet all of the damage cases. All damage cases don't
15 have to pass the criteria to pass the probabilistic damage.

16 **LCDR Venturella:** What are some differences between the old deterministic damage
17 stability and newer probabilistic criteria? And do you have an opinion as far as which
18 one is better or the safer option for a vessel's review?

19 **WIT:** The deterministic damage criteria has a set determination of damage extents,
20 longitudinal, transverse and vertical. And for every condition, every case of damage it
21 be it designated a one compartment or two compartment the vessel has to meet the
22 criteria in order to pass the deterministic criteria. So that's where in a deterministic it
23 has to meet all of the damage cases, the probabilistic you don't. The deterministic also

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1 looks only damage to typically B/5, where the probabilistic will look at damages all the
2 way to centerline. And the deterministic looks at, you have to review the stability, the
3 damage stability at all cases at all drafts from lightship to full load, where probabilistic
4 only looks at the partial load draft and the full load draft. You asked my personal
5 opinion I prefer the deterministic damage stability over probabilistic. If it's up to me and
6 I was the Master of the vessel I would like to know that the – if I had a specific damage
7 the vessel's going to meet the criteria or not going, you know if it's going to meet the
8 criteria or ship's not going to survive. But in the absence of any criteria the probabilistic
9 does provide a higher level of safety.

10 **LCDR Venturella:** When should a damage stability analysis be conducted for a
11 vessel? Like when is it required?

12 **WIT:** It depends on the regulation.

13 **LCDR Venturella:** So let's say for the El Faro. When would a damage stability
14 analysis be required for the El Faro?

15 **WIT:** The Coast Guard determined that the addition of the 90 foot mid-body in 1992,
16 '93 was a major modification, therefore, the current addition of SOLAS had to be met
17 which was the probabilistic damage. When they increased the draft you changed the
18 parameters the stability calculations were run under. Ideally the partial load and the full
19 load, so in 2006 it was again.

20 **LCDR Venturella:** So was a damage stability analysis conducted and reviewed by
21 ABS following the 2005, 2006 conversion when the load line was increased by 2 feet?

22 **WIT:** I believe it was.

1 **LCDR Venturella:** Can you please refer to Exhibit 166? Exhibit 166 is a document
2 submitted to the Marine Board of Investigation by Mr. Gruber giving the SOLAS
3 probabilistic damage stability analysis for the El Faro. I was under the impression this
4 document was provided on May 6th, 2016 because there was not a probabilistic damage
5 stability analysis performed in 2006, is that incorrect?

6 **WIT:** That's incorrect. We – when we went through the files our hard copy files were
7 sent out to be scanned and came back incomplete. So our search for the calculations
8 have been, we haven't been able to find it, but we don't have the full files. What this
9 calculation was in preparation for this was to rerun the calculations to see how the ship
10 complied with the criteria. So this was done within the last few months.

11 **LCDR Venturella:** On this exhibit it indicates that a GM of 2.89 would enable passage
12 of probabilistic damage stability in full load and partial load for El Faro. As you
13 mentioned it would not naturally include a review of the loading conditions a
14 deterministic review would. In the case of the trim and stability booklet that is approved
15 for El Faro there were several sample load conditions including a departure and arrival
16 for homogenous full load and departure and arrival conditions for ballast conditions.
17 Can you comment on how this review covers the complexity of the loading conditions
18 for the El Faro including all four of those load conditions?

19 **WIT:** I have not looked specifically at those four loading conditions. What I did was to –
20 with this was to run – the first step I did is take the existing GM curves that were in the
21 booklet and evaluated it, the probabilistic in accordance with the GM's from the one tier
22 of containers curve. And that did not pass the probabilistic damage criteria. I
23 subsequently then increased the GM until the criteria passed.

1 **LCDR Venturella:** So I noticed the same about the one tier of containers, that GM of
2 2.89 was above that GM curve in the T&S booklet, the trim and stability booklet. If
3 probabilistic damage stability was reviewed in 2005, 2006 wouldn't that have required
4 that GM curve for the one tier of containers to be raised to the 2.89?

5 **WIT:** Yes it would have.

6 **LCDR Venturella:** So is it correct to assume that there was an error in the GM curve
7 assigned to the El Faro for one tier of containers?

8 **WIT:** The one tier curve that's in the booklet is based solely upon on the intact stability
9 and would not have met the probabilistic damage stability.

10 **LCDR Venturella:** What makes you confident that there was a probabilistic damage
11 stability review given that there was that error and there's no indication anywhere else?

12 **WIT:** I know what was required at the point, at that point and time and I have
13 confidence in the engineer that was doing the review that he had done the review.

14 **LCDR Venturella:** Okay, thank you. I'm going to pass it back to Doctor Stettler.

15 **Mr. Stettler:** Thank you. Mr. Gruber I would just like to follow up with that. You had
16 mentioned that you sent your documentation out for copying and you weren't able to
17 find the damage stability analysis. Have you come across any letters or references or
18 other documents which reference such a damage stability analysis which might have
19 been done in that time frame?

20 **WIT:** No. To date I've not been able to find anything.

21 **Mr. Stettler:** Thank you. I would like to follow up a little bit on the concept of
22 downflooding points. We really – we've talked about it in two areas. One is a damage
23 stability analysis, or excuse me, I take it back. The load line idea, downflooding. And

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1 also you mentioned downflooding in the context of an intact stability criteria for vessels
2 with righting arm energy criteria as a limit of the extent of the righting arm. What
3 constitutes whether a hole opening, just talking general vessels now not necessarily the
4 El Faro, what constitutes whether or not a hole opening may or may not be considered
5 a downflooding point for either of those two situations?

6 **WIT:** Well the, are you looking at intact or damage stability?

7 **Mr. Stettler:** Both. So if they're separate please discuss those.

8 **WIT:** For intact stability the downflooding point is the first opening that cannot be closed
9 weathertight. So as long as you know Load Line Convention requires a weathertight
10 closure then that would not be included as a downflooding point. Now for damage
11 stability the, typically at the equilibrium load water line any opening that cannot be
12 closed watertight automatically is, or not considered watertight closed at sea is
13 considered a downflooding point. For the range of stability after equilibrium then the
14 intact stability requirement – same intact stability requirement for downflooding comes
15 into effect. As long as an opening can be closed weathertight it's not considered a
16 downflooding point for the range of stability after damage.

17 **Mr. Stettler:** Is it correct to say that the regulatory, the various regulatory frame works
18 which discuss downflooding points, you mentioned definition in terms of if it can or
19 cannot be closed, is it correct to say that none of those regulations discuss whether or
20 not those openings are closed on a routine basis? Or can be closed rapidly? Are there
21 any criteria in that context?

22 **WIT:** No. The criteria is that they can be closed weathertight.

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1 **Mr. Stettler:** I draw your attention to, I would like to pull up, Lieutenant Commander
2 Yemma, if you would pull up Exhibit 195 please. So Exhibit 195 includes 4
3 photographs. The first photograph, and it'll come up here momentarily on the screen is
4 a photograph of a – the El Faro underway showing the port side, or left side of the
5 vessel. And the bottom photograph on that first page shows a close up, is the pier view
6 side so it is, we're looking at the starboard side in this case. Could you, actually I would
7 clarify that Mr. Gruber you actually took the later 3 of these photos. Could you describe
8 what we're looking at in this, that second photo on that first page?

9 **WIT:** Okay. The – do you have a pointer like a laser pointer, I could?

10 **Mr. Stettler:** So just to make things a little more straight forward. If you would just
11 describe, I know you are familiar with these openings in the side shell, if you would just
12 discuss what they are and also if you could reference where the normal full load water
13 line is approximately in terms of those openings. And I should highlight this is the El
14 Yunque, a sister vessel. So it has identical ventilation system specifications.

15 **WIT:** Okay. This here that I'm pointing to is I believe the air intakes for the holds as
16 well as the second one that's further forward on the vessel. These openings here are
17 the openings for the air exhausts for the holds. And then somewhere down here, below
18 the level of the pier is the actual Plimsoll mark, the load line assignment.

19 **Mr. Stettler:** I know it's a little hard to see with a dark photo, but yes you're correct. So
20 the red paint line is nominally where the Plimsoll mark is, yeah it's approximately where
21 your pointer is. Do you know – do you recall having looked at this, the arrangement and
22 the ventilation system drawing what the vertical distance is between the full load draft
23 Plimsoll mark and the bottom of that first ventilation opening?

1 **WIT:** Are you referring to exhaust or the intake?

2 **Mr. Stettler:** The exhaust.

3 **WIT:** I don't recall what the exact measure to this point is. But that's not considered to
4 be the downflooding point. There's an internal baffle that goes up several feet higher
5 than the opening on the side of the ship. That's the actual downflooding point.

6 **Mr. Stettler:** Thank you. Yes and I know that question was asked or that was
7 discussed briefly in the previous testimony. Could you clarify a little bit the impact of
8 those baffles on the designation as the downflooding point?

9 **WIT:** The height of the baffles does not have any impact on the designation of the
10 downflooding point. It just sets the point, the highest point at which water has to reach
11 before it can flood into the vessel. The definition of a downflooding point is dependent
12 upon the closure. And in this case as I stated before there's, in accordance with the
13 drawing on the air intakes the closures have gaskets and are deemed as weathertight.
14 To be conservative on the air exhaust where there is no gasket we did not consider
15 them to be weathertight. So they were considered unprotected openings and therefore
16 downflooding points.

17 **Mr. Stettler:** Okay. So discuss the question of whether or not those ventilators are
18 normally closed or normally opened and we've heard previous testimony that from
19 ship's crew that those ventilation openings are never closed other than to test them or in
20 the case of a fire because those are fire dampers. Is any of that covered in any of the
21 regulations that whether or not a, I guess I've asked this, but do you have a personal
22 opinion about whether or not that is – should be covered in the regulations in terms of
23 whether or not a ventilation's opening is considered a downflooding point? In other

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1 words do you, from a – you’ve been doing this for many years, do you believe that
2 statement that a ventilation that can be closed or an opening that can be closed can be
3 considered not a downflooding point? Do you believe that that’s adequate?

4 **WIT:** I think regardless of what I believe we have to enforce the regulations as put forth
5 by either IMO or the Coast Guard in this case. So it is what it is.

