NATIONAL TRANSPORTATION SAFETY BOARD

IN RE:	
THE EL FARO INCIDENT OFF THE COAST OF THE BAHAMAS ON OCTOBER 1, 2015	NTSB Accident No. DCA16MM001

INTERVIEW OF: LEE BROWN

Tuesday,
October 13, 2015

Jacksonville, Florida

BEFORE:

MIKE KUCHARSKI, NTSB
KEVIN STITH, TOTE Services
LOUIS O'DONNELL, ABS
[redacted] U.S. Coast Guard

PRESENT ON BEHALF OF THE INTERVIEWEE:

ADAM COLE, Radio Holland

This transcript was produced from audio provided by the National Transportation Safety Board.

P-R-O-C-E-E-D-I-N-G-S

11:17 a.m.

MR. KUCHARSKI: Good morning everyone. This is Mike Kucharski. Today is the 13th of October, 2015. It's 11:17 a.m., and we're at the Marriott Hotel in Jacksonville, Florida, as part of the investigation of the El Faro incident.

We have an interview scheduled right now for the Imtech representative that was on board El Faro and did the inspection of the radio gear, and the GMDSS (phonetic) gear and electronics stuff, and Mr. Brown is the gentleman's name, and Mr. Brown, before I go through more information and just how we'll proceed, do you mind if I record this interview?

MR. BROWN: I don't mind. Go ahead.

MR. KUCHARSKI: Thank you. The purpose of this investigation is to increase safety. It's really not to assess liability or blame. The NTSB, though, cannot offer any guarantee of confidentiality or immunity from legal and licensed actions. Let me stop there. We have no authority to enforce, enforcement, punishment or anything like that. We don't.

But this information will be become public. Our interview will. So your name will appear on here, this recording that is transcribed. You also can ask

for a copy of the transcription, and if you ask me, you tell me now, we have it on tape, we have it on record, or you can convey that through TOTE after you decide. There's not going to be any quick process to have all these transcribed or written down.

But if you want to, I will then send it to you, and you will have an opportunity to review it before it becomes part of the public record. It's called the docket. So all the documents, everything. Not only yours, everything. The interview is many, many documents. I imagine in this matter it will be thousands will be available for the public to review, to see how we develop our analysis and probable cause.

That's why it's quite a bit of transparency, so that things will not be on there that we share with government agencies, Coast Guard maybe. If there's any other government agencies, we share that between agencies, okay. You may have a personal representative at this interview. I understand you have one. We will come around the room.

The personal representative may not testify on your behalf. It has to come from you. But you can talk it over, and then give your answer if you want, maybe to refresh your memory or whatever it may be. That's fine to do. The representatives' comments also

are limited, if your representative wants to make a comment. But as I mentioned to you, we can go off the tape. It's not trying to trick anybody. Understand that sometimes maybe I don't form a question correctly, I'm not too clear. So we could always discuss that and then you can answer, okay.

MR. BROWN: Okay.

MR. KUCHARSKI: Any questions so far?

MR. BROWN: No.

MR. KUCHARSKI: Well very good. My name is Mike Kucharski, and I am in the Operations Group Chairman. In Operations, we look at bridge operations, mostly deckside operations, not really engineering, although if they interface we can. So we have other members in here. I'd like to go around the room to my left and ask them to introduce themselves.

MR. STITH: Kevin Stith with TOTE Services Operations Group.

MR. O'DONNELL: Lou O'Donnell, part of the Engineering Group from ABS.

MR. [redacted] with the Coast Guards, part of the Operations Group.

MR. COLE: Adam Cole with Radio Holland.

MR. KUCHARSKI: Okay, and your function here, Mr. Cole?

MR. COLE: I'm a regional manager for the Southeast. Lee works for me and I was asked to come by my managers to sit in on what's being said today.

MR. KUCHARSKI: Okay, but that doesn't get you in the door. Why are you -- what other function are you serving?

MR. COLE: If Lee needs any help with deciphering any of the information that he has --

MR. KUCHARSKI: As his personal representative.

MR. COLE: Exactly.

MR. KUCHARSKI: Okay, thank you.

MR. BROWN: And Lee Brown, technician for Imtech Radio Holland.

MR. KUCHARSKI: Lee, would you spell your complete name?

MR. BROWN: Middle name as well?

MR. KUCHARSKI: If that's what you use, yes. What appears on your driver's license. How is that?

MR. BROWN: Okay. Lee Freeman Brown, L-E-E, F-R-E-E-M-A-N, B-R-O-W-N.

MR. KUCHARSKI: Great, thank you. Talk about your background in the marine industry, so we can get a picture of what you've done, your training, some of your credentials, and they we'll walk up to what

you've -- in the recent past.

MR. BROWN: Okay. Well, my electronics training started out in the Coast Guard. While I was there, I worked my way up to E-6. I was doing electronics in the Coast Guard for about -- it was probably about five years' worth of the time I was in, and after I got out of the Coast Guard, I moved here to Florida and the company Sea Coast Electronics was looking for an employee then, and I luckily just stepped right into it.

I've been Sea Coast -- well, Sea Coast Electronics was bought by -- first by Radio Holland, and then Radio Holland bought by Imtech. Our group around here has stayed pretty much the same throughout the changes, from Sea Coast to Radio Holland to Imtech.

I hold the -- I originally held the second class radio telephone license, but when that was sort of changed, according to the GMDSS regulations, then all of it became a GMDSS maintainer license.

In working for Imtech Radio Holland, I do things like repair the electronics, a little bit of equipment installation and radio surveys from time to time for various classes, like the ABS and FCC, Det Norske Veritas, Lloyd's, just quite a number of them.

What else?

MR. KUCHARSKI: The GMDSS maintainer, can you tell us what that is?

MR. BROWN: Yes. That's -- you study and then take tests to get the GMDSS maintainer license, which prepares you for the assorted regulations and requirements that the ships radio equipment need. So like the GMDSS radio station, what sort of equipment they should have or what options they have as far as which equipment to have, and how they have to operate, which aids in when we do our testing.

It tells you -- it has to be like on frequency, as far as transmitters putting out the right power; is its antenna system working as it should, and even in the cases where they have backup battery power, what the capacity should be and how often, how long it should work.

So in the case of doing a radio survey, you check out all of the equipment, make sure it's all working according to the specifications and requirements. So that's --

MR. KUCHARSKI: The GMDSS maintainer -- this is Mike Kucharski -- the GMDSS maintainer certificate allows you, would it be a fair assessment to say it allows you to work on --

MR. BROWN: It authorizes me to --

MR. KUCHARSKI: Authorizes. Who issues that certificate or license?

MR. BROWN: Well, they've got the --

MR. KUCHARSKI: Is like the FCC or is it Coast Guard.

MALE SPEAKER: Could we stop the --

MR. KUCHARSKI: Going off the tape and it's 11:27.

(Tape change.)

MR. KUCHARSKI: Okay. We've started back up and it's 11:29. Let me ask that question again. The GMDSS maintainer license, who issues that to you?

MR. BROWN: The FCC.

MR. KUCHARSKI: The FCC. Great, thank you. Any questions on the licensing or his background gents? Okay. So let me move on then into other items. Do you also work on other items outside of the GMDSS?

MR. BROWN: Yes.

MR. KUCHARSKI: And let's zero in on the El Faro now. What were the other items, besides GMDSS, would you work on?

