UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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In the matter of: *

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MARINE BOARD OF INVESTIGATION *

INTO THE SINKING OF THE *SCANDIES ROSE* *

ON DECEMBER 31, 2019 *

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Edmonds Center for the Arts
Seattle, Washington

Wednesday,
March 3, 2021

APPEARANCES:

Marine Board of Investigation

CAPT GREGORY CALLAGHAN, Chairman
CDR KAREN DENNY, Member
LCDR MICHAEL COMERFORD, Member

Technical Advisors

LT SHARYL PELS, Attorney Advisor
KEITH FAWCETT, Technical Advisor

National Transportation Safety Board

BARTON BARNUM, Investigator in Charge
PAUL SUFFERN, Meteorologist

Parties in Interest

MICHAEL BARCOTT, Esq.
Holmes Weddle & Barcott
(On behalf of Scandies Rose Fishing Company, LLC)

NIGEL STACEY, Esq.
Stacey & Jacobsen PLC
(On behalf of survivors Dean Gribble and John Lawler)

Also Present

LT IAN McPHILLIPS, Recorder

I N D E X

P R O C E E D I N G S

(8:00 a.m.)

CAPT CALLAGHAN: Good morning. It is 0800 on March 3rd, 2021 and this hearing is now in session. Morning, ladies and gentlemen. I'm Captain Greg Callaghan, United States Coast Guard Chief of Prevention for the 11th Coast Guard District. I'm the Chairman of the Coast Guard Marine Board of Investigation and the presiding officer over these proceedings.

The Marine Board has established a COVID mitigation plan to comply with federal, state, and local requirements. As a result, no member of the public will be permitted to view this hearing in person. The Board will receive witness testimony through a hybrid of in-person, virtual, and telephonic means. Members of the Board have been spaced out far enough at the table to remove their masks while seated to maximize clarity and minimize disruption. Members are to place masks back on at any time when leaving the table and whenever approached by another person. I ask that anyone who is unable to maintain social distancing, please keep their masks on unless actively speaking into the microphones.

Due to the extensive technology used to support this hearing, and the potential for unanticipated delays or challenges, I ask that you please be patient with us in the event of any disruptions.

The Commandant of the Coast Guard has convened this Board under the Authority of Title 46 U.S.C. Section 6301 and Title 46

C.F.R. Part 4 to investigate the circumstances surrounding the sinking of the commercial fishing vessel *Scandies Rose* with the loss of five lives, on December 31st, 2019, while transiting the vicinity of Sutwik Island, Alaska. There were two survivors.

I would like to take this opportunity to express my condolences to the family and friends of the five crew members who were lost at sea. Again, many of you are watching this hearing on livestream due to the COVID restrictions in place, but we appreciate you being here with us.

Upon completion of the investigation, this Marine Board will submit its report of findings, conclusions, and recommendations to the Commandant of the United States Coast Guard. Other than myself, the members of this Board include Commander Karen Denny and Lieutenant Commander Michael Comerford. The legal counsel to this Board is Lieutenant Sharyl Pels. The recorder is Lieutenant Ian McPhillips. The Coast Guard technical advisors to the Board are Mr. Scott Giard and Mr. Keith Fawcett. This Board's media liaison is Lieutenant Commander Scott McCann.

The National Transportation Safety Board is also participating in this hearing. Mr. Bart Barnum, Investigator in Charge for the NTSB *Scandies Rose* investigation, is here with us, along with Mr. Paul Suffern.

Witnesses are appearing before the Board to provide valuable information that will assist this investigation. We request that all members of the public be courteous to the witnesses and

respect their right to privacy.

The members of the press are welcome to attend virtually and provisions have been made during the proceedings to allow the media to do so. The news media may question witnesses concerning the testimony they have given after I have released them from these proceedings. I ask that any such interviews be conducted with full consideration of the COVID mitigation procedures that the Marine Board has established.

The investigation will determine as closely as possible the factors that contributed to the incident so that proper recommendations for the prevention of similar casualties may be made; whether there is evidence that any act of misconduct, inattention to duty, negligence, or willful violation of the law on the part of any licensed or credentialed person contributed to this casualty; and whether there is evidence that any Coast Guard personnel or any representative or employee of any other government agency or any other person caused or contributed to the casualty.

The Marine Board planned this two-week hearing to examine all events relating to the loss of the *Scandies Rose* and five crew members. The hearing will explore crew member duties and qualifications, shore-side support operations, vessel stability, weather factors, effects of icing, safety equipment, operation of the vessel from the past up to and including the accident voyage, and survey imagery of the vessel in its final resting place. The

hearing will also include a review of industry and regulatory safety programs, as well as the U.S. Coast Guard Search and Rescue activities related to the response phase of the accident, after notification that the *Scandies Rose* was in destress.

The Coast Guard has designated parties in interest to this investigation. In Coast Guard marine casualty investigations, a party in interest is an individual, organization, or other entity that under the existing evidence or because of his or her position may have been responsible for or contributed to the casualty. A party in interest may also be an individual, organization, or other entity having a direct interest in the investigation in demonstrating the potential for contributing significantly to the completeness of the investigation or otherwise enhancing the safety of life and property at sea through participation as a party in interest.

All parties in interest have a statutory right to employ counsel to represent them, to cross-examine witnesses, and have witnesses called on their behalf. Witnesses who are not designated as parties in interest may be assisted by counsel for the purpose of advising them concerning their rights. However, such counsel are not permitted to examine or cross-examine other witnesses or otherwise participate in the investigation.

I will now read the list of those organizations and individuals whom I've previously designated as parties in interested: Scandies Rose Fishing Company, LLC, represented by

counsel that are here with us today; crewpersons Mr. Dean Gribble and Mr. John Lawler, represented by counsel appearing virtually today; Mr. Bruce Culver, not currently present.

The Marine Board will place all witnesses under oath. When testifying under oath, a witness is subject to the federal laws and penalties for perjury for making false statements under Title 18 U.S.C. Section 1001. Penalties could include a fine of up to $250,000 or imprisonment up to five years or both.

The sources of information to which this investigation will inquire are many and varied. Since the date of the casualty, the NTSB and Coast Guard have conducted substantial evidence collection activities. Some of that previously collected evidence will be considered during these hearings. Should any person have or believe he or she has information not brought forth for which might be of direct significance, that person is urged to bring that information to my attention by emailing uscg.scandiesrosembi@gmail.com. This email address will be continuously monitored through the -- throughout these proceedings.

Mr. Barnum will now say a few words on behalf of the NTSB.

MR. BARNUM: Thank you, Captain.

Good morning. I'm Bart Barnum, Investigator in Charge for the National Transportation Safety Board's investigation of this accident. The Safety Board is an independent federal agency which under the Independent Safety Board Act of 1974 is required to

determine the cause or probable cause of this accident, to issue a report of the facts, conditions, and circumstances related to it, and to make recommendations for measures to prevent similar accidents.

The NTSB has joined this hearing to avoid duplicating the development of facts. Nevertheless, I do wish to point out this does not preclude the NTSB from developing additional information separately from this proceeding if that becomes necessary.

At the conclusion of this hearing, the NTSB will analyze the facts of this accident and determine the probable cause independent of the U.S. Coast Guard. At a future date, a separate report of the NTSB's findings will be issued, which will include our official determination of the probable cause of this accident. If appropriate, the Safety Board will issue recommendations to correct safety problems discovered during this investigation. These recommendations may be -- come prior to the report.

In addition, on behalf of the NTSB, I would like to offer my deepest condolences to the families and those effected by this tragic accident.

CAPT CALLAGHAN: Thank you, Mr. Barnum.

Yesterday, we heard from Coast Guard representatives involved in the Search and Rescue efforts for the *Scandies Rose*, as well a representative from the Coast Guard Office of Search and Rescue and Capabilities.

Today, we will hear from survival -- a survival equipment

expert, representatives from the Coast Guard National Maritime Center, and from the Office of Engineering Standards, as well as a representative from the Crawford Nautical School.

At this time, we will take a brief recess and resume at 0815.

(Off the record at 8:08 a.m.)

(On the record at 8:15 a.m.)

CAPT CALLAGHAN: (Indiscernible) 0815. Hearing's now back in session. We will now hear from Mr. Mario Vittone.

Mr. Vittone, Lieutenant McPhillips will now administer your oath and ask you a few preliminary questions.

Mr. McPhillips?

LT McPHILLIPS: Good morning, Mr. Vittone. Please stand and raise your right hand.

(Whereupon,

MARIO M. VITTONE

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

LT McPHILLIPS: Please be seated. Please state your full name and spell your last name.

THE WITNESS: Mario Michael Vittone, V-i-t-t-o-n-e.

LT McPHILLIPS: Please identify counsel or representative if present.

THE WITNESS: None present, sir.

LT McPHILLIPS: Please tell us, what is your current employment and position?

THE WITNESS: I am the general manager of Lifesaving Systems Corporation in Apollo Beach, Florida.

LT McPHILLIPS: What are your general responsibilities in that job?

THE WITNESS: I manage the sale and manufacture of helicopter and maritime safety and rescue equipment.

LT McPHILLIPS: Can you briefly tell us your relevant work history?

THE WITNESS: For most of my adult life, I was a helicopter rescue swimmer for the U.S. Coast Guard. Following that job, I was a marine accident investigator and vessel instructor for the U.S. Coast Guard, and then I started -- retired in 2013 and developed rescue and safety and survival courses for professional mariners, and the moved to my current job in 2015.

LT McPHILLIPS: What is your education related to that position?

THE WITNESS: Every course the U.S. Coast Guard taught me; marine instructor course, marine accident investigator course, dozens of professional courses on the equipment itself, (indiscernible) life support equipment courses, courses in victim care and prehospital care of hypothermic victims, (indiscernible) accident victims, trauma victims, and a litany of courses around those -- shorter courses along those lines. It's just care and -- the care and rescue of mariners in distress.

LT McPHILLIPS: Do you hold any professional licenses or

certificates related to your position?

THE WITNESS: No, sir. I have -- I had an OUPV license back in the day, but that's the sum of it for that, for --

LT McPHILLIPS: Thank you, sir. Captain Callaghan will now have some follow-on questions for you.

THE WITNESS: Sure.

CAPT CALLAGHAN: Good morning. Thanks for joining us this morning, sir. At this time, I'm going to hand it over to Mr. Keith Fawcett.

Mr. Fawcett?

MR. FAWCETT: Thank you, Captain.

BY MR. FAWCETT:

Q. And thank you, Mr. Vittone, for being here today, and especially for sharing -- or giving us permission to share a video, which we have created into an exhibit. I will note for the record that we did edit the video a little bit for the time constraints, and also we are focusing on survival suits to enter the raft, and so we excluded a discussion about the wearing of lifejackets.

So we are going to pull up exhibits on your monitor; you'll see them, along with the audience. If we need to zoom in or manipulate the exhibit, please just tell us what to do and the recorder, Lieutenant McPhillips, will do that for us, and if you need to take a break at any time, please let us know.

A. Yes, sir.

Q. So you talked about your career a little bit, but I would like you to give us a little more explanation about your role as a rescue swimmer. We did have the pilot of the aircraft that conducted the rescue of the two survivors, Lieutenant Clark, here yesterday and he talked about the role of the rescue swimmer -- and I'm not sure. Did you see his testimony, sir?

A. No, sir. I was unavailable yesterday, sorry.

Q. Okay. So one of the things he mentioned was that the swimmer, when he was hoisted, he was iced over -- they had to break some ice off of his neoprene suit and they had to clear the ice off his goggles, but could you talk about a little bit, not in great detail, but the role of the rescue swimmer and what goes into the training of a rescue swimmer?

A. Sure. The primary role of the rescue swimmer is to leave the aircraft and effect rescue operations that simply can't be done, usually to do with either the type of aircraft or the sea state. You know, before, there was a swimmer program in the Coast Guard that we'd either just send a basket down and the victims would climb in, but because of the *Air Florida* crash and the *Marine Electric*, where a cold -- particularly a colder hypothermic patient can't help in their own rescue, they implemented the rescue swimmer program so someone was trained and equipped to leave the aircraft, make their way to the victim and assist them in getting into the aircraft and out of the environment.

The training involved is months -- 16, 17 weeks of training

in Elizabeth City, followed by aircraft specific training and syllabus emergency medical technician courses. So it takes about a full year from the time the student gets to school until he is qualified or she is qualified in an aircraft to stand duty as a rescue swimmer.

(Technical difficulties.)

BY MR. FAWCETT:

Q. Can you hear me now, Mr. Vittone?

A. I can, but I could before so --

Q. All right. I'm sorry for the interruption. So is there any particular reason that you stopped being a rescue swimmer? Is it as a result of a particular accident or just burnout in the job?

A. It wasn't burnout, I just -- I had always planned to end my career in prevention. I had a longstanding belief that prevention saved more lives than response and I wanted to get into that before I got out, and as soon as I was eligible to apply for warrant officer and go that route, I did. That's all.

Q. And one of the terms that Lieutenant Clark mentioned, and perhaps you can speak to that, so the seas during the *Scandies Rose* rescue hoist were approximately 30 feet, and the aircraft commander made the decision to keep the swimmer on the hook. Is there another way that you can effect a rescue where the swimmer was released from the hoist hook and he swam to the victims and brought them back to the hook and put them on the hook?

A. Yes, there's -- it can be done both ways. One's called going

direct. It's a direct deployment where the swimmer stays on the cable to do the rescue, and the other is you can free swim, and it's just the choice of the crew at the time. There's no -- one's not right and one's not wrong. There are just different tools to be used.

Q. So in the conditions similar to the *Scandies Rose*, there might be a risk if the swimmer was free swimming where you could perhaps not -- like, if visibility closed in, you might not be able to quickly and effectively recover the swimmer; is that correct?

A. It (indiscernible) possibility in terms of it's a risk. I think going direct certainly reduces the risk of losing your swimmer, because, you know, they're tied to the hook and I can understand, particularly in really low vis, high wind, high sea state conditions, where the crew, particularly the pilots, would rather the swimmer stay connected to the aircraft, because it can be hard to get back in close enough to get them if you let them go.

Q. So, shifting our focus to your position now, how do you identify a particular product that relates to vessel safety? How do you identify that, and then how do you create -- in the briefest terms, how do you create a product? Give me -- can you give me an example of something that you have identified a need for and then created a product that would benefit safety of mariners?

A. Sure. We just -- it's (indiscernible) driven by regulation if a product is, like, a life ring or an EPIRB, for example. That's driven my regulation. They're required to exist, and so you make one. The last thing that we made was a floating water light or a floating marker light, and the need we identified was that the technology and the electronics has improved, but the strobes necessarily hadn't, and so the requirement to get approval for the strobes that operates for 24 hours or 18 hours at full brightness, and we knew that the electronics could flash it for a brightness for days and weeks, and so we created a new floating water light. That's one example.

We design and modify all the time different rescue harnesses and rescue baskets, (indiscernible) for -- and that's often customer driven. You know, I'd like a (indiscernible) that's shorter or longer or that has the ability to protect the patient better, and we engineer those -- so we engineer those solutions.

So it's either customer driven or regulation driven, and every now it's you have a good idea driven, but that's rare.

Q. So I'm going to walk you through some phases of an emergency, and I'm going to ask you to make some comments to questions I direct. So the first one is, preparing for an emergency onboard a vessel, and I want to ask you about -- first of all, you have conducted training for crews --

A. Yeah.

Q. -- for emergencies, correct?

A. Yes, sir.
Q. Okay. So how important are the drills and training to prepare for emergencies?
A. I think they're -- 90 percent of the purpose is actually going through the motions and doing it. You can have a procedure or have a checklist, but if you're -- if you don't have the muscle memory to go through that procedure engrained in yourself, it gets a lot harder to remember under pressure. It's not about the procedure. It's about your ability to recall and act on the procedure under pressure. And, certainly, an actual emergency at sea gets quite pressured, and so the drills, that's how swimmers and pilots do it. They drill a lot so that while they're under the pressure of actually doing a rescue, they just repeat their drills and repeat their trainings.

I'm certain the rescue swimmer on this case didn't stumble a lot of time thinking about when he released his (indiscernible) and when -- what the signals are to leave the aircraft. He had done that so many times it was just like walking or riding a bike to him. It just happened, and the same is true for mariners. If they don't practice man-overboards, if they don't practice with their equipment, with, in this case, immersion suits or life rafts -- if you don't have experience with it at sea, in 30-foot seas isn't the time to learn.
Q. So let's expand on that a little bit. Looking at the northeast coast of the United States and Alaska maritime region,

same thing with the Pacific Northwest and the cold water and the harsh environments, is there anything that's even more important in the training and the drills?

A. Well, the equipment itself has to be spot-on, and you have to have it and it has to be the right equipment and it has to be -- you know, in the case of immersion suits, they have to be your size immersion suits. They come in sizes. They equipment has to be well-maintained. So you have to know how to use it through drills and procedures, and it has to be good equipment. I'm saying -- go ahead.

Q. No, you go ahead, sir. I'm sorry.

A. I'm saying the whole -- you know, once the boating turns into a mayday call, it ceases to become boating and now it's survival and all rescues -- all maritime accidents are about time; extending the time the mariner can survive while waiting for rescue and reducing the time it takes an asset to get on scene to rescue them. And training and equipment extend the mariners' time, and often training and equipment will reduce the time it takes for an asset to get on scene to (indiscernible) rescue.

Q. So we've heard testimony that the *Scandies Rose* had two recently inspected life rafts. Both life rafts, the capacity for the rafts exceeded the number of the crew that was carried on the *Scandies Rose* on the accident voyage. Do you think that's a good marine practice?

A. It's (indiscernible). Two's better than one, and I can tell

you from experience, if it's a six-man life raft, you don't want to have six people in it. It's not a comfortable ride. You can fit six. It's typically about buoyancy. It's not about how comfortable and easy it will be to survive in it. You and I together in a six-man raft would be quite cramped, so six of us would really be -- we'd be jammed in there. So it's -- I'm a fan of larger rafts than I need, and I'm also a fan of redundancy. So I -- having two rafts is better than having one and having a larger raft than you need, to a point, is better in my way of thinking.

Q. So would it increase the likelihood that one raft would definitely make it to the surface is the vessel sank, if the other raft got entangled and didn't break free of the vessel for some reason.

A. Well, it's exactly 100 percent more chance that it'll work, right? So it's a whole other raft, so, yes, sir. You know, there's also reasons why both of them wouldn't let go, you know, depending upon the condition. Icing is a big one that's often not considered. If the hydrostatic release or the raft is covered in ice, its ability to let go of the boat is hindered. That's also true with the EPIRB. You know, they're designed to let go, but they're not designed to let go and float free if they're covered in ice, and not designed to let go and float free if the boat sinks sideways or pitch pulls or ends up top down. That would affect everything's ability to float free. And, you know, the

life raft has to escape everything -- it might be entangled, but it has to be able to operate, and so, you know, having another one is just a second chance to get that done, but it's not unlikely that both would go off and it's not unlikely that neither one would go off given the right conditions, which is usually when boats go down.

Q. So, Lieutenant McPhillips, if you'll pull up Coast Guard Exhibit 074. And while he's doing that, this is a recommendation from the sinking of the El Faro, which was an American flag steam ship that sank in 2015. And on page 3, there is recommendation, which is recommendation 12, and it indicates: It is recommended that the Commandant direct a regulatory initiative to require that all personal flotation devices on ocean going commercial vessels be outfitted with a personal locater beacon.

And then I'll ask you, Lieutenant McPhillips, to go to page 6 now and look at item 70. Item 70 is from the National Transportation Safety Board and they made a conclusion that providing all persons employed onboard vessels in coastal, great lakes and ocean service with personal locater beacons would enhance their chances of survival. From your position as a survival system expert, can you talk about how a personal locater beacon would improve the survivability of people in the water?

A. Well, first of all, I read that report when it came out, and when I read those two lines, the ones from NTSB and the recommendation, I stood up and shouted, yes, finally. It is -- if

-- again, if you think in terms of the saving of time, there's nothing made. There's no piece of gear out there that would reduce the time to rescue like a personal locater beacon, one that's on you. There's one in my lifejacket. There's one in the rescue swimmers' lifejacket. So the swimmer has one on him. He's a professional mariner of sorts.

But there's -- it is the greatest advance in maritime safety in the past 100 years for rescue, and the cost has come down and I'm -- it has the ability to often tell the rescue and coordination center exactly where that person is. All rescues end the same way with -- all searches end the same way. All search and rescue cases end with somebody getting their eyes on somebody else and the EPIRB giving you an exact location. It narrows the window that the rescuer has to look to get their eyes on that person, essentially taking that search part out of search and rescue and -- I don't know why it took so long to get that recommendation. I don't -- I'm not sure if it's the first time it was recommended, but since they've dropped into the (indiscernible) $100 category, I don't know why that there's any reason not to do that.

There's training involved. There's some set-up involved. It's not just enough to have it with you. The sailors on the *Cheeki Rafiki*, if you remember from a few years ago, (indiscernible) sank and their PLBs went off two or three times and then stopped transmitting. I think that's because personal

locater beacons, unlike EPIRBs, don't float by themselves in a position that they'll transmit. They're -- some are designed to float, but if the antennae touches the water, they don't transmit. And so the *Cheeki Rafiki* -- if you have the PLB on your lifejacket, but you don't have a way to secure it to the lifejacket to keep the antennae up and out of the water, then you have to hold it out of the water and you can only do that for so long if the water's cold.

So it comes with -- it's not just enough to have the PLB in the lifejacket. It's got to be able to be affixed to the lifejacket, and then you're going to have to implement drills and training in the basic survival -- the BST training, the Basic Survival Training for mariners, to teach them how to operate that thing. But I -- that's absolutely my favorite new regulation if they can make that happen.

Q. So you might be able to offer some clarity on a term that was used in previous testimony. One of our witnesses recommended that fishing vessel crews take BST training, and that's Basic Safety Training. Can you elaborate just a little bit on what that Basic Safety Training is? And the point I'm trying to make is that the various entities offer some level of training for fishermen, but the Basic Safety Training is a different type of training. Can you basically explain what that is?

