UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

Investigation of:	
FIRE ABOARD *GRANDE COSTA D'AVORIO* AT BERTH 16 IN THE PORT OF NEWARK IN NEWARK, NEW JERSEY ON JULY 5, 2023	Accident No.: DCA23FM039

Interview of: RENATO MANDAPAT, Chief Engineer
Grande Costa D'Avorio

via Microsoft Teams

Thursday,
February 22, 2024

The above-entitled matter came on for hearing, pursuant to notice, at 8:00 p.m. Eastern Time.

APPEARANCES:

INVESTIGATIVE TEAM:

CDR CHRIS BARGER
United States Coast Guard

LT. BRANDON REED, Recorder
United States Coast Guard

LCDR STEPHANIE MOORE, Assistant Investigating Officer
United States Coast Guard

LCDR KATIE WARD, Legal Advisor
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WILLY PITTMAN
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BART BARNUM, Office of Marine Safety
National Transportation Safety Board

NANCY McATEE, Fire and Explosion Specialist
National Transportation Safety Board

PARTIES-IN-INTEREST:

GARY LIPSHUTZ, ESQ.
City of Newark, New Jersey

PAUL KIM, ESQ.
Squire Patton Boggs
Counsel for Port Authority

JOHN LEVY, ESQ.
Montgomery McCracken
Counsel for Grimaldi Deep Sea

GINO ZONGHETTI, ESQ.
Kaufman Dolowich
Counsel for Ports America

TANNER HONEA, ESQ.
Freehill Hogan & Mahar
Counsel for American Maritime Services

I N D E X

P R O C E E D I N G S

(8:10 p.m. EST)

CDR BARGER: All right. Good evening. Today is February 22nd, 2024, and the time is now 8:10 p.m. Eastern Standard Time. We are back on the record for the formal hearing regarding the fire and subsequent fire fatalities that occurred on board the *Grande Costa D'Avorio* on July 5th, 2023, in Newark, New Jersey.

I am Commander Christian Barger of the United States Coast Guard. I'm the lead investigating officer for this First District formal investigation and the presiding officer over these proceedings.

The First District Commander convened this investigation under the authority of Title 46 United States Code, Section 6301 and Title 46 Code of Federal Regulations Part 4. Our purpose is to investigate the circumstances surrounding this incident. The investigation will determine as closely as possible the circumstances and factors that contributed to the incident so that proper recommendations to prevent similar recurrences can be made.

Besides myself, the Coast Guard investigation team consists of Lieutenant Commander Stephanie Moore, Mr. Willy Pittman and Lieutenant Brandon Reed who is also the recorder. Legal counsel to the investigation is Lieutenant Commander Katherine Ward.

The National Transportation Safety Board is also participating in this hearing. Mr. Bart Barnum is the investigator-in-charge for the NTSB and is assisted by Ms. Nancy

McAtee.

The Coast Guard has designated five parties in interest to this investigation. We will now take appearances for the party as I call each. As you introduce yourself, please state your name and spell your last name for the record. Grimaldi Deep Sea.

MR. LEVY: Good evening, everyone. This is John Levy, L-e-v-y, from the law firm of Montgomery McCracken, representing Grimaldi.

CDR BARGER: Okay. Thank you. Ports America.

MR. ZONGHETTI: On behalf of Ports America, Gino Zonghetti from the law firm of Kaufman Dolowich, Z-o-n-g-h-e-t-t-i.

CDR BARGER: Okay. Thank you. American Maritime Services of New York.

MR. HONEA: For American Maritime Services of New York, Tanner Honea of Freehill Hogan and Mahar. The last name is H-o-n-e-a.

CDR BARGER: Thank you. And for the Port Authority of New York and New Jersey.

MR. KIM: Yes, Paul Kim, K-i-m, from the law firm of Squire Patton Boggs on behalf of the Port Authority of New York and New Jersey.

CDR BARGER: Okay. Thank you. And for the City of Newark.

MR. LIPSHUTZ: Good evening, everyone. Good morning, Chief. Gary Lipshutz, L-i-p-s-h-u-t-z, first assistant corporation counsel for the City of Newark. Pleasure.

CDR BARGER: Okay. Thank you. This evening, we'll continue our formal proceedings through virtual witness testimony obtained by Microsoft Teams.

Today's witness is Mr. Renato Mandapat, chief engineer on the *Grande Costa D'Avorio* on July 5th, 2023. Lieutenant Reed, please swear in the witness.

LT REED: Good evening, Mr. Mandapat.

CHIEF MANDAPAT: Good evening, sir. If you would please, raise your right hand.

(Whereupon,

RENATO MANDAPAT,

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

LT REED: Okay. Thank you. I now have a few preliminary questions for you. Will you please state your name and spell your last name for the record?