6 **Mr. Stettler:** Okay, thank you. Mentioned the height of those ventilation openings and I
7 believe it’s a fairly straight forward calculation of about 17 feet above the full load water
8 line which would mean that those ventilation openings would submerge at an angle of
9 roll of about 20 degrees in the full load, full load condition. If they were considered
10 downflooding points, you know if they were not so, let’s extend idea, would and the
11 vessel was subject to a righting energy criteria would a geometry like that on a vessel
12 meet modern intact stability criteria?

13 **WIT:** Could you repeat that please?

14 **Mr. Stettler:** Yes. If a vessel had unprotected openings that were, that submerged at a
15 20 degree angle, you know a roll or a heel angle would they meet modern intact stability
16 criteria? In other words if the El Faro were built today it would be required to meet
17 modern intact stability criteria, I believe 2008 IS Code, would that meet – would those
18 openings meet those requirements?

19 **WIT:** The – it would still meet the Coast Guard weather criteria. The Coast Guard
20 righting energy criteria is only for vessels 100 meters in length and below. So it would
21 not have to meet, even today a CFR based righting energy criteria.

22 **Mr. Stettler:** Okay, thank you.

1 **LCDR Venturella:** Before I get going on my next section I just wanted to ask one real
2 quick thing for a clarification for myself. You mentioned that the internal baffle would
3 raise the height of that opening. Given the openings on the El Yunque around the
4 longitudinal that were right inside that opening in the hull, wouldn't that negate the
5 effectiveness of the baffle?

6 **WIT:** It would negate the effectiveness of the upper portion of the baffle. But that upper
7 portion of the baffle was not part of what was statutorily required on the vessel. So
8 forcing a repair on that would not have been in accordance with the statutory
9 requirements for stability.

10 **LCDR Venturella:** Okay. Moving on. Discuss the process at ABS for review and
11 approval of stability documents on behalf of the Coast Guard?

12 **WIT:** The documents are submitted by either the Naval Architect or another owner's
13 representative for our review on behalf of the Coast Guard. We typically in our first
14 approval letter would send advice to the Coast Guard that we're doing this review on
15 their behalf as required by the NVIC. At that point forward typically one of the first
16 things we get is the inclining procedures, stability test procedure. We would review,
17 send it back, send a copy to the Coast Guard for the Coast Guard advise through the
18 system that they've set up for advising the Coast Guard. I think it's the PRAS system.
19 Everything then that's submitted after that we would do the review, get the submittal,
20 make sure it's complete, review it, issue our approval letter and then advise the Coast
21 Guard that the review was done.

22 **LCDR Venturella:** What are some different types of stability documents that ABS
23 handles?

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1 **WIT:** Stability test procedures, stability test results, intact stability calculations, damage
2 calculations, stability guidance for the Master, either trim and stability booklet or draft
3 simplified stability letter.

4 **LCDR Venturella:** What is the purpose of a trim and stability booklet and can you
5 speak to its required format or content for a trim and stability booklet?

6 **WIT:** The trim and stability booklet is a manual onboard that to give guidance to the
7 Master to enable him to let him or her to load the vessel in accordance with the required
8 intact and applicable damage stability criteria. There are several different guidance
9 notes. As far as the regulations go in the C.F.R. I can't, it's in 170. There's a list of
10 items that are to be considered in the development of the booklet.

11 **LCDR Venturella:** Using the El Faro trim and stability booklet as an example what is
12 included in the trim and stability booklet and does it meet the required format and
13 content? If you would like to refer to it it's Exhibit 8.

14 **WIT:** Do you want me to go through step by – page by page, what do you want?

15 **LCDR Venturella:** No. A short answer would be acceptable. Just that it – you can tell
16 me in your review, I'm sure you've looked at it, can you tell me if it meets the required
17 content that you just discussed?

18 **WIT:** Okay. The format of this trim and stability booklet was originally developed by the
19 Naval Architect who did the original stability on, I guess the class of ships and was
20 originally approved by the Third District in the Coast Guard back in the 70's. The format
21 was updated in 1993 when we approved the stability booklet on behalf of the Coast
22 Guard in accordance with NVIC 3-84 change 1. In accordance with that NVIC the Coast
23 Guard Marine Safety Center then reviewed the document itself and found no problems

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1 with it. That format was then revised by the Naval Architect in 2006 when further
2 changes were made to the vessel. And we, again that format was approved by ABS on
3 behalf of the Coast Guard. So it contains the information the Master needs to evaluate
4 the stability of loading conditions in accordance with criteria.

5 **LCDR Venturella:** Sir, that's a good segue. Can you describe how the vessel operator
6 can use the trim and stability booklet to evaluate the stability condition of the vessel?
7 And can you also speak to how realistic that is from your experience that the vessel
8 operator can actually use the trim and stability booklet?

9 **ABS:** To the extent that Mr. Gruber is here to comment on load line and stability of the
10 vessel. You know he would be pleased to answer the question, but you realize he isn't
11 a Captain or a Master or an operator.

12 **LCDR Venturella:** Yes I understand. However, as a reviewer of the trim and stability
13 booklet he would understand it's his job to review it to make sure that the Master has
14 suitable instructions to make the vessel operable.

15 **WIT:** The booklet has a minimum required GM curve or a series of minimum required
16 GM curves that will when the vessel is loaded in accordance with them will meet the
17 criteria as we discussed earlier. There are instructions for the Master on how to
18 calculate the loading condition. There are blank loading forms for the Master to use to
19 evaluate the loading conditions. There's tank tables in there for him to use for the
20 specific tank loadings. There are blank loading forms, I'm sorry there are sample
21 loading conditions in the manual itself. And some standard and some conservative
22 guidance for the Master to make it simplified. That meets the requirements for a rapid
23 and simple means to evaluate the stability of the vessel. Now granted for a smaller

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1 vessel it's going to be easier for them to calculate. In this case there's a lot of
2 containers, there's a lot of RO-RO cargo so there is a lot of calculation by hand that is
3 necessary to fill out the forms. But it does provide the Master with the ability to evaluate
4 the conditions.

5 **LCDR Venturella:** Are there any specific loading conditions provided as examples in
6 the trim and stability booklet? Which ones are provided and what are these used for?

7 **WIT:** Okay. In the example conditions there's a full load departure and arrival and a
8 ballast departure and a ballast arrival condition shown in the booklet.

9 **LCDR Venturella:** In your opinion does that cover the entire scope of the vessel of
10 operation?

11 **WIT:** These are the minimum loading conditions that need to be put into the trim and
12 stability booklet. If the owner wants additional conditions in the booklet it's between
13 them and the Naval Architect that they have to – that they've hired to create the trim and
14 stability booklet to put those in the booklet. But at this point they have sample
15 conditions and they have blank loading forms to evaluate conditions that aren't shown in
16 the booklet. So it meets the criteria.

17 **LCDR Venturella:** In the El Faro's trim and stability booklet how are cargo weights and
18 centers of gravity determined and considered?

19 **WIT:** There are certain instructions for the calculation of the VCG of the cargo. There's
20 guidance on how to do that in the booklet itself. And the containers I believe are done
21 through an outside program and then brought in, you know done by hand.

22 **LCDR Venturella:** So your, okay let me clear that up. So you said the containers are
23 determined through an outside program, is that correct?

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1 **WIT:** That's what I've been told. It's not part of the trim and stability booklet, but that's
2 what I've been told that they instead of evaluating each container by hand they have a
3 program that tallies the numbers.

4 **LCDR Venturella:** So was the review of the trim and stability booklet considering
5 software?

6 **WIT:** No. The booklet has a blank loading form for them to do it by hand.

7 **LCDR Venturella:** Okay. How are liquids such as fuel, ballast water and other liquids
8 accounted for including their weights, center of gravity and free surface effect? And can
9 you comment specifically on which free surface criteria is used?

10 **WIT:** There are tank capacity tables that were put into the trim and stability booklet.
11 Originally the booklet had used full load centers for the conditions. Later on the booklet
12 was modified to have variable centers based upon the actual liquid loadings of the
13 tanks, the sounding tables. So the Master can sound the tanks, go to the tank tables
14 and they'll come up with the weights and centers and free surface requirements from
15 the tank tables.

16 **LCDR Venturella:** Can you comment on which specific regulatory criteria impacted the
17 free surface in the book? The free surface that comes into effect for each of the slack
18 tanks.

19 **ABS:** Are you asking how free surface is calculated in slack tanks?

20 **LCDR Venturella:** Yes. I'm saying in the review of the booklet for instance was the
21 free surface done with the intact stability code or with 46 C.F.R. subchapter S criteria?

22 **WIT:** We did not use the IS code, the IMO intact stability code in review of the booklet.
23 This was done completely to the Coast Guard criteria and the C.F.R.

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1 **LCDR Venturella:** Would it be accurate to assume that if the subchapter S free surface
2 is used in the trim and stability booklet then the same criteria would be used in the
3 software?

4 **WIT:** No that would be incorrect.

5 **LCDR Venturella:** Okay. I think we're going to get into that later.

6 **WIT:** If I could clarify. It's – the C.F.R. criteria limits the number of slack tanks and
7 requires a maximum free surface of a certain number of tanks. In the CargoMax
8 software the program uses at a minimum the free surface requirement from 170.285 I
9 believe it is as a baseline. So regardless of how much free surface or how little free
10 surface it will always have that minimum requirement. Minimum required free surface.
11 It can allow the Master to have more slack tanks than that and it will increase the
12 amount of free surface considered in the condition accordingly.

13 **LCDR Venturella:** Thank you for that clarification. What is the minimum required GM
14 and how is it determined using the trim and stability booklet?

15 **WIT:** The minimum required GM in the trim and stability booklet as it currently stands is
16 based on the Coast Guard weather criteria in 46 C.F.R. 170.170, which is the criteria we
17 described before. Do we need to revisit that?

18 **LCDR Venturella:** No. What I would like to do is could we refer to page 16 in Exhibit 8,
19 the trim and stability booklet. It's the minimum required GM curve.

20 **WIT:** Okay.

21 **LCDR Venturella:** Can you explain specifically how the user would use these curves
22 that are developed?

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1 **WIT:** Okay. Based – these – there’s 5 different required GM curves and they’re based
2 upon the wind profile of the loaded ship based on how many containers there are and
3 how many tiers of containers. So if they’re only carrying a maximum of 1 tier of
4 containers on deck then the lowest curve labeled as 1 tier would be the required GM. If
5 there’s any containers – any container tiers that are two high regardless of how many, it
6 could be 1 it could be all of them then the second, then the curve labeled 2 tiers would
7 be applicable. And then there’s labels for each of the curves to show when those
8 curves would be used.