A. Well, the BST is typically five days, and there's a not light amount of hands-on. They actually get into a raft in the water,

which is huge. It's always an eye opener for mariners who haven't done it before. You think you'll just climb into the raft, and then you put them in the water and say, okay, go ahead and do it, and it never works out the way they think it's going to. And so that -- and there's firefighting and there's some basic medical and there's training about the EPIRBs and the radios and the survival equipment that's on a vessel, but I think it's the hands-on nature of that course or the in-water portion of that course that makes is truly valuable. Again, this is a drill.

I did hear some testimony from the life raft maintainer that was talking about how training with a raft is one thing, but you really have to train with your raft. You have to know what's in your raft. I always recommended to mariners that when their raft is up for annual inspection, that they take the crew down to visit -- because you always -- the raft's always in this can, but when you see it out and inflated, know where that knife is and take a tour of the raft so you're not in the dark in the cold trying to figure out where things are. There's booklets in the raft, there's signage in the raft, and I promise you you're not going to be reading it at midnight. You know, it's not going to be visible in the way you're -- you're not going to be reading the instructions.

And so BST would help solve some of that mystery for commercial fishermen. If they haven't been in a raft, it would allow them to get into one and figure out how to do it. It's not

often -- even the way the rafts are set up -- if you're going to show the video I think you are, you know, the boarding ladder has always been a thing you don't want to use. There's a boarding ladder on rafts and if you stop on them, you're not going to get into the raft, which is counterintuitive; it's supposed to be a boarding ladder. So depending upon you start out, it may make things better or worse for you, and the only way you'll know it is to try it, and then use an alternate way to get into the raft. That they'll teach you in BST usually.

So I know there's a balancing act between cost and practicality, but I -- but personally (indiscernible) training at BST that would allow them to understand devices that they use. It would certainly help more of them survive these things. The ocean has no idea whether they're a tugboat person or a commercial fisherman or any other mariner. It doesn't know what kind of mariner you are. Once you're in the water, it's -- it plays by the same rules for everybody so --

Q. So we're going to bring up that video in a moment so you can elaborate, but I just want to make sure I cover something. For a vessel that's going into a harsh environment, such as the Alaska maritime environment with notoriously rough seas, ice and so forth, would you say that it's important that those mariners pay particular attention to radio antennaes, electrical connections for antennaes and other important communication tools to make sure they're ready and serviceable in that environment?

A. I don't know if it's more important for them, sir; I just know that they have a better -- given the environment, they have extra factors that make those things easier to break, and, again, mostly I'm pointing to ice and just the stress on -- the stress of that environment. You know, a commercial fishing vessel certainly has a much tougher day at sea than a tugboat here in Tampa Bay, and so it's easier for them to maintain antennaes here in the bay than it would be up off the Aleutian chain.

And so it's important for both, no matter where they're sailing, that environment tends to beat up the vessel a lot more, and so I -- it's one of those accidents that happens at the dock. You know, if they don't maintain the gear before they leave, then not much they do when they're out there is going to help them out. So that's a yes and sort of a no at the same time, but -- to your question, but that's a rough environment on equipment and monthly, weekly, pre-sail check lists to look at all of those things make mariners safer, and so they should do it, whether they're in Alaska or here, but certainly in Alaska you've got a greater chance of ruining your gear just by going to work.

MR. FAWCETT: So now we'll shift our attention to Coast Guard Exhibit 072, which is a training video, which is called Life Raft 102, and you were kind enough to share that with this MBI. We're going to show you a segment and ask you to elaborate if necessary.

(Exhibit 072, Liferaft 102 Training Video v2, plays.)

MR. FAWCETT: We're going to back that up and start that

again and make sure the sound's on for everybody.

BY MR. FAWCETT:

Q. So I was just going to say, while we're waiting, Mr. Vittone, did you produce this video?

A. That was produced by Boaters University. I wrote the course and taught it there with Mike Carr. That's Michael Carr. That was a part of a larger course I developed called Basic Offshore Safety and Survival. That was sort of the (indiscernible) professional mariner and (indiscernible).

(Exhibit 072, Liferaft 102 Training Video v2, continues.)

MR. FAWCETT: Thank you.

BY MR. FAWCETT:

Q. In that -- just for the record, in that video, it was difficult to see what the raft that was deployed on the ocean surface, there was a long, white line coming from it. And this video will be posted for the public at the conclusion of today's hearing. But that's the sea anchor and drogue and how important is that, Mr. Vittone?

A. Well, it just -- it changes the way the vessel rides and it sort of slows it -- a raft is a big sail area, and so there's a lot of sail area on a raft and the wind will blow it and make it move, and you want to move as little as possible, and the sea anchor also -- helps predict which side of the raft the seas are going to hit. So if I can drag one side of the raft, I can keep that side of the raft to the oncoming sea, and it's almost always

on the opposite side from the door so that if there are some breaking waves, they'll hopefully break on the closed side of the raft or the side without a big opening with which to dump more water in. So they become important -- they're usually packed to self-deploy, but not always, and so that's, again, one of those things where you -- if you have some training on your raft up front and you know you want to get that thing out there, then you're not just sitting there looking at it.

The sum of that video was *Bounty* rescue, and during the *Bounty* hearings, they testified that there was things on the raft that they were afraid of. Like, they didn't know what it was so they didn't want to touch it, and so that's why that can be a problem if you're not trained up on what's in your life raft.

Q. So, for the record, the *Bounty* was a replica, a tall ship, that sank off the Virginia capes during a hurricane. Lieutenant, if you could pull up Coast Guard Exhibit 098. This is -- we've shown this previously with testimony for Mr. Simmons. This is a short video that shows, in particular, the actual life raft that the -- one of the two actual life rafts that were similar to the *Scandies Rose* survival equipment.

I'm not going to play the video, but I'm going to ask Lieutenant McPhillips to start the video and stop -- that's just fine right there, sir. Now, this raft is equipped with a boarding platform, and if you'd just advance for just a moment, Lieutenant, and now stop. So what we see are some orange and white straps

that are attached and affixed to the boarding -- the inflation tubes, and then I the extreme lower-left corner, you'll see a horizontal yellow strap and a white object, which is the boarding platform. Could you talk a little bit about that in terms of is that adequate? Do we need to change the boarding platform to accommodate -- and we're talking in particular the wearer of a survival suit

A. Well, the object of the platform is to give them something to step up on. I saw that video. That's the portion of the testimony I saw, and they used to be inflatable, or there was a time Zodiac and other manufacturers had an inflatable (indiscernible) and I didn't like that because the flotation was something to climb up onto. And, like I said, the rafts are very tough. They're really hard to puncture. So I don't know if they got away from inflatables because it was less expensive to make or -- I have not been on one of those suspended platforms.

And so they're adequate so long as I can, with my 220 pounds, get my knees up on it and kneel on it and not have it fold under. If the platform folds under when one or two people are on it, then it's not adequate, and -- because it will fold under and then they're in a fight -- and then it actually pulls their (indiscernible) under the raft and what they think they're supposed to do to step on that stuff ends up getting them in trouble.

Again, back to the *Bounty* crew, they -- in their estimation,

they think it took them 30 minutes to get in the raft. They gave up for a while and just hung on the side because they couldn't get in it, and I suspect it's because they were stepping on the ladder trying to get in it and they finally just got mad enough -- somebody got mad enough to make it in and pull the rest of them in.

But these are modern rafts that aren't intuitive. You know, it's not intuitive to not step on the thing that says, step here, and so I don't know whether that's good or not. Put it in the water and I'll tell you in three minutes, you know, by standing on it. So it's important, if there's a boarding support system, whether it's a ladder or a -- it has to be solid. It's got to support weight on it's own. I should be able to free stand on that thing, and if I can't, it's more in the way than it's not.

Q. So I just noticed something. If you could, Lieutenant McPhillips, will you pull that back up and go to that approximately position on the slide -- on the video please? So you notice on the white strap and the yellow strap, there's extremely strong nylon webbing or some other type of synthetic webbing, but then there appear to be two buckles.

A. Yeah.

Q. I hadn't noticed those before. Could those buckles inadvertently fail or could they be disengaged so that swim -- the boarding platform might not be as affective?

A. They could be. Those are plastic (indiscernible) either

nylon or there's other plastics that are used to make it, and those are (indiscernible) -- because they're packed in a raft so they're not worried about sun exposure too much, but they're just -- you just pinch them and they come open. So if that's something I'm grabbing, I could pinch it and open it. It's just -- if I grab that on both sides, it'll open. They just got two little bayonets that clip in there and pop out. They're remarkably strong. Like, believe it or not, it would take about 100 pounds to break one of those, but if you grab them, you can undo them quite easily. That's the only thing I -- but I imagine they're in there for adjustment.

Q. Okay, so shifting away. We've already discussed this life raft has some thermal protection and it has -- in the canopy and the floor. Turning your attention to the survival suits or the immersion suits, are there any limitations for those suits from an either industry perspective or Coast Guard perspective that could be improved at the actual suits?

A. The suits are pretty good. There's an outfit down in Puerto Rico, of all places, that -- with warmer water that -- tried to invent one, and you'll see them at trade shows where they'll be laying in an ice bath for the entire trade show. They're massively thick. Thickness equals warmth, and that's -- I hated it. I tried to get in it and took me half-an-hour to get in it in a pool. So there's always a tradeoff. I think the immersion suits are fine, but they don't -- I'd like to see them have more

flotation, particularly around the legs and around the -- behind the neck. Some of them have an inflatable pad on them. The Imperials have this little inflatable and you can inflate the -- which will keep your head up out of the water more.

I'd like to see -- you know, you put -- people looking for you at night will use forward looking infrared and a mariner flat out disappears in an immersion suit on infrared. The only thing you can see of the mariner in an emergency on infrared is usually his face that's sticking out of the immersion -- it's the only part that's warmer because the outside of the immersion suit's the temperature of the water. And so there's some tradeoffs with the things.

I'd like to see them have more flotation, whether it's a CO2 inflatable or there are just more close foam on the side to keep the mariners' legs a little higher. Pressure is bad. So if they're straight up and down, they can see better and that's great, but the pressure on their legs if they're straight up and down means those appendages are going to get colder faster. It's about keeping -- they have to heat the water up that's in the suit, and there will be water in the suit.

The suit has to fit very well. I think the biggest danger with immersion suits is they don't fit. Mariners are all different sizes and there's a boat full of mediums or adult larges or adult universal. They call it a universal size. The universal is not universal. If you're 5'6" and you put on a universal suit

and jump in the water, you might drown in it because your head's going to go below -- inside the immersion suit and water's going to go in. So it can be -- if you're wearing a too-large immersion suit, it really can be the things that kills you if you jump in the water with it if it doesn't fit right.

A really small person in a too-big suit is terribly dangerous, and so that has to be addressed. And too often it's like, hey, okay, there's 12 mariners on the boat so there's 12 immersion suits and they're all different sizes and the big guys can't get into his at all and the small person's going to have their head at the chest when they jump in the water. So it's more about fit. They're not one size fits all despite the universal label on them. And, again, you find that out at BST when they make you put on an immersion suit and jump in the water. You go, man, this universal doesn't fit me. Hey, boss, I need the small. That's how you find out.

So that's my recommendation on immersion suits. Again, it's fine gear, but it has to be the right gear for you and you have to train on it.

Q. So I'll note for the record, and we are going to talk to the folks at the AMC and the North Pacific Vessel Owner Association training that they do provide hands-on training as part of their training so -- so my question -- the manual dexterity of the typical survival suit, whether it's got the three fingers, meaning you have some dexterity, or the -- there's sort of a mitten type.

How much manual dexterity would I have? Could I go to a VHF radio and turn to a particular radio channel, or could I -- the radios also have a little, red, plastic cover, which, if I lift that cover and I stick my finger in the hole, I can push a button which makes a unique alert to the Coast Guard that transmits my position. I don't have to even say anything; I just push that button. Do I have enough dexterity to do that in a survival suit?

A. I doubt it very seriously depending on the suit. Some of them have palms that open up; you can get your hand out of it. That's so you can have the dexterity. But those full mitten types, you're not hitting a small little button on your PLB with that mitten. You might use your teeth to do it, but you better know where it is. But I doubt you're going -- it's a big five-millimeter neoprene mitten, so it's what you do if you want to take away dexterity.

It's part of the solution and part of the problem. I have no had -- I can get the radio knob to turn with mine. I can get dexterity to turn a radio knob and talk. I could probably flip that and maybe jam enough of the neoprene in there to press the DSC button. You're talking about the Digital Selective Calling, DSC, alert. But, again, you have to add in night, cold, cold incapacitation, which is a problem, whether you have the glove on or not, so, you know, if you're in the water for ten minutes without an immersion suit, they're not pressing the button on a radio. Their hands aren't going to work anymore up in that part

of the world.
Q. So looking at the Imperial suit, I believe that was the suit that was carried aboard the *Scandies Rose*, do you know if they have the flip open type so your hand is free?
A. I don't think they do. I've got one in the garage. I don't think they have the flip open in the stand Imperial -- you know, it's about they cost more. When they get nicer, they cost more. So the more options, they go up. But it's not a requirement that you can get your hand out. That might be a nice requirement. Because they keep your hand warm enough to operate, you know, 15 minutes after you abandon ship, but if you can't use your fingers, then it doesn't matter. I think it's just the -- not the lobster claw, but the glove hand -- the neoprene glove hand.
Q. So looking at an accident scenario, if I'm operating a vessel, any vessel, I think I -- I think -- would you agree with me that it would be a painful choice to decide to keep my hands free and use the radio to make a distress call or push the Digital Selective Calling alert button and do those kind of things, as opposed to putting on a survival suit to prepare for abandoning ship?
A. Well, I don't think there's any reason in the world if you're deciding to put on your immersion suit that you haven't already pressed the DSC button or made the call. I don't -- you know, the *Scandies Rose* seemed to have destabilized and very quickly everyone had to get in their immersion suits, and that's just

horrible, but I know that I would do it. I would call mayday, hit the DSC, light off the EPIRB, and then get in my immersion suit and I'm telling everybody every way I possibly can and getting in the water. I wouldn't get in the water in an immersion suit with my arm free.

It's possible to get into an immersion suit from the water, like get in the water with an immersion suit and climb in it. It's horrible and it hurts and it can be daunting, you'll warm back up, but it takes practice, and it takes a whole lot of calm. I wouldn't want to do it in 30-footers, but I wouldn't enter the water with my hands out, so I would've -- you know, I suppose if I -- you know, if you had to, you can -- if it fits right, you can free your own arm in those things and then once you're in the water and get to it, but you're going to onboard some whatever when you open it up to do that, so that's going to be a tradeoff and a tough one.

Q. So just basically to rephrase, so it would be critical to do those radio calls, do the mayday, get out the -- light off the EPIRB if it's, say, in the wheelhouse and make sure it's tossed out into the ocean if that's a good choice, and then, in limited time, put on your immersion suit, correct?

A. Well, you know, there's no perfect answer, sir, for every situation. If there's time to do that, that's what I'm doing. If I wake up and the boat's upside down, I'm jumping off. I'm getting on my immersion suit and hoping someone else did all that.

But, yeah, the -- if I was making a quick reference guide and if I was making a red book checklist, and I have done, the first thing you do is call mayday. If you can't call mayday and you want to call mayday, then you get to your EPIRB and light it off.

I prefer taking it with me as opposed to throwing it over because we're going to drift at different rates and I don't want it to drift -- I want it to drift at my rate, so it's coming with me, whether I'm in a life raft or in my immersion suit. The ship's EPIRB is coming with me. If I have an EPIRB, it's going off as well. I get this question about one a month: should I turn the EPIRB off after a few hours to save the batteries? No. light them all off. If I have five EPIRBS and a life raft with five guys, I'd light off five of them. You know, and then work on staying warm.

Q. So in a typical training world, not training classes that you've put on, but training classes that you might know about, is there -- are there any training classes that teach people who are going to be rescued what to do and understand how to communicate with the rescue forces that are coming their way?

A. I don't know. I think AMC might talk about it. I know in BST they try and talk about it in different courses, but it's -- aside from distress signaling, which is going to be EPIRBS or DSC or calling mayday or (indiscernible), beyond that, once the rescuers get there, they'll tell you what to do, or you won't need to hear it, one of the two. If the rescue swimmer shows in your

raft and starts dragging you out of there, you're going to do what he or she says.

I don't know that -- I'd like to see more training for mariners on how to communicate with Coast Guard assets that arrive on scene when it's not this urgent man overboard. You know, if everyone's in the water in a life raft, then there's not much need for talking at this point. They're going to come take care of it. It's (indiscernible) someone lost an engine or you're taking on water or you're going to get a rescue swimmer to come down because of a medical emergency. There should be more training about how to communicate with the assets then.

There's some things to do with distress signaling with flairs that they don't teach, but I teach, a lot of people teach, I think AMC does as well, but don't just pull out a flair and light it. Make sure that you're -- there's someone -- you see someone you want to signal. Don't flair into the blind. You're usually just burning up a flair. Those kinds of distress communications could be trained on a little more.

But as far as what to do if you're in a life raft -- there's been cases (indiscernible) in '95 swam up on a life raft in 30-footers off -- 250 off in the Atlantic and surprised the guys in the raft. The helicopter was hovering over the raft and they didn't know it because it was too windy, and he scared them to death. He jumps into the raft and just frightens all three of them because they didn't know anyone was there. So, you know,

they didn't know a helicopter was there to talk to, but the rescue went off fine without that communication.

So, again, I'm really stuck on those two things: how do I keep the mariner alive longer, and how do I get there faster? So what regulations can we put in place that would achieve both of those. I think the EPIRB -- the personal EPIRB is one, drills and training is another. Both of those things get the rescuers there faster. Making sure that an immersion suit fits, that they know how to get into their raft, increases the time they can wait.

Q. So both -- or Lieutenant Clark, the helicopter pilot was talking yesterday in his testimony and he spoke about the first raft being empty. The co-pilot glanced out and he saw one of the survivors -- he didn't know it at the time, but he saw a light being moved and flashed in their direction from side to side and he knew that wasn't the blinking light on top of the raft or the raft dipping below the surface of the sea. Are there any other signaling devices that might be considered -- you know, we talked about the parachute flairs; we talked about the smoke flairs; (indiscernible) constant brightness flairs that, unfortunately, drip burning hot material in front of them. Any other technology that might improve the survivability and the location of people in rafts?

A. Flashlights. They're -- my favorite rescue signaling device is a flashlight. I don't know if he was waving a flashlight, but it's not an international distress signal, but a waving flashlight

will turn an aircraft. They last for a really long -- a flair only lasts for 30 seconds. The light end of a flair lasts for 30 seconds and if I don't see it, that's gone, and like you said, it drips liquid hot material out the end of it and could hurt you and hurt your raft. I think they're a device whose time has come and gone, and I would trade every flair on my boat for three waterproof flashlights in my raft. And I guess (indiscernible) and a heat -- a couple of heat packs.

I like the -- the smoke end of a flair is a really good night signaling device because it's not smoke, it's really hot smoke, and so every Coast Guard aircraft that's searching, and almost every aircraft in the world now, is searching with infrared and that orange smoke is hot orange smoke and it creates a big, long V pointing back at who lit it off. It still through really hot dripping prosperous, and I don't like that about it, but a flashlight, as a requirement -- that's what's in my lifejacket: a PLB, a radio and a flashlight, and for reasons I don't want to get into, a way to start a fire. But the flashlight will turn the aircraft. I suspect that's what he was doing, waving a flashlight or a ChemLight or something.

Q. So are Coast Guard approved flashlights for inclusion of life rafts, are they adequate, or should they be improved to include, like, an automatic SOS signal or a strobe feature or anything like that?

A. I don't think so. Again, if an assets out there looking for

you, they're not going to see a flashlight not flashing SOS and go, oh, well it's not SOS so I'm not going to go check that out. They're going to go check it out whatever it is. It just needs to be a really good flashlight, a good waterproof flashlight that's bright, and the LED lights are brighter and brighter. So a really bright flashlight.

It doesn't matter how the mariner waves it. If he points it at the aircraft, they're going to the light, whether he waves it, doesn't wave, SOSes it, strobes it. Strobes are nice because they're passive. So I can take a strobe light, put it on the roof of the raft or put it outside the raft, and it'll signal for me for -- I can be inside the raft not knowing the helicopter's there and they will have seen the light, and so that's a passive signal. But as an active signal, a flashlight is, I think, the best not required piece of gear I've ever heard of.

You know, if you have an EPIRB -- because the EPIRB gets them really, really close, but they still have to get their eyes on you, and so the flashlight's great. It just reaches out for miles and tags somebody, and it doesn't matter whether it's an SOS strobing. Just a waving flashlight pointed at the aircraft or boat and that's the direction they're coming next.

Q. So I'm getting towards the final area of our conversation here. So despite the fact that the Coast Guard and other rescue forces are well-equipped and highly trained, there still can be extreme risk to the crew, either on ships, boats or aircraft, and

the same is true for commercial fishing vessels and any vessel. So (indiscernible) risk, we've talked about it many times in these hearings, and it's such a simple word.

And what I'd like you to do, Lieutenant McPhillips, is pull up Coast Guard Exhibit 075. And while he does that, this is an artist's rendering of the *Selendang Ayu* and a Coast Guard helicopter. And so what happened in this accident was a large boat carrier grounded north of the Aleutian chain. That was the *Selendang Ayu*, and this was 2004. The Coast Guard had put extensive resources into the rescue operation. They had a cutter there, equipped with a flight deck, somewhat similar to the Coast Guard cutter *Mellon*, and in this artist's rendering, you see a helicopter at the bow of the ship about to hoist ten people aboard, and a large wave struck the ship and it came up and hit the helicopter. The helicopter plunged into the water and six people were killed. The Coast Guard crew survived, the aircrew survived, and there was one other survivor.

Are you familiar with that accident, sir?

A. Yes, I am. Yeah.

Q. And did you know any of the flight crew of that accident?

A. I think I knew all of them. I knew the rescue swimmer and he graduated school not too long before I was in Elizabeth City, but I knew that crew and the case and read the mishap reports and -- so I'm familiar with it, yes, sir.