THE WITNESS: I am Renato Mandapat. Last name is M-a-n-d-a-p-a-t. And my middle name is Nietes.

LT REED: Okay. On July 5th, 2023, what was your profession?

THE WITNESS: I am the chief engineer of *Grande Costa D'Avorio*.

LT REED: And who were you employed by at that time?

THE WITNESS: By the -- I was employed by principal of Grimaldi Shipping.

LT REED: Okay. What, if any, professional certificates or

certifications do you hold related to that position?

THE WITNESS: I have my license being a chief engineer. I have also some training certificates with regards to STCW and basic training for emergency firefight, advanced firefighting, emergency first aid advanced and fast rescue boat training.

LT REED: Okay. And how long were you employed in that position as of July 5th, 2023?

THE WITNESS: I was employed as chief engineer for -- on board the *Grande Costa D'Avorio* for 6 months, but my service was -- before the fire was only 1 1/2 month.

LT REED: Okay. Thank you, Mr. Mandapat.

The following witness may require the use of a translator. Mr. Lopez, if you would please, raise your right hand.

(Whereupon,

FELIX LOPEZ

was duly sworn to interpret the questions and answers to the best of his skill, judgment and ability.)

CDR BARGER: Okay. Thank you very much. Mr. Lopez, will you please state your name and spelling your last name for the record?

INTERPRETER: My name is Felix Lopez. My last name is L-o-p-e-z.

LT REED: Thank you very much.

Commander Barger, the witness is ready to proceed.

CDR BARGER: Okay. Thank you. Lieutenant Commander Moore will be conducting the direct examination of this witness.

Lieutenant Commander Moore, please proceed.

LCDR MOORE: Thank you, Commander.

DIRECT EXAMINATION

BY LCDR MOORE:

Q. Good evening, Mr. Mandapat.

A. Good evening, ma'am.

Q. Can you give us a brief summary of your background and experience as a chief engineer?

A. Well, I was on board *Grande Costa D'Avorio* as chief engineer for my fifth contract. I took my first engineer position last 2019 up until 2023 with five vessels on board Grimaldi ships as chief engineer.

Q. And how long have you been with Grimaldi in total?

A. I was with Grimaldi since 2010 or 2009.

Q. Do you recall when your initial chief engineer's license was issued?

A. I was issued with my chief engineer license last 2019.

Q. And what flag issued that license?

A. Italian. I have my Philippine license and my Italian endorsement as chief engineer.

Q. Okay. Thank you. Have you served on any other RORO ships prior to the *Grande Costa D'Avorio*?

A. Yes, ma'am. I have served RORO ships on board Grimaldi vessels.

Q. Have you served on any other types of ships as an engineer?

A. No. I served as a chief engineer only. With other ships, I was still as a lower rank rating at that time.
Q. Okay. What types of ships were those?
A. I was on board oil tankers, almost all of the oil tankers classifications. I also was on board bulk carrier ship and reefer ships.
Q. Can you described the duties and responsibilities of a chief engineer?
A. Well, the duties and responsibilities of a chief engineer is being the head department of the -- the head of the engine department. I am in charge of maintaining the vessel's propulsion unit, the power generation unit. I am also in charge of taking care of stores and requisitions, spare parts as well. And the management of the whole engine team department.
Q. How big was the *Grande Costa D'Avorio* engine department? How many people?
A. We have only seven people on board *Grande Costa D'Avorio*, ma'am.
Q. What are your duties surrounding drills on board?
A. Being a chief engineer, my sole duty is to secure and make sure that the engine will be ready when it comes to emergency. Like when it comes to firefighting, I should make sure that the fire pumps, CO2s, ventilations, shutdowns and such or startups are all operating normally. As with oil pollution, to make sure that we have the lifeboat prepared and easily deployable when it comes

to oil pollution response, and aside from that, that's it.
Q. Generally, what are your duties surrounding maintenance on board?
A. Well, for maintenance we do follow a certain program. I recall this one as the AMOS system, A-M-O-S, which is the system where the maintenance of the machineries are recorded by running hours, and these running hours, when they reach a certain point, they will pop up in the computer and inform us that we need to do this job so it will not be overdue.
Q. Does that system tell you exactly what to check or is it just a reminder?
A. It will tell us what to check also and, you know, what needs to be done and what needs to be replaced or overhauled.
Q. What are your duties during loading of the ship?
A. During loading of the ship, usually my duty is to carry out, oversee maintenance jobs on the engine department like there will be jobs for maintenance of the main engine, the auxiliary generators and auxiliary machineries as well.
Q. What are your duties if there were a fire on board?
A. My duty if there is a fire on board is to be on the engine room, engine control room, make sure that the fire pumps are running. I am also in charge of preparing the CO2 for releasing, and keeping the ship on ready standby if it needs to maneuver or if the ship needs more power to start one more generator and everything, just to prepare everything for the emergency.