MR. BROWN: Well, they have -- they oftentimes have a VHF, which isn't according to the full regulations for the GMDSS radio station. That is,

it would just have -- might work on just regular ship's power and maybe off the emergency generator, if they switched to emergency generator power, but wouldn't be programmed or updated with the position of the ship, which the GMDSS VHF radios would be.

The gyro compasses. When you ask me is when the mind is blank. Let's see. They have hand-held radios that the crew uses, although in those cases, usually it's more economical to dispose of them and get a new one if they have any serious damage.

MR. KUCHARSKI: What about radars?

MR. BROWN: Yes. Well, there are radars, but those also come under the GMDSS --

MR. KUCHARSKI: The SSAS?

MR. BROWN: Yeah, yeah. The ship security alarm system. The AIS and the Epirb (phonetic). All these are all part of the -- those are the things that I check under the radio survey.

MR. KUCHARSKI: Okay. You say -- you mentioned radio survey. Is that a requirement? Who was that -- whose requirement is the radio survey?

MR. BROWN: Well for them, the FCC has a number of forms, like Form 629 and on. You list the equipment and then basically what they ought to have, and in the case of the El Faro, they would have a GMDSS

station and two VHFs, a sat sea (phonetic), MFHF DSC radio, Epirb, AIS, and SSAS, lifeboat radios.

MR. KUCHARSKI: So is the survey part of this service report that we're looking at? Is that the survey that we're talking about?

MR. BROWN: Well, no. That's just our paper work to write any details or special comments. Further down, you've got the actual -- that's starting there.

MR. KUCHARSKI: That's the survey?

MR. BROWN: Yeah, like the (inaudible) form like 29 or whatever.

(Simultaneous speaking.)

MR. KUCHARSKI: Okay, and just so I can --

MR. BROWN: The first page is what ship and what's its personal information.

MR. KUCHARSKI: Well, we're looking at the cargo ship safety radio certificate. So this doesn't say survey on it. So what is the physical document that is the survey?

MR. BROWN: Well, this is our --

MR. KUCHARSKI: Is what you call a survey?

MR. BROWN: Our radio survey, yeah.

MR. KUCHARSKI: Okay. So the actual what you're calling radio survey, I'm looking to is it says "Federal Communications Commission, Cargo Ship Safety

Radio Certificate," and it says "United States of America, issued under the provisions of the International Convention for the Safety of Life at Sea." So this is the survey that we're actually looking at.

This here -- then I go down. I see Record of Equipment, Radio Facilities, all this information. Who do you provide this to, this survey, all these documents?

MR. BROWN: Well, the FCC does not actually have any more their representatives in there. You know, 25 years ago, when you do a radio survey for FCC type, they'd actually have an FCC guy. He would come out and we would attend with them, and he would make sure that it all worked.

But finally, you know, as we got into the modern times with the GMDSS stuff, they bowed out and we took over just doing the survey, and I have the GMDSS maintainer license to do them.

MR. KUCHARSKI: Okay. I'm looking, as part of all this documentation, "American Bureau of Shipping, Checklist on SOLIS Surveys."

MR. BROWN: Uh-huh, okay. The FCC, and this one for the SSAS, the FCC does not have an actual certificate for the SSAS and ABS does, and being an

American ship, we use that form to fill the details of its operation. The SSAS actually is more of a ship security matter, and so when it comes to the SSAS, we can ask them to test it out or if they have recently tested it and its up to them whether they actually do a test.

Usually, their program has them doing it themselves, and if they're not successful, then they would call us and have us pursue it.

MR. KUCHARSKI: But this -- all these checks and surveys, all these things you check as part of -- is it part of some procedure, annual type thing, semi-annual?

MR. BROWN: It's for the FCC, GMDSS inspection is once a year.

MR. KUCHARSKI: Once a year, and does that information go to anyone else besides yourselves and the FCC?

MR. BROWN: To (inaudible) in our office, and they keep a record of it.

MR. KUCHARSKI: Do you give a copy to class to ABS, the class for this vessel?

MR. BROWN: No. Actually, I mean we are the class representative in this case.

MR. KUCHARSKI: Okay.

MR. BROWN: And we keep full records of all this.

MR. COLE: So it goes to the ship; it does not go --

MR. KUCHARSKI: Identify yourself please.

MR. COLE: Adam Cole. It goes to the ship, it goes to our company and that's it. The Coast Guard doesn't get it.

MR. KUCHARSKI: ABS. ABS doesn't get it?

MR. COLE: No.

MR. KUCHARSKI: Are you familiar -- anybody have a direct question on that?

MR. O'DONNELL: Yes. Lou O'Donnell with ABS. I have forum standing on the form flag process (phonetic) with radio surveys. If there's deficiencies, we have to go to the flag to get dispensation or authorization to either issue a short term radio certificate on how to proceed. Who do you report -- if you're doing a radio survey and you find anything with GMDSS, nav equipment, AIS, SSAS and you find something deficient, who do you report those deficiencies to?

MR. BROWN: Well, we detail it thoroughly on a work order if there was a problem, and as far as our company goes, we are to definitely notify the master in

writing of what's going on and what it means. Usually when there's an item, everybody already knows what the consequences of that item are.

Like if say if both the radars didn't work, then most definitely the Coast Guard would want to know about that. But we make sure that the onboard the master knows, you know, the consequences of whatever it is that isn't working.

MR. O'DONNELL: Okay. So as Imtech, you don't report this to the FCC or the United States Coast Guard? You leave that responsibility to the master?

MR. BROWN: Yes. Now usually if it's a big thing, then the master is in contact with the Coast Guard, who is often waiting for us to fax them a completion service report that yes, this has been attended to or what's been done.

MR. KUCHARSKI: Mike Kucharski. The bottom line, you just give that deficiency to the captain. You don't give it to Coast Guard, you don't give it to ABS. You don't give it to anybody but --

MR. BROWN: If it's brand new, I mean it just happened like nobody else knows about it, then yes we thoroughly inform the captain, you know, of what's going on, the circumstances. As I said before, oftentimes if it's something big, everybody already

knows about it.

My point is that the Coast Guard is already waiting for a response on it. If it's, you know, just happened, then we tell the captain what it means.

MR. O'DONNELL: Excuse me, Louis O'Donnell of ABS again. It's a redirect. So you don't directly notify U.S. Coast Guard or FCC, yes or no?

MR. BROWN: No.

MR. O'DONNELL: Thank you.

MR. STITH: I had a question. Kevin Stith with TOTE Services. Do you or have you done work on the FROs Inmarsat (phonetic) telephone or mini-am (phonetic) systems?

MR. BROWN: Well, on the sat sea I have.

MR. STITH: Okay, just the sat sea. Do you know if that sat sea or more appropriate probably in the SSAS, if it had the capability to be pulled by the user officially?

MR. BROWN: Well, there's another system. It's called the LRIT system, and in that case, people on shore, if the equipment is on, would be able to poll the thing and it should respond with where they are. Whether it is done or not, you know.

MR. STITH: It would have that capability.

MR. BROWN: Yeah.

MR. STITH: Who would be -- who would have access to poll the ship's position?

MR. BROWN: Well, it would be the customer.

MR. STITH: So it would be the ship owner. Would the Coast Guard have the ability to poll the ship's position?

MR. BROWN: I think they would have to notify.

MR. COLE: Adam Cole. How that works is depending on where the vessel is. If it was off the U.S. coast, then it is the Coast Guard. If he goes past Cuba and down to South America, those governments down there have the right to poll the vessel.