Q. So the picture in the lower right is the aircraft that had

washed up on the beach, and we had mentioned -- again, I want to give you an opportunity to talk about muscle memory and training. So the flight crew, first of all, they were in a better position to get out of the aircraft, but they all survived, as did one person. So do you think it was the increased training -- and I know commercial fishing vessels can't train to the level of the Coast Guard, but can you speak to why those crew might have survived?

A. Well, one is the training and two is the equipment. Unlike the people they put in the back, the crew was all wearing dry suits, and so when they ditched and they're instantly immersed in cold water, the first thing that happens in cold water is immersion shock, which is gasping and -- uncontrolled gasping and hyperventilating, which doesn't happen if you're in a dry suit because it's protecting most of your skin. That reaction is caused by the assault of cold water on every square inch of your skin, and the greater skin contact and the greater the cold, the greater the response. So the six survivors who came off the boat not in dry suits would have had a dramatically different experience in entering the water then the flight crew.

And then you had in the flight crew's training. They practice -- first of all, they get out of the aircraft, they enter the aircraft every day, and so they know how to get in and out of the aircraft. Plus, they train on how to ditch and the pilots were equipped -- I don't think the flight mechanic ever put his

escape breathing device in his mouth. He was just at the door and went out, but the pilots had to use their escape breathing device to get enough air to get themselves out, and, of course, the mariners they put in the back didn't have those things. So those two things, and if I had to pick one, it's the dry suits first and the training second is what helped them survive.

Q. So you mentioned dry suits. Can you give us, if you know, the price difference between a dry suit for a particular individual versus a survival suit?

A. A survival suit is a couple hundred bucks; a dry suit's 1,000. And you can't wear a dry suit all the time. The pilots can wear them -- it's a balancing act, okay? And so a mariner working on a boat could essentially wear a dry suit, but then he doesn't -- so he or she's protected if they have to enter the water for any reason, but they're going to die of heat -- they're going to have a heat stroke problem if they're just working. And so they're restrictive.

So the crew can fly in them because they control the temperature of the aircraft, and they have a limited -- they fly for eight hours at the most, right? And then they're on the ground. So you can handle it for eight hours. You can't work on the deck of a boat for 12 or 8 or every day. I don't know that it's an effective -- small boats, small crews, again, on rescues, we'll wear dry suits, but they're not working as hard as a work-boatman is, and so -- and they're dry suits, not warm suits.

So I can put the dry suit shell on, but I have to put on undergarments if I'm going to use it in the water, and then I'm increasing my heat posture when I'm not in the water. And so they're a real balancing act to (indiscernible) and they're an order of magnitude more expensive.

Q. So you would not recommend that a dry suit be carried for emergencies in lieu of a survival suit that would be stowed so it's immediately accessible for an emergency situation?

A. I wouldn't, sir. Not because I don't think they're a better device, but the maintenance of those devices is complex, the seals are complex, and it's hard enough to get them to maintain the immersion suits that are really easy to maintain. You have a complexity of wrist seals and neck seals and dry zippers that really have to function well. I have to lubricate the zippers. I have to (indiscernible) clip seams and have to -- it'd be a monthly inspection or, at least, every six -- and then getting it on in under a minute is not happening. So that -- getting it on in a real sea is probably out the window, you know?

And so -- and unlike an immersion suit, if I get a half-liter of water in my dry suit, I reduce its ability to insulate me by 30 percent. If I get water in my immersion suit, it's designed to have water in it and it's okay. I'll heat it up because it's insulated well. So it's a much more forgiving device than a dry suit of a leak or from water intrusion. My insulation in a dry suit is the liner that has to stay dry. If it gets wet, it's no

longer insulating me. Now I'm being insulated -- the only barrier between me and the cold water is a thin layer of plastic really.

So it's a -- they're a lot more complex and there's a lot of tradeoffs there. the reason why boat crews and helicopter crews use them is the organization affords that level of complexity and maintenance and training and -- and if I break the neck seal, I take it to the shop and they give me a new one and so I think -- it seems intuitive that, well, it's a dry so it's better, and it is, but for sure, in a long enough timeline, someone will have died in a dry suit that wouldn't have in an immersion suit because of water intrusion.

MR. FAWCETT: So, Mr. Vittone, those are all my questions. I do want to thank you again for your willingness to participate and I'll turn my questions over to Captain Callaghan. Thank you again, sir.

THE WITNESS: Thank you, sir.

CAPT CALLAGHAN: And thanks again, sir, for joining us and, at this time, I'm going to turn over questions to our colleagues at the National Transportation Safety Board.

Mr. Barnum?

MR. BARNUM: Thank you, Captain, and thank you very much, Mr. Vittone. Very informative presentation and also information you have, so it's great.

BY MR. BARNUM:

Q. One question, sir. Obviously, we're looking at icing very

closely in this accident. Mr. (indiscernible), the other day, touched on this with icing accumulation on some of that survival gear, and I believe you did as well on the life rafts, and then particularly EPIRB. Are you aware of any mitigation devices or methods to help combat that icing on, in particular, the life rafts and the EPIRBS?

A. There's anti-ice compound, but, sir, you have to actively use it. You can spray anti-ice or -- silicon spray works pretty well. Anything that keeps the ice from sticking. So on the -- but you'd have to be covering the device in something that wants to deteriorate it otherwise, either a petroleum product or silicon. It's (indiscernible) where they keep these things. If they keep -- you don't keep -- you'll see a lot of times they'll keep the EPIRB and the life raft up high on the roof of the house, where it's least accessible to knock the ice off of it, but it's also the best chance it has of floating free because it's on the top and clear of everything else.

And so that's a tradeoff. There's anti-ice compounds that'll make it easier to knock the ice off and make it less likely to ice up, but, again, you're going to making this tradeoff of covering my gear in something I don't necessarily want to cover it with, but I'm just doing it because it's cold today, it's windy and I'm icing up.

Q. Have you heard of any artic models or any heated brackets or heated blankets or anything --

A. I haven't, sir, but that doesn't mean there aren't any. I'm in a different world. I'm -- I've been in helicopter rescue work for 30 years and that's (indiscernible) is those things can be made. I guess, again, it has to be really robust to survive that environment. You know, heaters and current and wires not made out of -- you know, made out of something that corrodes in that environment. I think (indiscernible) in a lab and four months later it's just this thing tied to the life raft that's not working anymore.

So it's a tough one. I think more of those -- I don't know what the answer is. I'm not a commercial fisherman. I don't know how often the boat terribly ices up. I just -- you know, whether there's a way to implement weather (indiscernible) or weather restrictions, I have no roughly idea. It's not my world of work, but I don't -- technology and the Bering don't usually mix very well in that way, and so they just have to watch it.

I wouldn't keep the EPIRB on top of the house. I think the EPIRB's best chance of getting off the boat is me taking it with me, and I wouldn't worry too much about whether it's going to float free. It's a really bad day, it's the first time you realize you had a problem is the EPIRB went underwater, and so I would rethink that. I wouldn't put them at a place where I can't get my eyes on them to see that they're iced up or not. That would be a good 85 percent solution to that problem is making sure I can see the life raft and see the EPIRB and (indiscernible).

MR. BARNUM: Mr. Vittone, thank you very much. That's all the questions I had.

THE WITNESS: Thank you.

CAPT CALLAGHAN: Thank you, Mr. Barnum.

And now, sir, I'm going to shift over to our parties in interest, counsel for the two survivors.

Mr. Stacey?

MR. STACEY: Good morning, sir. Can you hear me all right?

THE WITNESS: Yes, sir, I can.

MR. STACEY: Wonderful. Thank you very much for your work, and thank you very much for your focus on prevention to try to ensure that all survivors that unfortunately have to go into the water come back. I applaud you for that, and encourage you to keep working as hard as you have been on that in the future, and I have no questions for you. Thank you, sir.

THE WITNESS: Thank you, sir.

CAPT CALLAGHAN: Thank you, Mr. Stacey.

Shifting over to counsel representing vessel owners, Mr. Barcott?

MR. BARCOTT: Thank you, Captain.

Thank you, Mr. Vittone. Can you hear me all right?

THE WITNESS: Yes, sir, I can.

MR. BARCOTT: We appreciate your testimony here today. You bring real-world experience to some of these things, and it was really helpful for me to hear your responses to some of

Mr. Fawcett's questions. I don't have any specific questions for you, so thanks so very much.

THE WITNESS: Thank you, sir.

CAPT CALLAGHAN: Thank you, Mr. Barcott.

And, sir, so, again, we want to take the opportunity to thank you, sir. This has been very good for us, very enlightening. I certainly appreciate you sharing some of the information here, and also sharing the videos that you had produced prior to so we could use those as exhibits and help provide those education opportunities as part of this hearing as well.

Sir, we want to take the opportunity to thank you for your career or dedicated safety to life -- you know, to the safety of life at sea, so not only in your previous career, but something you continue to do now. And so, you know, a lot of people continue to benefit from your service to mariners out there. So thank you for that.

THE WITNESS: Yes, sir.

CAPT CALLAGHAN: At this time, sir, we are -- you are now released as a witness from this formal hearing. Thank you for your testimony and cooperation. If we later determine that the Board needs additional information from you, we'll contact you direct.

If you have any questions about the investigation, you may contact the the Investigation Recorder, Lieutenant McPhillips.

THE WITNESS: Thanks, Captain.

CAPT CALLAGHAN: Thank you very much, sir. I appreciate your time today.

THE WITNESS: Yes, sir.

(Witness excused.)

CAPT CALLAGHAN: Time is now 0928. This hearing will not take a recess, scheduled to start back at 0945; however, that may shift to 1000, and, if so, we will provide that and display the update on live feed. So we will now go to a recess.

(Off the record at 9:28 a.m.)

(On the record at 9:59 a.m.)

CAPT CALLAGHAN: The time is now 10 o'clock and this hearing is now back in session. We'll now hear from Captain Kristen Martin from the National Maritime Center.

Captain Martin, Lieutenant McPhillips will now administer the oath and ask you some preliminary questions.

LT McPHILLIPS: Good morning, Captain. Please stand and raise your right hand.

(Whereupon,

KIRSTEN R. MARTIN

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

LT McPHILLIPS: Please state your full name and spell your last name.

THE WITNESS: My name is Kirsten R. Martin, M-a-r-t-i-n.

LT McPHILLIPS: Please identify counsel or representative if

present.

THE WITNESS: Yes, represented by Lieutenant Commander Matthew Pekoske.

LT McPHILLIPS: Counsel, please state and spell your last name, as well as your firm or company relationship.

LCDR PEKOSKE: Lieutenant Commander Matthew Pekoske, P-e-k-o-s-k-e, Coast Guard Judge Advocate and counsel to Captain Kirsten Martin.

LT McPHILLIPS: Thank you, sir.

Captain, please tell us what is your current employment and position.

THE WITNESS: I am currently serving as the commanding officer of the Coast Guard National Maritime Center.

LT McPHILLIPS: What are your general responsibilities in that job?

THE WITNESS: The Coast Guard National Maritime Center issues all merchant mariner credentials and documents to U.S. merchant mariners. It's the sole source for U.S. mariners to get a license.

LT McPHILLIPS: Can you briefly tell us your relevant work history?

THE WITNESS: Yes, I have had multiple tours in our Coast Guard's Prevention mission. This includes operational tours and commercial -- focused on commercial vessel inspects in New York, New York, Buffalo, New York and San Francisco, California, as well

as multiple headquarters tours where we draft our policies and work on regulatory projects, et cetera, working in the office of commercial vessel compliance, and also the office of law enforcement.

LT McPHILLIPS: What is your education related to your position?

THE WITNESS: So, for this job, there are no prescribed educational requirements in terms of degrees required for being the commanding officer here. I am not -- I'm also not a licensed mariner in terms of I do -- I myself do not hold a merchant mariner credential, but it's really the background required is knowledge of vessels, knowledge of mariners, knowledge of their operations and how they interact in our marine transportation system.

LT McPHILLIPS: Do you hold any professional licenses or certificates related to your position? Please explain if so.

THE WITNESS: I do not.

LT McPHILLIPS: Thank you, Captain. Captain Callaghan will now have follow-up questions for you.

CAPT CALLAGHAN: Good morning, Captain, and thanks for joining us here this morning, or I guess afternoon out there. I'm going to turn it over to Commander Karen Denny, who's going to initiate with some of the questions this morning.

THE WITNESS: Okay, great.

BY CDR DENNY:

Q. Good morning or afternoon, Captain. Thanks again for being with us virtually today. We appreciate that. So using this platform, this virtual platform, we will be able to share exhibits. You provided us in advance with a presentation on the NMC, the National Maritime Center. So if you -- as you present, if you want us to advance, please ask Lieutenant McPhillips, the recorder, to just go ahead and advance the slides. For the benefit of the public, we've been asking everyone to attempt to minimize use of Coast Guard acronyms and just use plain speak as much as possible.

So, ma'am, I'm going to let you go ahead and talk to us a little bit about the National -- the NMC and make your presentation and then we'll go ahead and have some follow-up questions.

A. Okay, sounds great.

Q. Lieutenant McPhillips, if you could please pull up Exhibit 109, which is the presentation for Captain Martin.

A. Yes, and I might, by default, use one acronym routinely and that is the NMC, so NMC does stand for the Coast Guard National Maritime Center.

And if you could go to the next slide.

So, in short, our -- the NMC mission is really to both effectively and efficiently issue credentials to fully qualified mariners, with the overall goal being the safety, security,

economic viability of our nation and our global marine transportation system. So I do say effectively and efficiently, meaning we want the right mariner to have the right credential in the right amount of time. So we are focused on serving the mariner and making sure we not -- we balance that service with ensuring they meet all the requirements to hold and operate under that license or credential.

Next slide please.

So a little bit about our center's operations. We really do have a wide range of operations. We have over 320 employees located at 20 outlying locations to carry out the Coast Guard mission as it relates to the documentation and licensing of seamen.

So credential production, that is literally just creating the book. If folks aren't familiar with that, this is what our United States Merchant Mariner Document Credential Book looks like. It's a passport-style book and these are made at our facility in West Virginia. You'll see our org chart in a few slides ahead of this, but we have a host of subject matter experts who, day in and day out, do this work, and it really is focused on the entire breadth of both training for mariners, and then also the testing of mariners in terms of competence, et cetera, and then finally, the issuance. So the range of operations you see here are very broad in terms of, you know, the highest level.

So we are looking at mariners for safety suitability, their

ability to hold that credential and act in accordance with, you know, the authority within that credential. We do look at them for medical fitness. We look at them for professional competence and professional capabilities. We also look at course approval; so training that leads to a credential. We looking at training and training providers that provide that for United States mariners. We create exams at our center and those exams are issued at our regional exam centers. The training location's outside of West Virginia, and I did not mention that earlier. The National Maritime Center is located in West Virginia.

And then there is a lot of documentation required to both submit an application and create that credential and then maintain the mariner's file. So documentation, records management is a large part of what we do. We also maintain our merchant mariner licensing and documentation database. So this is the Coast Guard's enterprise system for retaining mariner information.

And last, but not least, we do have a pretty robust customer service operation as well.

Next slide.

So a little bit about our organization, and I'm happy to take questions now if folks aren't familiar with the Coast Guard organization as a whole. So I did mention the main office for NMC, if you kind of think of us as a hub and spoke, the main office is in West Virginia. We are a Coast Guard headquarters unit, meaning my chain of command, the NMC chain of command, is in

Washington, D.C. I report directly to a CG-5PS, and that is the director of commercial regulations and standards, Mr. Jeffrey Lantz, and Mr. Lantz reports to CG-5P, the assistant commandant for prevention policy, Rear Admiral Timme. We have a sister office at Coast Guard headquarters, the Office of Merchant Mariner Credentialing. So the NMC really is the implementing side of the Coast Guard's program, meaning we'll receive any of the applications, we're giving the tests, we're creating those credentials. The Office of Merchant Mariner Credentialing is focused more on regulatory updates and changes, issues related to policies, trends coming through IMO and changes on the international front that would eventually, you know, affect United States mariners.

Next slide.

So this shows our organizational structure. Like I said, we do have a pretty large staff. We have 320 folks and this gets into a little bit more detail in terms of all the operations that are carried out within our six main divisions. So I am military obviously, Captain U.S. Coast Guard, serving as the commanding officer. We have a small number of military staff at the unit, seven to be exact. The rest are comprised of federal employees, GS employees, and also contract employees.

About 12 years ago, the Coast Guard centralized the authorities to issue credentials in West Virginia. That was known as centralization. Prior to that, those OCMI, what we call OCMI

authorities, or Officer in Charge, Marine Inspector authorities were situated out at operational units out at sectors who had the ability to issue credentials locally. But due to a variety of reasons, the Coast Guard centralized that program, centralized those authorities so the primary authority -- OCMI authority to issue mariner credentials in now in West Virginia.

So within our six divisions, division one is a Regional Exam Center Operations Division. So, again, we have 20 outlying offices throughout the CONUS, also OCONUS and Hawaii, Alaska, Guam and Puerto Rico, and, again, a number of offices throughout our continental United States. So they oversee all of the work going on there. Pre-COVID, that is where a mariner would walk in face-to-face to discuss applications, to pay fees, and then also to take exams. Currently, post-COVID, most of those face-to-face transactions related to customer service and fees is now done remotely via the phone or using websites, et cetera, but mariners still do report to regional exam centers for testing and for the issuance of those examinations that are required, at times, to gain a credential.

NMC 2 is our mariner Training and Assessment Division. So we have over 300-plus mariner training providers located throughout the United States. Any training that's leading to a license or an endorsement on a merchant mariner credential will be, in most cases, Coast Guard approved, and that unit does all the approvals for all the training that is conducted. Like I said, over 300

trainers and over 2,000, you know, approved courses that the Coast Guard has approved, leading toward merchant mariner training. They also do assessment, meaning the exams. They're creating the exam questions, they're creating the actual exams themselves, and then they're working closely with our regional exam centers in terms of getting those exams out to the regional exam centers for the mariners. We're still a little bit behind technology. We still work in a paper-based environment when it comes to examination, but we've figured out ways to work through that in COVID environments.

NMC 3 is really our wheelhouse. I won't get into it too much, but it's HR, it's budget. It's all the stuff that the NMC needs to execute its core mission.

So NMC 4, Mariner Information Division operates a fairly robust website. So if you're looking for information, you can go to our website and get that. They maintain that. They maintain the mariner files. They maintain (indiscernible) our merchant mariner licensing and documentation database, and they also manage our call center. We have a robust call center to deal with the many, many queries we get on a day in, day out basis. We have over 208,000 U.S. merchant mariners at this time. We pull numbers annually, and I've been at the unit for about five years now, and we've hovered right over that 208- to 210,000 active U.S. merchant mariners. And when I mean active, I mean they have -- they do have a valid credential.

NMC 5 is our Mariner Evaluation Division. They're looking at mariners from two different perspectives. One, safety and suitability, looking at mariner's past law enforcement, driver records, et cetera, and making those decisions is someone suitable to hold a Coast Guard issued merchant mariner credential. And then our professional qualification evaluation branch, they'll look at all the professional qualifications that a mariner will hold or made to meet if they're looking at upgrading or obtaining a higher level credential. When I say professional qualifications, they're looking at their service, what types of vessels did they serve on, the tonnage of those vessels. They're looking at any courses that they've taken in terms of the training that's required for a credential. They're looking at the amount of time someone's spent at sea, their sea service. So they're really looking at those competencies; what -- when they are serving on a vessel, what capacity did the mariner serve. Those all lead to maintaining a credential or usually upgrading or getting a higher level credential.

And then last is our Medical Evaluation Division. They're looking at mariners to make sure they are fit for the credentials sought. So we have a doctor. We have -- that division in particular is led by an occupational medical specialist, a -- you know, a board certified PhD doctor, and we have a number of physician assistants and then a robust contract team of medical (indiscernible) that work in that division as well.

Next slide. Okay. Did we skip one? We went two ahead. I think we're at the right place. Perfect.

So we already mentioned these. These are our regional exam centers and monitoring units, those kind of forward facing offices, which, again, with COVID, maybe not as forward facing as they were, you know, over a year ago, but just to get a sense of kind of the breadth of the operation. So, again, if a mariner was taking an exam, that's where they would go, that's where they would report.

Next slide.

So this, it just gives you a very basic overview of the application process. So if a merchant mariner or a want-to-be merchant mariner was applying for a U.S. credential, this is the basic process that every mariner would follow. So they would start with applying for TWIC, Transportation Worker Identification Card. They would submit the required forms to us, and there's two different forms, one for the actual NMC for a merchant mariner credential, and then one also for the medical certificate. And I didn't point that out earlier, but every credential book also has a little envelope in the back for the merchant mariner medical certificate. So these little exam centers do receive our applications, which now are, knock on wood, all electronic, and when I say electronic, I just mean they're a PDF. We're looking towards pretty dramatic IT enhancements on the horizon, but we still are pretty much in a paper, and then when COVID hit, a PDF

environment.

So mariners will submit applications through the regional exam centers. They'll get an initial review, then they will come up to West Virginia as part of our application in processing, and then all of those evaluations that I spoke about earlier, the medical, the professional qualifications, and then also the safety suitability will occur, and ideally, all the requirements have been met. There are fees; fees have been paid. Or if an exam was required, you know, exams are complete and passed. And, ideally, you know, everything is good to go and that credential is printed and then, obviously, sent back to the mariner.

Next slide.

So 2020 I don't think was normal for any of us with COVID, and we definitely saw a pretty significant drop in applications overall at our unit. This kind of just gives you a broad brush on the scope of our operations, what we do in a day. Pre-COVID, in a normal year, we would issue over 60,000 merchant mariner credentials each year, and a corresponding 60,000 medical certificates each year. So a very robust operation. There is never a dull day in West Virginia, that's for sure. We're always working on some unique issue related to some unique mariner. But that really is the general overview of the National Maritime Center and our operations.

And I think the next slide is just the closeout slide. So I will leave it at that, and look forward to any other questions you

may have.

Q. Thanks, Captain. We really appreciate that PowerPoint to give us a sense of what the National Maritime Center does. I do have some follow-up questions, but I wanted to ask you -- thanks for showing us the credential and what that looks like.