Q. Are your duties different for fire at sea versus in port or are they the same?
A. They are the same.
Q. On July 5th, 2023, where was the *Grande Costa D'Avorio*?
A. The *Grande Costa D'Avorio* was at Port of Newark, New Jersey. They were alongside that time.
Q. And what were the plans for the ship on that day?
A. The plans for the ship was they were -- we were loading secondhand vehicles, and I have a plan which I discussed with the second engineer prior to arriving in port to do an engine fuel pump maintenance and the fourth engineer will be doing some maintenance on the auxiliary machineries which is I think the sewage discharge pump.
Q. Did you have any interactions with shore-based personnel while the ship was in port that day?
A. No, ma'am. I didn't have any interactions, ma'am.
Q. When were you first made aware that there was a fire on board?
A. I was made aware of a fire on board when I was awakened by my sleep in the night of July 5 at around 9 p.m. when an alarm went off, fire alarm went off indicating. It's in -- an alarm in my cabin, ma'am.
Q. What did you do after you heard that fire alarm?
A. Well, I woke up immediately. I heard a commotion outside my cabin along the alleyway, too much like people are running around.

I started to go for my coverall and my -- and I was changing to my coveralls as I heard the captain page on the ship's intercom for me. He said the chief engineer, please go down to the engine room.

Q. Is that what you did?

A. Yes, ma'am. After I changed to my coverall, I immediately ran down to the engine room.

Q. All right. And when you arrived at the engine room, what happened next?

A. When I arrived at the engine room, I already saw the fourth engineer in the engine room, and he informed me that the main fire pumps are already running. And so I asked him to check if everything is okay. And then while I was there, also the third engineer came also down the engine room into the -- inside the engine control room.

Q. Were you aware of where the fire was at that time?

A. No, ma'am. I wasn't aware yet at that time where the fire is.

Q. What did you do after you spoke with the fourth engineer and the third engineer?

A. So after I told them some instructions, to check the fire pumps, I called up the captain and told me -- and I informed him that engine team is in the -- in their position or as duty required. And that is when he told me that they have fire on deck 10. That's just what he said.

Q. Was there a checklist or a guide to tell you what to do as you were responding to that fire?
A. The checklist usually comes with the duties and responsibilities being written on the muster list, ma'am.
Q. Did you refer to it or use it on July 5th, 2023?
A. No, I didn't refer it because I already know it by -- as per my duties, ma'am.
Q. Okay. You spoke about a few interactions with the captain. Did you hear any orders given by the captain other than the two that you previously mentioned to go to the engine room and then that report of the fire being on deck 10? Did you hear any other orders given by the captain at that time?
A. At that time, I was just given to -- kept on standby and wait for further instructions.
Q. While you waited further instructions, what did you do next?
A. I was just monitoring the fire pumps, pressures of the fire pumps and making sure that we have enough power to support the generator once we start to get -- have, you know, short circuits or any sort of something to happen take.
Q. As you were monitoring those systems, were there any problems or issue?
A. No, ma'am. I didn't encounter any problems or issues at that time.
Q. And were the fire pumps at the pressure you expected them to be?

A. Yes, ma'am. They were running at 9 bars, ma'am.
Q. Shifting to the CO2 system, what are the activation procedures for the CO2 system on *Grande Costa D'Avorio*?
A. On the *Grande Costa D'Avorio* for initiating the CO2 release, I have to prepare a certain valve which is what we call the pilot valve. This what I have to open on a cabinet on the CO2 room itself. And we have also remote controls in deck 12. That's the CO2 room for release cabinet in deck 12 and that is included in fire station number 1, and the one in deck 3 which is located just outside the elevator room, and it is -- this one will also be remotely activated, but this CO2 will release only on the engine department whereas the one in deck 12 will release CO2 into the cargo spaces.

So in releasing this one, I was -- I went to the CO2 room, prepared the pilot cabinet. In this pilot cabinet, once I open this one, there will still be no alarm or whatever. It will be just pressurizing the system of valve cabinets. This one will just open and pressure the valve cabinets for releasing the main valve and the releasing of the zone valves. So it will be a pilot valve and then on the cabinet valve itself where the zone is included.

So once I open like what we had was fire Zone C, which is from deck 6 to deck 11. So I opened this cabinet. Immediately when I opened this cabinet, I already activated an alarm which indicates that CO2 is giving out an alarm and that CO2 will be

releasing -- will be released. So upon opening this cabinet door, I will see in front of me another Plexiglas which has a timer and this timer -- in order for me to open this Plexiglas, I have to align a lever to open, and this lever will be only aligned after a certain time has elapsed. And thereby, once I pull out the pin of this lever, it will start to count to -- to count down for about 50 or a minute or so, and then this will also activate -- when I pull out the pin and this timer starts, this one will activate the shutdown of the ventilations, shutdown of the front extractors in the cargo space involved with the fire. And then once the lever has already aligned itself with the Plexiglas hole, I can open now the door and I can already operate the two valves within this cabinet which is the main valve, CO2 main valve and the CO2 distribution valve or the valve which goes into the affected area.