9 **LCDR Venturella:** Thank you. And based on that I assume that if containers are
10 arranged with a number of different levels in different bay’s that the user isn’t permitted
11 to do some form of interpolation that they are to assign a conservative value as you
12 suggested, right?

13 **WIT:** In accordance with the trim and stability booklet, yes.

14 **LCDR Venturella:** But you’re, I assume from the way you answered that it’s allowed to
15 be different for the stability instrument again?

16 **WIT:** Yes.

17 **LCDR Venturella:** Okay. Thank you.

18 **CAPT Neubauer:** Can I ask a clarification here? Sir, does that mean that the
19 CargoMax software which is stability instrument would allow the vessel to operate
20 outside the Federal Regulations without some kind of warning or notice?

21 **WIT:** No, sir, that would be incorrect. The CargoMax program has a feature that allows
22 the Master to input the container loading and then based upon the actual wind profile of
23 the loaded containers would calculate, excuse me, the required GM in accordance with

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1 46 C.F.R. 170.170. So it would be in accordance with the required intact stability
2 criteria.

3 **CAPT Neubauer:** How about in regard to the slack tank criteria?

4 **WIT:** The CargoMax criteria – CargoMax stability instrument, the purpose of the
5 stability instrument is to allow the Master to have more flexibility in the loading of the
6 ship. The free surface requirement that's in the trim and stability booklet is in there as a
7 conservative measure for the stability calculations. The stability instrument allows a
8 Master to have greater flexibility in the calculation process. So while the vessel is not in
9 accordance with the trim and stability booklet it is in accordance with the applicable
10 regulations.

11 **CAPT Neubauer:** So is it your understanding that a vessel can be outside compliance
12 with the trim and stability book, but be in compliance with Federal Regulations?

13 **WIT:** Yes, sir. And that's a commonplace. I mean that's what these stability
14 instruments were developed for. The guidelines on developing them and reviewing
15 them specifically talked to different types of programs which include actually running the
16 calculations, the required calculations to show compliance with the criteria.

17 **CAPT Neubauer:** Thank you.

18 **LCDR Venturella:** Okay. I'm going to continue a little bit here. First of all I did want to
19 ask one question. What is considered primary, the trim and stability booklet or the
20 stability instrument software?

21 **WIT:** The stability instrument is a supplement to the approved stability documentation.
22 It cannot be approved in place of the written trim and stability booklet. And that's

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1 documented in the intact stability code as well as IACS Unified Requirement number 5,
2 L5.

3 **LCDR Venturella:** Is the stability instrument a requirement for the El Faro?

4 **WIT:** No it is not.

5 **LCDR Venturella:** Okay, thank you. In the previous testimony we've heard the term
6 GM margin mentioned a lot. Please explain what that is and how it relates to the
7 minimum required GM calculated in the trim and stability booklet for El Faro.

8 **WIT:** In the statutory regulations there is no such thing as a GM margin. There's a
9 required GM which is what's incorporated on page 16 of the trim and stability booklet, if
10 the owner or the operator decides to operate at a higher GM than that based upon ship
11 handling, ship – their experience that is entirely up to them. But there is no margin
12 above the requirement that they have to meet.

13 **LCDR Venturella:** What are damage control plans and damage control booklets? And
14 was the El Faro required to have them?

15 **WIT:** Damage control plans and damage control booklets are – come into effect with
16 the SOLAS regulations. They are there to show the closing appliances, the watertight
17 and boundaries of the vessel. And what needs to be done if the vessel has to, in a
18 damage condition. It's a quick reference to where the closing appliances are. It is a
19 document that is required to be onboard, but is not required to be approved. Therefore,
20 it was in this case it was up to the OCMI to require the damage control plan to be
21 onboard the vessel. That was outside the scope of the ABS review.

22 **Mr. Stettler:** Captain Neubauer this is probably a good time to pause and provide an
23 opportunity for the board members and the NTSB and PII's to ask some additional

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1 questions. We've covered three basic topic areas, basic roles and responsibilities, load
2 line certification and a general stability. After the break we'll also cover stability tests
3 just for everybody's knowledge, we'll get into more depth in stability test and inclining
4 and deadweight surveys. And we will also spend some time on stability instruments,
5 the loading software that we've been discussing as well. Captain.

6 **CAPT Neubauer:** Thank you. At this time does the NTSB have any questions? Mr.
7 Stolzenberg.

8 **Mr. Stolzenberg:** Good afternoon Mr. Gruber, Eric Stolzenberg, NTSB. Okay. Earlier
9 you stated the, and I apologize if I jump around a bit due to my colleagues previous
10 statements. I just want to touch on a few points and get some clarifications. Earlier you
11 stated that exhaust ventilation trunks were the downflooding point, is that correct?

12 **WIT:** That is correct.

13 **Mr. Stolzenberg:** And that was because they were the first, the lowest opening or the
14 deemed opening that could not be made weathertight or watertight?

15 **WIT:** That's correct.

16 **Mr. Stolzenberg:** Okay. And the supply ventilation trunks could be made weathertight
17 according to your statements and therefore they were not the designated downflooding?

18 **WIT:** That's correct.

19 **Mr. Stolzenberg:** Okay. So if the vessel's underway should the supply ventilation
20 trunk fire dampers to the main cargo holds, if they are closed does the vessel meet load
21 line requirements? And if they're open does it not meet load line requirements?

22 **WIT:** They are permitted to be open at the discretion of the Master.

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1 **Mr. Stolzenberg:** Okay. And then per applicable rules and regulations to the El Faro
2 where would the required documented information regarding the closure of these
3 dampers be furnished to the Master or to the vessel shore side operations personnel?

4 **WIT:** The openings are actually listed on the load line form condition of assignment
5 that's onboard the vessel. Instructions on when – on closing them are – it's up to the
6 discretion of the Master. We don't – there's no requirement on operation of the vessel
7 itself in the Load Line Convention.

8 **Mr. Stolzenberg:** So the Master would have to have the availability of the load line
9 documentation to make that determination?

10 **WIT:** That document is – that document lists all of the openings. It is actually onboard
11 the vessel and maintained onboard the vessel.

12 **Mr. Stolzenberg:** Okay. Would that information be furnished in the stability booklet?

13 **WIT:** That is not in the stability booklet, no.

14 **Mr. Stolzenberg:** Is it typically in a stability booklet in your experience for ocean going
15 vessels?

16 **WIT:** I have seen where information like that has been included and where it hasn't
17 been included.

18 **Mr. Stolzenberg:** Thank you. Earlier you mentioned that the El Faro, and if I misquote
19 you please correct me. You mentioned the El Faro would still meet current Load Line
20 Conventions even if righting energy was considered because that energy criteria was
21 only for smaller vessels, is that correct?

22 **WIT:** Could you repeat that please?

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1 **Mr. Stolzenberg:** Earlier you mentioned the El Faro would meet current Load Line
2 Conventions that included the righting arm criteria because that criteria is not applicable
3 to the El Faro at this time.

4 **WIT:** You're confusing it. You're saying – at one point you're saying its required and
5 the next sentence you're saying it's not required.

6 **Mr. Stolzenberg:** Okay I'll rephrase it. Would the El Faro meet the righting arm energy
7 requirements under – if it was built today?

8 **WIT:** For the size of the vessel there are no CFR righting energy requirements for it to
9 meet today.

10 **Mr. Stolzenberg:** Okay. Additionally do the side shell and covered freeboard deck
11 ventilation openings on the El Faro present any typical – an atypical design that the
12 international load line rules and the ABS Load Line Technical Manual did not effectively
13 account for?

14 **WIT:** No, I mean the openings in the, are you talking about the openings in the side
15 shell for cargo or the opening for the vents?

16 **Mr. Stolzenberg:** I'm specifically referring to the supply and exhaust ventilation
17 openings, sir.

18 **WIT:** Provided they were, based on the load line tech manual, provided the gaskets
19 were put on the exhaust vents it would meet the current regulations of the – the current
20 Load Line Convention and Coast Guard interpretations of that. Any decisions that were
21 made when the vessel was built would have to be looked at with regards to those
22 gaskets.

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1 **Mr. Stolzenberg:** Okay. Is the arrangement to have large ventilation openings in a
2 covered freeboard deck typical for vessels of this size and major, or is this an atypical
3 design? In your experience.

4 **WIT:** I don't recall seeing this similar design on other vessels. But I can't say that it's
5 not out there.

6 **Mr. Stolzenberg:** Another follow up question during the fire dampers that had come up
7 earlier, in the original design drawings, I think it's Exhibit 203 they're listed as watertight
8 fire dampers. But earlier in the decision around 1993 and I believe you stated they were
9 weathertight fire dampers. Can you give me the history or do you know the history how
10 originally they were fire tight, or excuse me watertight dampers and became
11 weathertight dampers?

12 **WIT:** I believe the drawings say WT which I believe you're assuming to be watertight.

13 **Mr. Stolzenberg:** In the detail of the drawing it says watertight on the drawing.

14 **WIT:** Okay. From the stability standpoint we considered those to be weathertight which
15 is all the intact stability requirements or downflooding points requires. We didn't make a
16 distinction that it was weathertight.

17 **Mr. Stolzenberg:** Okay, thank you. So to clarify in '93 when ABS first does a stability
18 assessment, or a load line those are just considered weathertight and the original
19 designation of the drawing is not necessary?

20 **WIT:** Correct. The intakes were considered weathertight.

21 **Mr. Stolzenberg:** Thank you.

22 **WIT:** Just to further clarify on that. The stability calculations were then submitted to the
23 Coast Guard Marine Safety Center for a full independent review under NVIC 3-84

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1 change 1. And the Coast Guard had no comments on those calculations. By that we
2 take it that the Coast Guard agreed with the – how we applied the openings as
3 weathertight and non-tight.

4 **Mr. Stolzenberg:** Okay. A follow up along that same line. Earlier you described how
5 ABS interfaces with Coast Guard during the stability letters and issuing a load line.
6 Does the Coast Guard perform routine and non-routine oversight of your stability
7 reviews?

8 **WIT:** Yes they do.

9 **Mr. Stolzenberg:** And which division performs those?

10 **WIT:** It depends on the division in the Marine Safety Center. We differ, ABS differs
11 from the Marine Safety Center in that our load line stability group handles all types of
12 vessels except for offshore units. In the Marine Safety Center they have a large and
13 small vessel group, they have an offshore group, so it depends on which division in the
14 Marine Safety Center is doing the review, or doing the oversight.