CDR DENNY: We're having some technical difficulties, so I think we're about to take a seven-minute recess to work out some issues on our end, ma'am.

THE WITNESS: Okay.

(Off the record at 10:22 a.m.)

(On the record at 10:41 a.m.)

CAPT CALLAGHAN: Okay. It is now 1041. The hearing is back in session.

So, Captain Martin, just so you're aware, we've kind of switched over. So this is -- the Zoom will show as recording and then it'll be posted to livestream later as we've got a technical difficulty with livestream. So I'll turn it back over to Commander Denny.

CDR DENNY: Thanks, Captain.

BY CDR DENNY:

Q. And thanks, Captain Martin, for your patience. I was just saying I appreciate the presentation that you gave, and I did have some follow-up questions. You showed us an actual credential, which was great, and I was hoping that you could please elaborate on the process. You had a slide, it was slide 7, that talked

about it in overarching terms, but can you talk a little bit more about the specifics of a credential? For example, how long is a credential good for from issuance until there's a need for renewal? And then I also have some other follow-ups.
A. Yes. So, in general, credentials are good for five years. So you would have that credential -- once it was issued, the validity time would be five years, and the same applies, in general, for your medical certificate. Sometimes there's other conditions that a mariner may have that the medical certificate will not be the full five years. They might have underlying conditions, et cetera, that requires a waiver. Waivers are -- it could be a single-year waiver, it could be a multi-year waiver. But, in general, five years for domestic. If we start talking international, it gets a little different, but five years.
Q. Okay. So for the purpose of, I think this questioning, we'll stick with domestic for sure. So, Captain, in terms of the investment that it takes for a person who is looking to get a credential, what are we talking about in terms of that individual's investment for training, for example? Let's say they're trying to get a -- for a small commercial vessel.
A. So, I mean, it really would vary. You can -- you don't always need training. You can get, basically, on-the-job experience. So if you got what we call entry-level credential, which is really -- there is no endorsement, there's no officer endorsement on it, you're able to be an ordinary seaman, a

(indiscernible) or steward. You're basically applying for your TWIC, you're getting your medical application in, your Coast Guard application, and paying the evaluation fee and the issuance fee, which is right around $145 for those. So if it's an entry-level, it's -- again, no endorsement, the cost is not that great. But I don't want -- it is not free. There are some fees.

Obviously, when you look at adding training and going to, say, a commercial training provider, there are costs incurred there. But some -- many times, mariners can just get experience. They can serve on vessels. They can capture their seat time that they have spent on vessels and use that as part of the entry-level credential requirements.

And it definitely is -- you know, obviously, it's a building block, you know, to go from an entry-level (indiscernible) endorsement to master or chief engineer unlimited. You know, those are very broad gaps in the skills, competencies required for those endorsements. If you look at (indiscernible), they cover the licensing and documentation of merchant mariners and seamen. It's -- there are a lot of different credentials. We have a wide variety of subject matter experts that can get really the details on the level of credential and, you know, most of them are based on tonnage. Tonnage of vessels is one of those markers that really delineates the requirements that are behind a credential, as well as the waters that that mariner is going to be operating in.

But it really does vary. If you -- as soon as you start increasing the level of endorsement, the level of credential. If you're going to do it purely in training, those dollars will add up in terms of the amount of money an applicant would have to pay for a school, and there are options where you can do all training. It's called course, in lieu of exam. So instead of getting the Coast Guard exam, you could take a training course and it would -- basically, you would not have to take our Coast Guard exam. Those are capped at 200 tons basically and below.

Any of the more (indiscernible) level credentials, you have to take a Coast Guard exam. But, again, our fees are -- they are -- I don't have it exactly, as you can tell. I can provide that easily, but I'd say our fees are pretty (indiscernible) to get that actual book issued, it's a $45 fee.

Q. So just for a little bit of clarifications, you had mentioned, you know, the very entry-level credentials, but a person with the entry-level credentials couldn't necessarily operate that commercial -- hypothetical commercial vessel, right?

A. (Indiscernible) ordinary seaman (indiscernible), you're really entry-level into that ship, and those are, you know, (indiscernible) that are in a larger -- you know, a larger vessel. But you're usually not even involved in the direct operation of things. You're helping cleaning, you're helping support the crew and some of the crew requirements. But, yeah, it's very as it sounds, entry level. You would not be on the bridge operating the

vessel. That's correct.
Q. Yes, ma'am. So, ma'am, I'd like to focus actually on a scenario to think about in terms of the investment that needs to be made by an individual. What if that person was going to operate a small, let's say, water taxi in a major harbor like Seattle, for example? Would they need some type of Coast Guard credential to do that job?
A. So depending, again, on size of the vessel (indiscernible), they would probably -- you know, assuming it's an inspected passenger vessel, and then, again, depending on the tonnage, yes, that person would need a credential. It would be a master credential, again, based on the size of the vessel and the number of people that are onboard. So (indiscernible) master 100, 100 gross tons, so a master 100 gross tons is a common entry-level credential that someone could get. That is one where you could do a course in lieu of exam. In terms of getting that training and not taking the Coast Guard exam, you would still need some operational experience to help support that, but that is a common entry-level credential.
Q. Okay. So you mentioned the different sub-directorates of the National Maritime Center, and you specifically talked about I believe it was NMC 6 that talked about medical sufficiency. How does the Coast Guard ensure that people are medically fit to work on vessels?
A. Yeah, so it's two pronged, medically and physically fit.

There are vision requirements. There are hearing requirements. There is basically -- mariners will take their application form to their physician of choice and the physician will work -- fill the application out, basically documenting conditions, whether that's, you know, the wide range of any type of health (indiscernible) condition that an individual could have, medications that someone is on. There is, basically, screen for is someone physically able to do the job. (Indiscernible) environment -- vessel environment (indiscernible) strong enough to do certain things, physically fit enough to be able to do certain things on a vessel because of the configuration of ships, of vessels. So that's basically that screening that happen with the mariner and then the mariner's physician. And then those are reviewed by our staff at National Maritime Center.

And then if a mariner already has a credential, we will look historically to see if there's changes in condition. You know, if someone (indiscernible), you know, five years ago and then they come back and there's a lot of (indiscernible) physician to just ensure that the member is fit. Also, vice versa, if they had a lot of problems and then they came in to renew and they had a clean bill of health, again, we would normally go back to that servicing physician and have a conversation where the physician would make sure, you know, that something wasn't missed on the application, because, again, we want to ensure that mariner's serving are fully, 100 percent ready to do the jobs and the

demanding jobs that are out there.

Q. Captain, what would happen if a person, the applicant, submitted their application and their medical paperwork and that person had a heart condition? What would happen within NMC 6 and the people reviewing that?

A. So, again, we have several layers of review. There's medical screeners, contract medical screeners. We have physician assistants on board, and then there is our, you know, board certified occupational medical specialist, you know, our doc. So in any (indiscernible) screener see a change in condition or there is something that needs a higher level of review, that's exactly what happens. So (indiscernible) can be reviewed by physician assistants.

Certain other conditions have to come all the way, you know, up to Dr. Torres-Reyes, who leads that division, for that determination. But it would be screened, and, you know, we're looking at those to ensure that, again, the mariner is medically fit -- is physically able and medically fit to perform the job, and we know these jobs are safety sensitive positions and we do our due diligence to make sure that those mariners are 100 percent ready to serve.

Q. Okay. So different example, if -- let's say I was applying for a credential, a mariner's credential, and I had a prescription for near-sightedness, would I be able to get a Coast Guard credential or would I get flagged medically for example?

A. So if there's items related to vision, or if there's items like I mentioned earlier, hearing -- ships, engine rooms, you know, these are loud environments and if someone's served for years on a ship, there's a good chance they're going to experience some level of hearing loss. But we would look at the condition and then go, is it correctable.

So, again, if it's hearing, you know, can the mariner wear hearing aids? Is there some enhancement that will allow them to serve? Same thing with vision. Correctable vision is something that we routinely deal with, so, again, they're going to get a med cert, but on that med cert, it's going to clearly state, mariner must wear -- mariner needs to wear glasses. You know, it might be a simple fix, but it would be prescribed on that medical certificate.

Q. Okay. Thank you for that clarification. I'm going to go down this line just a little bit more. What about if a mariner, an applicant, was taking prescription medication? Is that something that's going to be flagged or is that something that's authorized, for example a sleep aid that's prescribed? And then the follow-on question is what about if it's over-the-counter?

A. So a mariner should always provide all prescribed medicines that they are taking on their application because we need to evaluate that, right? We've learned from past incidents that if you have two different medicines and -- there's complexities when you layer a series of medicines, one on another. So our doctors

will -- or our medical teams will look at what position is the mariner in, what are the safety, you know, sensitive duties that the mariner is performing, what is the medication, and can they still do their work and take that medication. So there's many times where we're dealing with a mariner, and then, again, we're going back to that physician.

We rely heavily on the medical documentation presented to us. So our staff will look and talk with the servicing physician to ensure that the mariner can serve. Because especially as folks age, and, again, if you're -- if you've worked a lifetime in the marine industry, it's a tough environment. You're going to get some bumps; you're going to get some bruises. So you may be, you know, taking some medicines, but our teams will make sure that safety is not compromised.

Q. So that actually segues a little bit into, like, the physical fitness of the individual. You mentioned that you -- is it fair to say that you rely heavily on that physician -- the individual's physician to determine if the mariner has the physical dexterity to operate? For example, operate a water-tight door or to rescue somebody. Are you relying on that physician to attest to that?

A. There -- in the actual medical application forms, it explains basically the physical requirements that a mariner needs to be able to perform. So there are very specific on-the-job things that -- you know, if you're part of a firefighting team and you need to don equipment and then, you know, put on a self-contained

breathing apparatus and be able to go fight a fire, those are physically demanding activities, and there -- the medical form explains that to the servicing doctor so they can really evaluate, you know, the patient that they see in front of them. Hey, can this person operate a water-tight door? Can this person carry loads of X amount of pounds up and down ladderways on a ship? You know, can they perform some of these very physical job duties that are present on a vessel?

UNIDENTIFIED SPEAKER: It's 2 o'clock.

CDR DENNY: Okay. I don't know what that was, but apparently it's 2 o'clock somewhere.

BY CDR DENNY:

Q. So, ma'am, in terms of that physical, is that one of the expenses that is required for the applicant to pay for individually, or is that part of the overall fee that they pay?

A. So the physical itself would be -- you know, the mariner would pay for that physical. Currently, there is no fee related to the actual medical certificate issued by the Coast Guard. So that -- but, again, yeah, they would use their own -- you know, whether it's primary care or however their healthcare is organized, they would use their own servicing physician and then submit that in, but there's no Coast Guard fee for that. There is a Coast Guard fee for the credential book itself, but not for the medical certificate.

Q. Okay. Thanks, Captain. So could you talk to us a little bit

about how the Coast Guard ensures that vessels are drug- and alcohol-free places where credentialed mariners can work safely?
A. So a part of -- normally, part of our application process is to have proof of a drug test. So that would be one of the things that we're looking for in the application. So in terms of it's a requirement to get the credential to be -- you know, to provide proof of a clean drug test.
Q. Ma'am, could you talk a little bit in general terms about what types of tests people might have to submit?
A. In terms of the types of drugs being tested for or --
Q. The types of drug tests. Like, can it be any old drug test? Does it have to be DOT certified?
A. Yes. It would be a DOT certified lab or medical drug test provider.
Q. So, generally, what would happen if a mariner working offshore had two heart attacks? Can you tell us what would happen if he held a credential for a vessel less than 200 gross tons and that situation happened? How would the National Maritime Center be involved?
A. So the scenario is a mariner is on a vessel less than 200 gross tons and has two heart attacks. Is the mariner required to even have a credential --
Q. Yes, ma'am, in this scenario.
A. So, one, we would need to be notified. There is a self-reporting mechanism for mariners to notify the Coast Guard

about changes in medical fitness. So, ideally, the mariner would relay this information to us, because that could have very significant impacts to their ability to hold a medical certificate. We would need to find out more information about, you know, what happened in terms of the -- two back-to-back heart attacks are fairly significant health events. So, again, that would require us to talk to the mariner, again have that mariner connect with their servicing physician, and we would be looking at that more closely.

Q. Thanks, ma'am. So I'm going to shift us a little bit to competency and talking about mariner competency and how the National Maritime Center is involved in that. How do you check or verify that a person is maintaining their competency with the new types of equipment or changing technology? Is there a mechanism for that?

A. So that's maybe two different prongs. A lot of changes in technology, which I think we're seeing quite a bit of, right? Like, hey, we're talking about autonomous vessels, et cetera, or just all the changes in IT that we're seeing, cyber, et cetera, on ships. So some of those broader changes are going to be -- there's going to be -- regulations need to change, right? Like, there is a set standard in 46 C.F.R. Part 10 that says, here's what the Coast Guard is going to look at in terms of required topics from mariner exams, whether that's a deck endorsement or an engineering endorsement.

Those topics need to keep up with the changes in technology. So for (indiscernible) changes in technology, whether it's engineering or it's navigational technologies, we need to make sure that the items that we're examining mariners is keeping up with that pace.

Q. So you mentioned 46 C.F.R. Part 10. When is the last time, roughly, that that's been updated?

A. I would probably be speaking a little bit out of turn because that's more of the Office of Merchant Mariner Credentialing, our headquarter sister office, that does that. I know -- you know, we've been in a little bit of a nonregulatory environment for the last four years, so in terms of broad changes to that, I know that has not happened. We see -- again, we're implementing the policy and regulatory changes that really are created in the Office of Merchant Mariner Credentialing back within the CG-5PS.

Q. Thanks, Captain. So to shift back to competency, you indicated in your presentation that, you know, you have a sub-directorate that assesses those trainings and also kind of, is it fair to say, audits or decides what's accredited or approved. Have there been cases where people get, quote, grandfathered to give them credit for a lifetime of marine operation experience?

A. I'd have to think of that one a little bit, so give me a minute. I mean, there's always -- whenever there's new regulatory changes, you know, with the Coast Guard at least, in my experience, there's -- many times there's some sort of grandfather

clause. If you're looking at changing -- say it's changing certain equipment on a vessel, many times, you know, hey, if you had this equipment and it was already installed, it's good for the lifetime of the equipment because -- just to allow folks that opportunity to gear up for a new requirement. So in terms of licensing for the personnel, I can't think of anything off the top of my head where we would grandfather someone's competency, but I would have to just look into that (indiscernible) --

Q. Okay, that's fine. So I kind of want to talk a little bit about suitability for credentialing. Pretty basic, does a credentialed mariner have to be a U.S. citizen?

A. So for certain officer endorsements, you do, yes. For others, you do not. So we look at citizenship, and then we also look at criminal record, convictions, national driver registry. We -- again, we want to make sure that person is (indiscernible) suitable to hold the credentials being sought.

There's a whole section in there that talks about convictions, and, you know, sometimes folks need to -- there's an assessment period applied, meaning they cannot apply right away due to the nature of the conviction. So we work closely with our DHS partners in terms of getting information as part of the TWIC application process to make sure that, again, we're giving this credential to someone who really is suitable to hold, and then obviously, act under the authority of the credentials.

Q. So, ma'am, what would be the affect to a person in terms of

credentialing for -- if you guys found that said applicant was driving under the influence or had a fairly serious criminal conviction? How would that impact that person's ability to get a credential?

A. So the -- as I mentioned, there is a table of assessments and it literally applies basically years that we can take into account when we're looking at a mariner's background. (Indiscernible) there is, on the application form itself, a mariner's duty to identify convictions. Sometimes mariners do not identify those convictions, but we find out as part of our safety and suitability checks.

So there's a table. We apply, you know, the table. If there's something more egregious, they could be denied, but you always -- the table's basically our framework for using some judgement and also talking with the mariner. We always look at the mariner as -- that they do have that ability, right? Like, to provide someone a credential is to provide someone a way to earn a living, a way to support their family. To deny someone, you know, we take that seriously when we really take that opportunity away, especially if they've been holding a credential. But there are rules, there are standards, and we will look at those assessments and apply the required time.

Q. So is there a way for an applicant to be able to appeal that determination? You mentioned that there's judgement used. Is there a way for them to appeal that determination that's made?

A. Yes, there are multiple -- actually multiple levels of appeal for a mariner. So upon the initial application, the mariner -- if they were denied or say they were getting a four-year -- you cannot apply for four years if that was the assessment time given, that's done at a level below me.

So, one, the mariner -- the next step is what we call reconsideration. The mariner would send the reconsideration request to me, and, again, I would take an independent look because I would never have seen that decision that was made earlier. That's at a lower level. And then above me is -- the mariner would appeal to CG-5PS, so to my direct chain of command. That appeal would go to the director of commercial regulations and standards.

Q. Okay. I'd like to kind of pull us out into a higher level in terms of just overarching issues. We've heard testimony from other Coast Guard witnesses about a database, MISLE, the Marine Information for Safety and Law Enforcement System. Does that National Maritime Center use this database in processing mariner credentials?

A. So we will -- we have our own database, Merchant Mariner Licensing Documentation database, but we will look in MISLE if -- to see if there's any indicators of -- if there's anything that, you know, is related to a mariner accident, mariner conduct, or something that was captured within MISLE that, again, is separate from our database. So, yes, there are times when we will use

MISLE.

CDR DENNY: Ma'am, I'm going to need 30 seconds. We are having some more technical difficulties. Give me just one minute.

(Background conversation.)

CDR DENNY: Thank you very much for your patience, ma'am.

BY CDR DENNY:

Q. So would the system that you're using, does it have associations between the mariner and the person that, like -- would it have an association with the mariner or person, and do you guys check, you know, Coast Guard boardings or accidents to see if that association between the application is there? You know, if they were involved in pollution incidents or other casualties.

A. So that is something that -- there's no direct connection between MMLD and MISLE. As, you know, I'm sure you're aware, some of our Coast Guard IT systems are not purpose built for what we're using them for today. So there are no direct connections. If we are aware of something, there's an ability for us to put notes in there in our MMLD system, and so we will put, basically, a documentary note about something. There are times where we are, you know, working with suspension and revocation staff related to revoking a credential.

So we work closely with the folks that use MISLE. We can use MISLE. We're allowed. You know, we have access. But the two systems are not connection in what I would say is an efficient

way. So there's no immediately notification if something happened in MISLE that it would feed over into MMLD.
Q. Would you say that additional resources to upgrade the systems to have better connectivity would help the Coast Guard in identifying suitability for potential mariners?
A. I think it would streamline, yes, the data that -- again, that investigative data related to accidents that in MISLE, connecting that back to MMLD. Yes, without a doubt.
Q. And is it a fair statement to say that -- so because you have the two different databases, would every credentialed mariner be in the MISLE system?
A. I don't think they are now because I think that is a -- if a mariner's going to be entered into MISLE, because it's not an automatic feed, it had to be hand entered by someone using MISLE. So I doubt there's 200,000 entries into MISLE for every, you know, credentialed U.S. merchant mariner. If there's, again, an accident or some type of case involving a credentialed mariner, my understanding is that that has to get hand entered in (indiscernible) of a mariner reference number, in our credential and in our system, and that is a key piece of information that would need to get over to MISLE, because if they just said mariner John Smith was involved in a grounding and corresponding pollution spill, you know, we need to know which John Smith over in our MMLD system.
Q. Okay. So is it fair to summarize that if we had a situation

and I, as an investigator, needed to go into MISLE, I have access to MISLE, and I could look up the mariner. If he was already plugged in, could I see his information based on his credential? Could I see his medical conditions or see if he was required to wear glasses or -- you know, hypothetical situation, but could I, as a MISLE user, be able to connect said mariner back to those potential medical conditions?

A. I believe there's a -- there's certain information that is there, but it's very limited. I don't think you would get a full -- I don't think you would get the full picture that we see in our system.

That is an area where I would like to clarify a little bit because, again, I don't have my MISLE account. I haven't had it for quite some time, but I would rather clarify that, but I know there are some limitations in terms of the IT transfer between the two systems.

Q. A little earlier in the testimony, you know, I asked if a person who operated a small passenger vessel, a hire -- a water taxi for hire in Seattle, if they would be required to have the credential, and we talked through it. I want to talk about vessel types and validation that would -- you know, I just want to validate whether or not they would be required to have a credential to operate said vessel, said platform.

So towing vessels. Let's start with that. Would a person operating a towing vessel be required -- an inspected towing

vessel, would they be required to have a merchant mariner credential?

A. So can I take a quick chat with counsel quick?

Q. Yes, ma'am.

CDR DENNY: Mr. Pekoske, I can see you, but I don't have Captain Martin. Are you guys okay?

LCDR PEKOSKE: Yes, ma'am. We're all set. Captain Martin should be popping up -- there she is.

THE WITNESS: Yeah, thanks.

CDR DENNY: Awesome.

THE WITNESS: So going back to your question, in general, certain operators of towing vessels, yes, would be required to have a credential. Those are some of our newer regulatory rules that have been established and we would be, you know, looking at those applications just like any other application. Again, there are provisions for tonnage, where the vessel operates, what the vessel's operation is focused on. It really drives those requirements to whether, you know, a credential is required, a licensed operator is required, or not.

BY CDR DENNY:

Q. How about a platform like a ferry vessel, ferry boat?

A. So large -- yes. Large passenger vessels without a doubt would require licensed operators, licensed mates, engineers, et cetera.

Q. And then tank vessels?

A. Yes, yep. Tank vessels.
Q. How about small passenger vessels, like dive boats?
A. So there's -- you can have operators of uninspected passenger vessels, and then, yes, also (indiscernible) vessels but those do require a licensed (indiscernible) handled at that local (indiscernible) level, in terms of, you know, the member. You always need the master, but then how many mates -- you know, how many other positions that are identified on a vessel certificate of inspection. The manning aspects are handled more locally.
Q. So, ma'am, you mentioned uninspected passenger vessels. So what about small, uninspected, sport fishing boats? Would they be required to have something like an operator of an uninspected passenger vessel, like an OUPV under 100 tons with six passengers for hire?
A. So for a sport fisher that is a passenger vessel would still have OUPV operator.
Q. And that -- and, again, so that requires some level of credentialing and training and -- okay. So how about larger fishing vessels over 200 tons?
A. Over 200 tons, there'll be license requirements. Again, it would be focused on the COI, Certificate of Inspection. Pretty much everyone needs a master and then some of those other specific ones. There are some unique, you know, tenders. There's a few provisions for differences and those are outlined in policy related to the Mariner Safety Manual, but, in general, if you're

talking of larger vessels, commercial trade, of that size, they will have licensed masters, mates, engineers.