So I open this main valve and this one will only -- will remotely open the valve actuator. So it will already open the valve actuator which means that CO2 already on the main line, but it's still within the branch, still not going into the space affected. So when I open the branch valve which is Zone C, Zone C is where the fire is ongoing, and this one will now -- CO2, once I activate this valve, it will remotely open the branch valve going to Zone C, and it will now -- CO2 will now go through the main line, through the Zone C branch going to -- into the cargo spaces. So this one will take for zone -- for all the cargo spaces. It will take 10 minutes for CO2 to discharge. And after 10 minutes,

it will automatically -- the main valve will automatically shut down by itself or close by itself which means that CO2 has already released for a certain quantity for that certain zone.

And that's when I have to report that CO2 has already been released to affected area, and the main valve is already closed. And that is also where the captain will be waiting for a certain time or as he demands it for the firefighters to check or inspect if the fire was out or was it reduced or is it still ongoing.

Q. Just a few questions on that. When you first talked about the process, is there anything that has to be done before you activate the system to isolate or close any of the zones?

A. Yes, ma'am. Actually, there is these weater tight doors that are open which should be closed before releasing the CO2 which from what I know is that it's standard procedure for the captain to give instructions to everybody to make sure that the doors are closed, all water tight doors are closed, ventilation and fire dampers are all closed, musters are all done, and there will be nobody inside the zones where CO2 will be deployed, ma'am.

Q. When you conducted fire drills on the ship, did you incorporate closing those doors as part of your fire drills?

A. No, ma'am. We didn't -- I didn't experience closing doors when we were doing drills as the doors were already closed when we were doing the drills, ma'am. It's usually done at sea, ma'am.

Q. And you talked about firefighters checking to see if the CO2 was successful. When you say firefighters, are you referring to

the ship's crew firefighters?
A. Yes, ma'am. I'm referring to the ship's crew firefighters which includes fire team number 1, which is composed of the chief mate and the bosun, ma'am.
Q. Who's authorized to activate the CO2 on the crew?
A. Well, I am the sole, primarily in charge of activating CO2 release in the engine -- in the whole ship, ma'am.
Q. Okay. And you mentioned a few areas that have controls. Would you have to go to those areas to use those controls after activating the pilot in the CO2 room?
A. No, ma'am. Those controls are like secondary controls. Like if, for example, I cannot go into the CO2 room, I can still release CO2 in the bridge or on the aft side of the bridge which is fire station number 1. And I have also a remote control in deck 3 or deck 5 that will be just about deck 3, because the deck 5 is a moveable deck and we use what we consider this as deck 3 because it's where the elevator for deck 3 is located. And that door will also be remote control for operating the CO2 just in case we have fire only in the engine room.
Q. Okay. Thank you for clarifying. On July 5th, 2023, can you walk me through the activation of the CO2 system on that day?
A. So -- well, I was already on standby in the engine control room waiting for further instructions when -- from the captain when the captain called me and told me to go to the CO2 room to prepare CO2 release into the affected area. That was around 2130

or 9 p.m. in the evening. So once I received the instruction from the captain, that is by telephone, to go to the CO2 room, I immediately ran together with the third engineer who is my assistant at the time. We immediately went to the CO2 room and from there, I tried to call the captain by telephone from the CO2 room, but we couldn't understand each other. He was receiving -- I can hear him answering the call but he can't answer me. He can receive -- the captain cannot hear my voice. So I asked the third engineer to go up to deck 5 and to relay the message from me by radio to the third engineer in deck 5, and from there to the captain on the bridge. So I just gave him instructions to the third engineer that we are already here in the CO2 room and awaiting for further instructions.

So the third engineer relayed that to the captain, and the captain answered it by radio to the third engineer who also relayed it to me in the CO2 room. We have to do this situation because the CO2 is also part of the dead zone where communication is not that good by radio. So when the captain already knows that we are in the CO2 room, we waited for his instructions to release and as we are waiting, I can -- we can hear on the radio of the third engineer that they were doing headcounts already. They were also preparing doors to be closed and then when the captain gave instructions to the third engineer which he later related to me that we are to release the CO2.