15 **Mr. Stolzenberg:** Is that oversight conducted independently of and concurrently with
16 ABS?

17 **WIT:** It is conducted independent of our review after our review is completed.

18 **Mr. Stolzenberg:** Okay. Do you have an idea in your experience of the percentage of
19 your stability reviews that are then provided oversight review?

20 **WIT:** I don't have any idea of how many the Coast Guard does now.

21 **Mr. Stolzenberg:** Are you aware of any non-routine stability reviews by the Coast
22 Guard of ABS stability reviews?

23 **WIT:** Can you define what you mean by non-routine?

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1 **Mr. Stolzenberg:** Specifically I'm referring to NVIC 3-97 which was brought up earlier.
2 Non-routine might be due to a problem or a determination of an issue in a stability
3 review.

4 **WIT:** I'm not aware of any specific reviews that are – or oversight that's being done in
5 that regard.

6 **Mr. Stolzenberg:** Okay. Are you aware if the Coast Guard attended the El Faro
7 stability test, the most recent one?

8 **WIT:** I would have to check to see if they're on the list of attendees in the approved
9 report. I believe that's one of the MBI Exhibits.

10 **Mr. Stolzenberg:** Okay, thank you. We can check that later then. And lastly along the
11 same lines does the Coast Guard provide ABS with guidance and or stability letter
12 formats illustrating current Coast Guard policies concerning stability letters for various
13 vessel classes?

14 **WIT:** When I was in charge of the load line stability group we were in constant contact
15 with the Marine Safety Center and there was a free flow of information back and forth
16 with that regard and we did receive sample stability letters. I honestly I do not know
17 with the, it's been several years since I've been in charge of the load line and stability
18 group, so I don't know the answer to that at the current time.

19 **Mr. Stolzenberg:** At the time you were in charge of the group how did ABS promulgate
20 that Coast Guard guidance to Naval Architecture firms?

21 **WIT:** We did not provide that to Naval Architecture firms. Sample stability letters were
22 given to ABS because we were issuing those stability letters on behalf of the Coast
23 Guard. So it was for internal ABS guidance, not for the guidance of the Naval

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1 Architects. There is guidance on a presentation for the stability of information to
2 Master's which is in Coast Guard NVIC 3-89. And that's out there for public
3 consumption.

4 **Mr. Stolzenberg:** In your experience running the group did you return or reject
5 submitted, any submitted stability books based on incompleteness or not following
6 Coast Guard guidance?

7 **WIT:** We rarely stamped them resubmitted required. We would typically contact the
8 Naval Architect, go over what deficiencies were in the booklet and they would resubmit
9 the booklet to us.

10 **Mr. Stolzenberg:** Okay, thank you.

11 **CAPT Neubauer:** Mr. Kucharski.

12 **Mr. Kucharski:** Good afternoon Mr. Gruber. My questions will be a little bit less
13 technical and maybe just try to gain some insight on the instructions contained in the
14 stability manual and some of the other documentation. Can you tell us if there was an
15 approval letter for the 2007 revision E of the trim and stability book?

16 **WIT:** Yes. If a booklet is approved there is an associated letter that goes along with it.

17 **Mr. Kucharski:** Okay even if there's just notation on the load line certificate that says it
18 complies with, would there still be a letter out on that?

19 **WIT:** We would issue a, there's two different letters. There's a stability approval letter
20 which is how we document what we have done and we answer the Naval Architect or
21 the submitter with what we've done. And then for certain vessels there is a another
22 stability letter that's addressed the to Master and that would go along with the booklet
23 onboard the vessel. In accordance with 46 C.F.R. 170.110 pretty much all of the time

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1 we had a trim and stability booklet we dispensed with the stability letter and just
2 referenced the approved booklet onboard on the load line certificate. And that comment
3 was in our stability approval letter.

4 **Mr. Kucharski:** Okay. So there is a stability letter and we can get a copy of that?

5 **WIT:** You've already got a copy of it.

6 **Mr. Kucharski:** Okay, thank you. I believe you said that the trim and stability book is
7 the primary tool for assessing stability of the vessel, the El Faro?

8 **WIT:** Yes.

9 **Mr. Kucharski:** And were all the calculations in the trim and stability book reviewed by
10 ABS and confirmed?

11 **WIT:** The calculations for the required GM curve and the loading conditions were
12 checked, yes.

13 **Mr. Kucharski:** Would it be a fair statement to say that CargoMax or the stability
14 instruments, stability computer was based on the trim and stability calculations for the El
15 Faro? Taken out of the trim and stability book.

16 **WIT:** There's two parts to the CargoMax program. There's one that reads the required
17 GM curves from the trim and stability booklet. There's another that an auto wind heel, I
18 believe it's called that will actually allow the Master to – allow the Master to push a
19 button on the program to have the program calculate the required GM based on the
20 Coast Guard weather criteria and the actual wind profile. So that's not in the trim and
21 stability booklet.

22 **Mr. Kucharski:** And why is that not in the trim and stability booklet if it's the primary
23 source?

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1 **WIT:** The trim and stability booklet provides a rapid and simple means to the Master to
2 evaluate the stability. Is it not permitted to put stability calculations like that in the trim
3 and stability booklet. That is delineated in the Coast Guard NVIC 3-89. The – to allow
4 the Master greater flexibility in loading the stability computer does permit the Master to
5 load differently, but still evaluates to the applicable stability criteria.

6 **Mr. Kucharski:** I just want to make sure I understand your statement that I believe you
7 just said, it's – the stability booklet is a quick assessment the Master to determine
8 stability, is that correct?

9 **WIT:** The trim and stability booklet provides a rapid and simple means to evaluate the
10 stability.

11 **Mr. Kucharski:** And would you consider doing a long hand form with the forms at the
12 end of the stability book a quick method of determining stability?

13 **WIT:** Rapid and simple considers the actual calculation of compliance with the intact
14 stability criteria. For a vessel – instead of having the Master calculate the wind profile of
15 the vessel and calculate the GM for the different conditions or for a vessel where there
16 is a righting energy criteria, having to calculate the righting arms, draw out the curve,
17 evaluate the areas under the curve, that would not be considered a rapid and simple
18 means to evaluate stability. In either case the Master still has to input the loading
19 condition of the vessel. There's no way around that.

20 **Mr. Kucharski:** Okay. So using the trim and stability booklet, how would the Master
21 then calculate quickly how to determine if you had – if there was ample stability or GM?

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1 **WIT:** Once the condition is put in the resulting GM is compared to the required GM
2 curve. Either it's above the curve and it's acceptable or it's below the curve and
3 unacceptable.

4 **Mr. Kucharski:** Okay. So once you say it's put in are there numbers that physically
5 have to be put in on a sheet, some kind of a sheet, weights and everything else to
6 determine what the GM is of that vessel?

7 **WIT:** Yes. There are blank loading forms where the Master inputs the loading
8 condition.

9 **Mr. Kucharski:** Okay. So I'm a little bit confused. That's a rapid using method, is a
10 rapid way of determining it?

11 **WIT:** It's a rap, sorry, it's a rapid and simple means to evaluate the condition in
12 accordance with the stability criteria.

13 **Mr. Kucharski:** Have you ever performed taking those sheets to your Naval Architect,
14 could you give us an idea how long it takes to put all of those numbers in there and get
15 that rapid assessment and you know, get all the – get the GM of the vessel?

16 **WIT:** I did not do the review on this, but I've done it on other vessels. As I stated
17 before for smaller vessels with simpler cargo – simpler cargo loading arrangements it is
18 quicker. In this vessel because of the amount of containers it is a long hand operation.
19 But it's no different from any other container ship that is out on the ocean right now.

20 **Mr. Kucharski:** Would you consider using the CargoMax computer a rapid way to go
21 ahead and simplify the calculations then?

22 **ABS:** Are you asking what he considers or what ABS or what the Coast Guard
23 considers to be a rapid and simple means?

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1 **Mr. Kucharski:** No I would ask him what he considers the CargoMax, if it's a very rapid
2 way to go ahead and determine the stability of the vessel.

3 **WIT:** The CargoMax program, the Master still has to input the different weights of each
4 container of the RO-RO cargo. That still has to be input. What makes it simpler is the
5 comparison with the GM curve becomes automatic or in the case of the auto heel, auto
6 wind heel, the evaluation of the criteria based upon the specific loading is – becomes a
7 rapid and simple means of evaluating stability.

8 **Mr. Kucharski:** Just briefly, I don't want to get too far into the CargoMax software, but
9 what was the standard of review for the CargoMax software? Can you speak to that?
10 Was it all the calculations reviewed?

11 **WIT:** Could you repeat that again, I'm sorry?

12 **Mr. Kucharski:** Yeah, the CargoMax software when that was submitted, we have a
13 letter I believe it's Exhibit 16, but we'll come to that, it's a letter that you signed on the
14 CargoMax, about the CargoMax software. Can you tell us the level of review for the
15 CargoMax software? In other words it was provided by a third party to ABS for review.
16 Were all the calculations reviewed?

17 **WIT:** Our, the plan review engineer that worked for me at the time did an in-depth
18 review of the calculations and the operation of the program.

19 **Mr. Kucharski:** Would you look at Exhibit 8, I'm sure you've looked at it quite a bit, and
20 that's the approved 2007 trim and stability book? And would you look at pages 6
21 through 8, starting with 6, table that's entitled instructions roll on, roll off vessel trim and
22 stability? Do you see that?

23 **WIT:** Yes.

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1 **Mr. Kucharski:** Was the El Faro considered a roll on, roll off vessel after the – adding
2 of all the containers which is a revision D I believe it is?

3 **WIT:** It was a combination, it was a roll on, roll off and a container vessel.

4 **Mr. Kucharski:** Well I'm going to skip a little bit there then. Exhibit 40, page 7 has the
5 definition of standardized, non-standardized, or semi-standardized and non-
6 standardized cargo.

7 **ABS:** What exhibit number?

8 **Mr. Kucharski:** Exhibit 40 please. It's a securing manual and I apologize for jumping
9 to it, but at page 7 it has the definitions of what standard cargo is, semi-standard, do
10 you see that at the bottom of page 7? It says standardized cargo means, then it has
11 semi-standardized and non-standardized.