Q. So then how about the smaller commercial fishing vessels under 200 gross tons?

A. So there are some current regulatory exemptions that basically allow for vessels under 200 gross tons to not be required to have some of the positions that, you know, we talked about on others ones; having the master, having the mate, having a chief engineer, or a first engineer.

Q. So, ma'am, the *Scandies Rose* is a commercial fishing vessel that was under 200 gross tons, and it then, by the things that we just discussed, would not have been required to have any credentialed mariners with any requirements for training in terms of the credentialing that we just talked about; is that a fair statement?

A. That's correct.

Q. Ma'am, would you be able to give us some background history on why commercial fishing vessels under 200 gross tons don't require any kind of credential to operate on the water, you know, off the United States or in coastal waters of the United States?

A. So I've been in my job five years and since I've been here, there haven't been any initiatives focused on credentialing of those mariners of that size of vessel. In terms of my Coast Guard experience, which I'll kind of rely on heavily here, I know in the past that that's been looked at.

There's a lot of forces when it comes to changing regulations, you know, putting in new requirements for licensing. We talked about grandfathering of certain -- you know, for equipment upgrades earlier, and I know that that has been looked at in terms of other regulatory initiatives, but I couldn't say why those standards weren't put in place. Sometimes the cost is a factor, looking at actual cost to obtain a credential or any cost to the industry. You know, if certain segments are, you know, maybe barely making enough to survive and then here's another government regulatory cost.

Another avenue is to look at that -- I think you've already heard from the fishing vessel safety coordinator and the staff from Coast Guard headquarters. We have a merchant mariner personnel advisory committee. So they're a federal advisory committee that helps guide our operations whenever we look at new regulatory requirements, and there's a corresponding merchant mariner medical personnel advisory committee that does the same things as it relates to medical.

So -- and I know in my tenure, you know, this issue in particular has not come up. There are avenues for that discussion, and there is a regulatory process that would look at that and go, is it economically viable. What's the cost? What's the cost for the industry? And whenever lives are lost, it's a very tough question to look at and make some of those decisions.

Q. Okay. Captain, thank you so much for your candid answers,

and also for your patience with our technical difficulties on this end.

CDR DENNY: Captain Callaghan, those are all the questions that I have at this time, sir.

CAPT CALLAGHAN: Thank you, Commander Denny.

And thanks, Captain Martin, for hanging with us through some of the technical difficulties.

I am now going to pass it to our colleagues at the National Transportation Safety Board.

Mr. Barnum?

BY MR. BARNUM:

Q. Hi, Captain Martin. Bart Barnum, NTSB. Thanks for appearing today; great information. Appreciate it. Just two follow-ups from Commander Denny's line of questioning. Throughout your presentation initial phase there, you mentioned COVID several times and the challenges that you've experienced with that with the multiple regional exam centers and the face-to-face. I was just curious -- I mean, you had also mentioned that there's about 300 of these approved training providers nationwide. Have you gotten any feedback from them?

I know these mariners, in order to keep up their credentials -- credentialing, need recurrent training and training to do so. They potentially might not be able to receive that training if there's a closure of a training facility. Have you heard from any of your providers? What is the Coast Guard doing to alleviate

some of these problems that potentially might be happening because of COVID?

A. Yes, so we've been actively working with our mariner training providers since this all started. So normally an approval is good for five years. So we've look at extending the approval where appropriate. We've gone to electronic testing, when we've never had electronic testing before. We've gone to electronic delivery of training materials, meaning give (indiscernible) just like we're doing in this hearing versus a brick and mortar, you know, we're in the school and the teacher is right there and everyone is in the same room.

So we've really tried to be as flexible as possible with those training providers so the training can still occur, one; that folks that need that training can get it, because you kind of couple COVID with the things that the states -- right? So, hey, we have our national requirements, but in that COVID environment, you have a state saying, hey, no commercial operations at all for my state, or limiting gatherings to six people. So what does that mean for a class size? So we've been really keeping good lines of communication and actively working with them.

There has been a lot of allowances issued in the Marine Safety Information Bulletin related to COVID-19 specific things, related to credentials. We've extended credential expiration dates. Normally, a mariner has about a year to test. We've broadened some of those days because we were closed -- the

regional exam centers were closed for March to September of last year. So we've provided some leeway for mariners as a whole and training providers to kind of get them through this last year that we've all lived through.

Q. So as we're talking about the mariners aboard these smaller commercial fishing vessels not required to be credentialed, but they are required to have a certified drill inspector, at least, one on board. Assuming that instruction happens at one of these training providers, where does the NMC come involved with that whole certified drill instructor course? Are they -- do they issue any kind of credential or how does that work?

A. (Indiscernible) for the drill instructors. We don't have a huge number of those, and -- but we have issued Coast Guard approvals for schools to do those drills to be a certified drill instructor.

Q. Okay. So the school is actually issuing the certificate? It's not actually going through any sort of review at the NMC or anything?

A. So we issue the school approval, and then the school issues the certificate to the student. Yes, sir.

MR. BARNUM: Thank you. That's all the questions I have for you, Captain Martin, and as a credentialed mariner myself, I would really like to appreciate your human resources department there at NMC. They are fantastic, so thank you.

THE WITNESS: Right, thank you.

CAPT CALLAGHAN: Thank you, Mr. Barnum.

Captain Martin, I'm going to shift now over to our parties in interest, so to counsel for the two survivors.

Mr. Stacey?

MR. STACEY: Thank you, Captain Callaghan.

And thank you very much, Captain Martin, for your testimony today. I have no questions for you. Thank you.

CAPT CALLAGHAN: Thank you, Mr. Stacey.

Now shifting to counsel for vessel owners, Mr. Barcott.

MR. BARCOTT: Thank you for your testimony this morning, Captain Martin, very informative presentation. At this point, we have no questions for you. Thanks again for your time this morning.

CAPT CALLAGHAN: Thank you, Mr. Barcott.

And, Captain, I've got just a couple follow-up questions from Mr. Keith Fawcett.

BY MR. FAWCETT:

Q. Captain, thank you for your time. A couple of clarifications for us please. When you mentioned safety sensitive position, are you speaking about a -- the steering of a vessel or operating the throttles and controls?

A. In general, yes. The -- all of those positions -- you know, basically, of the master chief, you know, your licensed crew, they're always focused on safe operations. So, yes, sir.

Q. So in your opening presentation in the beginning, you talked

about the Marine Transportation System. Is there an official -- and I'm not asking you to get it, but is there a policy or regulation that defines that system?

A. That is a good question. It's just a term that I have used, I think we all use, in the industry and affiliated with the industry, but I don't know if that is defined in regs. I would assume so that it's out there, but I can't say for sure, sir. I would have to follow-up on that.

Q. And does that include commercial fishing vessels as part of the Marine Transportation System, or were they excluded?

A. Again, not having that definition in front of me, but from my experiencing, anyone that's operating out in the environment is part of it because there -- if it's engaged in commercial activity -- I know commercial activity is part of the MTS, as is, you know, vessels, all the waterways that are maintained and part of our nation's MTS, as well as port facilities, et cetera. It is a broad and encompassing system. I just don't know if it's actually defined in regulation, sir.

Q. So I just have two more questions. One is Commander Denny spoke about drug testing. So there's four types of drug testing that can confront a merchant mariner. They could be pre-employment, also -- and I'll throw that into the notification of the Coast Guard that they have a test so they can get their credential. Then there's random testing. There is post-accident testing, and there is testing for cause.

For any of those circumstances, could a marine mariner use a Amazon style drug testing kit to comply with those regulations, or is it much more rigorous than that?
A. Sir, they're normally using, you know, licensed facilities for those purposes that are approved -- DOT approved facilities or SAMHSA approved facilities for those testimony requirements.
Q. So my follow-up question is all of use over-the-counter medications, and I'll give you an example, there's a product called ZzzQuil, which is a sleep aid. You know, the engine is noisy, you've got to get to sleep as fast as you can so you take a product like that. Can a licensed merchant mariner, when they're working on a ship or vessel of any type, take that type of over-the-counter medication?
A. A ZzzQuil?
Q. Yes, a sleep -- something that would make you fall asleep. I mean, the operation of a vessel, you're operating 24 hours a day, and you need to spring out of the rack and you need to answer alarms and so forth. So from a Coast Guard policy perspective, do you know if that's prohibited?
A. I do know that that isn't prohibited, as long as it -- you know, they're still able to perform their duties.
Q. And so they need to talk about that in their mariner physical when you list all of the drugs prescribed and over-the-counter medications, even vitamin supplements; would that be correct?
A. I would need to check to make sure that that is all

encompassing. I know the prescription medicine definitely is part of that. I just -- I can't recall off the top of my head if the over -- if all of the over-the-counter is also on there.

Q. Thank you very much, Captain. I appreciate it. I appreciate your time.

MR. FAWCETT: And I'm finished, Captain.

CAPT CALLAGHAN: Thank you very much, Keith.

Captain, I want to take the opportunity to thank you for your time and your patience, particularly as we kind of struggled through some of the technical difficulties on our end. Again, I echo Mr. Barnum's sentiments. It -- just the value of what you all provide there at the National Maritime Center is hard to state in this short period of time, so we certainly appreciate the effort there, and, again, we just want to thank you for taking the time, not only to share some of this information with us, but to help further educate the public through this venue on some of those requirements and some of the differences between vessel types and the like. So thank you very much.

At this time, you are now released as a witness to the formal hearing. Thank you for your testimony and cooperation. If at a later date we determine that the Board needs additional information, we'll contact you through counsel. If you have any questions about this investigation, you may contact any member of the Marine Board of Investigation.

Thank you, again, Captain.

THE WITNESS: No, thank you.

(Witness excused.)

CAPT CALLAGHAN: The time is now 1144. This hearing will now go into recess and resume at 1300 as scheduled.

(Off the record at 11:44 a.m.)

(On the record at 1:05 p.m.)

CAPT CALLAGHAN: Time is now 1605. This hearing is now back in session. I want to quickly clarify for the record that, due to the technical difficulties experienced earlier, a portion of that testimony from Captain Martin was recorded and will be posted on livestream later today.

Correction, it's 1305. And so we'll now hear from Mr. Sirkar from Coast Guard headquarters.

Mr. Sirkar, Lieutenant McPhillips will now administer your oath and ask you some preliminary questions.

(Whereupon,

JAIDEEP SIRKAR

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

LT McPHILLIPS: Please state your full name and spell the last name.

THE WITNESS: Jaideep Sirkar. Sirkar is spelled with 6 letters, S-i-r-k-a-r, Sirkar.

LT McPHILLIPS: Please identify counsel or representative if present.

THE WITNESS: Lieutenant Commander Matt Pekoske.

LT McPHILLIPS: Counsel, please state and spell your last name, as well as your firm or company relationship.

LCDR PEKOSKE: Lieutenant Commander Matthew Pekoske, P-e-k-o-s-k-e, U.S. Coast Guard Judge Advocate (indiscernible) counsel to Mr. Jaideep Sirkar.

LT McPHILLIPS: Mr. Sirkar, please tell us what is your current employment and position.

THE WITNESS: Good afternoon. I am a supervisory naval architect and the chief of the Naval Architecture Division at the U.S. Coast Guard headquarters. This division is one of four divisions within the Office of Design and Engineering Standards. The Office of Design and Engineering Standards through the senior executive for -- who is the director of Commercial Standards reports to the Coast Guard flight officer who is the assistant commandant for prevention policy.

LT McPHILLIPS: Thank you. What are your general responsibilities in that job?

THE WITNESS: In this job I am responsible for managing a staff of naval architects in the development of rules, regulations, policies, standards for naval architectural applications for the U.S. Coast Guard in its role as a regulator in the commercial shipping industry.

LT McPHILLIPS: Can you briefly tell us your relevant work history?

THE WITNESS: Yes. My professional career as a naval architect started about close to 40 years ago with about 9 years of experience as a practicing naval architect with ship design (indiscernible) in the areas of ship stability, ship structures, stability software development for various U.S. Navy, U.S. Coast Guard and commercial customers.

Subsequently, for the past 30 years I have been employed as a civilian at the U.S. Coast Guard, first as a staff naval architect developing regulations and then as a regulatory program manager and currently as a supervisory naval architect; a position that I have held for the past 11 years.

LT McPHILLIPS: What is your education related to your position, sir?

THE WITNESS: I have a bachelor's degree in naval architecture and marine engineering from the Indian Institute of Technology. I have a master's degree in naval architecture and marine engineering from the University of Michigan. I also hold a master's degree in computer science from Johns Hopkins and a master's degree in national resource strategy from the Eisenhower School of the National Defense University.

LT McPHILLIPS: Do you have any professional licenses or certificates related to your position?

THE WITNESS: I do not.

LT McPHILLIPS: Thank you, sir. Captain Callaghan will now have follow-up questions for you.

CAPT CALLAGHAN: Mr. Sirkar, thank you for joining us today. We greatly appreciate your time and your patience as we work through a few of the difficulties we're having on this end. Sir, I'm going to pass it to Lieutenant Commander Michael Comerford who's got some questions for you, sir.

EXAMINATION OF JAIDEEP SIRKAR

BY LCDR COMERFORD:

Q. Good afternoon, Mr. Sirkar. All my questions today are going to be related about the work of the United States Coast Guard in the realm of safety of commercial fishing vessels.

Thank you for being on the line with us today and attending the hearing virtually. If at any point we ask a question that you do not understand or cannot hear because of technological issues, please do not hesitate to say so and we will repeat or rephrase the question as necessary. We have been having some technical difficulties earlier this morning so if we do lose you temporarily we'll take a short recess to reestablish communications. So please work with us on that today.

A. Yes.

Q. Using the Zoom platform today we have the ability to share exhibits virtually. The recorder, Lieutenant McPhillips, will put any necessary exhibits up on your virtual desktop. If we do so and you need to point anything out on these exhibits, do so verbally to the best of your ability and Lieutenant McPhillips may highlight certain areas based on your directions. And if they

need to be adjusted just let us know. If the area -- if you -- if we do use any exhibits, please take your time to refresh your memory as necessary or acquaint yourself with the information. And also, in our community, we have a lot of acronyms so for the benefit of the public if you could minimize your use of acronyms and use as much plain language as possible, we would really appreciate that today.

So I'd like to start off today, Mr. Sirkar, could you just give us a little bit of background on what your office does on a general basis for stability low-line and regulations for vessels in general?

A. Yes. Our office provides the technical advice and the technical support that is required in drafting regulations, guidelines, policies related to ship stability, ship structures, low lines. That, in general, is our role and our responsibilities pertaining to commercial vessel safety.

As I had mentioned before, in our office we have four divisions so it is not just the naval architecture division that provides that technical advice and technical support. The other divisions as well, with various other technical areas and technical subject matter experts in the fields of electrical engineering, mechanical engineering, fire protection engineering, life-saving equipment and so on.

Q. And as for clarity, I hope I word this accurately, but (indiscernible) how would you describe your customer base? Are

you working more for the -- assisting local Coast Guard offices or are you working directly with naval architects submitting plans for vessels or (indiscernible) regulations, divisions? Could you help describe that a little bit?

A. Yes. The customer base for our division and our office is quite varied. Our division, our office, we do not conduct plan reviews so we do not have direct interaction with those who submit plans in order to have them reviewed by the Coast Guard to determine compliance with the regulations. As the office, and as the division, developing rules, regulations, standards, policies and guides.

Our customer base include Coast Guard field offices, the industry who is being regulated and needs support and answers related to possible interpretations within the regulations or within the guidance, and of course, other parts of the industry that are directly affected by the regulations and by our policies. So the industry at large and Coast Guard field offices, we have other customers within the Coast Guard, as well, in addition to field offices, varies units within the Coast Guard headquarters organization, such as the Office of Commercial Vessel Compliance. We would be working closely with them to interact in providing technical advice or technical counsel related to these different subject areas.

Q. And you mentioned (indiscernible) guides, policies, regulations, could you discuss in what forms those generally take?

A. Yes. The development of regulations would have essentially two forms. One is within our Code of Federal Regulations, 46 C.F.R. and 33 C.F.R.. That is one form. The other form is where we interact with our counterparts in other countries. When I say our counterparts I mean other federal regulators or the equivalent in other countries in various international forums such as the International Maritime Organization, IMO, in the development of international rules, regulations, policies, guidelines for the form, if you will, that is developed at IMO. So those are the two areas: the 46 C.F.R., Code of Federal Regulations, 33 C.F.R., and our activities at IMO where we develop international codes, conventions, guidelines, and policies.

When it comes to other non-regulatory actions, they may take the form of what we call Navigation and Vessel Inspection Circulars, NAVICs; they may take the form of policy letters issued under the -- issued from headquarters, various types of policy letters with interpretations and guidance; they could take the form of information bulletins or marine safety alerts. So these are some of the other forms that we would be either developing or providing input to for the development of.

Q. So I'm going to circle back to some other questions later, but (indiscernible) fishing vessels, what action -- how much involvement does your office have with respect to commercial fishing vessels for regulations and policies?

A. Yes. In the area of fishing vessel safety, once again we

would be interacting very closely with the Fishing Vessel Safety Program office, which is within the Office of Commercial Vessel Compliance. We would be working closely hand-in-hand with them to provide whatever technical input is appropriate and necessary for the development of regulations or any other policies or guides that may be promulgated by us. By us, the Coast Guard at large.

Q. As of right now, are you aware of any policies in the works or guidelines in draft that are being worked on or reviewed for fishing vessels related to regulations?

A. I am not aware of any.

Q. Thank you.

A. We do have -- I'm sorry, let me -- that was not a completely -- that was not a complete answer. I am not aware of any guidelines under development. There is a rule making with the next action undetermined for an NPRM that was published a while ago. We did have interaction with the program office. When I say program office, once again I'm referring to the Fishing Vessel Safety Program Office within CVC, the Office of Commercial Vessel Compliance. We did work with them in the development of that NPRM, but that rule making is currently, currently on hold because of other reasons that -- for other reasons.

Q. I guess for the benefit of the public, could you help explain what NPRM is (indiscernible) rule making? And you mentioned -- and to follow up with that you mentioned the status of the current rule. Is there any information about why it's in the status that

you mentioned?
A. Yes. Because there were several, there were several acts of Congress that were signed into law subsequent to the -- subsequent to the passage of the act that required the publication of that NPRM. So we need to take those subsequent statutes into consideration and so we will need to amend, appropriately, the NPRM. So we did need to put that on hold while we assess the next set of actions. And as of right now that is undetermined as published in the regulatory agenda.
Q. And for clarity, is your office working on, or monitoring, that notice to proposed rule making in a technical advisory position or are you the lead office per the regulations that might be worked on?
A. Our office would not be the lead office for that particular rule making. We would certainly be in a supporting role; in a technical and supporting and technical advisory role.
Q. Now I always find that (indiscernible) for the public to get a perspective. When you're working through rule making -- the rule-making process, and your office's involvement in the process, in your personal experiences, what's the -- what's a typical timeline look like for a rule making?
A. In general, I would not use the word typical because of the wide variety of rule makings that we have that could be broad in scope or not. And so it is somewhat challenging to call a timeline for a rule making typical. Having said that, the rule-

making process is an extremely deliberative, careful, carefully-planned-out process taking into account input from all interested parties through a very disciplined, thorough -- in a very disciplined, thorough manner.

And again, governed by other (indiscernible) such as the Administrative Procedure Act that require us, as a federal agency, to make sure that we are providing the regulated public with adequate notice and comment, and that there are no decisions that are being made by the federal agency or by the Coast Guard, in any form -- in any type of arbitrary manner. So we would have to develop a proposal in a very careful manner, together with the appropriate analyses, not just technical but economic analyses for articulating the costs and benefits of a proposed rule and then present that to the public in a completely transparent manner, in order for the regulated public, or any interested party for that matter, to comment on that.

And then we would take all of those comments into consideration while we proceed to develop the final rule. And we may take other steps, intermediate steps, in between the publication of a proposal and the final rule. There may be other supplemental notices published in order to respond to specific comments, or if there's new information available modifying or requiring a need to modify the original proposal, then we may take intermediate steps, as well.

So again, the process is thorough, deliberative, and careful,

and it may take several years. There have been instances of swifter action if the statute has been written in a manner that exempts the Coast Guard from certain administrative requirements, but generally rule making takes years to accomplish.

I hope I was able to answer your question without giving you a straight typical number.

Q. No, you actually -- I really appreciate the perspective you provide there. And it echoes some of the same comments that Mr. Myers was speaking of the other day. So we really appreciate that. I want to back up just for a minute and kind of go back to some basic things. Could you help us understand a little bit of importance of stability when it comes to, let's say, a fishing -- commercial fishing vessel and why it matters? Why do we care about stability for a commercial fishing vessel?

A. The stability of a vessel, a fishing vessel or any vessel, is one of the most important -- is of utmost importance and one of the most importance characteristics of any vessel, in particular of smaller vessels like, perhaps, fishing vessels. Why is it so important? It is important because without appropriate stability the ship will not float or it will not float and function in an appropriate manner that is safe for the people on board and that is stable for the functions of the vessel.

So inadequate or insufficient stability could -- would kill people, would result in lives lost, in property damage or property loss, including complete loss of vessel. So the ship needs to

float in a manner that allows for these outcomes, these horrific outcomes, not to come to pass. Thus, stability of a ship, of a vessel, fishing vessels, is of utmost importance.

Q. Now with regards to stability of commercial -- with commercial vessels, are there certain things to evaluate for a commercial fishing vessel or certain aspects of the stability study for a commercial fishing vessel, say operating in Alaskan waters, that would be more critical to the safety of a commercial fishing vessel?