Q. Do you remember the last time you used the phone in the CO2

room before the incident?
A. Yes, ma'am. We did -- we were doing like a month before, it would be like June when we also had the CO2 release simulation and also we did communications by telephone from the CO2 room to the bridge and from the bridge to the CO2 room.
Q. Did you have any trouble during --
A. No.
Q. -- calls?
A. No, ma'am. We didn't have any problems with the telephone that time.
Q. Okay. So, were there any problems releasing the CO2 on July 5th, 2023?
A. No, ma'am. We didn't have any problem with regards to releasing the CO2.
Q. And I think you might have mentioned it earlier, but which zone were you releasing on July 5th, 2023?
A. I was releasing CO2 into Zone C, that's Charlie, ma'am. Zone Charlie.
Q. And I'm sorry to go back there, but the phone in the CO2 room, is that a sound-powered phone?
A. It's a telephone, ma'am. It's not a sound powered. It's a typical normal telephone line.
Q. Okay. And you mentioned closing of doors. Were you made away of any problems sealing CO2 protection Zone C, on July 5th, 2023?

A. No, ma'am. I wasn't aware of doors being not closed, ma'am.
Q. Did you receive any confirmation that the door was or had been ordered to be closed?
A. I received only an instruction to release but any instruction to close the doors, I did not receive anything from the captain, ma'am.
Q. Earlier when we were talking about the system in general, you talked about ventilation. What are the ventilation closure procedures on board?
A. Well, there are actually two procedures which is different from each other. One would be by manual closing this one. When we say manual closing, the captain will have to push a pushbutton in the bridge which will take off the breaker in the engine control room thereby shutting down the extractors, ventilations and the pumps -- I mean fans, for the fans itself.

So another method is when you open the CO2 door with the cabinet, and when you pull out the pin of the Plexiglas, that's when the automatic shutdown of ventilation and fans will occur, ma'am.
Q. Okay. During your fire drills, was manual activation of the -- that pushbutton on the bridge, was that part of the fire drills at all?
A. Yes, ma'am. It is a part of the fire drill, and it is also part of our routine task safety checks which we do every Saturday that we do shutdowns and checks, safety checks Saturdays, ma'am.

Q. And on July 5th, 2023, was it manually activated for the ventilation or was it through the CO2 system?
A. It was already manually activated. In fact, when I came down to the engine room from my cabin, I already noticed that the fans and the ventilators were already shut down, ma'am.
Q. Was that something you would expect to see when you went to the engine room or was that different?
A. Well, I already expected that the captain will be shutting down manually by pushing the emergency stop of the machineries, ma'am.
Q. Are you aware if the ventilation was ever reactivated on July 5th, 2023?
A. That was already after I released the CO2, when the captain already give instructions for me to go back to the engine control room and reset the breakers for the ventilations and the fans, ma'am.
Q. Do you recall about what time that was?
A. It will be like about 1 1/2 hour after I release the CO2. So it will be like 9:30, 10:30 -- about 11 or about midnight, ma'am.
Q. Just going back to your actions on the evening of July 5th, 2023, after you released the CO2, what did you do next?
A. I was instructed to be on standby in the CO2 room, ma'am, and my -- when the captain -- when I called him, informed him that the main valve is already closed and he told me to -- I asked him if he needs more CO2 into the affected area, and he told me, no, not

yet, just keep on standby in the CO2, and I will be giving you instructions later on. And, he mentioned about some people are missing in the cargo space.

Q. Were you ever made aware who those people were?

A. No, ma'am. I wasn't made aware, but I was just thinking at that time, that it was one of our crew who were missing as they were -- as they are supposed to do checks when -- after I released the CO2.

Q. Did you ever leave that standby position for any reason?

A. No, ma'am. I kept CO2 room for -- at standby until I was given the order to go back to the engine control room.

Q. Okay. When you got that order to go back to the engine control room, do you know about how long that standby mode was?

A. Well, I was in the CO2 room for almost like 1 1/2 hours, ma'am.

Q. Okay. And then you went to the engine control room and what happened next?

A. When I went to the engine control room, I informed the captain by telephone that I am already in the engine control room and waiting further instructions. And he told me to switch on the breakers for the ventilations and the fans which first I questioned him why we have to start as I have just released CO2 into the system, and he told me that they have to look for the people who are missing. And that's just the information that he gave me, and he didn't give me any more details about it.

Q. Okay. And then did you comply with that request?
A. Yes, ma'am. I did comply, ma'am, but as they have to save lives. So I have to save -- to start -- to switch on the breakers, ma'am.
Q. Okay. And then what happened?
A. When I switched on the breaker, I was monitoring on the computer on the engine control room of the -- you know, if it's working properly. So I have an indication there where the red which is closed will turn into a green position which means that the ventilators are open or the dampers I mean are open. So once I switch on the breaker, this one will automatically open the dampers but not the fans. So when I was monitoring the dampers to be opening, I also observed that fans in deck 10 were operated for about 30 minutes, ma'am.
Q. And after that, what did you do next?
A. After that, I was still on standby in the engine control room when the captain again called me up and asked if I can do something about the door in deck 12 which -- the weather tight door in deck 12, that if I can close this one, and then I asked the captain, you mean that this one is still open? And he said, yes, that if there a way that we can close this one. And I said that there is a way, but we have to try it first, if we can do something about it. So he asked me to go up to deck 12 by the stairs and then immediately when I was going up, that's where I reached deck 12, and the captain gave me instructions of what to