MR. STITH: That answers my question. Thank you.

MR. KUCHARSKI: Mike Kucharski, moving on. Are you familiar with the term "shore-based maintenance certificate"?

MR. BROWN: Yes.

MR. KUCHARSKI: Can you tell me what that certificate or the process entails, shore-based maintenance?

MR. BROWN: Well, with the regulations, they like you to have at least either -- well, there are three options. There's backup of the equipment, like

an extra radio, and then there's a shore-based maintenance agreement, and then there's where you would actually have a technician on board to look after the equipment.

Most people have the shore-based maintenance agreement, which is an agreement with some agency as far as pursuing any problems with the equipment that you might have.

Oftentimes, like if something happens with the ship, they call Radio Holland if they have the shore-based maintenance agreement through us, and they say all right, my radar doesn't work and they're going to this port, say Jacksonville on the 12th, and then, you know, can you go fix it.

Then we do our best to have spares or whatever we think might be needed to attend the vessel and fix the item.

MR. KUCHARSKI: Did the El Faro have a shore-based maintenance agreement in place with Imtech?

MR. BROWN: Yes.

MR. KUCHARSKI: They did. Could you tell us your personal involvement with the El Faro?

MR. BROWN: Just when called to it.

MR. KUCHARSKI: Did you inspect the vessel?

MR. BROWN: Oh yes, yes.

MR. KUCHARSKI: At her last annual inspection?

MR. BROWN: Yes, which was about January or end of January/February early.

MALE SPEAKER: Where is the report?

MR. BROWN: I forgot the date. What date is on there? 27 January of 2015. I guess eight, nine months ago.

MR. KUCHARSKI: Did you go on board?

MR. BROWN: Yes.

MR. KUCHARSKI: After that time for anything?

MR. BROWN: I have been on there -- well, with all the ships, we call everything. But I think one time I delivered a keyboard to them and one time I think they -- I think their radio telex was experiencing a problem, which just doing a reset on it cleared it up and everything was working again.

Now they -- the crew periodically checks the equipment anyway, and I think it might be before sailing, just to make sure that no warning signs or errors are coming up.

MR. KUCHARSKI: But this is your belief. You don't -- you haven't physically been on board the ship to see them actually test it while they're

underway.

MR. BROWN: They would do this before they leave, and I have seen some things done. I don't like stay around because, you know, that's when they are leaving.

But they usually do this up to a half hour, an hour before they are leaving. So sometimes I see it, where they're checking the -- I see it, you know. I'll get a radio check on the VHF and they check the steering, let the radars come on and work.

MR. KUCHARSKI: So you were on El Faro some time between -- my original question was from January through the present, when you did the annual, what other reason were you on board El Faro. So between that time period, you were physically on board and saw them testing the gear?

MR. BROWN: As far as the last time I was on there, I mean we could check the records.

MR. KUCHARSKI: No. Just your personal knowledge.

MR. BROWN: Oh. I think it was just --

MR. KUCHARSKI: If you don't remember, that's fine to say that.

MR. BROWN: I believe I was on there, as I said, the MFHF radio, MFHF DSC problem it had locked

up, and then resetting it cleared it. In that way, anything with a processor with a laptop, they can just, you know, a glitch and then you reset it and you're fine, and there's no way to predict those things. It may never happen. It may happen in a week.

MR. KUCHARSKI: Follow-on questions about his inspection involvement with the El Faro?

MR. O'DONNELL: Your inspection -- I'm sorry. Lou O'Donnell with ABS. Your inspection. So you are strictly -- your last radio inspection on the 27th of January 2015 was strictly for the nav equipment, GMDSS, sat sea, AIS? You had no involvement testing either the VDR or LRIT?

MR. BROWN: No. I do know testing on the LRIT, it's with -- they're online, okay, and if they were to go offline when they periodically check, they would -- and they didn't get responded to, then they'd send some kind of a message and say hey, where's your LRIT? What have you got, you know.

So they would have been -- it would have been noticed that they were -- at some point that they were off the grid, and then they would have been contacted about it. So that's, as far as testing, that's not really done by us.

We do check to see if they have the

certificate, that they do have the LRIT.

MR. KUCHARSKI: Is that like a conformance certificate?

MR. BROWN: Yes, conformance certificate.

MR. KUCHARSKI: Sorry, that's Mike Kucharski.

MR. BROWN: As far as the VDR, no. I believe it's a Sperry VDR which I don't do. The Sperry has their own protocols and testing to do, and so I don't really don't know anything about the Sperry VDRs.

MR. O'DONNELL: Okay. Lou O'Donnell again, ABS. So you're not authorized or you guys -- with Sperry authorized to service the VDRs. I know with some specific equipment, VDR, LRIT, SSAS, you have to have certain certifications or training by that name to actually service that equipment; is that correct?

MR. BROWN: Yeah. With VDRs, you have to have the manufacturer's certificate or, you know, authorization to work on the equipment, and I do not have that for the Sperry VDR and I did not touch it.

MR. O'DONNELL: Okay, and Lou O'Donnell again with ABS. One last question with the LRIT. You said you did confirm their last conformance test report when you were on board as part of your survey?

MR. BROWN: No. It's just that they had it, that they have it set up originally.

MR. O'DONNELL: But --

MR. BROWN: And once they're on the system, they'll get notified if they drop off of it.

MR. O'DONNELL: So you hadn't confirmed the recent test with their --

MR. BROWN: With the LRIT.

MR. O'DONNELL: I don't know if you want to say their supplier or monitor of the LRIT, that they, you know, that they have done their annual test with the LRIT?

MR. BROWN: Right.

MR. O'DONNELL: All right, thank you. No further questions to ask about the survey.

MR. KUCHARSKI: [redacted]

MR. [redacted] Yeah, [redacted] with the Coast Guard. Looking at the report, the 27 page report in our system that's titled "El Faro 227744," you know, your survey report from January, looking at page -- I've got a quick question about pages four and five, just to clarify for the record what these notations mean in the report.

You know, some want to say provided; others have (inaudible). Could you just describe, you know,

just generally how you fill out the report and what those notations mean?

MR. BROWN: Okay. The extra lines that are lined through are other options that might be filled in, based on what the requirements are for the particular vessel. This one had an MHFH radio installation, which covers everything as far as the earlier listing of MF radio installation.

It goes beyond that. But it is not called that, and so they are lined through because it's not really that.

MR. [redacted] So the line through essentially means "not applicable" to the vessel?

MR. BROWN: Right, right. Down below, VHF Epirb, for instance, I've never seen one of those. Nobody ever has them. They always have the 406 Epirbs.

MR. [redacted] When it says "provided" in your report, that means what, that it's on board --

MR. BROWN: That this is what they've -- this is what they've chosen and they have it and it works.

MR. [redacted] Where I see provided with a (2) in parentheses, does that mean there's two of that particular piece of equipment?

MR. BROWN: Two of the ship's radar

transponders and by regulation required to be one on each side.

MR. [redacted] My next question is similar in nature, just clarifying things in the report for the official record, going to page 26, it looks like there's a yes column, a no column and an N/A column, and what I see in the report is it's kind of a scratch between yes and no. Is it safe to say that that really denotes not applicable there?

MR. BROWN: Not a passenger -- in this case, not a passenger ship.