12 **WIT:** He's opening it up. The cargo securing manual is reviewed by a different
13 department at ABS. That had absolutely nothing to with the load line and stability
14 department. So I was not, neither I nor any of my engineers were a part of this review.
15 So answering questions this should be directed to that department.

16 **Mr. Kucharski:** Okay. So you're still maintaining the answer that it was roll on, roll off
17 vessel and not something else? Is that correct? Under the trim and stability book.

18 **WIT:** It had roll on, roll off cargo and container ship – and container cargo.

19 **Mr. Kucharski:** Please look at Exhibit 16, it's a letter signed by you regarding the
20 submission of documentation for approval of the CargoMax software. And it mentions
21 item 2 of the documentation submitted, it talks about wind heel, is this the wind heel
22 criteria where it says Dear Mr. Newton and we have received the following documents,

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1 direct calculation of required GM for U.S. Coast Guard wind heel. So is this the wind
2 heel criteria we're talking about?

3 **WIT:** Yes. I was referring to the auto wind heel, but that is documentation that supports
4 the program.

5 **Mr. Kucharski:** Was the wind heel criteria calculations included or added to the trim
6 and stability book?

7 **WIT:** The wind heel criteria is in the trim and stability booklet. There's required GM
8 curves in the trim and stability booklet. The direct calculation that's referred to in here is
9 the opportunity for the Master to have the program evaluate conditions based upon the
10 actual wind loading profile. Not the generic profiles that are in the trim and stability
11 booklet. A little conservative approach in the trim and stability booklet.

12 **Mr. Kucharski:** So can you point me anywhere in the revisions of the trim and stability
13 booklet where it talks about the auto wind heel calculations being included in there?

14 **WIT:** They're not in the trim and stability booklet. Why would we refer to them?

15 **Mr. Kucharski:** Okay. Okay, so the wind heel calculations are not in the trim and
16 stability booklet?

17 **WIT:** Which wind heel calculations are you talking about?

18 **Mr. Kucharski:** The auto wind heel. The wind heel criteria within the CargoMax
19 loading program. Is that wind heel criteria in the trim and stability booklet?

20 **WIT:** That option is not in the trim and stability booklet. There are GM required values
21 in accordance with the GM, the weather criteria in the T&S booklet. There's two
22 different things.

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1 **Mr. Kucharski:** Can you tell us what those values are then in the trim and stability
2 booklet? What wind values are actually in there?

3 **WIT:** Do I need to repeat this or can we go back to the original ----

4 **Mr. Kucharski:** Give me velocity. Can you tell me a velocity in there that ----

5 **WIT:** The velocity I believe was calculated to be about 54 knots if I'm not mistaken.

6 **Mr. Kucharski:** Is this mentioned anywhere in the trim and stability book and
7 instructions or anything to the Master?

8 **WIT:** No. Details of the actual calculations are not to be put in the trim and stability
9 booklet in accordance with the Coast Guard guidance in NVIC 3-89.

10 **Mr. Kucharski:** And you consider the wind speed as a detail?

11 **WIT:** That's never been put into a booklet that we've approved or that I've seen
12 approved by the Coast Guard. And it was not in the Coast Guard approved booklets for
13 the El Faro or any of the sisters that I've seen.

14 **Mr. Kucharski:** The, so you said you've never seen the wind heel or the wind speed in
15 an ABS approved trim and stability booklet, is that correct?

16 **WIT:** Not that I can recall, sorry.

17 **Mr. Kucharski:** Okay. The U.S. Coast Guard weather criteria, does this include sea
18 state and wind? If not what does it actually include?

19 **WIT:** It includes the wind speed that's derived partly on the basis of the vessel's length.
20 So as I said in this vessel I believe, is it 54 or 55 knot wind, I don't recall off hand.

21 **Mr. Kucharski:** Were there changes made to the load line, and we've talked a lot
22 about it, was it approximately a 2 foot change to the load line from the 1993 stretch to
23 where the containers were added on the deck? Was it approximately 2 foot?

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1 **ABS:** In 2006, you're referring to the conversion?

2 **Mr. Kucharski:** Yeah, correct.

3 **WIT:** Yes there was approximately 2 foot increase in draft.

4 **Mr. Kucharski:** So that – so that means the ship sits, simplistically sits 2 feet deeper in
5 the water?

6 **WIT:** Yes, sir.

7 **Mr. Kucharski:** Please look at Exhibit 204. And I think we've talked about it quite a bit
8 or you've mentioned it, this is the actual C.F.R. section, I think it's subpart D. It says
9 stability instructions for operating personnel. You can start on page 1 of Exhibit 204.

10 Do you see that?

11 **WIT:** Yes.

12 **Mr. Kucharski:** Okay. This is 2006 version. I also have the 2007 version. If you could
13 tell me which one of these two would apply to the 2007 I believe it is, was it 2007 or 6, I
14 think it was 2007 when the stability manual, the trim and stability book was submitted for
15 approval.

16 **WIT:** They're both the same and they haven't changed – they were both – it was also
17 the same when we did the review back in 1993, so.

18 **Mr. Kucharski:** Great thank you. You make it a little bit easier. I didn't see any
19 changes myself, but I just wanted to be clear. Who would you consider the operating
20 personnel onboard the vessel?

21 **WIT:** The Master and the Mates.

22 **Mr. Kucharski:** Okay. Would you look at section 170.110, it's entitled stability booklet,
23 do you see that?

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1 **WIT:** Yes.

2 **Mr. Kucharski:** Okay. Then go to section D. And at the bottom of section D, well
3 section D says the format of the stability booklet, do you see that paragraph where it
4 starts there?

5 **WIT:** Yes.

6 **Mr. Kucharski:** And then reading a little bit further down it says in developing the
7 stability booklet consideration must be given to including the following information.

8 **WIT:** Yes.

9 **Mr. Kucharski:** Would you skip down to number 11 where it states general precautions
10 for preventing unintentional flooding? Could you tell us what unintentional flooding
11 would be?

12 **WIT:** Unintentional flooding in a general sense would be the entrance of water into the
13 watertight and weathertight envelope of the vessel.

14 **Mr. Kucharski:** Okay. So would that be, included in that would be vents or the fire
15 dampers on the hull there? Would that be – if water came in through that would it be
16 considered unintentional flooding?

17 **WIT:** Yes.

18 **Mr. Kucharski:** So I'm a little bit confused. Are there any instructions or general
19 precautions in the trim and stability, in the instructions that warn about general
20 precautions like any kind of closures?

21 **WIT:** There are none in the trim and stability booklet either approved in 2006 or in the
22 previous approval that was reviewed by ABS and the Marine Safety Center.

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1 **Mr. Kucharski:** Looking at the same section, 170.110 would you look at please at item
2 number 15? And could you read this to us please?

3 **WIT:** Any other necessary guidance for the safe operation of the vessel under normal
4 and emergency conditions.

5 **Mr. Kucharski:** Thank you. Would guidance on the effective wind on the vessel,
6 especially in an emergency situation, would that not be considered necessary
7 guidance?

8 **WIT:** In the guidance that we've received from the Coast Guard and based on previous
9 reviews and oversights that's never been an issue that's come up as a deficiency. So
10 it's not – we typically do not put the wind speed in the trim and stability booklet.

11 **Mr. Kucharski:** Thank you. No further questions. Thank you, Mr. Gruber.

12 **CAPT Neubauer:** Mr. Gruber we've been going for a long time. I plan to just go to the
13 parties in interest and then we'll take a break. Does that sound okay, sir?

14 **WIT:** That's fine, thank you.

15 **CAPT Neubauer:** Tote do you have any questions at this time?

16 **Tote Inc:** We don't have any questions, sir.

17 **CAPT Neubauer:** ABS?

18 **ABS:** Yes, sir. Mr. Gruber you described GM, there's been discussions during the
19 course of the week about GM and the margin, or GM margin. Firstly could you describe
20 what the terms tender and what the term stiff means in connection with how a vessel
21 behaves?

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1 **WIT:** A vessel is tender when it tends to roll over and recovers slowly. And that's
2 typical of a lower GM, higher KG value. A vessel is stiff when it has a lower KG value or
3 a higher GM and it tends to roll back faster.

4 **ABS:** Okay. So if the vessel's stiff it's tendency to right itself is faster?

5 **WIT:** Correct.

6 **ABS:** Okay. And the forces of the accelerations with a stiff vessel would be increased,
7 correct?

8 **WIT:** Correct.

9 **ABS:** Now with regard to GM and the minimum GM that's required for the stability of
10 the vessel is it fair to say that under the stability requirements the minimum GM for a
11 particular condition of loading would need to be maintained for the entire voyage?

12 **WIT:** The minimum GM is – the loading condition is calculated and compared to the
13 minimum GM for that draft. It is up to the Master or whoever he designates to evaluate
14 the conditions along the voyage to account for the fuel oil burn off to ensure that the
15 vessel in that condition meets the associated – the required GM associated with that
16 draft.

17 **ABS:** Okay. So again just to be clear there is no requirement for a GM margin? The
18 requirement is to maintain the GM through the course of the voyage regardless of how
19 much fuel might be burnt off.

20 **WIT:** To maintain a required GM in accordance with that draft.

21 **ABS:** Okay. And so if a vessel maintains its GM, its required GM for a particular draft
22 during the course of a voyage, does it matter if it's tender or stiff as far as the stability
23 requirements go?

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1 **WIT:** No that has nothing to do with the required GM.

2 **ABS:** Okay. So if a vessel is tender that doesn't mean it doesn't have adequate
3 stability, correct?

4 **WIT:** That is correct.

5 **ABS:** And if a vessel is stiff that doesn't mean that it has too much stability?

6 **WIT:** No, it doesn't mean that.

7 **ABS:** And so can you describe what the – what considerations generally go into
8 whether a vessel – withdrawn. To the extent a vessel does have too much GM or a
9 high GM if the vessel is very stiff, why might that not be a good condition for a vessel?

10 To have excess GM or too much GM, or to be too stiff.

11 **WIT:** As long as it meets the required GM then it's up to the Master to determine how
12 much GM they want in excess of that. That's an operational issue, that's not covered by
13 the regulations.

14 **ABS:** You indicated that the ventilator arrangement was reviewed in accordance with
15 the Load Line Convention, correct?

16 **WIT:** Yes.

17 **ABS:** And based on your review sitting here today was the ventilation arrangement
18 properly approved in accordance with the Load Line Convention?

19 **WIT:** Yes it was.

20 **ABS:** Can you again describe what a damage control plan is and by whom it would be
21 required by?