do with the door that was left open in deck 12.
Q. And approximately how long when you were waiting on standby in the engine control room after the fans were running on deck 10, and then getting asked to go up and check on that door on deck 12, about how long was that?
A. When going up to the stairs, ma'am, going up to deck 12 from the engine control room? Well, it too me just about 5 minutes going up to deck 12, ma'am. So --
Q. Once you arrived -- I'm sorry. Go ahead.
A. So when I arrived there, the captain gave me instructions to discuss things with the -- I've already seen the -- the first time to see firefighters from port -- from the port, are already in deck 12, ma'am.
Q. And when you arrived on deck 12, what was the initial report you received?
A. When I arrive in deck 12, the captain gave me -- told that this one was -- they tried to close this door, the weater tight door in deck 12, but they can't close it. So I asked if -- immediately, I run, I check and inspected the situation and asked for spare breathing apparatus or at least face mask so I -- because the smoke was too much to -- and the heat was also there. And, I went asked firemen from -- I'm not sure if it's from New York or New Jersey, asks the fireman there if they have some spare breathing apparatus that I can borrow to go into the pilot and do something with closing the doors. And then the captain --

I also gave instructions to the first engineer, I called my engineers and the fitters if we can do something, if we can try to unhook the pin because our priority is to unhook the pin which is securing the door from the frame. And that way, we can manually close the weather tight door from the outside.

As I -- we were trying to operate the panel by manually operate, operating the solenoid valves but the smoke and heat is just too much for us as we don't have spare breathing apparatus and face masks. At that time, they were already used up, ma'am.

Q. You said they were already -- the ship's breathing apparatus were already in use and not available?

A. Yes, ma'am. They were already used up, ma'am.

LCDR MOORE: Lieutenant Reed, can you please pull up Coast Guard Exhibit 8?

LT REED: Yes. Just one moment.

BY LCDR MOORE:

Q. And while he's pulling that up, you mentioned controls for the door are inside the space. Are there controls for the door anywhere else on the ship?

A. We have the controls for this certain door. It is only located inside the ramp, ma'am.

Q. Were there other doors like this one on board the ship anywhere else?

A. Like for this one, ma'am, we have doors on deck -- going to deck 1 and 2, and doors going down to deck 3, 4 and 5, ma'am.

Q. And the other doors, are there multiple controls or only one?
A. For the other doors, ma'am, their control is basically just within the vicinity of these doors, ma'am.
Q. Okay. And we have Coast Guard Exhibit 8 on the screen. Is this photograph familiar to you?
A. Yes, ma'am.
Q. Can you tell us what this is?
A. This one is the water tight door going to -- when you go down, it will be deck 11 but on this area, this one is already deck 12, ma'am.
LCDR MOORE: Lieutenant Reed, can you scroll down to the second photo a little bit?
CHIEF MANDAPAT: Yeah, that will be deck -- this deck will be deck 12, and you open this door, it will go down to deck 11.
BY LCDR MOORE:
Q. And this door, are there requirements on when it can be opened or closed?
A. Well, actually, ma'am, this door will be -- supposed to be shut, closed, when the vessel is preparing to leave the port. Once the vessel starts to sail and this one is open, it will give an alarm to the bridge indicating that weather tight doors are not closed and once the captain changes the mode of the vessel from sea to -- to sea -- from harbor to sea, and any weather tight doors that are open will give an alarm. So they should know that it should be closed when going to sea and open when they will be

doing cargo operations, ma'am.

LCDR MOORE: Lieutenant Reed, can you scroll onto the next page please?

BY LCDR MOORE:

Q. Is this the same door we've been speaking about? Can you go back on the story from July 5th, 2023? You asked for the breathing apparatus. One was not available, and you're discussing with the shore firefighters and the crew of the ship on what to do next. What happened after you realized there was no breathing apparatus available?

A. So we were actually trying to pull out the pin. If you can see on the -- from what I'm look -- it will be on the -- if you see it by the ship, it will be the starboard frame or -- yeah, it will be -- yeah. If that one is -- it will be the -- if you are looking at this one, it will be right-hand corner, there will be frame in the door on the other side. That frame has a hole where the pin, locking pin of security -- of securing this door is pushed in. So we have to pull out this pin in order for this door to go down hydraulically, but since we cannot control this -- by hydraulically -- by hydraulic. So what we did was we tried to pull out the hydraulic hose connection on the cylinder so we can jack out the pin on this door but what's happen is the weight of this door is pinning down the pin which we cannot pull it out, ma'am.