MR. [redacted] Exactly. So had there been a N/A box, that probably would have been checked?

MR. BROWN: Yes. Well, if you notice on the date on this, the last time that the FCC updated their form -- well, you know, take a second to get up to that page. August 2012 is the -- no wait, this one. It stays the same for year after year, because nothing much changes.

MR. [redacted] Right, and then my final question about the report, I see in parentheses there where it's, you know, talking about the passenger ship requirements that obviously don't apply. It speaks to Subpart W vessels. Can you describe what that means? I think that means something a little bit different

than what it says there, and I just want you to describe for us what that means.

MR. BROWN: Which page is that?

MR. [redacted] So we're on page 26.

MR. BROWN: Aircraft frequencies. So only passenger vessels.

MR. [redacted] There are some that says Subpart, you know, it talks about Subpart W. I believe, correct me if I'm wrong, I think it's talking about Subchapter W in 46 CFR, where there's a table that denotes what equipment is required on certain vessels.

I think it means 46 CFR Subchapter W instead of Subpart W; is that correct? Or does that mean something else that I'm not aware of?

MR. BROWN: Regulation 80 point --

MR. [redacted] Is that maybe an FCC regulation?

MR. BROWN: Yeah. Part 80, yes. The FCC regulation is Part 80 and then that point 1085B. Interminable regulations. It's a thick book.

MR. [redacted] Sure. But that's an FCC regulation?

MR. BROWN: Yes.

MR. [redacted] Okay.

MR. BROWN: And not being a passenger ship, they wouldn't have the aircraft radio.

MR. KUCHARSKI: Mike Kucharski. Do you also look at their GMDSS radio log?

MR. BROWN: Yes.

MR. KUCHARSKI: And what do you look at it for?

MR. BROWN: To make sure like battery testing, writing down of what they've -- who they've talked to or maybe they made a radio test. Anything of significance with the radio station, and we ourselves may do a survey and make a notation to -- that we've done that.

MR. KUCHARSKI: Do you check to see that they have a GMDSS' operators endorsement?

MR. BROWN: Yeah. They've -- these days, I think just about every ship's officer, as part of their license, covers the radio operator.

MR. KUCHARSKI: Questions before I move on on that line? Let's talk about specific equipment. The Epirb. Could you tell us how that particular model operates on there?

MR. BROWN: Well, it's mounted on a bulkhead outside of the bridge. It's restrained in place by what's called the hydrostatic release, which is

intended that when the ship sinks and the device is immersed in say a meter of water, that the water pressure will release this more or less a razorblade and snap the bolt that's restraining it, and then there's like a spring mechanism that's supposed to catapult it out.

I mean it's not a terrific spring, but it's just supposed to push it away. It's got a switch on it where you can test it, set it off manually and it's another position for just testing. It also flashes the light when you're doing the test, and if you were to actually transmit the thing, the beacon would -- the light beacon would go off now and then.

The idea is to transmit the distress message and when it gets in the water, and the satellites can receive that and triangulate where it is. Some of them even have a GPS device that figures out its position itself, and makes that part of the message.

It's also got a, for local, to find them locally, it broadcasts on 121.5 megahertz. Not very strong but it sends a message out and it's supposed to aid in if a ship, a rescue ship is on scene, that they'll guide them more quickly to where the Epirb is.

MR. KUCHARSKI: So what actually activates this Epirb?

MR. BROWN: The sea water.

MR. KUCHARSKI: Sea water does.

MR. BROWN: You can't do it manually, but if you toss it in the water, sea water, there's like electrodes in the bottom of it and the water completes the circuit, and so it starts transmitting.

MR. KUCHARSKI: So you said you can also activate it manually?

MR. BROWN: Yes. A slide switch on this model.

MR. KUCHARSKI: Would that frequency be capable of being picked up if it was inside the bridge or there was metal around it?

MR. BROWN: I don't know how far away you would get it. It would probably be able to be -- it would get a little distance I'm sure. I don't know just -- I have no experience on just how much it would take to block. It can full regular transmission of the Epirb.

MR. KUCHARSKI: Okay. You were on that ship; correct?

MR. BROWN: Yes.

MR. KUCHARSKI: You know the way out of that wheelhouse?

MR. BROWN: Yes.

MR. KUCHARSKI: If I took that Epirb off of its current position, which you said is on the -- which side?

MR. BROWN: It's the starboard side aft corner of the bridge wing.

MR. KUCHARSKI: The starboard wheelhouse door, at the back of the wheelhouse --

MR. BROWN: You go out the starboard bridge door and back up about 15 feet and then turn right and you're looking at it.

MR. KUCHARSKI: And if you -- in your estimation, if you took that out of its cradle, for lack of a better word, and brought it into the wheelhouse and put it on manual, do you think that signal would be heard?

MR. BROWN: I think it would. If it was left on for enough time, it would be heard. I really am just guessing, since I have not actually done this. But I think if left on long enough, eventually it would get at least one hit that the satellite would receive.

MR. KUCHARSKI: Would this manual switch stay on automatically unless you take it off, or does it stop the manual at a certain time unless you keep pressing it?

MR. BROWN: It will stay in manual.

MR. KUCHARSKI: In manual, uh-huh.

MR. BROWN: But there is sort of like a restraint to keep it from accidentally being -- going to manual. So you would have to on purpose make it do that.

MR. KUCHARSKI: Questions?

MR. STITH: I have a question. If it was activated, approximately how long would you think that it could transmit? Is this graded for like a 24 hour transmission time or --

MR. BROWN: Oh, continuous transmission? I don't know.

MR. STITH: If it was in the water, would it not -- would you say in one day?

MR. BROWN: I don't know.

MR. STITH: Okay.

MR. BROWN: I do know that if they say they were in the lifeboat and had this thing, they would only -- they might choose to just turn it on now and then to prolong the battery. I mean once -- if it's just in the water, it's going to go continuously, and last the shortest, as opposed to manually.

MR. KUCHARSKI: That was Kevin Stith of TOTE Services. Any further on that? Let me ask you about the location again of the Epirb. You come out the

wheelhouse door, you turn and you walk aft a few steps and it's mounted on the bulkhead. Is that a good location for it?

MR. BROWN: It is the best one on -- there's never a perfect place, but you go for the best one. Where that is does get some protection from the elements, and there is nothing obviously normally in its way to snag it, which is another thing you don't want.

MR. KUCHARSKI: Is it easily snagged if something's around there?

MR. BROWN: Oh, I mean like on some ships that you go on, they like throw ropes, hang over rails and stuff like that. But I mean there's nothing normally in that area that would snag it.

MR. KUCHARSKI: In your estimation what -- if it were snagged, what would do it? How would that happen on that ship? What would be the worse case scenario?

MR. BROWN: From where it's normally mounted, I just don't see anything doing that.

MR. KUCHARSKI: You mentioned about water activatization.

MALE SPEAKER: Activation.

MR. KUCHARSKI: Activation, yeah. It's the

lawyer in me. Have you had any instances where just rain water would set that off? Have you heard of any?

MR. BROWN: No. It's covered with a plastic cover to protect from the elements. The chance of rain water doing it, I don't see that happening.

MR. KUCHARSKI: How about if you had it outside of the case? Would just -- would rain water activate that? Does it have to be immersed for a certain period of time for it to work?

MR. BROWN: I haven't tested such a thing, but I'm pretty sure that the salinity of the sea water is what's counted on to complete the circuit and set it off. Just ordinary rain water I wouldn't think would do it, nor even make the connection long enough to make it happen, unless you were trying to.