A. Yes. (Indiscernible) regions would experience certain types of unique hazards that are unique to that region. In particular, we would expect that there would be some, some exposure to ice accretion or some exposure to weather conditions that are suitable for ice accretion in some, in some manner. Ice accretion is a recognized hazard and under certain conditions could pose a significant threat to the stability of the vessel.

There could be other geographical (indiscernible) or geographical unique situations such as wind and waves that govern the -- or that influence the behavior of the vessel and thus perhaps present higher risks or different risks than in other locations. Again, in Alaskan waters cold temperatures, the propensity for ice formation, wind, waves, would be amongst some of the known hazards.

Q. In your work, have -- has your office or the offices that you work with, commissioned or initiated any studies related to ice

(indiscernible) on commercial fishing vessels in Alaska?
A. Our office has not.
Q. Now, just from your experiences, how familiar with the stability requirements for commercial fishing vessels in Part 28?
A. I'm familiar with them.
Q. So a couple things I'm just kind of looking for perspective for (indiscernible) when it comes to ice and wind and waves. These -- because the regulations apply ice for commercial fishing vessel in that area to both sides of the vessel evenly or does it account for offset asymmetric ice loads or anything in those ways?
A. The stability regulations assume a uniform distribution both on horizontal surfaces and vertical surfaces on both sides without any special consider -- again, just talking about the regulations -- without any special considerations for asymmetrical formation of ice.
Q. And earlier we talked to some professional engineers and the Marine Safety Center. There's a general belief or general practice described for (indiscernible) ice loads for crab pots. They discussed treating it like a shoebox, for lack of better terms. So if you have a stack of pots (indiscernible) top of the pots and the outer side of the pots. Would this be consistent with the regulations are intended or implied for icy conditions on a crab boat?
A. Generally, yes. And the reason why I say generally is because we know that crab pots are not a simple box with simple

flat, horizontal and vertical surfaces. They do represent what one may call (indiscernible) kind of surface with, with the mesh, if you will, which would allow freezing spray to pass through that hypothetical or theoretical flat surface, vertical or horizontal, allowing that freezing spray to freeze and form ice inside the pot. And that is an obvious physical phenomenon that is very recognized and is a possible less-conservative interpretation of the regulation.

The regulation itself is generally silent about how to treat icing on crab pots. And this particular interpretation has been used by many naval architects. And that's the reason I said "generally, yes" but perhaps not sufficiently conservative and possibly open to other types of interpretations where another naval architect may have better data to perhaps model the icing or the ice formation on (indiscernible) crab pots more realistically.

Q. So I'm going to have a couple more questions on icing, but you mentioned earlier that you do work with International Maritime Organization?

A. Yes, I do.

Q. And do you -- are you familiar with Torremolinos Treaty for fishing vessels?

A. I am. The Torremolinos Convention followed by the Torremolinos Protocol followed by the Cape Town Agreement of 2012. Yes, I am.

Q. So with respect to the evolution of the international regs,

has there been any updates or changes to the way icing is considered on the international stage, the international community from the original Torremolinos Convention and Protocol?

A. The short answer is no. The Torremolinos Convention Protocol, as amended by the Cape Town Agreement, has maintained or continued to maintain the basic accretion standards from the original guidance that was developed several years prior to the first Torremolinos Convention. So the short answer is no, they remain unchanged.

Having said that, the Convention, Protocol, and subsequently the Cape Town Agreement, clearly recognized (indiscernible) there could be conditions where ice accretion would exceed the basic minimum requirements in the regulation. And provide some general guidance as to how to approach the development of such ice accretion standards those that are set in the, in the prescriptive form, the prescriptive numbers.

I'm not sure I've completely -- if I've completely answered your question, but I'll stop there and see if there are any clarifications that you seek.

Q. Well (indiscernible) are there any discussions in those committees that you're aware of for reevaluating or addressing the icing standards from the widely observed utilizations of ice accretions?

A. Some countries have submitted comments related to that, in part because of real life experience where there have been some

experience with loss of stability due to icing -- ice accretion well beyond that which is currently required by Torremolinos. So comments have been made, statements have been made by various parties, various countries, about that. Right now there are no real active studies -- at IMO there are no active engagements underway to revise those numbers.

Q. (Indiscernible) have you been following the hearing in any way (indiscernible)?

A. I have listened to some of the testimony from the naval architects from the industry as well as the naval architects from the U.S. Coast Guard. I have also listened to some of the testimony from one of the former crew members of the *Scandies Rose* as well as some of the captains of similar (indiscernible). So the answer to the question (indiscernible).

Q. I think we got a little cut off there. But Mr. McPhillips, can you pull up Exhibit 123? So, Mr. Sirkar, if you were watching you may have seen this picture or heard about this picture being put up. This is a crab pot. We got it from a fishing vessel in Alaska. It weighed about -- kind of cutting to the chase, it weighed about 1,000 pounds dry. Next page, Lieutenant McPhillips. And then after a very hypothetical experiment, a very cursory experiment, they got some ice on this pot and it weighed over 3,000 pounds. The (indiscernible) maxed out so we don't know.

Now, Lieutenant McPhillips, if you could bring up Exhibit 46, page 2. And while he's bringing that up, my first question is not

related to this next picture. Just -- does that, does that amount of change in mass surprise you in any way or would you have comment on that type of growth and weight from ice?

A. It does not surprise me. Under certain types of conditions, one could possibly experience this type of extreme ice accretion on crab pots. It is not impossible. It is generally recognized that that could be the case.

Q. Now a follow-up here, this is the Coast Guard safety alert 1117. Did your office provide any input toward the drafting of this safety alert?

A. We worked with the program office that put this out, yes. We, we worked with them.

Q. Could you -- from your recollections was there any -- do you recall anything about putting together a safety alert that was interesting to you or kind of stood out from your experiences?

A. Again, what we, the Coast Guard, are trying to do with this safety alert is making sure -- making -- trying to conduct outreach to make sure that we inform -- we inform the owners/operators that there are specific hazards that go beyond the minimum regulatory requirement that operators should be aware of and that could sufficiently affect the stability of the vessel. So that is what we were trying -- what we are trying to do, is inform and provide some guidance that this is a hazard, watch out for this, to the extent possible, be aware of the conditions that could cause this type of accretion to occur.

Try and avoid this type of situation. Where possible, get recommendations from a naval architect to bound your problem, if you will, what types of loading conditions can sustain what kind of icing such that you're not at risk of becoming unstable. So that's the, that's the message that we want to put out there.

Q. Now, Mr. Sirkar, in this photo here -- and this is exactly what I was going to hone in on -- on this vessel, if you look, the icing up on the floor, port side of the bow, is very heavy and it -- it gradually decreased the amount of ice until, like, the last pots near the house are a lot less than ice (indiscernible) on the port side.

We've heard several testimonies about ice building up asymmetrically. And even on the Coast Guard 378 (indiscernible) cutter that responded in the search and rescue case discussed how ice built up -- can build up on one side of the vessel, heavier than the other. Could you talk how this would impact the stability of the vessel?

A. Yes. So asymmetric ice formation -- well, first of all ice formation to the displacement of the vessel, thus lowering its freeboard, increasing its draft overall, and raising the center of gravity, the KG, both of which, in combination has a deleterious effect on the stability. Beyond that the asymmetric nature of the accretion would cause a certain amount of permanent list, if you will, that could again, if there are downflooding points that are relatively close to the water line, when the vessel is rolling, if

she already has a permanent list, that could further endanger the safety of the vessel.

So increased draft, higher center of gravity and a certain amount of list, not to mention possibly trim if there's asymmetric loading for and aft, not to mention asymmetric loading in a transverse direction. So you could have some undesired listing and undesired trimming effects, as well. So all of that put together makes for, again, reduced stability characteristics of the vessel.

Q. (Indiscernible) dynamic stability evaluation?

A. No. The current regulations do not generally directly take into account dynamic stability. Our stability regulations are a -- in a manner of speaking, have built into them some simplified quasi-static, not really dynamics, effects of motions of the vessel.

Having said that, recently the International Maritime Organization has promulgated guidelines to evaluate dynamic stability of vessels. And these are not regulations; these are recommended interim guidelines that perhaps in the near future we will have a better understanding of dynamic stability than what we already do. Short answer, no, we do not take into account directly dynamic stability.

Q. Now, if you had that vessel that we showed you where the amount of icing on the pots, real briefly, how does -- how do the regulations account for wind for that vessel and what's -- what

would you expect to happen with wind on the vessel? And I'm going to -- I'm going to clarify that. I'm going to make the scenario that ice built up on the port side of the vessel because the prevailing conditions were coming from the port side of the vessel.

A. So there are, there are sort of multiple questions built into your question, really, the way I interpret it. First of all, in the one part of your question, I think what you have asked me is what is happening with the stability of the vessel in the presence of wind. But the other part, I think, is how do you -- how do you, how do you reconcile that type of a situation with what is in the regulation. I think if I sort of try to interpret that in my words would that be what you are asking me?

Q. More or less, that's a pretty good way to reword it, yes.

A. So before I give you a direct answer -- and I will -- let me explain that a regulation in general is not, in this case in particular, was not intended to reflect worst-possible scenarios in extreme conditions of ice and wind. What was envisioned was a certain minimum, basic standard that could provide for some additional stability, impact stability, and perhaps with that basic standard there would be some awareness that if we were under other circumstances, under extreme circumstances, that there would need to be actions taken.

Some type of de-icing or some other operational methods or -- in the first case or in the first instance, to try and prevent

that type of an ice formation to occur in the first place. There would be some either preventive action or some actions in response to that formation of ice for removal of the ice.

So that is what the regulations that was promulgated -- that were promulgated in 1991 were envisioned to accomplish. So it's a basic, minimum standard to provide a certain degree of safety for ice accretion, not really addressing -- not intended to address extreme conditions.

So that is -- so there is no, there is no -- I wouldn't really call it an attempt to reconcile regulations with extreme hazards. We cannot -- it would perhaps be physically -- let me rephrase that. For every pound of ice that I add to my regulation, that's a pound of cargo -- either a pound of crab, pound of cod -- that I'm removing from the vessel. So there comes a point where, if the regulations are so extreme in nature that we would not be able to justify having such a regulation. It would result in an unacceptable, unviable situation; a condition that is simply not viable. It would not -- no longer be a functional vessel, a functional fishing vessel.

So we have to take that into consideration when looking at -- we have to take that perspective into consideration when looking at these extreme scenarios and if we do find -- I would look to, with great interest of the analysis conducted by the board to see, you know, what was or what were the causal factors for this particular casualty and how perhaps we should be studying -- or

what we should be studying in our existing regulations.

Of course, these types of extreme scenarios as shown in that photograph, give us pause and make us think long and hard about the adequacy of our regulations. Having said that, going back to my earlier point about the process, we have to consider and respect the process and take measured effective steps.

Regarding the second part of your question: if I place that vessel in a scenario where I have that kind of ice formation with a 50, 60 knot wind off the port bow. You know, I can't predict -- you know, I don't know; I haven't run the numbers, but that's a pretty severe -- extremely severe scenario and, you know, it's hard to tell what the loading condition is from that photograph. If she happens to have any kind of cargo on board, in addition to that extreme ice formation, with the wind then we are in -- most likely in very serious trouble.

Q. You mentioned when the regulations were written, and I recall from your background for your work -- were you involved or monitoring the regulations being written for fishing vessel standards in the early 90s, late 80s?

A. I personally was not, no. At that time, I was not directly working on fishing vessel stability, at the time the 1991 regulations were being developed and written.

Q. And then I want to --

A. I'm sorry; let me complete my answer. My office was; I was not. I'm sorry to interrupt you, please.

Q. No, thanks for the clarification. I was just wondering if by chance you were personally involved or just the office. So thank you. Now, with that being said, we've heard from a couple captains during the hearing and one resonated with me stating that he wouldn't break ice until a certain point. If they were to evaluate the regs, would that type of operational consideration be evaluated in the ice regulations for a fishing vessel, the input from captains on their operational observations or comfort or practices in these certain waters?

A. I'm sorry; I'm not sure I quite follow your question. I mean, I did understand your point about the captain not taking action until a certain point in time when the ice accretion exceeded some level. I understand that point, but I'm not sure I understood, understood your question.

Q. Let me rephrase, and hopefully this is a little clearer. If there was a regulation project to reevaluate a certain vessel, a certain type of vessel's ranks -- and we're going to keep it to fishing vessels -- and something like ice accretion was a discussion point for the new regulations, what things would be considered by your office, typically, for a new icing standard? So again, today it's a little over an inch -- you know, in that a little-over-an-inch range. Would it be studies or would it be input from mariners or a conglomeration of inputs?

A. Thank you for clarifying. I understand the question. So if we were consider reviewing the ice accretion standards, we would

get involved in -- again, studying first the existing literature, because there's a vast amount of existing literature on ice formation, on all sorts of vessels -- fishing vessels, Coast Guard vessels, naval vessels -- the list goes on.

So we would first make sure we have a firm handle on all of the existing information out there. And then, given that information, then we would engage with the industry and with other theoretical or other analytical studies, we would engage in formulating appropriate analytical studies bolstered by experience and perhaps with some model tests, as well. (Indiscernible) information from experience, from experienced (indiscernible) and fisherman. Perhaps supplemented or bolstered with some model testing.

Q. Okay, thank you.

LCDR COMERFORD: Captain Callaghan, if we could take -- we'd like a five-minute recess if you can.

CAPT CALLAGHAN: (Indiscernible) take a five-minute recess and resume at 10 after. Is that okay with you, sir?

THE WITNESS: Yes, of course.

CAPT CALLAGHAN: (Indiscernible) recess.

(Off the record at 2:04 p.m.)

(On the record at 2:11 p.m.)

CAPT CALLAGHAN: The time is now 1411, hearing is now back in session, and we'll go back to Lieutenant Commander Comerford.

BY LCDR COMERFORD:

Q. Thanks again, Mr. Sirkar. First question to circle back around to one thing earlier. You mentioned the Coast Guard's intent for outreach to the fishing vessel operators, owners, and things like safety alerts, 1117 being tools that the Coast Guard used for outreach. We've asked a few captains during this hearing if they've seen Safety Alert 1117. Would it be (indiscernible) hearing that none of them recognized Safety Alert 17 [sic] in any, any way?

A. Well, that's obviously not very good. I mean, we have to certainly make sure we reach our intended audience and if that is what we hear then we have to reevaluate our methods of communication, our methods of outreach. So I really don't have much more than that. If we're not reaching -- if our voices are not heard then -- or if we're not communicating with each other then that's not good.

Q. I've got to imagine there's got to be a good amount of effort, amount of time, that goes into those safety alerts. Is that something that's made overnight in your office or is that a lot of thought and time to develop these resources?

A. Again, it's not overnight. And there would be many parties involved. There'd be the program office; there would be our office, the Office of Design Engineering Standards; possibly even the Office of Investigations that would be involved, perhaps even our Public Affairs office. So there are many parties involved that would be involved in publishing or putting out these outreach

documents.

You know, again, they are available so we just need to keep -- we just need to keep up the drum beat, shall I say, to make sure that the folks out there are aware that the Coast Guard has these different channels of communication open and this is how to tune in, if you will.

Q. And then -- I'm going to kind of circle back to another thing you said. You talked about the minimum standard for the stability for fishing vessels and some discussion on whether or not there needs to be other considerations by the professional engineers doing the evaluations -- would you expect a professional engineer to be empowered to hold a higher standard to a vessel, such as a commercial fishing vessel?

A. Well, a professional engineer, again, should advise the owner, to the best of his/her ability of all the reasonable hazards and risks and the reasonable envelope, if you will, within which given the non-operating scenarios for that particular vessel, the operating safe envelope that would give the master and the owner enough information to exercise prudent seamanship.

And power to -- the PE, the professional engineer, would not be -- you know, they wouldn't have any authority to stop or prevent the owner from conducting certain operations. But it would be -- it would be incumbent upon the professional engineer to provide that complete scenario, the complete picture to the owner and the stability instructions to the master.

Q. Would there be any incentive for a professional engineer or naval architect firm to conduct an extra asymmetric icing evaluation or add an extra half-inch to icing standards? Or would there be issues with that for their firm?

A. Well, again, the way I would approach the roles and responsibilities of a professional engineer in this context, again, it's somewhat similar to the answer I just gave, which is giving enough information so that appropriate decisions can be made that if certain conditions of ice accretion and/or wind and/or other environmental conditions are exceeded within certain expected loading scenarios of the vessels, then you could be compromising the stability.

So it's not saying I am going to give you stability instructions with three inches of uniform ice on the desk and two inches of ice on the port side and one inch of ice on the starboard side, and I'm going to restrict you to those conditions, I don't think that would be, or should be, the professional engineer's approach. Rather, it could be that this is the minimum regulatory standard, but if you experience ice beyond that standard you are safe under the following loading scenarios and you are not under these scenarios.

If that -- if those instructions can be put down in a manner that are straightforward, easy to follow, easy to understand, then perhaps that is a feasible, technically reasonable, approach.

Q. I'll actually segue a little bit on what you said here. A

couple things we have heard through the hearing are most commercial fishing vessels do not have licensed captains. They have limited or no stability training in their professional careers. If they have, they may be introductory, basic courses.

There's one thing in the regs that's interesting about the stability instructions. It has some verbiage of items that could be included in the stability instruction and they list them as may requirements, the instructions may have X, Y, Z based on the request of the owner/operator. It's language to that effect. Are you familiar with these regulations for the fishing vessels, the stability instructions?

A. You're referring to the stability instructions to the (indiscernible). Yes, I am.

Q. Would you believe it's expected for a owner/operator or captain to know what would be the best information to ask for in the stability instruction, if they have not had any training, or formal training, on stability?

A. I would not.

Q. Thank you, Mr. Sirkar.

LCDR COMERFORD: Captain, at this time, this is all the questions I have.

CAPT CALLAGHAN: Thank you, Lieutenant Commander Comerford.

Mr. Sirkar, I'm now going to turn it over to colleagues at National Transportation Safety Board.

Mr. Barnum?

MR. BARNUM: Thank you, Captain.

BY MR. BARNUM:

Q. Nice to see you, Mr. Sirkar. Bart Barnum, NTSB. Thank you for talking to us today.

A. Good afternoon.

Q. I don't have any follow-up questions. Commander Comerford hit most of the topics I was going to ask you about, sir. One follow up -- I guess you were talking about the Torremolinos Protocol or Convention Protocol and then the Cape Town Agreement. I guess that was the progression. Do you have any insight on what, what problem -- how did that come about? Why did the discussion of icing start? Was there, like, a shipwreck, and notorious shipwreck that sank because of ice accumulation or was there a fleet of vessels? How did that get on IMO's radar?

A. I can only give you a somewhat general answer. There were fishing vessel casualties that seemingly were caused or had a significant -- had ice accretion as a significant causal factor in the 60s, in the early- to mid-60s. And at that time IMO -- it was not called IMO at that time. It was called I-M-C-O, IMCO, at that time.

One of the -- one or more, actually -- the two subcommittees -- a committee on stability and a committee on fishing vessel safety -- decided that this particular subject needs to be investigated and started -- so IMCO at that time started this discussion and invited various countries to bring to the table

whatever guidance and regulations they may have at that time to the table for further discussion. And there were several countries that did just that.

And so, those discussions were held, again, in part because it was recognized that ice accretion could be a causal factor in many casualties. That information was brought to the table, it was discussed and debated, and those standards were put in place and stand to this day, largely unmodified.

Q. Understood. Yeah, and you'd mentioned that earlier -- largely unmodified and that there hadn't -- any real active studies by IMO or other countries that you knew of. But you did say there was some comments that had been made. Do you know in what respect or who was making these comments or what were they? Were they fishing vessel fleet or are they countries; do you recall?

A. I am just aware of Poland. I had been informed that there are other countries, but I'm personally aware that Poland has commented on the possible inadequacy of the ice accretion standards. And perhaps just to correct my earlier statement, there have been reports published regarding ice accretion on different types of vessels.

And some -- I really can't call them studies, but there has been some data that has been gathered and there are papers that have been published related to ice accretion. So it's not -- if I said no studies have been conducted since Torremolinos, that's not

a, that's not a completely accurate statement. There have been a lot of papers published. There's a lot of data out there regarding ice accretion rates and ice accretion standards.
Q. Has the -- has yourself or anyone in the Coast Guard had a chance to review these studies or have you reviewed them technically or looked at them?
A. We have them. We have not reviewed them in any kind of systematic, methodical manner. We have a lot of these studies, but the short answer to your question is no. We have, we have read many of them, but we have really not analyzed, studied and systematically collated the data from these reports and papers.
Q. So do you think that anything that you've seen -- I understand you haven't analyzed them completely -- but have you noticed anything within those reports that may be more accurate than what the regulations are currently provide for ice accumulation?
A. I have not seen anything that jumps out really. Again, what is -- why do you recognize is that extreme conditions are not reflected in the basic standards in the regulations. That is widely recognized. There does not seem to be any form of firm, specific, well-thought-out proposals to change those standards, at least not that I have -- from the studies I have read or the papers that I have read; I haven't seen any.
Q. So fully understanding your position there that these regulations aren't intended to be for extreme conditions, you

know, we've spoken to a lot of captains this week and it appears that this icing is pretty common in these parts of the world. In fact, the regulations are pretty specific in defining what area that this icing calculation should be applied to. So I would argue that the regulations do agree that this is probably some level of extreme in this area.

And we've also talked to the National Weather folks, a representative from the National Weather Service, who states that, you know, these heavy freezing sprays conditions, for example in January, were forecasted 40 times. So you know, in my view this is a pretty standard, standard weather, standard scenario, these heavy freezing sprays, potential icing conditions in this area. Do you think that there -- do you think that the Coast Guard, you know, could consider this in possibly, maybe defining their extreme area a little better?

And I don't know if I formed that in the correct question or not, but there does appear to be a disconnect between what the regulations apply for a minimum and what actually is being seen in the Bering Sea and Aleutian Islands?