22 **WIT:** The damage control plan is described in the SOLAS convention as a document
23 that shows the watertight boundaries of the vessel internal and external as well as the

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1 closure devices and location of these closure devices if the Master needs to get to them
2 in the case of an emergency. It is – SOLAS does not require the documents to be
3 approved, just to be onboard the vessel which puts it to the OCMI at that point to require
4 to be onboard.

5 **ABS:** Nothing further.

6 **ABS:** Captain Neubauer, I'm sorry Brian Eisenhower for ABS if I may add a question
7 before we move on to the next party in interest?

8 **CAPT Neubauer:** Yes, sir.

9 **ABS:** Thank you, sir. Mr. Gruber you were answering some questions from Captain
10 Kucharski a moment ago about Exhibit 204 the section on subpart D, and specifically
11 we were in 170.110 about the stability booklet. And he read to you a particular
12 sentence and I know there were a number of items below it, and quote in developing the
13 stability booklet consideration must be given to including the following information and it
14 continues from there. Mr. Gruber do you consider those items to be mandatory items
15 for inclusion in the stability booklet based on the C.F.R.?

16 **WIT:** No. The C.F.R. says they need to be considered, but not required to be included.

17 **ABS:** Thank you Captain, no further questions.

18 **CAPT Neubauer:** Mrs. Davidson?

19 **Ms. Davidson:** No questions.

20 **CAPT Neubauer:** Herbert Engineering?

21 **HEC:** No questions.

22 **CAPT Neubauer:** At this time we'll take a recess and reconvene at 5:15.

23

1 *The hearing recessed at 1704, 19 May 2016*

2 *The hearing was called to order at 1716, 19 May 2016*

3 **CAPT Neubauer:** The hearing is now back in session. For everyone's planning
4 purposes we're not going to be able to finish completely with your testimony Mr. Gruber
5 today. So we were planning to just focus on the inclining test for the El Faro for the
6 remainder of the day and then cover CargoMax issues tomorrow morning if you're able
7 to come back at that time, sir?

8 **WIT:** I'll be here. I don't fly home until Friday afternoon, Friday evening, so.

9 **CAPT Neubauer:** Excellent. Doctor Stettler.

10 **Mr. Stettler:** Thank you Captain. Mr. Gruber so we're going to talk about stability test
11 which the El Faro underwent in 2006 I believe, I don't remember the exact date of the
12 test, but the stability test report was signed in early 2006. Also called an inclining
13 experiment and a deadweight survey. So I just have some questions regarding that for
14 you. To start out with could you please explain the purpose of a stability test or an
15 inclining experiment? And when one is performed?

16 **WIT:** Okay. The purpose of an inclining experiment is to determine the lightship weight
17 and vertical and longitudinal center of gravity of the vessel. It is typically done when a
18 vessel is finishing completion just prior to delivery when the vessel's complete. And it's
19 also done on cargo ships when there's a major modification. Passenger ships are
20 handled a little bit differently. According to SOLAS they have to have periodic light
21 weight surveys to verify any changes during that process. But for cargo ships it's just
22 required at this point when there's a change to the lightship weight that requires the
23 inclining.

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1 **Mr. Stettler:** And what is a deadweight survey when you use that term?

2 **WIT:** A deadweight survey is typically done as part of an inclining. It's the first part of
3 the inclining experiment where the vessel's weight is determined by taking freeboard
4 readings along the vessel's length at five different points on each side. And determining
5 the weight and the LCG of the vessel.

6 **Mr. Stettler:** Are they always conducted in conjunction with one another?

7 **WIT:** A deadweight survey is always with an inclining, but it can be done separately to
8 confirm detailed weight calculations.

9 **Mr. Stettler:** Okay, thank you. What are – could you discuss a few of the requirements
10 for conducting a stability test? In other words what are the governing documents and
11 what sets the procedures? Are there procedure and requirements on conducting a
12 stability test?

13 **WIT:** The requirements come in 46 C.F.R. subchapter S, it's in 170. There are
14 requirements for the stability test. I don't know the exact number of the regulation, but
15 it's in subchapter S. And it does require an inclining procedure to be submitted
16 beforehand by the Naval Architect. That procedure delineates where the vessel is
17 going to be done, who's in charge, what the condition of the vessel is going to be or
18 intended to be. Where the freeboard readings are going to take – be taken. If it's an
19 inclining experiment it will go into the details of the inclining experiment. Position of the
20 weights, the pendulums or other reading devices. And that's submitted to the reviewing
21 authority prior to the test and it's approved by either Coast Guard or ABS on behalf of
22 the Coast Guard prior to the test.

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1 **Mr. Stettler:** You mentioned a C.F.R. section which provides some requirements. Are
2 there any procedural guidelines or any other documents that are commonly used?

3 **WIT:** The ASTM standard for conducting inclining experiments, F1321 and there's
4 different versions of it depending on when it was approved. The most recent version
5 was from 2014. That's the Coast Guard's guidance for stability test. That's also ABS's
6 guidance as well.

7 **Mr. Stettler:** So just to confirm that is guidance though, correct?

8 **WIT:** That's delineated by the Coast Guard as to the stability test has to be done in
9 accordance with that document. And it's in our procedures as well for U.S. Flagged
10 vessels and foreign flagged vessels.

11 **Mr. Stettler:** Could you please provide just a basic description of the process, overview
12 of the process for conducting a stability test, what uh, you know step by step what does
13 the folks do that actually do the test?

14 **WIT:** The test is conducted by the Naval Architect or the shipyard. The ABS is there,
15 we have a surveyor there as a witness only similar to what a U.S. Coast Guard
16 inspector would be attending as. The vessel is prepped for the test prior to the
17 attendance of the ABS or the witness. Like I said the procedure is already done and
18 approved. But everybody gets onboard, typically there's a meeting to go over what's
19 going to happen. They look – they start surveying the vessel for weights to add, deduct
20 and relocate to bring the vessel from as the inclined condition to the lightship condition.
21 So there's a full survey of the vessel top to bottom, stem to stern. The tankage is all
22 sounded to make sure that it's in accordance with the requirements for slack tanks.
23 Typically at that point the inclining weights are put onboard the vessel, if they're not

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1 already on. The pendulums should have already been set up and are checked. At that
2 point they take the freeboard readings along the vessel's length, typically five equally
3 spaced points starting at the stem going back to the stern on both sides of the vessel.
4 The waterline is then plotted at an exaggerated scale to make sure that all the points
5 are in line. When everybody is in agreement the inclining experiment will start. Where
6 they'll start shifting weights from the initial condition, typically three movements to the
7 port side, back to the original point, three movements to the starboard side and then
8 back to the original point. And the pendulum readings are taken to determine the heel
9 angle based on each weight movement.

10 **Mr. Stettler:** Could you describe those pendulums please?

11 **WIT:** Typically it is a washer suspended on some type of knife edge from somewhere
12 near the overhead. It drops down it's typically a weighted bob down in a tub of oil and
13 there's a batten stretched across the top of that. When the initial condition is marked it's
14 marked on the batten. And then for each weight movement once the movement is
15 done, the vessel's settled out the deflection is marked on the batten based on the
16 pendulum reading. That's done at three different locations along in the vessel. This is a
17 requirement for three different reading devices.

18 **Mr. Stettler:** What is the, you mentioned an ABS surveyor witnesses the test. What is
19 his role other than witnessing the test? Is he participating in any way in that test?

20 **WIT:** The ABS surveyor is there to witness the test to ensure that it's performed in
21 accordance with the approved procedure and the ASTM standard. He's there to answer
22 any questions about small minor deviations to the test procedure that typically occur at
23 the last minute. As far as ABS is concerned our surveyors collect the same data that

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1 the Naval Architect collects and submits that back to the engineering department in a
2 special report immediately following the test. They don't have any – they cannot stop
3 the test at all. That's up to the person conducting the test. They can make suggestions,
4 but it's up to the person conducting the test. That's where their responsibility for the test
5 lies.

6 **Mr. Stettler:** I should have asked, approximately how long does, for a large vessel like
7 the El Faro, how long would an inclining typically take for that?

8 **WIT:** It could take several hours to half a day.

9 **Mr. Stettler:** Could you describe the role of the engineering review conducted? So you
10 mentioned the surveyor witnesses the test and then the engineering, the load line
11 stability group reviews. Could you discuss what they do as part of the review in the
12 engineering department?

13 **WIT:** The review of the results?

14 **Mr. Stettler:** Yes.

15 **WIT:** The Naval Architect will submit the results to ABS. We will have previously
16 received the report from the surveyor. The first thing we do is take a look at the report
17 side by side to make sure that the data taken from the day of the test is accurately
18 reflected in the report. Most of the time, if there's differences typically it's an oversight
19 or a mistype in the report that will get fixed. But the first thing you do is to make sure
20 that the report reflects the day of the test. The engineer then takes the model, the
21 computer model, verifies the draft, the drafts along the vessel's length that are
22 submitted in the report. Inputs them into the GHS program to verify the as inclined
23 weight from the report.

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1 **Mr. Stettler:** Is that a, you said the model in GHS is that some kind of calculation to
2 verify what the Naval Architect is doing?

3 **WIT:** Yes. We're taking the same data and doing an independent check to verify the
4 results of the report.

5 **Mr. Stettler:** So this is a completely separate computer model of the vessel from what
6 the Naval Architect is submitting, is that correct?

7 **WIT:** That's correct.

8 **Mr. Stettler:** How close do the results need to be if you're comparing the results of the
9 Naval Architect and the results that your engineers obtained in doing their analysis?
10 How close do they have to be for acceptance? Or do you have something that you look
11 at? What are your requirements?

12 **WIT:** Typically we look at less than 1 percent difference between the two. If it's greater
13 than that we'll start investigating why there's such a difference.

14 **Mr. Stettler:** One percent of what?

15 **WIT:** The lightship weight.

16 **Mr. Stettler:** Okay. How about KG or the height of the center of gravity?

17 **WIT:** Typically ----

18 **Mr. Stettler:** How do you compare those?

19 **WIT:** Typically it's less than an inch. No more than an inch and a half.

20 **Mr. Stettler:** What happens if the results are slightly different? So say it's 2 inches,
21 what happens then?

22 **WIT:** We'll investigate why the difference is. Typically it'll lead back to the hydrostatics
23 and the ship model in determination. Typically you have two people that will be on

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1 opposite sides of the country making their own ship model so there's bound to be some
2 differences that have to be looked at to see if there's inaccuracies.