MR. KUCHARSKI: Any questions along that line?

MALE SPEAKER: No further questions.

MR. KUCHARSKI: The GMDSS, let's talk specifically about the GMDSS and sending it a distress message. On that ship, as fitted, what are the different modes of sending a distress message?

MR. BROWN: Well, they've got the MFHF and they've got --

MR. KUCHARSKI: What is that MFHF?

MR. BROWN: Oh pardon me, MFHF DSC radio, which operates from about two megahertz up to 30 megahertz of frequency, although generally the marine bands are just the two, four, six, eight, twelve and sixteen megahertz bands. The equipment has a button on it for distress. They can just hit that, or they could choose 2182, which isn't used so much anymore and set that off.

Frankly, there's not really many people listening on 2182 anymore. The sat sea --

MR. KUCHARSKI: So let me stop you there sir, if I may. Back to the MFHF. So how do they realistically send out a distress message using medium frequency or high frequency; is that what MFHF stands for?

MR. BROWN: Yes.

MR. KUCHARSKI: How would they effectively, if 2182 is not monitored, how do they then send a distress message?

MR. BROWN: Well, of course as far as there's voice. They can pick up the mic.

MR. KUCHARSKI: MFHF. Let's concentrate on MFHF.

MR. BROWN: Yes, I know. The microphone. It's MFHF radio telephony in this case, and you dial up

either some specific frequency or one of the emergency frequencies, and then broadcast, you know, Mayday, Mayday and try and reach someone.

MR. KUCHARSKI: I'm sorry to stop you on that train of thought, but the emergency frequencies, did you see them posted anywhere on the bridge?

MR. BROWN: Yes. They have them on the -- on like a sheet that was on the (inaudible) station.

MR. KUCHARSKI: So concentrating back on the MFHF, the unit's on. You would have to put in that frequency to send a distress message?

MR. BROWN: Yes.

MR. KUCHARSKI: You would manually have to put it in?

MR. BROWN: Uh-huh.

MR. KUCHARSKI: Are you familiar with the setups where they have a little MFHF, where you press two buttons to go ahead and make, put out the signal?

MR. BROWN: Well, what they have was just -- it was a Farino (phonetic) MFHF, and as far as what options they had, it was hit the button.

MR. KUCHARSKI: Hit one button?

MR. BROWN: For 2182.

MALE SPEAKER: Could we stop the tape for a moment?

(Tape change.)

MR. KUCHARSKI: Okay everyone. It is 12:14. We're back on the record. We took about a five minute break there, and so if we can go back to the MFHF and the capabilities they had to go ahead and send a distress message. Mr. Brown please.

MR. BROWN: Yes, Lee Brown. As far as the MFHF radio, which was completely it's MFHF DSC and telex, they're able to press a button for 2182 transmission of distress call. There was -- you can -- for the DSC part of it, you can press the button so that the DSC distress call is sent to -- it's a number of the distress frequencies on the different bands, two, four, six, eight, twelve megahertz bands.

So they could have hit the distress button to -- it would cycle through and send DSC distress messages on each of the assigned MFHF distress frequencies for DSC calls. As a telex, they could have sent out the telex message to some particular location.

MR. KUCHARSKI: Okay. So that's MFHF --

MR. BROWN: MFHF DSC telex.

MR. KUCHARSKI: And if it's you say telex, they would have to type something in?

MR. BROWN: Yes. Telex would be the manual

doing, where you know who you want to talk to.

MR. KUCHARSKI: I'll get to you. I see you, thanks.

MR. BROWN: If you had like some specific person and their MMSI number entered into it and send like a telex message to them.

MR. KUCHARSKI: And back to the -- when you say press the button, the frequency, they have to have that frequency already programmed in there, or to transmit a distress --

MR. BROWN: The system already has those frequencies programmed in.

MR. KUCHARSKI: So when they press the button, it's automatically going to pick one of those frequencies?

MR. BROWN: It will cycle through them and do each of them. The operator doesn't have to do anything more than trigger it.

MR. KUCHARSKI: Press the button. Right, thank you.

MR. STITH: I'm just curious. Is that telex band the narrow band direct printing? Is that what you're talking about?

MR. BROWN: Yes.

MR. STITH: Okay. Yeah. Along those lines,

to get to use that telex option, would you have to first send like a call to another vessel or another, I guess, another receiver and wait for them to answer, and then start messaging back and forth?

MR. BROWN: Well for a telex, what happens is if you enter the address, the MMSI number of the person you're trying to reach, and then you start it off, your radio transmits and the guy you're trying to reach would then, if they're listening, would receive it and it says oh, somebody's trying to reach me, and then they would start transmitting back.

The equipment or the radios would mesh. They'd, you know, get their timing right, and then you're all set to -- one guy can type in, sends that off, and then the other guy can type back and transfer text messages back and forth that way.

MR. STITH: Okay, very good. Let me ask you along those lines, and this is Kevin Stith, TOTE Services. Do you feel that that narrow band direct printing or telex is a reliable option for messaging?

MR. BROWN: I feel that like the satellite-based stuff is better. In fact, one drawback of that, of the MFHF stuff is that the current draw, the power usage is greater than the rest of the equipment combined. So if you're on backup power and trying to

husband your resources, it can -- it's going to wear it down a lot faster than just a digital sat sea message, and that doesn't even go into the account of all the other factors involved in making MFHF communications.

But just the time of day where you are, the time of day of where the person you're trying to reach, sun spot activity, weather, the frequency band you're using, the power you're using, how good his antenna is, how yours is. If you add all that to how much power it uses, it's -- if it's what you've got to work with, you use it. But --

MR. STITH: Kevin Stith with TOTE Services. So there's actually a lot of variables quote-unquote in this equation, not only your equipment, the weather conditions and the sphere, the receivers, position, location and in addition to below deck equipment and above deck equipment, meaning the antennas, things like that, the tuner?

MR. BROWN: I did want to say one thing on that. Of the different transmitting and receiving equipment, the MFHF antenna system is most vulnerable. If you're going into a hurricane, that might be the first thing that would go in the really rough sea. It's -- you're connecting from a coupler that's maybe about two foot square, and it has to be right there at

the hull of the ship, because if you want efficient communication it's got to be well-grounded and then connected to the actual aerial. If you get one big -- it just takes one big wave to make that -- take that offline.

MR. STITH: Those antennas or aerials, those are typically fiberglass antennas?

MR. BROWN: Yes.

MR. STITH: And either two part or three section antennas?

MR. BROWN: Uh-huh, yes.

MR. KUCHARSKI: Very susceptible to wear and tear, weather conditions, lightening?

MR. BROWN: Well, and particularly where the antenna coupler connects to it. It's a flexible cable usually. It just strikes me that just a wave could just knock that out and then you don't have an antenna, not to mention if it actually damaged the antenna coupler, which is out there.

MR. KUCHARSKI: Mike Kucharski, follow on that. When those antennas are about 100 foot above the water, a wave's going to hit that? I guess I need to know, are you testifying of personal knowledge on those vessels, that they had a lot of problems with their VHF or single side band, or the HFMF (sic) antennas?

MR. BROWN: I'm just saying that I think that the -- it would be more susceptible, they'd be more vulnerable of the other equipment that's placed like at the top of the mast.