A. Yes. And again, thank you for the question. Certainly, we can look at the areas, in particular, from the information provided by the National Weather Service, the specific areas that perhaps are not directly addressed in the regulations. You know, if the analysis used to indicate that icing may have been a causal factor in this, in this casualty.

But going back to my earlier comment about the regulatory process and the philosophy behind most design regulations -- not just ice accretion, but most design regulations, typically do not take into account extreme scenarios. Extreme hazards are not protected against -- through the design standards in the regulation. That is generally a true statement for most design standards in regulations.

Q. Right, understood, but would you agree with me that icing in itself is an extreme condition?

A. There could be extreme scenarios for ice accretion, yes.

Q. Okay.

A. But not all ice accretion is extreme.

Q. Right, yes. Okay. Well, thank you very much, Mr. Sirkar, we appreciate it.

MR. BARNUM: That's all the questions I have, Captain.

CAPT CALLAGHAN: Thank you, Mr. Barnum.

Mr. Sirkar, I'm now going to go to our parties in interest, to counsel representing the two survivors, Mr. Stacey.

MR. STACEY: Thank you, very much, Captain.

We have no questions for your, sir. Thank you for your testimony.

CAPT CALLAGHAN: Thank you, Mr. Stacey.

And now to counsel representing the vessel owners, Mr. Barcott.

MR. BARCOTT: Thank you, Captain.

BY MR. BARCOTT:

Q. Mr. Sirkar, I'm Mike Barcott. I represent *Scandies Rose*. And you're talking about a topic that I have a deep and long-standing interest in so I'm looking forward to our conversation here. And I'm going to jump around a little bit so if you're not tracking where I -- where I'm asking a question, please let me know.

You talked about the Torremolinos Convention and how that was incorporated into the regulations. Can you tell me -- and you used the term porosity to refer to crab pots -- am I correct that the icing regulations that currently apply, do in fact apply 16th of inch on vertical surfaces of ice and 1.3 tenths on horizontal surfaces and it just the outside surface? There is nothing in the regulations to account for the fact that with porous crab pots, water gets inside and inevitably becomes ice inside; do I understand this correctly?

A. Yes, you do.

Q. Are you aware of any studies that take into account the fact that crab pots are porous; they're not a solid surface?

A. I am not aware of any studies specifically for icing on/in crab pots.

Q. So we're here with the Marine Board, but there's an audience watching this and I'd like you to help me educate them a little bit. You saw that crab pot that was on the *Polar Star* with in excess of a ton of ice in that crab pot. If that crab pot is up

on the top of a stack of crab pots, could you explain that the impact weight up high has, versus weight down low, on stability?
A. Weight up high increases or raises the center of gravity of the vessel, thus reducing the stability characteristics of the vessel, making it less stable.
Q. And an example I sometimes use to explain this concept is if anyone has ever stood up in a canoe they understand the adverse impact of weigh up high on stability. Is that an analogy that generally describes this?
A. Yes, it does. That is a very good analogy.
Q. Okay. So if, rather than one pot on the deck of the *Polar Star*, there were 30 pots on the top of a stack of crab pots, and each of those 30 pots gained a ton of weight that would add 60,000 pounds of weight up high on the stack, right?
A. Yes.
Q. And that would be equivalent to adding roughing 60 more crab pots up on top? That's what that ice would be the equivalent of?
A. Yes.
Q. And would that weight also impact the righting arm of the vessel?
A. Yes, it would.
Q. And would asymmetric weight, ice accumulating on one side or the other, impact the righting arm?
A. Not directly, no.
Q. Would you explain what the impact on the righting arm would

be, not precisely, but in general terms, with the equivalent of 60 additional crab pots put up on top of the stack?
A. Again, I couldn't give numbers without a specific loading condition. It would significantly -- assuming it's relative to the rest of, the rest of the weights, it could significantly reduce the righting arm.
Q. Which would have what effect on the vessel?
A. Which again would reduce the stability characteristics; it would reduce the righting energy. When the ship was rolling it would reduce the propensity of the vessel to come back up. It would increase the roll period, making it thus -- resulting in a less stable vessel.
Q. Right. And so to the public -- actually, let me just finish. We have heard a couple skippers describe that when their vessel is icing up, they've noticed that it has a slower roll, more sluggish roll. Is that part of what you're describing here?
A. Exactly.
Q. Okay. And if, if there is less righting energy, does that, in lay terms, mean there's less of a tendency of a vessel to right itself once it rolls over?
A. That is correct. Which means, in practical terms, if there are other energies or other sources acting on the ship, on the vessel, such as (indiscernible) that with a higher righting energy it could have righted itself, now perhaps with the reduced amount of righting energy from the external other forces (indiscernible)

external energies it perhaps has reduced that amount and maybe either incapable of righting itself or hanging to a point where exposure to downflooding becomes a secondary, secondary hazard.
Q. I'd like to pick up on the discussion you had with Mr. Barnum of the NTSB. You've called some of the severe ice, for example the photographs you've seen, as extreme conditions. My clients fish in extreme conditions; that's what they do. So that they are clear in understanding these regulations, would it be accurate to say that the current regulations do not address the accumulation of ice in extreme conditions?
A. The current regulations require a certain amount of ice accretions for all reasonable loading conditions that the vessel might see. The regulations do not take into account such extreme formations of ice of such magnitudes of ice accretion such that all of the possible loading scenarios of the vessel can satisfy the required stability characteristics. This rather large -- these rather large formations of ice that we have seen photographs of would not be considered in the -- are not considered in the regulations in order to meet the stability standards.
Q. So I'd like to highlight if I can the things that crab fisherman face that are not factored into the current regulations. And tell me if I have it right. Do I have it right that the current regulations make no allowance whatsoever for the fact that ice might accumulate on one side of the vessel more as opposed to evenly around the entire vessel?

A. So I would not completely agree with that statement and this is why.

Q. Okay.

A. The regulations were written to provide a great deal of flexibility to the operator and owner and we have placed a great deal of -- implicitly we have placed a great deal of responsibility on the qualified individual as required in the regulation to inform the owner and the master of all reasonable scenarios that the vessel might experience. Explicitly is asymmetrically icing addressed in the regulations? No.

So I cannot completely agree with your characterization, if you will, that the regulations do not take that into account. They're implicit that to avoid additional prescriptive requirements that may be appropriate for one type of fishing vessel but completely -- but perhaps not appropriate for (indiscernible). We have left that flexibility up to the qualified individual, the master, and the owner.

But the answer to the explicit question, do the regulations themselves that talk about ice accretion, do those regulations account for asymmetrical accumulation of ice, beyond what perhaps a naval architect maybe should tell the owner. No, but the regulations also do not prevent the qualified individual from telling the owner what is prudent in terms of loading scenarios under various upgrading and weather conditions.

Q. Where does that responsible party -- and I assume you're

talking about the naval architect who would do the stability, study the incline studies -- is that right when you say responsible party?

A. Qualified individual, yes.

Q. Qualified individual. So where does that person go, to understand in any level of detail, the impact of asymmetrical icing? Where's the data on that?

A. Again, that data is not in the regulation.

Q. Is that data anywhere, as far as you know?

A. Again, there are studies out there. There are owner/operators who have experience and who have years and decades of experience and they have experience asymmetrical ice accretion. So given -- and again, not in a rigorous scientific or rigorous technical manner, there is -- there is information out there that naval architects could glean from that could provide data for reasonable, reasonable instructions to take into account ice accretion beyond that which is explicitly stated in the regulations.

Q. Same question with regard to accretion of ice inside the crab pots, on the netting on the coils of line, on the pots inside the stack -- do the regulations account for that ice?

A. Explicitly, no.

Q. Now you mentioned that there is -- you have to respect the process when new rules have been promulgated, but would you agree that before rules are promulgated relating to something like this,

there should be data gathered; this should be a data-driving process?

A. Absolutely, yes. And again, I will qualify that answer with when there is a reasonable expectation or a reasonable basis for believing that there needs to be something specific that one -- when I say one, I mean the federal agency that -- the Coast Guard could be doing, in amending a given regulation. If there's reasonable basis to believe that, then absolutely yes. There would have to be data gathering, studies, and work done prior to any form of proposal being put out there.

Q. Absolutely. And would you agree that at present, other than anecdotal evidence, people who have been in industry for years, there is no hard scientific data on the impact of ice inside crab pots, as it relates to vessel stability?

A. I have not seen any specific to crab pots.

Q. Okay. Thank you, Mr. Sirkar. Those are all the questions I have. We appreciate your time today.

MR. BARCOTT: Thank you, Captain.

CAPT CALLAGHAN: Thank you, Mr. Barcott.

And Mr. Sirkar, I just have some follow-up questions from Commander Denny.

Commander Denny?

BY CDR DENNY:

Q. Mr. Sirkar, thank you for being here today. I do have some follow-up questions because we circled back a couple of times

about the minimum standard, what's in the regs for icing, the minimum standard -- and again, it would be up to the qualified individual to inform the owner/operator of other conditions or stuff that -- conditions or scenarios that may be outside of that. I -- do we allow marine inspectors to apply additional standards to, let's say, a small passenger vessel, an inspected passenger vessel?

A. I'm sorry, I -- when you say additional -- when you say marine inspectors applying additional standards, I'm not quite sure.

Q. Sure, let me clarify. So let's use a small passenger vessel inspected under Subchapter T. There are regulations for all kinds of things in Subchapter T, all kind of various areas. Do we allow a marine inspector to go outside of what is in the regulations in Subchapter T and apply something in addition that might be more prudent? Would we just allow them to apply that to a vessel inspected under Subchapter T?

A. No, we would not.

Q. Okay. And I'm not trying to put words in your mouth, but is it fair to say that's kind of what we're asking PEs to do?

A. Not really. We're not asking PEs to apply a standard beyond the standard that is required. First of all, the inspector -- the marine inspector inspects to the regulation. The PE would conduct the analysis to make sure that the regulations are met for all loading conditions.

But when it comes to stability instructions to the master it would not be unreasonable to expect that there would be appropriate advice given to the master that addresses, in somewhat simple, straightforward manner, what conditions could possibly be unsafe. So we're not really asking the PE to come up with additional standard or to impose additional standards, but merely inform the owner and the master of what is reasonably within the bounds of the regulation and what is reasonably safe for a specific vessel and that vessel's operating scenario.

Q. So -- okay, let me shift a little bit. Sir, after the loss of the *Destination* a few years ago, did your office recognize the issue -- the unique issues surrounding pot icing and that icing might, in fact, be an issue on pots? Was there any action taken from your -- with (indiscernible) after the *Destination*?

A. So there was no regulatory action the (indiscernible) taken after the report of the Marine Board was issued. We did review all of the recommendations made by the Marine Board, the various offices, the program office, the Fishing Vessel Safety Program Office, our office, we coordinated and we consulted. We reviewed the recommendations. We did not directly concur with several of those recommendations. We did not amend any of the regulations. We did put out information -- bulletins and we did outreach to the industry providing them with information and alerting them to certain types of scenarios where we could have crab pot icing resulting in -- certain types of crab pot icing.

Q. And to your knowledge, sir, has the National Fishing Vessel Safety Advisory Council, or its predecessor since it's just turned in the National FSAC, do you know if it has recommended that the Coast Guard examine stability or icing issues?
A. Yes. We have received some recommendations from them. We have put out some response to recommendations. The recommendations included putting additional language in the regulations to address specifically icing on crab pots and icing on top of open deck gear. And again, in response to that we have not amended any regulations. We have put out information to the industry about awareness regarding crab pot icing and crab pot weights.
Q. And sir, when you say that you put out information to industry, are you referring to the 1117 alert?
A. No, this was subsequent to that. I don't have that in front of me, but I believe it was Information Bulletin 0121.
Q. Okay. So just very recently in the last, like, month or two?
A. Yes.
Q. Okay. And -- I need to bring us back to regulations for -- so inspected small passenger vessels there's policies with regards to warm water and cold water delineations, right? So it affects requirements on life-saving appliances. Are you familiar with that, sir?
A. Yes.
Q. Has there been any consideration to develop standards or

policies with respect to various, you know, scenarios -- as we've talked about, various scenarios -- so clearly fishing up in the Bering Sea or up in the northeast where there are more extreme environments, have there been any considerations within your office to develop any of those standards or policies for potential additional restrictions for stability for OCMIs to be able to help interpret the existing regulations?

A. No, not at this time.

Q. Thank you.

CDR DENNY: Captain, sir, that's all the questions I have.

CAPT CALLAGHAN: Thank you, Commander Denny.

Mr. Sirkar, again, thank you very much for your time today. It's been very informative. It certainly helps to understand not only what your office does and is responsible for, but obviously the regulatory process is not an easy one and comes with a very important balance between what -- as you mentioned earlier, not inducing unintended consequences economically for the folks that are impacted. And what fits one does not always fit everyone that would be impacted by the same regulation. So greatly appreciate understanding what your office does in that regard. Certainly appreciate your time.

At this time you're now released as a witness at this formal hearing. We thank you for your testimony and cooperation and if we, at a later date determine that the Board needs additional information from you, we'll contact you through counsel. If you

have any questions regarding this information, you may contact a member of the investigation board or the investigation recorder, Lieutenant Ian McPhillips.

Again, sir, thank you very much for your time today.

THE WITNESS: Thank you, Captain.

(Witness excused.)

CAPT CALLAGHAN: Okay. The time is now 1458. Our next witness is scheduled to begin testimony at 1615. For any reason we're able to begin sooner we'll update the time displayed on livestream. Until that time, this hearing will be in recess.

(Off the record at 2:58 p.m.)

(On the record at 3:44 p.m.)

CAPT CALLAGHAN: Time is now 1545. This hearing is now back in session. We'll now hear from Captain John Crawford from Crawford Nautical School.

Mr. Crawford, Lieutenant McPhillips will now administer the oath and ask you some preliminary questions.

CAPT CRAWFORD: Okay, sounds good.

(Whereupon,

JOHN F. CRAWFORD

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

LT McPHILLIPS: Thank you. Please be seated. Please state your full name and spell your last name.

THE WITNESS: John Francis Crawford, that's C-r-a-w-f-o-r-d.

LT McPHILLIPS: Please identify counsel or representative if present.

THE WITNESS: Nobody present.

LT McPHILLIPS: Please tell us, what is your current employment and position?

THE WITNESS: Instructor/partner, Crawford Nautical School in Seattle.

LT McPHILLIPS: What are your general responsibilities in that job?

THE WITNESS: Teaching and doing a lot of the business work.

LT McPHILLIPS: Can you briefly tell us your relevant work history?

THE WITNESS: Graduated from Kings Point 1976. Sailed 3rd mate, 2nd mate, chief mate. Then in 1986, I guess it was, I started sailing master for American President Lines and sailed for them as master for about 14 years.

LT McPHILLIPS: Do you hold any professional licenses or certificates related to your position? Please explain if so.

THE WITNESS: Master (indiscernible) oceans and it's in continuity of -- and all sorts of different certificates from various schools I've had to go to for the company.

LT McPHILLIPS: Thank you, sir. Captain Callaghan will now have follow-up questions for you.

CAPT CALLAGHAN: Captain Crawford, thanks again for joining us today. I'm going to now turn it over to Mr. Keith Fawcett who

is going to have the questions for you today, sir.

THE WITNESS: All right.

EXAMINATION OF JOHN F. CRAWFORD

BY MR. FAWCETT:

Q. Good afternoon, Captain Crawford. All of my questions will relate to a timeframe leading up to the loss of the *Scandies Rose* that occurred in late December of 2019. We expect your testimony to be relatively short, but if you would like to take a break, please let us know.

A. Okay.

Q. Sir, (indiscernible) master's license and could you talk a little bit more about what the Crawford Nautical School tends to provide to (indiscernible) and fisherman in terms of training?

A. Okay. It's been around for a long time since 1923. It's a family-run business and we teach people -- I guess the bulk of our business is preparing people to take Coast Guard exams and we teach approved courses for certain licenses and do other approved training such as bridge resource management, leadership and management skills, radar. And what we try to do is make sure people get the information that they need and also that they understand the information.

Q. So you mentioned the term continuation and (indiscernible) my license is in continuation. Could you explain what that means in terms of a professional (indiscernible)?

A. What it means is if you're not intending to go to sea for a

while you can put your license into a continuity, which kind of in effect freezes it. And at some point in the future, if you want to take it out of continuity, what you have to do is meet the -- any changes that came into place since you put it in continuity. Say, for instance, STCW requirements. I put my license into continuity mid -- I think it was around 2005. So many additional classes have become required and requirements so I'd have to make those things up before I could activate my license again.

Q. Would you say that those requirements are pretty stringent?

A. Yes.

Q. Now, if I was a fisherman, a commercial fisherman, could you talk about the courses that would be available to me, specifically for fisherman, at your school?

A. First of all, would be a license as either mate or master fishing, which with us is a little bit more than a month and (indiscernible) where we can give you exam in-house. But what would happen is you'd get the license, you'd also get 100-ton license inspected and the 200-ton (indiscernible) inspected. We also do radar so certain licenses are required to have a radar endorsement.

I believe now fishing does not. That gets a little murky, but we do that. And if they're getting STCW certification, courses that we would offer them would be bridge resource management, which actually is included in the regular fishing class, and leadership and management skills. Pretty much

everything else they would have to go to other schools.
Q. So if I was to get that fishing exam, would I also have to then go out and get a physical, drug test and all the other Coast Guard requirements?
A. Yes.
Q. And from your perspective at the school, what kind of vessel would I want to have that fishing license for that is a Coast Guard credential?
A. For requiring the license aboard it would have to be over 200 tons. Under 200 tons you could get the license, hold the license and it's my understanding it would be more to satisfy insurance companies if you're working on something that's say 199 gross tons where you don't need a license, but having the license it would potentially make an insurance company feel better, I guess is the word or words.
Q. So I don't want you to name a company or vessel, but can you sort of -- would a typical physical vessel that had a master or with a Coast Guard license under 200 tons, are there any examples that you're aware of, like in the Bering Sea crab fishery or the cod fishing (indiscernible) type of equipment like cod, do you know of any (indiscernible) that is required (indiscernible) to get a Coast Guard license for fishing?
A. Insurance companies as such, no. What the students have told me is they get the license and they don't mention what insurance it might be, but it might be the insurance company, it might be

the owners who would prefer to have somebody who was licensed. So I can't really answer as to specific insurance companies or even specific owners, but it's a common practice that people who are working on under tonnage fishing vessels would get a license, for nothing else to satisfy their own ambitions and give them opportunities for bigger vessels.

Q. So it makes sense. Did anybody mention that it might be for a government charter, that the government requires a license?

A. Yes. That happens -- it's been happening more frequently now. We had a student just recently got offered a job with the State of Alaska running a boat and the way he explained it to me was the State of Alaska required him to have -- I thought he told me an inspected license, which would be either the 100-ton or 200-ton license. But that would allow him to meet the terms of the charter with the State.

Q. So I want to go back, you mentioned an approved course.

A. Yes.

Q. If the Coast Guard comes to you, in brief terms could you describe to us what you have to do at the Crawford Nautical School, just in general, to meet that approval process?

A. The first thing is we figure out what course we want to get approved. And the approved courses are things that meet licensing regulations, such as radar, or it's in lieu of an exam at the Coast Guard, which is what the fishing -- our fishing course does. And then we write up the course, we submit it to the National

Maritime Center, they review it, give us comments on things that we might need to change, and once they're happy they will issue us an approval.

After that point, we keep records of the students, their scores. When we submit to the Coast Guard we give them the syllabus and the -- everything that goes on with the course, all the course materials, and then periodically the National Maritime Center will send someone to audit us. They usually audit, not the whole school at once, but specific courses. And they'll look at our records and what we're teaching to make sure that it matches what we submit for approval. And they also get involved in the space available, you know, how many students you can have in a room and things like that. Then, if everything is okay, (indiscernible) any discrepancies they let us know and we fix it.

Q. Okay. So now -- assuming I find out about the Crawford Nautical School, I desire to get that fishing license that you just described, and it's a four-week -- is it four- or five-week course of instruction?

A. With the fishing it's four weeks and about three or four extra days. And just to let you know, usually the students take longer than that because they need to study for the exams. And so some people -- in general, it takes about six weeks to get through everything by the time you take all the tests.

Q. Okay. So let's pretend I'm a student and I'm sitting through that entire training course. Can you give me as much general

detail as possible on a couple of topics? What am I going to learn about vessel stability?

A. We have -- we devote a full day to stability and then have another day set in the schedule for follow ups. We realize nobody learns stability in a day. So we have the opportunity to go over everything again. And our intent on stability is teaching the principals of stability and then the basic calculations.

I must also say that we prepare people for licenses such as (indiscernible) unlimited where the stability exam is very tough and now recently master 500 and 1600 inspected also have very tough stability exams. It's a dedicated exam. We teach those guys and people who are doing the fishing are sitting in in the same class so we don't try to overwhelm them, but they are absorbing, we hope, the same things of trying to teach the higher licenses.

Q. So sitting the class, are we going to be seeing a human instructor or is it computer-based, or are you going to use, like, demonstration props where you have sort of a model of a vessel and you add weight top side? Tell me how I'm going to learn this.

A. COVID, and not counting that because we're doing things Zoom now, but normally it would be an instructor in person. We have specific stability booklets or books for the student that goes through all the details. We do a lot of drawing on the whiteboards. We do have relatively simple props, which some of them are odd. A metronome, for instance, to illustrate rolling

period and its relationship to GM. It's a simple tool that can show that.

My sister is the boss and she's going to kill me when I mention this, but we have a lot of, what we call toys, that we try to use, squeaky toys and things like that, where we try to make it so that the people, the students, are understanding the principals without having to dive into -- when I was in school I took two or three quarters of naval architecture; it almost killed me. I don't want to do that to my students, but I do want them to know what's going on.

And so we try to make things as simple and practical as possible. We don't have model ships; we don't -- we do have a few videos on stability, only a couple of videos, but mostly it's in class and (indiscernible) props.

Q. So shifting to another subject, if I was a student -- this is the timeframe up to the end of December of 2019, once again -- do you teach me about the dangers and risks of a vessel icing?