3 **Mr. Stettler:** Okay. What do you typically determine that it's somewhere in the middle
4 or one is wrong and the other is right? Or how do you resolve that discrepancy in those
5 cases?

6 **WIT:** It's done on a case by case basis. I can't tell you one – that there's a standard
7 way of doing it. It depends on where we find the discrepancy.

8 **Mr. Stettler:** Does the process for the load line stability group review vary depending
9 on whether or not the Coast Guard is involved or whether or not a vessel is – ABS is
10 acting on the Coast Guard's behalf under a NVIC or the alternate compliance program?
11 Are there any differences with the way that ABS handles an incline experiment?

12 **WIT:** I'm not sure exactly. If the Coast Guard is involved, do you mean that the Marine
13 Safety Center is performing the review?

14 **Mr. Stettler:** Yes. Or during the actual inclining itself. Would a Coast Guard inspector
15 be aboard to witness the inclining itself? Under what – I guess under what conditions or
16 what situations would the Coast Guard be involved either as a witness to the inclining or
17 in reviewing the results?

18 **WIT:** If we're doing a review on behalf of the Coast Guard either under ACP or NVIC 3-
19 97 the Coast Guard's not involved in review until the oversight process. So they would
20 – there would not be a concurrent review happening. As far as the surveyors if it's
21 being done under, again ACP or the NVIC 3-97 the ABS witness is the official witness.
22 The Coast Guard is obviously welcome to be there and can offer suggestions but the
23 official witness is the ABS witness.

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1 **Mr. Stettler:** I believe it was asked previously whether or not you were aware of a
2 Coast Guard witness, witness the inclining and I believe your answer was you didn't
3 know, is that correct?

4 **WIT:** That's correct.

5 **Mr. Stettler:** I would like to draw your attention to two exhibits. One is Exhibit 139
6 which is the most recent stability test report for the El Faro which was reviewed and
7 approved by ABS in 2006. And Exhibit 194 which is the, you mentioned the ASTM
8 standard guide for conducting a stability test which is dated 2004. If you would on page
9 7 of 29, this is page 7 of the ASTM standard guide. You don't necessarily have to look
10 at it but it states, it talks about the pendulums used in the inclining. I asked you how –
11 what generally what they look like or how they work. And there's some statements in
12 there about the pendulums and it says – states they should be used or the pendulums
13 which are used to measure the heel angles should be a minimum, or they should deflect
14 a minimum of 6 inches during their test. There should be 3 pendulums, or a minimum of
15 3 pendulums and they all should deflect a minimum of 6 inches. And it also goes on to
16 say that the induced angle of heel should be a minimum of 1 degree, maximum of 4
17 degrees. And I believe the word is preferably or typically achieved angles in the 2 to 3
18 degrees range. In this test, and if you look at page 13 of 31 in the stability test report it
19 was the case that only 1 of the 3 pendulums used for that stability test on the El Faro
20 reached the desired 6 inches. And the maximum angle was only 1.1 degree, so less
21 than the optimal 2 to 3 degrees. And this can be seen if you look on page 13 of 31
22 which is the pendulum data down at the movement column list for each of the weight
23 movements, what the obtained deflection on the pendulum was. It doesn't list the angle

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1 but it list the tangent of the angle, which and they're all the maximum is about 1.1
2 degrees. So the question, it's not so much about the specific test but more, you know
3 there doesn't seem any review of this stability test. There doesn't seem to be a
4 justification for why – why one pendulum deflection would be acceptable. Although it
5 makes sense, but I guess the question is, is this type of difference frequently approved
6 where you've got the guide stating that you should have a certain – certain accuracy or
7 a certain level of measure to improve the accuracy of the test. What are the
8 requirements at ABS for approving those types of differences?

9 **WIT:** Those type of difference from the guidance in the ASTM standard have been
10 approved on a case by case basis by both Coast Guard and ABS. We've had
11 numerous discussions with the Coast Guard on whether or not all three have to be 6
12 inches or one, at least one had to be 6 inches and the rest would be less. And they've
13 accepted the condition as shown in this report.

14 **Mr. Stettler:** In any of those discussion were there any ever discussions about reduced
15 – reduced accuracy of those results in terms of error that is introduced by using smaller
16 angles or you know smaller deflections? And that the effect of that promulgation of that
17 error in the final result? Is that something that ABS considers in their assessment of
18 those types of exceptions?

19 **WIT:** No. In our discussions there hasn't been a discussion about that leading to
20 inaccuracies in the report. Typically when we have pendulums of different lengths it's
21 because of the arrangement of the vessel and the availability to the get a pendulum
22 long enough to attain the 6 inch deflection. The larger the vessel the more difficult it is
23 to do that. And to get the heel, the vessel to heel that far over. So having different

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1 length pendulums is common place. It's actually preferred. In this case they were
2 unable to get the 6 inches in all but one.

3 **Mr. Stettler:** Is there an assessment done? Or has maybe there's been a study done
4 at one point in terms to assess the impact of that on the accuracy of the final results?

5 **WIT:** I'm not aware of a study at this point.

6 **Mr. Stettler:** Do you have a professional feel on how much the – what the accuracy or,
7 you know we use the term uncertainty? How certain that result is or what's the error in
8 the final result of the KG when it's calculated, inclining experiment with that kind of
9 exception? Do you have a feel for how accurate this KG might be in this case?

10 **WIT:** Well all the pendulum movements were accepted as valid in the test. None were
11 off to the point where it was obvious that they needed to be discounted. There was
12 nothing that happened during the test that required us to ignore a set of marks or a set
13 of deflections. When the results are plotted in the moment-tangent plot the line was
14 accurate and the R factor which is a way of determining how close the points lie on the
15 line showed the result to be very accurate.

16 **Mr. Stettler:** But you don't ----

17 **WIT:** A factor of 1 would be perfect. This had .9999 accuracy on that – on that factor,
18 so the results were deemed to be acceptable.

19 **Mr. Stettler:** Okay. That's for that. But you did not produce an error promulgation for
20 the actual measurements, is that correct?

21 **WIT:** Correct.

22 **Mr. Stettler:** Thank you. Referring to page 21 to 28 of the stability test report which
23 Exhibit 139. Which this is the survey you discussed going around and spending time

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1 figuring out what's onboard the vessel, all the equipment. You know basically anything
2 that wouldn't be considered lightship you would go around and list and measure their
3 location on the vessel. And so then items, those survey items are listed between pages
4 21 and 28 on the stability test report. But all of the items have an assigned transverse
5 center of gravity position of zero in that list. And those are the surveyed items.

6 Suggesting that the actual transverse location of those weight items, whether or not
7 they were port or starboard or centerline is not kept track of during the survey. Does
8 that seem reasonable based on the way you read that?

9 **WIT:** Yeah. Typically the inclining experiment only determines, is used to determine
10 the lightship weight and the vertical and transverse – the vertical and longitudinal
11 centers of gravity. It's only for very special vessels who have – where there's issues
12 with the transverse center of gravity, typically MODUS, different types of vessels where
13 they have asymmetrical equipment like dive support vessels is where that becomes
14 critical. Fishing vessels is another one.

15 **Mr. Stettler:** Are you aware if the El Faro and her sister vessels had any asymmetric
16 lightship weight items?

17 **WIT:** Yes I believe the ramps on the – were on the port side of the vessel.

18 **Mr. Stettler:** So I do notice if you look at I believe it's page 17 where there's a – the
19 summary of the calculation for the as inclined condition. It shows a calculated location
20 of the transverse center of gravity. But I just wanted to highlight that based on the fact
21 that the survey did not include any transverse locations that that calculated transverse
22 center of gravity location would be inaccurate, is that correct?

23 **WIT:** That is correct. And that's why we didn't include that in the approval.

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1 **Mr. Stettler:** So and I move on saying that the trim and stability book which uses the
2 output of the inclining experiment in terms of its lightship – vessel’s light weight and the
3 center of gravity location does not include any transverse center of gravity information,
4 correct?

5 **WIT:** That is correct.

6 **Mr. Stettler:** However, and we’ll talk in the morning a little bit more about the
7 CargoMax software does indeed keep track of the transverse position of the center of
8 gravity and the lightship weight which was taken from the inclining – was set to zero for
9 the lightship transverse center of gravity. And there’s been some testimony on the
10 hearing about the CargoMax calculation being somehow inaccurate in terms of
11 predicting the vessel heel. And I just wanted to point out that in the inclining because of
12 the deadweight survey did not include that transverse information there’s a difference
13 there because of those asymmetric ramps, or structures on the vessel. Does that seem
14 reasonable to you?

15 **WIT:** Yes. The transverse center of gravity was not considered in the inclining
16 experiment in 2006, nor was it considered in the inclining experiment in 1993, so.

17 **Mr. Stettler:** Is it more typical, so this was in 2006? Is it typical these days to have that
18 transverse center of gravity information included in the inclining experiment?

19 **WIT:** In the, I would say the past 2, 2 ½ years the Coast Guard Marine Safety Center
20 has actually been paying more attention to that and directed ABS to do the same. So
21 these days, yes, we’re paying more attention to that based upon the types of vessels
22 and the induced heel that it causes.

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1 **Mr. Stettler:** Okay. I have just a couple more final questions about stability tests for
2 the El Faro. Did you, and you may have answered this already, did you personally
3 review the stability test report in the El Faro in your role in the stability instructions
4 group? Or excuse me the load line and stability group.

5 **WIT:** No I did not.

6 **Mr. Stettler:** When an engineer or the engineering group reviewed it you said that they
7 do – they do independent calculations. What else do they do when they're – to what
8 extent do they do those calculations? Could you describe in a little more detail the
9 engineering check or comparison that is done at ABS?

10 **WIT:** We do a check to verify the weight and LCG and the vertical center of gravity.
11 We re-verify all those calculations. And then we go through – that'll get the condition,
12 as inclined condition and then we look at the – all the weights to add and deduct and
13 make sure that they've all been accounted for and the calculation process to go from
14 the as inclined to the lightship is correct.

15 **Mr. Stettler:** Thank you. Okay. I think Lieutenant Commander Venturella has a couple
16 of follow up questions and then we'll ask questions of the board.