Q. And just for the record, using like left or right or up or

down, where is this pin on the photograph?
A. On the photograph, it is not indicated on this one, but you can -- but once you get under this door, there should be a cylinder there on both sides, and a pin connected to it which will go into the frame of this door, ma'am.
Q. When you were discussing the pins, were you made aware of any attempts that were made to close the door prior to your arrival?
A. Yes, ma'am. The captain told me that they tried to close the door by the panel but they weren't successful in doing so. And so did the other crew, that the bosun also tried to close this one but they were not able to close it, ma'am.
Q. Did you receive any reports of what the specific issue was in getting the door closed?
A. No, ma'am. I didn't receive any issues as they were just telling me that it's not closing. It's not closing.
Q. If there were problems with the door closing, would there be any visual or audible indications that there was a problem?
A. It should be. It should indicate that a fault is on the panel itself but when I was asking them if they see something blinking or a red light, the bosun and the captain were just telling me that what was blinking was the red color -- the green color, not the red color.
Q. And do you know what a blinking green light would indicate?
A. The blinking green light indicates that the pumps on the power pack room is running, and it's blinking which means that

it's starting to prepare by itself. And once it stops to blink, and it shows full green -- red -- green color, this would mean that the pumps are already in use and hydraulic is already circulating within the system.

Q. We have some VDR information and at some point, there's a fault that appears for the door, a PLC-2. Are you aware what that fault is?

A. At that time, ma'am, I wasn't aware that there was a PLC fault on the system.

Q. But if you hear the term, PLC-2 fault, would that be something you're familiar with?

A. Yes, ma'am.

Q. Can you explain what that fault would indicate?

A. PLC, it's process logic controller which means that there was an interruption of the operating system whereby it could be sensors were broken or -- and that the door cannot identify itself by the sensor if it's open or if it's closed, ma'am.

LCDR MOORE: And, Lieutenant --

CHIEF MANDAPAT: So basically when the door is open, it should indicate that the sensors are aligned in the open position, but once this connection is broken, so it will just indicate that there is a fault and that the system doesn't know if the door is closed or if it's open. So a fault is there and you have to check what is really the condition of the door, if it's really open or if it's really closed, not unless you realign itself again. Then

the system will know that it's open. Then the logic is to -- the process for it is to close the system or the door, ma'am. But if it's not recognizing whether the door is open or closed, it cannot work on whether it'll have to close it or open it up, ma'am.

LCDR MOORE: Thank you for that explanation.

Lieutenant Reed, you can pull down Exhibit 8 for the time being.

BY LCDR MOORE:

Q. Prior to July 5th, 2023, were you aware of any problems with the water tight door on deck 12?

A. No, ma'am. I was actually even talking with the chief mate after every operation of the vessel when it comes to loading and discharging, and if he encounters any problem with the ramps, the doors or the double decks and he was telling me that everything is okay except for some minor leaks on the hoses, hydraulic hoses which we always replace it with new ones when we -- when there are leaks that occur, ma'am.

Q. And AMOS, the maintenance system you spoke about earlier, was all the maintenance for that door conducted prior to the fire?

A. As far as what I can see from the AMOS system, it was done before I came on board, ma'am, and they actually did some tests on the CO2 release considering it is partial or part of the securing the CO2 release that all doors must be closed, ma'am. This was done during the vessel's last dry dock, ma'am.

Q. Do you recall when that was?

A. Dry dock was done on the December of 2022 I think.
Q. And do you remember the last time the door was closed prior to coming to Newark?
A. Yes, ma'am. The door was closed during cargo operations in Baltimore.
Q. And on July 5th, 2023, were any other doors like this door closed on the cargo decks prior to the weather tight door on deck 12?
A. Yes, ma'am. Actually the door going out to the weather deck was open and they were able to close it successfully. The door going to deck 3, 4 and 5, which is same weather tight door was also closed successfully and also the door going down to deck 1 and 2 were closed successfully at the time, ma'am.
Q. And these other doors, are they on a different system than the door on deck 12 or are they all sharing one common system?
A. They are all sharing one common system or one common power pack for pumps and motors for all the doors, all weather tight doors, ma'am.
Q. Do you know what time those other doors were closed?
A. Well, I was going to the CO2 room. So I have to go outside engine control room, going out by the stairs and going into the rampway. That's when I noticed that they were already closing weather tight doors going to deck 1 and 2 and water tight doors on deck 3, 4 and 5. And I already saw the water tight door in deck 6 which was already closed, ma'am.