A. Not in too great a detail. So in other words we don't get into how much -- well, we do, but we explain that icing -- how it affects your stability, generally as added weight relatively high on the vessel, out of the entire lectures probably about 45 minutes would cover icing. But it's getting covered with other material, so specific to icing not a whole lot of detail on it. And again, this is up to 2019. We've kind of changed that in the past few months.

Q. So looking at weather, do you teach basically the students about marine weather and the marine weather environment?
A. Yes.
Q. How about, do you teach them how to reduce the risks, like risk strategies for, like, handling high seas and swells or do you just tell them about the weather itself?
A. Two separate topics. The weather, we go into a lot of detail on that and that's -- dealing with weather itself as far as the techniques or maneuvering, that would be in ship handling.
Q. So in your class, would you give or discuss like some of the marine accident reports that the Coast Guard or the NTSB puts out as a training aid? For example, the sinking of the *Destination*, would you use that as a learning moment for the students?
A. In the license classes we mention them, we go -- tell them what went on and the problems. We also have a class that we just started up specific to crab boats where we go into detail on -- that is one of the Coast Guard reports that we go over is the *Destination*.
Q. And we'll talk more about that, that course in a few moments, but do you hand out to your students or distribute it or point to, like, Coast Guard safety alerts or marine safety information, bulletins about vessel safety, like, for example icing or lack of stability or anything like that.
A. We give them the means to look them up. We -- if something comes up that is pertinent at the moment we'll print it off and

hand it to the students. We may not go over it in class, but we'll give them a lot of information that we may not go into detail in class that they can read up on their own, particularly those things. When they do our classes on regulations we spend a lot of time talking about where you can get information, which is kind of looking at what you were just discussing there.

Q. So let's move onto specifically to stability classes that are outside the normal training as part of getting a Coast Guard license, specialized stability. So Mr. Bud Bronson talked about a number of years ago that there was a class that you put on that lasted, I believe he said, a week about stability training. Does that ring a bell?

A. I don't -- it might have been -- I've done a number of classes specifically for fishing companies. I don't remember one that was a week long. My father might have taught it. But I know I was doing two- to three-day classes for a couple of big fishing companies.

Q. And when was that? Approximate is fine.

A. Early 2000s.

Q. And what kind of attendance did you get? So you had a two- or three-day class and how many students would you get?

A. On those -- on the company classes it was usually shackled to a company seminar for their people. So I would have maybe 30 plus people in the class.

Q. Did the companies pay for that or did the individuals pay for

that?
A. The companies paid for it.
Q. So I know that we'll be talking tomorrow to the folks from AMSEA, the Alaskan Marine Education Association. We'll also talk to the folks from the North Pacific Vessel Owners Association. They offer a stability course. Do you offer a similar course?
A. A separate stand-alone? We just started that, yes.
Q. But prior to late 2019 you didn't have that, correct?
A. No, we did not.
Q. So this Marine Board did ask the school -- we wrote an email request and we asked if any of the accident bridge crew had attended training at your facility and your response was negative to the best of your knowledge. Would that be correct?
A. Correct.
Q. So Mr. John Walsh, who is one of the insurance brokers in Seattle, and he's also one of the minority owners of the *Scandies Rose*, said that after the accident you got together with some captains and designed a new course for stability. Can you talk about that course?
A. Yes, that's the one that -- the recent course that we set up. And with John Walsh and a few other people kind of looked at what they would like -- we're acting as a vendor for them, but what they would like and the subject matter to cover, one of which is more in depth in icing. In fact, I'm looking at the syllabus here, and we spend about half a day or at least about two to three

hours on icing.

But yes, we worked with him. I wrote the course and we've had a few classes, told everybody (indiscernible) in January, it's an eight-hour class. I think it might be a little bit too short, but we wanted to try it out in the beginning just to see what would work. So I'm thinking it might be better with 12 hours at a minimum.

Q. So if you could look -- you were looking at something -- could you just give us the bullets, the significant bullets of the contents of the course, just the topics you cover in the 8-hour course, (indiscernible) them off?

A. Okay. So we spend a lot of time going over -- in the first day, this is the eight-hour class -- what we did was four or five hours on day one and then come back the next day for another four or five hours. On day one we concentrate on principals of stability and that's pretty much all that first few -- first day. Trying not too much to get into the numbers, but giving them the formulas that they could use to quickly make determinations, such as rolling period, (indiscernible) stability with changes in weight. The second day we spend time going over icing and then go over stability letters.

Initially we're asking the students to send us their stability letters for their vessel that we could go over and that became practically a bit awkward. Some people, if they were down here in Seattle, (indiscernible) the stability letter was on the

boat in that charter, you know, they couldn't get to it. So what we do now is we've got an actual stability letter for a somewhat standard size crab boat and blanked out all the pertinent names and we go over that. They're pretty much all the same, same format. And we go over that and make sure everybody knows how they can read -- how to read their stability letter. I think that's very important. It's the main information they really have.

Q. So is there any other course content that you haven't mentioned?

A. Let me see here. We go over some Coast Guard reports. Like I said, we use the *Destination*. We actually use the preliminary hearing on the *Scandies Rose*. And I've been going through the Coast Guard reports and some of the NTSB reports and I keep trying to find things that would be pertinent to the class, and at the same time not too overwhelming in trying to read it. Some of these reports, when you read them, can be a bit overwhelming.

Q. So in preparing for any of these courses have you, in recent years, looked over a few stability documents for different crab vessels. And what I want to focus on is, like, the instructions -- prohibitive instructions to the master about loading pots. Have you looked at those different comments?

A. Yes, I have.

Q. Have you found that the content of the instructions were all (indiscernible) or would they vary like some being more helpful to

the master and some being, like, very vague and general in nature?
A. Mostly helpful. I'm trying to think of the big ones, if any -- they weren't vague if you had a little bit more grounding into the theory of stability. So the ones that were vague, if you had a better idea of how stability worked, they wouldn't be so vague. But I could see that somebody who didn't have a background in it, might not get an awful lot of information out of that sort of letter. Most of them, though, were fairly clear.
Q. So if I was a crab fisherman with no professional education, in other words, no school-house learning like coming to a class like yours or any other of the training things, and I had that stability letter, the fact that they didn't have a lot of information in there, would it be correct to say that it wouldn't really help me?
A. Well, it certainly wouldn't hurt to have the information there, but even if you have the background information there's often not enough information to go further. Some of the reports I did read gave details of stuff that, if you were good with math, you could actually figure out information that the stability letter in itself does not cover. My understanding is that the stability letters are attempting to, at a minimum, meet the requirements of the regulations. Some of them did put in information that you could go beyond what the regulations actually call for, but you would have to know how to do it.
Q. So you've talked about fishermen and taking the courses and

in particular we're talking about Bering Sea crab fisherman and similar fisheries with pots, have you had students from other segments of the fishing industry like the skiff fishermen from the Bristol Bay or anybody else that may have stability issues, have they attended your training classes?

A. Yes. In the fishing industry right now we've got two guys who work on big tonnage fishing boats. I think one is a big trawler -- I think they're both big trawlers. People getting experience on -- they were small fishing boats, they get information, but not pertinent exactly to fishing boats. It's a general, general stability.

So I don't know how -- actually I don't know if I'm saying what I want to say here. But somebody who works on a smaller -- say like a small seiner, something like that, what we teach them for stability is useful, but here's a vessel that probably doesn't have a stability letter and he's just going to have to understand for his vessel what is good and what is bad in terms of stability. Does that make any sort of sense?

Q. Yeah, I think it brings up an important point. Have you had any fishermen come into your stability classes that said I don't have a stability instruction or a stability book for my vessel?

A. Yes. Those that I'm thinking of are all ones that are smaller. I guess the limit is, is it 79 feet? Less than that. I can't swear to the number, but I think that's what it is, 20 meters. But they don't really have much stability information at

all for the boat.
Q. So the classes that you've taught over the years and the -- including the license classes, is there any talk of -- have you talked with any insurance people -- let's exclude the license classes, but for the general classes for the non-licensed commercial fishermen, have you had any conversations with the boating industry about how that might reduce insurance premiums or have some kind of incentive to -- if the individual got the training it would be an incentive to reduce the cost of operating in the insurance (indiscernible)?
A. Not -- no. The answer is no.
Q. For my final question, the Coast Guard has a series of federal advisory committees. One of them deals with (indiscernible) training. Another one deals with commercial fishing vessel safety. Have you been involved with either of those committees in any way?
A. I spent two terms on the navigation safety vessel advisory commission -- committee. And that was in the 200s.
Q. Okay. That wasn't -- was that -- that wasn't related to the training of personnel; that was the actual navigation of vessels?
A. No, it was related -- I guess it's the -- NAVSAC -- Vessel Safety Advisory Committee -- it's kind of the overall picture was mostly looking at larger picture things, rather than -- I think it's MERPAC that does the training?
Q. That's correct.

A. So it was looking at -- I mean, some of the stuff we discussed was the wind power plants outside of Boston and rules of the road, things like that. I think it used to be -- before I joined it I think it was also called the rules of the road committee. So that was kind of the scope of things was more general and more particular to navigation systems. One of the things they had us talk about was Loran versus UPS, whether they should keep Loran around. And it was discussion on that scope.

Q. So (indiscernible) tonnage (indiscernible) and you're also a professional educator of (indiscernible) personnel of various types. We lost the *Destination* and now we've suffered a loss with the *Scandies Rose*. From either of those perspectives do you have any recommendations to the Board to help improve the safety of commercial fishing operations? And take a moment to think about it. That's going to be my last question.

A. From my point of view I would think that a better knowledge, whether it's training or somehow knowledge of weather, including icing, and the stability would be very important. In both of those cases I think -- I can't remember on the *Destination*, but I think both weather and stability were issues. And as I read through those things and some of the other reports, it's not that the people weren't trying hard, it's perhaps that the information that was available to them was not easily digested such as weather.

Weather reports, I can read them. I've been doing it all my

life so I understand it, but somebody else might look at them and not really understand what a weather map is telling them. And I think there's might be a bit of a gap, with weather particularly, on what they can get from the National Weather Service. So they put out a lot of products and they cover all sorts of different things. My experience is I use everything that's there, but (indiscernible) Transpacific so (indiscernible) Asia it's a whole kind of different world.

On the vessel in the Bering Sea, especially a smaller vessel, they probably don't have access to a lot of the information I was able to get in my career. And the information I was able to get, I could understand because I'd been doing it for a long time and looking at those things. But a weather map, for instance, if it's wind speed an understanding of what the wind that's being predicted actually is, might not be clear to somebody reading this thing that hasn't really got the background in it.

Wave heights, for instance when they say the wave heights, that's not the highest waves. I can't remember the number, but it's something like two-thirds of the highest -- it's not the highest waves that they give you. I look at it and I know okay, it's going to be big waves. They look at it and they go maybe it's not as big as I think, when it's being predicted.

I think a little bit more information or more -- I hesitate to use the word training, but I think people should understand more of what is available to them and understand what -- once

they get what's available to them, be able to understand what it's telling them. I guess that's as good as I can do without blabbering too much.

Q. Captain, thank you very much.

MR. FAWCETT: I'm done with my questions, but Captain Callaghan will have some follow-ups for you. Thank you, sir.

THE WITNESS: Okay.

CAPT CALLAGHAN: Thank you, Mr. Fawcett.

BY CAPT CALLAGHAN:

Q. Thank you, Mr. Crawford. Sir, you talked about your experience and just want to -- do you have any of the operational lessons learned that you've used from any icing experiences as a credentialed mariner that you bring to the captains in your class?

A. On some of the -- (indiscernible) Seattle to Asia, go through the Bering Sea and a number of occasions we were icing and these are big ships. And I once calculated that I think we iced about 3 inches on the side of the ship, the ship 900-plus feet long. And having probably nothing better to do I calculated the weight and it was in the neighborhood of about 200 to 300 tons on one side of the vessel. And okay, that's a lot of weight and it's all up high, except we had a ballast system that we had 400 tons of ballast that we could pump from side to side and we could take care of the list in about 8 minutes.

So what I try to tell the students is a big ship, icing -- it is a concern, but it's not a big concern. The smaller the vessel

gets the bigger the proportion that that weight of the ice is to the weight of the vessel and, therefore, the greater danger. Big ship usually icing is not a big issue. A smaller vessel it is. And (indiscernible) I tell people that if they don't like ice, fish in the tropics, but I use that example just to point out that they -- on the smaller vessels they have to be more alert to the dangers of icing.

Q. Thank you for that.

CAPT CALLAGHAN: Sir, at this time, I'm going to pass over to our colleagues at the National Transportation Safety Board.

Mr. Barnum?

MR. BARNUM: Thank you, Captain Callaghan, and thank you, Captain Crawford for your testimony today.

BY MR. BARNUM:

Q. Couple follow-ups from Mr. Fawcett for you, sir. What's the name of the course that you offer, the one that you're discussing, the one specific to crab boat stability? I'd just like to know the name so I can refer to it.

A. Okay. We call it -- in-house we call it crab stability, but --

Q. That's fine.

A. -- I think it's stability for crab fishermen.

Q. Okay. So stability for crab fishermen, when did you start offering that class?

A. I think our first class was in December -- we started putting

it together, I guess, around October, September/October.
Q. And you've had two separate classes?
A. Yes, so far two separate classes.
Q. How are they attended?
A. We did them on Zoom and so we had, I think it was, two to four people in each one. One thing we've seen, getting more than about six people is unhandy so this class we would like to keep very small.
Q. Okay. And you mentioned earlier you have to basically get your courses -- Coast Guard courses approved by the NMC, understanding this one -- this class is offered to non-credentialed mariners, but is it -- did you still reach out to the NMC and have them look at it? Is it something that they --
A. We would -- in the future, as time allows us to get to it. We'd probably submit to the Coast Guard to be, not an approved course, but an accepted course.
Q. Okay. I just want to talk about money a little bit of cost. You know, you mentioned earlier that you'd, in the early 2000s, offered a course that was well attended by commercial fishermen and it was paid for by the company.
A. Yes.
Q. My understanding is a lot of these commercial fishermen are independent contractors; they're self-employed; therefore, they would have to be paying out of their own pocket for some of these courses. You know, how much, how much money are we looking at for

an expense for these fishermen to take, you know, the crab stability class and then maybe your six-week fishing license course?

A. Okay. Something like essentially a one-day class, an eight-hour class, like the stability that's in the neighborhood of about $250. The longer course -- I'm trying to think here -- I think that's 1200.

Q. Okay. So a considerable investment?

A. Yeah.

Q. We heard earlier that the Coast Guard offers grants, gives money to different schools to establish programs and whatnot. And you know, without going into all your finances, sir, I'm just curious is that something that you guys look at it in soliciting these grants from the Coast Guard?

A. We've never had a grant.

Q. You haven't had one? Okay, thank you. And I guess my last question -- maybe a couple questions -- how -- speaking of the crab boat stability class, was it well-received by the -- the two times you've put it on by the participants, the students?

A. Yes, I got good reviews on it.

Q. And how do you judge those, sir, those reviews? Just verbally or they fill out some sort of assessment?

A. In this case, I talked to the people in detail over the telephone. And these two classes, they were kind of guinea pig classes trying to make sure the thing worked.

Q. So you know, in your opinion, how good were the students? I mean, coming in were you surprised with their knowledge or were you -- did you expect or think they'd know more or how did you judge it, you know, coming in and then concluding?
A. Most of them I knew beforehand, and I knew that they had a lot of knowledge. There were one or two who I didn't know and they didn't have a lot of, I'll just put it, textbook knowledge, but they had a lot of understanding of things and they caught on pretty good so that I wasn't surprised by how much people knew, nor was I surprised by how little they knew. People knew sufficient to actually get benefit from the class.
Q. Okay. I think I got you there.
MR. BARNUM: Okay. Thank you, very much, Captain Crawford. That's all my questions.
THE WITNESS: Thank you.
CAPT CALLAGHAN: Thank you, Mr. Barnum.
Mr. Crawford, I'm now going to go to our parties in interest. I'll start with counsel for the two survivors, Mr. Stacey.
MR. STACEY: Thank you, Captain Callaghan, and good afternoon, Mr. Crawford. Thank you for your testimony. We have no questions for you, sir.
THE WITNESS: Okay.
CAPT CALLAGHAN: Thank you, Mr. Stacey.
I'll now go to counsel representing the vessel owners, Mr. Barcott.

MR. BARCOTT: Thank you.

BY MR. BARCOTT:

Q. Captain Crawford, I represent *Scandies Rose* and, of course, her owners including John Walsh. So first of all thank you for getting proactive with John and getting to put this class. We appreciate that.

I have a question. You are certainly aware that the Coast Guard, or the regulations regarding icing, assume six-tenths of an inch on the outside of crab pots of ice and 1.3 inches on the horizontal surfaces for icing. Did you get from the students you had in your class, whether they came into your class with the knowledge of that limitation in their stability report?

A. What I got from the students was that they theoretically understood that those numbers because (indiscernible) in their reports, was used to make the calculations. I'm not quite sure that before the class that they understood what it actually meant.

Q. Okay. And we've looked at stability studies including the one for the *Scandies Rose* and, unless I'm mistaken, those numbers don't actually appear in the report. Have you looked at enough stability reports to know whether those numbers typically are easily extractable from the report or are they buried in those charts and tables somewhere?

A. Unfortunately, I think they're buried in either the charts and tables or in blurbs of explanations on how they do the calculations or a reference to 28 C.F.R..

Q. Going out of your class, did your students understand those limitations on their stability letter?
A. Yes.
Q. Okay. Thank you. Those are all the questions I have. We appreciate your testimony here.
MR. BARCOTT: Thank you, Captain.
CAPT CALLAGHAN: Thank you, Mr. Barcott.
Captain Crawford, just have a quick follow-up questions from Commander Denny.
BY CDR DENNY:
Q. Good afternoon, Mr. Crawford, Karen Denny. Thanks for being here this afternoon. I had a couple of follow-up questions. Sir, in your extensive and professional history, do you have experience sailing in the Bering Sea?
A. Yes.
Q. Okay. Could you elaborate a little?
A. A number of the runs I was on we would (indiscernible) Dutch Harbor and almost every one -- every run I was on that was (indiscernible) from the West Coast to Asia, the short route is through the Bering Sea. So yeah, we'd go through there frequently.
Q. Okay, got you. Thanks for that clarification. So I may have misheard you, but earlier in your testimony you said that at first for your stability you had -- you were having the vessel masters bring their vessel's stability letters, but that became

logistically difficult because they were separated from their boat and so you used kind of a template one, a redacted one. Is that correct?

A. Correct.

Q. But you also made a statement that you said that the stability letters are all about the same, same format? Is that correct?

A. Yes. What I kind of noticed is that what the regulations say they have to have, they're in there so in that regard they're fairly similar. And they usually have the same approach to how the information was given. One or two of the letters went -- gave greater detail, but none of the letters I saw gave less detail than what would be necessary based on 46 C.F.R. Part 28.

Q. So I recognize that you've only done two of these, kind of, test courses.

A. Yes.

Q. Did you notice any stability letters that had the same number of pots for icing and non-icing conditions?

A. Yeah, I'd have to look at one of the letters, but yes, I believe that -- how did that go? They gave different pot numbers for different configurations of fuel and ballast and, if I remember and I'm just trying to remember here, that they would give a maximum -- essentially a maximum deck load and the captain would have to determine, okay, if I carry 150 pots and I'm going to ice up, I'm going to exceed that maximum deck load. So he

would have to, in his judgment, not take as many pots. And the students I had told me that's what they do.

Q. Okay. And then knowing that this is, kind of, in its inception and that you're running these pilots courses, if you will, where you're really honing in on stability, have you considered or have you already partnered with any local PEs or PE firms to give more technical insight to your students on how to understand the stability process from the incline tests to what the stability letters say?

A. No. Deliberately, no.

Q. Could you elaborate on that?

A. We brought in very knowledgeable, talented people to teach a class and unfortunately what happens is they really know their business, but they can't teach. And so, deliberately no is saying we get information from everybody we can but not necessarily get the guy standing in front of the class.

Q. Okay, that's fair. So you guys considered it at least. Have you then partnered or reached out to PEs to get redacted stability letters to show comparisons of what stability letters could look like? Like, redacted ones?

A. No, we have not. That is -- was an idea and it's probably going to be done in the future, but at the moment we have not.

Q. Thanks, Mr. Crawford.

CDR DENNY: Captain Callaghan, that's all the questions I have.

CAPT CALLAGHAN: Thank you, Commander Denny.

Mr. Crawford, thank you very much for your time today. I know, you know, you were able to graciously carve out some time at the end of your day for us and we really appreciate what you can bring to this hearing to better understand some of the options out there for folks operating in this area and some of the new opportunities that you're offering with regards to your stability classes. So really want to thank you for that.

At this time you're now released as a witness at this formal hearing. Thank you for your testimony and cooperation. If, at a later date, we determine that this Board needs additional information from you we'll contact you directly. If you have any questions about the investigation, you may contact the investigation recorder, Lieutenant Ian McPhillips.

Sir, thank you very much for your time today.

THE WITNESS: Okay. You're welcome.

(Witness excused.)

CAPT CALLAGHAN: At this time I want to thank all of our witnesses for their testimony -- their time and their testimony today. Particularly for their patience as we experienced a number of technical difficulties today. As mentioned earlier, the testimony for Captain Martin from the National Maritime Center was recorded, despite some of our technical difficulties, and has now been posted to livestream.

Again, for the record, all exhibits presented today will also

be posted to the MBI media website. Also, given the particular discussions surrounding stability today, I did want to point out again that we have posted a video on livestream, just a general training video that goes over the basics of stability for anyone who chooses to review that.

And at this time it is now 1644 on March 3rd. This hearing will now adjourn for today and resume at 0800 tomorrow, March 4th.

(Whereupon, at 4:44 p.m., the hearing was recessed.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	Marine Board of Investigation Into the Sinking of the *Scandies Rose* On December 31, 2019
PLACE:	Seattle, Washington
DATE:	March 3, 2021

was held according to the record, and that this is the original, complete, true and accurate transcript which has been compared to the recording accomplished at the hearing.

[redacted]

Shelby Marshall
Transcriber

[redacted]

Christy Behlke
Transcriber