17 **LCDR Venturella:** Okay. I actually just have one question. Just following up on the
18 pendulum length issue. You had mentioned that the Coast Guard has accepted the
19 alternative arrangement of having one pendulum if it goes over the 6 inch deflection, I
20 agree. But I just wanted to discuss that a little further. When the Coast Guard and ABS
21 look at alternatives like that wouldn't they typically look at the ability to hang a pendulum
22 with sufficient length as probably the first consideration, would you agree with that?

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1 **WIT:** The ability to do that is not something we can verify in the engineering office.
2 That's something that's proposed by the Naval Architect or the person running the test,
3 shipyard to us. We'll typically discuss it with them, approve the procedure and then it's
4 up to the surveyor onboard to verify as the witness that things are done in accordance
5 with the procedure and to – you know if they have a different opinion they can always
6 call and discuss it with us.

7 **LCDR Venturella:** Would you agree that giving the pendulums, all three of them
8 sufficient length would generally increase the accuracy of the test?

9 **WIT:** I don't find anything wrong with the accuracy of the test that it is.

10 **LCDR Venturella:** Let me ask you this a different way. Please turn to Exhibit 194,
11 page 7 and look at figure 14. And Exhibit 194 is once again the ASTM guide for
12 conducting a stability test. And figure 14 includes some sample calculations for the
13 angle of heel versus the pendulum length that will get you there for the 6 inch deflection.
14 So what it mentions here is that it says that to get the appropriate 6 inch deflection with
15 a 4 degree angle that 87 inches is acceptable. Are you not with me?

16 **ABS:** Can you give us a page reference once more please?

17 **LCDR Venturella:** Yes, it's Exhibit 194, page 7, figure 14.

18 **WIT:** Okay, I'm there.

19 **LCDR Venturella:** Okay. So what I was trying to point out is that with a 4 degree angle
20 trying to calculate in the 6 inch deflection, 87 inches is a long enough pendulum. And
21 then they calculate for 3 degrees, 114 inches. And 2 degrees, 172 inches. The
22 pendulums in the case of this particular test were able to be 199 to 331 inches in length,
23 well over any of those. Do you agree with that?

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1 **WIT:** Yes.

2 **LCDR Venturella:** So what's really at issue is that the Naval Architect was proposing to
3 not heel the vessel to at least 2 degrees. Do you agree with that?

4 **WIT:** The Naval Architect has to take a lot of things into account when they propose
5 this. One of them is the vessel and the actual stability characteristics of the vessel. The
6 other is going to be what weights are physically available to shift to get the moment to
7 create that heel. So it's not just how high can I hang the pendulum, there's a lot of
8 things that go into that from the Naval Architect standpoint that have to be taken into
9 account in the approval process.

10 **LCDR Venturella:** But understanding that isn't it normally feasible to bring enough
11 weight onboard to get a vessel to a 2 degree angle of heel given that you have
12 appropriate pendulum length? I don't see how that would be a sufficient reason to
13 create an alternative. And I'm just trying to understand. You were – because you were
14 then giving alternative, not only on the 6 inch deflection but also the heel angle as well
15 to allow a 1 degree. So I'm just curious.

16 **WIT:** When you say allow 1 degree, the maximum heel angle has to be between 1 and
17 4 degrees. 2 to 3 is optimal. It meets the requirements of 1 to 4 degrees so it's
18 acceptable. We're not giving anything on there. If you want to call it that. The physical
19 capabilities of the shipyard and what's available have to be taken into account. Now I'm
20 not the Naval Architect, I'm not the one responsible for conducting these things. The
21 Naval Architect that was doing this was highly reputable Naval Architect that we've
22 worked with in the past a lot. So when they said, you know when it came up it was

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1 something that was understood. It wasn't that we were giving something. It was
2 something that physically couldn't happen.

3 **LCDR Venturella:** I understand. But can you tell me is this typical like for the load line
4 and stability department at ABS, would you say that this is a type of alternative that is
5 allow frequently to, you know allow a very slight heel angle? You know to help the
6 Naval Architect out with not bringing as much weight onboard? Is that type of
7 alternative allowed?

8 **WIT:** The allowance that I'm referring to as far as not having enough weight is
9 physically having enough weight available. You can't just pull weights out of thin air just
10 because you want. They have to be there to be put onboard the vessel.

11 **LCDR Venturella:** Okay.

12 **WIT:** Now as far as our approval process when I ran the load line and stability group
13 and stuff like this came up, the first thing I did was call the Coast Guard and we sat
14 there and we discussed it on the telephone. And there was nothing that came out in the
15 stability approval letter out of the ordinary that wasn't discussed beforehand. I consider,
16 when we reviewed on behalf of the Coast Guard we were essentially a branch of the
17 Marine Safety Center performing the same reviews that they did. So the lines of
18 communication were open both ways should something come up.

19 **LCDR Venturella:** Alright, thank you. No further questions.

20 **CAPT Neubauer:** Doctor Stettler.

21 **Mr. Stettler:** Yeah, thank you. I just wanted to have one follow up. And I just don't
22 want to be misunderstood that I'm questioning the accuracy or the appropriateness of
23 the inclining experiment in this particular case. What I – my question really is geared

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1 more towards is whether or not there's an understanding by the people doing the
2 inclining and people reviewing the inclining of how accurate those results are in terms of
3 the uncertainty of that. You know when the ship calculates a value of GM, you know
4 and they calculate that their GM is 2 feet. You know that's 2 feet plus or minus some
5 number. And so what I was asking really is whether or not there's an understanding,
6 you know when an inclining experiment or stability test is completed whether or not
7 there's an understanding when they're waiving or they're reducing or relaxing any of
8 those guidelines, those – the accuracy whether or not there's an understanding of how
9 that's effecting, you know that 2 feet plus or minus half a foot. You know and there is a
10 process to do that, but it seems to me that that's not as appropriate I guess and that's
11 what I was really getting at. Is, you know does ABS when they review those, and the
12 same question then could be directed at the Coast Guard, the Marine Safety Centers,
13 do they think about, you know what's the impact of requiring only one – one pendulum
14 to reach that 6 inches or the 2 to 3 degrees? You know what's the impact of that? And
15 that's really what I was getting at. And I think what I heard is you do not by in terms of
16 process evaluate the uncertainty of the final result. Is that correct?

17 **WIT:** We ----

18 **Mr. Stettler:** Quantitatively you don't do an uncertainty assessment, an uncertainty
19 analysis to determine the error in that find KG, is that correct?

20 **WIT:** We did not find that there was an error. We found the results to be accurate. The
21 pendulum readings, although did not reach the 6 inch deflection, did result in tangents
22 that were plotted to moment-tangent plots and found to be accurate. They were

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1 checked by the Naval Architect on site, they were checked by the witness and then they
2 were re-verified by the engineering staff.

3 **Mr. Stettler:** I'll stop my question there. I was only pointing out that that is all looking at
4 one very small part of the error in the total propagations. So there's more to it than that,
5 but I think we'll stop there, sir.

6 **ABS:** I think Mr. Gruber was just finishing up a further comment.

7 **WIT:** If you look on Exhibit 194 page 11 there is a section on precision and bias where
8 it talks about the accuracy that's expected during the test. So these things have been
9 evaluated and looked into in the development of the guidance.

10 **Mr. Stettler:** It does, but what it doesn't do is stipulate what is, it's not clear from the
11 stability test report how they end it in terms of these measurements. But more
12 importantly it doesn't address what the uncertainty of the final result is. And that's really
13 my question. Does -----

14 **CAPT Neubauer:** Doctor Stettler I think we should address our contention with the
15 NAVARCH or the Marine Safety Center.

16 **Mr. Stettler:** Yes, sir. I just, you know it was a question of whether or not ABS includes
17 that in their review. That was my original intent of the question. I have no further
18 questions.

19 **CAPT Neubauer:** Mr. Gruber the agreement with the Marine Safety Center that only
20 one pendulum has to have a 6 inch deflection, is that in writing or is that done on a case
21 by case basis for each test?

22 **WIT:** When I was doing it would not – in this case there was nothing documented in the
23 file on it.

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1 **CAPT Neubauer:** Do you know since that time has there been a policy or a technical
2 note that addresses that?

3 **WIT:** I'm not aware if there is one or not.

4 **CAPT Neubauer:** When you were discussing the test I believe you said for a stability
5 test it takes between 2 hours and half a day typically. Were you factoring in the
6 deadweight survey into that calculation?

7 **WIT:** Yes. I mean each test is individual and it's going to depend upon the preparation
8 and how things are done. So I was just giving you an estimate. As far as you've got a
9 Naval Architect coming in on Monday I would suggest that he would probably be able to
10 give you a better answer on the test length based on his experience.

11 **CAPT Neubauer:** And sir, just one last question. Before this test was conducted it's
12 my understanding from your testimony that the procedure would have already accepted
13 the only one pendulum would be 6 inch deflection. Is that agreed on upon before the
14 test?

15 **WIT:** Yes it would be.

16 **CAPT Neubauer:** Thank you. Are there any further questions from NTSB? We – I
17 recommend that we could follow up with some basic questions tomorrow for in the
18 interest of time. But I would like to go to the parties in interest before we break for the
19 day. Tote do you have any questions?

20 **Tote Inc:** No questions, sir.

21 **CAPT Neubauer:** ABS?

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1 **ABS:** Just one. Mr. Gruber you described that a vessel may have an asymmetrical
2 arrangement. Could you repeat once more what the asymmetrical arrangement was on
3 the El Faro?

4 **WIT:** On the El Faro there were ramps leading below the deck from the 2nd deck that
5 were on the port side of the vessel. So the steel to construct that – those ramps would
6 be asymmetrical.

7 **ABS:** To the extent that there's been testimony that the vessel had a natural list with
8 the location of the ramps and that asymmetrical arrangement caused a natural list.

9 **WIT:** Yes, sir.

10 **ABS:** And is there anything unusual or are there any violations of statutes or
11 regulations if a vessel has a natural list do to an asymmetrical arrangement?

12 **WIT:** At the time of the approvals there was no – attention was not given to that.
13 Currently it's come around to where we're now paying attention to that.

14 **ABS:** Nothing further, thank you.

15 **CAPT Neubauer:** Mrs. Davidson?

16 **Ms. Davidson:** No questions.

17 **CAPT Neubauer:** Herbert Engineering?

18 **HEC:** No questions.

19 **CAPT Neubauer:** At this time the hearing will recess and reconvene with you tomorrow
20 morning Mr. Gruber at 9 O'clock. And the hearing is in recess.

21 *The hearing recessed at 1757, 19 May 2016.*

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