MR. KUCHARSKI: But you have no knowledge of their -- I really need to zero in, to understand that this is subjective. You're saying in general or that particular vessel? Did they have problems, to your knowledge, with their antennas with susceptibility to --

MR. BROWN: No. They were installed the way they're supposed to be installed, and well grounded and would work fine under regular conditions.

MR. KUCHARSKI: Great. Gents, questions on the MFHF? I can move on. No questions. What other parts of the system besides VHF, MFHF do they have to send out a distress message?

MR. BROWN: They have a sat sea device. Those also have just several buttons. They do the same thing on the bridge. You press the button and it sends out a distress over the sat sea. Or you could send a message. It's a text message if you wanted to go that way.

But as far as how quick and simplest way, you just press the button and it would say distress,

and it would also report ship's position.

MR. KUCHARSKI: Okay. Two questions if I may. sat sea, is that also called mini-sea (phonetic)?

MR. BROWN: Yes.

MR. KUCHARSKI: Number two, is that a satellite-based system?

MR. BROWN: Yes.

MR. KUCHARSKI: Stop there. Questions, sat sea?

MALE SPEAKER: No.

MR. KUCHARSKI: No. You don't have a question.

MALE SPEAKER: No, I don't.

MALE SPEAKER: No further questions right now.

MR. KUCHARSKI: If you want to talk to him, consult with him and then he can answer.

MR. COLE: The Felcon 16 (phonetic) that they had on board is not a mini-sea.

MR. BROWN: Oh the 16, okay.

MR. COLE: It's a (inaudible).

MR. BROWN: Okay, sorry.

MR. KUCHARSKI: So would you like to --

MR. BROWN: The one they had was an Inmarsat Sea.

MR. KUCHARSKI: Inmarsat sea. Okay. So it's a mini-sea; it's Inmarsat Sea.

MR. BROWN: Yes.

MR. KUCHARSKI: Is that a different system?

MR. BROWN: Yes. As far as the GMDSS stations, they generally so but they just get the ordinary sat sea equipment, and that's, you know, the vast majority of them are just Inmarsat.

MR. KUCHARSKI: So what's the difference between Inmarsat sea and mini-sea and sat sea?

MR. COLE: The mini-sea --

MR. KUCHARSKI: Identify yourself please.

MR. COLE: Adam Cole. I believe the mini-sea has come out that has a smaller bandwidth and uses less power than the Inmarsat sea.

MR. KUCHARSKI: But they're all the same frequency range?

MR. COLE: They use the same satellite system.

MR. KUCHARSKI: Same satellite system, but it's a narrower beam?

MR. COLE: Yeah.

MR. KUCHARSKI: You believe this. I'm not trying to hold you to it, but I just -- I need to decipher here, because I hear all these things thrown

out there. Sat sea, mini-sea, Inmarsat sea.

MR. COLE: It is an Inmarsat sea.

MR. KUCHARSKI: So we need to narrow this down to what the had on there, okay, that particular ship had for sending it. So it's all utilizing the same satellite system. WE know that. We stop there. Questions gents?

MR. STITH: Yeah. The sat sea distress message. This is Kevin Stith with TOTE Services. The sat sea distress message, it uses -- it gets -- in that message, the position of the ship is taken from where?

MR. BROWN: With the (inaudible), they have GPS as part of the actual antenna.

MR. STITH: Okay. So that sat sea distress message would go to whom? Would that be somebody like the regional coordination center, like the Coast Guard?

MR. BROWN: I believe so.

MR. STITH: That information would have to be set up by the user; correct?

MR. BROWN: Just as far as the sat sea now, anything you set up beyond, you register your equipment. You've got a specific ID number and like a -- what's the word, service provider.

MR. STITH: Okay. Do you happen to know who the service provider was for the El Faro?

MR. BROWN: No.

MR. STITH: Would Stratos (phonetic) be one of the service providers?

MR. BROWN: Yes, that could be.

MR. STITH: Okay. Those are my sat sea questions.

MR. [redacted] [redacted] with the Coast Guard. So back to what's on the El Faro and particularly referencing your report, let's all go to page four for a second. That might help me understand the difference, you know, as far as sat sea, mini-sea and Inmarsat sea.

On page four, I'll give you a second to pull it up. Make sure we're all clear on what we're looking at. Page four.

MR. BROWN: Page four.

MR. [redacted] Page four, right. We're in Block 2 there, and then I see several line items. Where I see, you know, 1.4 Inmarsat sea and ship berth station. Is that what we're talking about here?

MR. BROWN: No.

MR. [redacted] Okay. What are we -- where are we when we're talking about sat sea and Inmarsats?

MR. BROWN: Yeah. That is the Inmarsat sea, yes.

MR. [redacted] That helps. Now a little bit of a checklist helps me understand. It's something we can reference under --

MR. BROWN: Okay. I didn't know if you were talking about down here or whether they're talking about the Inmarsat Epirb.

MR. [redacted] Right. So that's 4.2. That's a separate line item. So we're on the 1.4. Maybe we use this as a guide, if that will help.

MR. KUCHARSKI: He can use that as a guide, sure.

MR. [redacted] Whatever you would like to use as a guide to help describe for us what's on board.

MR. BROWN: Okay. They have an Inmarsat sea ship berth stations.

MR. KUCHARSKI: Okay. That was a load of sending a distress signal, and from your recollection, it's just press of one button, it sends it out. It sends out a GPS position in the vessel and the name of the vessel? Is that what it basically is?

MR. BROWN: It's -- well, the information that it sends out as far as it's Inmarsat number, ID number, would identify itself as far as who and what, where it was coming from through the satellite system to the provider. I mean they have everybody's numbers

and everybody's names. So if it makes a connection and gets through, then they know who and where.

MR. KUCHARSKI: Okay. How many Inmarsat seas did she have, the vessel have?

MR. BROWN: One.

MR. KUCHARSKI: One. So we've covered HFMF (sic), VHF. I believe you said VHF also has DSC capability?

MR. BROWN: Yes, limited range.

MR. KUCHARSKI: Limited range, digital selective calling. Okay. What would you say the range on the VHF is?

MR. BROWN: 25 miles.

MR. KUCHARSKI: 25 miles. HFMF?

MR. BROWN: Spotty, but if the circumstances were right, you could probably reach the, you know, California or Alaska.

MR. KUCHARSKI: Okay. Inmarsat sea.

MR. BROWN: As far as the satellite system, whoever they're connected to. It would go to them and it comes down to the ground station, and whoever they're connected to that's, you know.

MR. KUCHARSKI: So pretty much worldwide type of coverage?

MR. BROWN: Yeah.

MR. KUCHARSKI: Except maybe the poles or something like that?

MR. BROWN: Anywhere you've got an Internet.

MR. KUCHARSKI: Okay, and so we've covered now Inmarsat sea. What else do they have? What other capabilities?

MR. BROWN: Well, they had an SSAS. It's a ship's security alarm system, and that one's set up where it doesn't need any -- it doesn't need any set up or fiddling. All that is is the button, and it's usually put in a discrete place that isn't right out in the open.

Some people call it the piracy alarm, and you hit that button and it does have its own GPS as part of its antenna system. So when you hit that button, it will send off distress, whatever message that the ship had programmed into it, which could be anything. But it's help, this is piracy or a vessel in distress. It's whatever the vessel had originally programmed into it. It's just all fixed, ready to go and you hit the button.

MR. KUCHARSKI: So that's meant for really piracy or some type of terrorist type attack?

MR. BROWN: A silent alarm and it's one-way only.

MR. KUCHARSKI: Silent alarm.

MR. BROWN: In fact, the regulations are that there shouldn't be any direct confirmation from like the ship's security officer to the ship, you know, saying hey, we got your signal. No, that's not allowed.

MR. KUCHARSKI: So that goes out. That's a very quick, press a button, flip the switch type thing also?

MR. BROWN: Yes.

MR. KUCHARSKI: And are you familiar with their unit, their Faruno (phonetic) unit?

MR. BROWN: Not that much because -- in that we don't trigger it for them. They have their own schedule for testing it, and if they tell us that it went through successfully, then that's -- it isn't something that we can insist upon and say no, I want that.

MR. KUCHARSKI: Good. Okay. So you just looked at test results to see that it was tested correctly?

MR. BROWN: Yes.

MR. KUCHARSKI: Do you know the information on any SSAS, what the types of the fields, if you will, of information that are required, the types of

information?

MR. BROWN: Well, that would be the ship's name and call sign, and MMSI number and IMO (phonetic) number and a message.

MR. KUCHARSKI: How about position? Is that in there too?

MR. BROWN: Yes, definitely.

MR. KUCHARSKI: How about course and speed? Are they in there?

MR. BROWN: I don't think the course and speed are in there. Do you --

MR. COLE: I think it would be from the GPS.

MR. KUCHARSKI: I'm not talking about this particular ship. This is Mike Kucharski. Not this one. In period, is the regulation -- is the regulation --

(Simultaneous speaking.)

MR. KUCHARSKI: If you look at this, how do you confirm that the information on there is what should be on there?

MR. BROWN: Well, what we make sure is on there is the ship's position and the identification information. Being as it's a GPS, I think it would be possible to send course and speed. But that's not really -- the idea is where is it.

MR. KUCHARSKI: Okay. I just need to know what you're checking against, what the regulations are say must be on there, the minimum amount of information. Do you know exactly what that is?

MR. BROWN: It's the information that I mentioned, the position, the various identification number.

MR. KUCHARSKI: Okay. Any questions here gents?

MALE SPEAKER: No further questions at this time.

MR. KUCHARSKI: Okay. So we've covered SSAS, the Inmarsat sea. Is there any other Inmarsat system that they have on there? Gents.

MR. COLE: There was one more on there that wasn't -- not in the GMDSS system, the (inaudible).

MR. BROWN: As far as the GMDSS stuff, which we check during surveys, but that would be it.

MR. KUCHARSKI: That would be it.

MR. BROWN: If the ship has additional communications equipment, that would not be covered under the GMDSS radio station survey.

MR. KUCHARSKI: Okay what -- are you aware of any other system that they have?

MR. BROWN: I'm told that the have a

Worldphone.

MR. KUCHARSKI: What's a Worldphone?

MR. BROWN: Just another satellite communication phone system.

MR. KUCHARSKI: And it's something that you don't inspect?

MR. BROWN: Not part of the radio survey, no.

MR. KUCHARSKI: Okay. Outside the radio survey, do you work on that system for them?

MR. BROWN: Personally I don't. If they were to report they had a problem, then if somebody in our office didn't work on it but another somebody else from another office did, then we'd do our best to get them, so that they could work on it. But if they don't tell us something isn't working, we don't know.

MR. STITH: Just real quickly, going back to the sat sea, does the SSAS use the same antenna as the sat sea?

MR. BROWN: I've been on so many ships I'd have to check which --

MR. STITH: I understand the message. You use the same terminal, the Felcon 16 and it most likely has the same antenna.

(Simultaneous speaking.)

MR. BROWN: Okay. Then it would use the same antenna.

MR. STITH: Okay, thank you. Kevin Stith, TOTE Services.

MR. KUCHARSKI: Same line of questioning?

MR. STITH: Yes, yes. That antenna is typically located where? High up on the mast or --

MR. BROWN: As I say, it's usually with it being the sat sea, they try the highest on the --

MR. STITH: Get it as high as possible?

MR. BROWN: Yeah.

MR. STITH: Okay.

MR. BROWN: But unobstructed and --

MR. STITH: Unobstructed. Okay, very good.

MR. BROWN: And would see as much of the sky as it can.

MR. STITH: So even typically above the radar scanners?

MR. BROWN: Yeah, and generally you don't want the radars pointing at it.

MR. STITH: Right, right. Okay, very good. Thank you.

MR. KUCHARSKI: Okay. Mike Kucharski. Now moving down the line, the weather facsimile. Did they have a weather facsimile machine on there?

MR. BROWN: I believe they did, but that isn't part of the radio survey.

MR. KUCHARSKI: Did you ever work on that machine?

MR. BROWN: Offhand, I don't know. I've worked on so many --

MR. KUCHARSKI: How about Navtext (phonetic)? Do they have a Navtext receiver on there?

MR. BROWN: Oh yes. Yes, they had a Navtext receiver.

MR. KUCHARSKI: And what is Navtext used for?

MR. BROWN: It's for navigation messages of importance. Everything from icebergs to buoys being non-operational or pulled out of service. Just anything that might be important to the vessel.

MR. KUCHARSKI: Would weather be one of those things?

MR. BROWN: Yeah, it would report -- I imagine it was probably ablaze with the hurricane information.

MR. KUCHARSKI: Gents, before I move to the next? The weather station on the ship. It had some way to measure wind and direction and all that? Do you recollect that system?

MR. BROWN: Not, no. I believe that it had a young wind bird, which would have speed and direction of the wind but offhand, I don't know. If for those ships that we do VDR inspections on, and one of the (inaudible) would be the wind and speed direction, if it's available. Then in such case, part of doing VDR inspection then I would get into the wind speed.

MR. KUCHARSKI: So the VDR inspections that you do on other vessels, from your recollection is the input of wind direction and speed required for the VDR?

MR. BROWN: If they have one, yes. All devices that put out ANIMA (phonetic) information are required to be input to the VDR.

MR. O'DONNELL: Lou O'Donnell, ABS. One question. With the (inaudible), are you sure that it will pick up the wind speed and direction? The vessel was fitted with a simplified VDR with --

MR. BROWN: Oh. If the device had ANIMA output, it would be.

MR. O'DONNELL: Okay. No further questions.

MR. KUCHARSKI: Getting close to the end, gents. No, I think you've covered it on the SSAS, because you've answered a lot of questions. You've answered the question on the weather station. You believe there was one there, but you didn't do any work

on it.

MR. BROWN: I mean if -- we keep all records on the stuff that gets worked on, so I'm sure that anything y'all need that we can come up with, we'll provide you.

MR. KUCHARSKI: Well also you have my card there. If there's anything that you think of that we haven't covered. You see where I'm driving at. What's at their disposal to communicate, the Electronics suite up there, the radars? Radars aren't really communication, so that's why we haven't concentrated on those.

The AIS, I guess, is a form of communication. Yes, it sends out -- do you want to touch on that basically?

MR. BROWN: Oh sure. Keeping in mind that it's in the same frequency range as the VHF radios, only the VHF, the standard ones put out 25 watts. Now your AIS is only going to put out like 12 watts. That's because they don't want it to be long range, and the AIS will have a dedicated GPS antenna. So it knows where it and the ship is, and its job is to send little contact requests out on VHF band.

If there's another ship out there, their AIS gets in communication with them, and they set up an

arrangement of sort of like talking back and forth, just to keep each other appraised of where that system is, where that ship is and where the other ship is. Then you multiply that by however many ships there are in the area, and the AIS just can keep on touching bases with all the different ships out there to see where they are, what they speed, their identification.

Of course, the idea of that is they then feed that information to like either the radar or plotting equipment, such that on your actual live screen, you can -- instead of just a target on your radar, it will paint like the name of the ship or the call sign or make it easier to see who's out there.

If there's 20 ships out there, you'll know you're talking to that specific one, not "hey you over there." So it's a plotting method.

MALE SPEAKER: No further questions.

MR. KUCHARSKI: Okay. I think we have a pretty good picture. Again, if there's anything you think -- go through your records for us, you know, on what you maintained.

So you may see something that you spot on there that are form of communications. We have more interviews. You've helped us out. I will ask more questions based on that, but it's been very helpful.

Thank you.

MR. BROWN: I could mention one other very short range radio that the mates and possibly engineers carry, the little UHF radios on. It might be good for a mile, but it's great for inter-ship communications or just but not something you'd want to rely on, you know, long range.

MR. KUCHARSKI: Great. Okay gents. I'll stop the recording. It's now 12:45. Thank you very much for coming down. Sorry we were so long.

MR. COLE: So I'll just add my curiosity, if you don't mind me asking.

MR. KUCHARSKI: Off the record.

(Whereupon, the above-entitled matter went off the record at 12:45 p.m.)

A

a.m 2:2,5
ability 16:5
ablaze 53:20
able 15:21 28:15 35:9
above-entitled 57:14
ABS 1:14 4:20 6:24 11:25 12:22 13:9 13:9,14 14:20 15:6 20:9 21:13 21:23 54:14
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C E R T I F I C A T E

MATTER: El Faro Incident
Accident No. DCA16MM001
Interview of Lee Brown
Jacksonville, Florida

DATE: 10-13-15

I hereby certify that the attached transcription of page 1 to 69 inclusive are to the best of my professional ability a true, accurate, and complete record of the above referenced proceedings as contained on the provided audio recording; further that I am neither counsel for, nor related to, nor employed by any of the parties to this action in which this proceeding has taken place; and further that I am not financially nor otherwise interested in the outcome of the action.

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OCTOBER 13 2015

PAGE NUMBER	LINE NUMBER	CURRENT WORDING	Suggested CORRECTED WORDING	NTSB RESPONSE
10	01	sat sea	Sat C	AGREE
11	13	Type	Class	Do not Agree, transcript reflects what is on recording
11	22	Solis	SOLAS	AGREE
12	19	(inaudible)	Randy (Raulerson)	Do not Agree, transcript reflects what is on recording
15	14	Sat sea	Sat C	AGREE
15	15	Sat sea	Sat C	AGREE
15	16	Sat sea	Sat C	AGREE
23	06	MHFH	MFHF	AGREE
28	03	Can't	Can	AGREE
28	18	Block. It can	Block the	Do not Agree, transcript reflects what is on recording

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33	10	Sat sea	Sat C	AGREE
34	20	Farino	Furuno	AGREE
38	02	Sat sea	Sat C	AGREE
40	18	Sat sea	Sat C	AGREE
40	21	Sat sea	Sat C	AGREE
41	03	Sat sea	Sat C	AGREE
41	03	Mini sea	Mini C	AGREE
41	09	Sea	C	AGREE
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NO CORRECTIONS NEED. _____
Initials

LEE BROWN

Printed Name of Person providing the above information

[redacted]
Signature of Person providing the above information

/O,AIW 2-0/;;;-
Date

12. OMS Brown Transcript Emtta

TABLE OF CORRECTIONS TO TRANSCRIPT OF INTERVIEW FOR

LEE BROWN

TAKEN ON

OCTOBER 13, 2015

PAGE NUMBER	LINE NUMBER	CURRENT WORDING	CORRECTED WORDING	NTSB RESPONSE
41	20	16	15	Do not Agree, transcript reflects what is on
41	25	Sea	C	AGREE
42	01	Sea	C	AGREE
42	02	Mini sea	Mini C	AGREE
42	02	Inmarsat sea	Inmarsat C	AGREE
42	10	Inmarsat sea	Inmarsat C	AGREE
42	10	Mini sea	Mini C	AGREE
42	10	Sat sea	Sat C	AGREE
42	11	Mini sea	Mini C	AGREE
42	14	Sea	C	AGREE

If, to the best of your knowledge, no corrections are needed kindly circle the statement "no corrections needed" and initial in the space provided.

NO CORRECTIONS NEED. _____
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[redacted]

Signature of Person providing the above information

10 Nov 2015
Date

12. OMS Brown Transaipt Errata

TABLE OF CORRECTIONS TO TRANSCRIPT OF INTERVIEW FOR

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PAGE NUMBER	LINE NUMBER	CURRENT WORDING	CORRECTED WORDING	NTSB RESPONSE
42	15	SEA	C	AGREE
43	01	Sat sea	Sat C	AGREE
43	01	Mini sea	Mini C	AGREE
43	01	Inmarsat sea	Inmarsat C	AGREE
43	08	Sea	C	AGREE
43	10	Sat sea	Sat C	AGREE
43	14	Sea	C	AGREE
43	20	Sea	C	AGREE
44	05	Sea	C	AGREE
44	11	Sat sea	Sat C	AGREE

If, to the best of your knowledge, no corrections are needed kindly circle the statement "no corrections needed" and initialin the space provided.

NO CORRECTIONS NEED. _____
Initials

LEE BROWN

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[redacted]

Signature of Person providing the above information

/OA!cv20!S
Date

TABLE OF CORRECTIONS TO TRANSCRIPT OF INTERVIEW FOR

LEE BROWN

TAKEN ON

OCTOBER 13, 2015

PAGE NUMBER	UNE NUMBER	CURRENT WORDING	CORRECTED WORDING	NTSB RESPONSE
44	11	Mini sea	Mini C	AGREE
44	12	Sea	C	AGREE
44	19	Sea	C	AGREE
44	23	Sea	C	AGREE
44	24	Sea	C	AGREE
45	14	Sea	C	AGREE
46	04	Seas	C's	AGREE
46	06	HFMF	MFHF	Do not Agree, transcript reflects what is on recording
46	18	Sea	C	AGREE
47	OS	Sea	C	AGREE

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NO CORRECTIONS NEED. _____
Initials

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Printed Name of Person providing the above information

[redacted]
Signature of Person providing the above information

10 NOV 2015
Date

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TABLE OF CORRECTIONS TO TRANSCRIPT OF INTERVIEW FOR

LEE BROWN

TAKEN ON

OCTOBER 13, 2015

PAGE NUMBER	LINE NUMBER	CURRENT WORDING	CORRECTED WORDING	NTSB RESPONSE
50	13	SEA	C	AGREE
51	18	Sea	C	AGREE
51	23	16	15	Do not Agree, transcript reflects what is on recording
52	09	Sea	C	AGREE
53	09	Navtext	Navtex	AGREE
53	11	Navtext	Navtex	AGREE
54	05	(inaudible)	inputs	Do not Agree, transcript reflects what is on recording
54	12	ANIMA	a NMEA	AGREE
54	18	ANIMA	a NMEA	AGREE

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10NOV2015
Date

12 - NTSB response to Brown errata table of corrections