Q. And at any point during your time on deck 12, was the door able to be closed?
A. I beg your pardon, ma'am.
Q. When you were on deck 12, kind of troubleshooting the door to get it closed, did it ever get closed?
A. When I was troubleshooting, we didn't -- we were not successful in closing the door, ma'am.
Q. Were any other attempts made besides the interaction you talked about with the pins? Were any other attempts made to either close the door or seal it off in some other way?
A. Yes, ma'am. We -- the firefighters were putting a vinyl or a tarp to cover this door, but the pressure of the air coming out was just too much that it's just blowing it out, ma'am. And we also tried to disconnect the cylinders hoping that we can jack out the pins but it didn't work, ma'am.
Q. You mentioned a lot of parts and procedures. Is there a document that tells you how to operate that door?
A. Yes, ma'am. By emergency, we can operate this one, ma'am, but since the panel is inside the affected area, we tried to get some breathing apparatus so we can go inside the ramp and operate this one, but we didn't have any available breathing apparatus. So we just can't go inside the ramp, ma'am.
Q. And does this -- do the doors on board have a manual to tell you how to operate them?
A. Yes, ma'am.

LCDR MOORE: Lieutenant Reed, can you please pull up Coast Guard Exhibit 10?

LT REED: Yes. One moment.

LCDR MOORE: You might have to zoom in just a little.

BY LCDR MOORE:

Q. Are you familiar with this document?

A. Yes, ma'am.

Q. Can you explain to us what this is?

A. So basically these doors have the same system, these three doors, door 2-3, rampway door 3-6 and the door deck 6 -- I mean there's four doors, rampway door deck 12, has basically one system of operation and it's all the same. And operating this door is that you have to just -- on the panel, operating panel itself. So it will be a switch which you will operate to start the pumps, the hydraulic pumps, and these pumps, once you push the button for opening or closing, it will activate the cylinder, hydraulic cylinders which will go to open or close the door. And, another sent of cylinders which will secure the door or this will be the securing the clips or the pins for this system. So it says that initially the door is moved approximately 100 millimeter clear of the frame. So this one is what I was talking about, that we cannot pull out this pin from the frame because the weight of the door is pinning out -- down on the pin. So this why you have to move it so that the door will be clear, the pin will be cleared of the hole, and it can pull out the pin. And once this one is

pulled out, it will give an indication that pins or bolts or clips are off. And this one will give an indication for the PLC to start lowering or opening the door by itself, ma'am.

So when it comes to the emergency operation, so, you'll have to do a portable hand pump if the pumps or the hydraulic pumps are not working, but if it's working, you don't have this portable hand pump, but you can you just activate this solenoid valves by pushing the open position or the closed position. That way, you are bypassing the automatic control. So it will be directly activating on the valves. So when you push to open, you are actually opening a certain ramp or a port hole that hydraulic will be passing in pressurizing the cylinders to either close or open the system. So.

Q. And this document says ramp 4A door deck 12. Is the same we've been referring to, the weather tight door 12?

A. Yes, ma'am.

LCDR MOORE: Lieutenant Reed, can you go to page 3 please?

BY LCDR MOORE:

Q. You spoke about a portable hand pump unit.

A. Yes, ma'am.

Q. Was there one available on the ship?

A. We have actually two available on the ship, ma'am.

Q. Were they something you considered using when the door would not shut?

A. Yes, ma'am. We considered using this one. Actually we did

brought up one already in deck 12, but since we cannot go inside the ramp where we have to connect the hoses externally because of the smoke and the heat that was coming out of the ramp. So we just have to -- and I also have the power packs are all running. So I can -- you can sense that the hydraulic oil is running in the system as they were able to close the water tight doors at 6 deck, 2-3 and on the deck 1 and -- 1 and 2, ma'am.

Q. So just to be clear, if you have the hand pump, you still have to connect it inside the space to be able to use it?

A. Yes, ma'am.

LCDR MOORE: Okay. Lieutenant Reed, can you go to page -- I'm sorry. One minute.

BY LCDR MOORE:

Q. You talked about the solenoid valves and manipulating those as a different emergency procedure. Those valves are also inside the space for weather tight door 12?

A. Yes, ma'am. They are inside the ramp, ma'am.

Q. Do you recall what color those valves are?

A. When we were receiving it, they were colored black and blue and silver, like stainless steel, ma'am.

Q. Okay.

LCDR MOORE: All right. Lieutenant Reed, can you go to page 5 please? And just towards the bottom.

BY LCDR MOORE:

Q. Referring down to the bridge indicators, the indicators on

the bridge would show if they door's not closed. Is that correct?
A. Yes, ma'am. Red is not closed, ma'am.
Q. And that would be for water tight and weather tight doors or is that different?
A. So it will be -- for the weather tight doors, ma'am, including the ramp itself, ma'am.
LCDR MOORE: Can you go to page 12 please?
BY LCDR MOORE:
Q. And you spoke about the solenoid valves for emergency operation. Is this the emergency operation you were referring to or is it different what's on the document?
A. This one is basically what we do when we use it for emergency operation, ma'am.
Q. Did you ever practice or drill emergency operation of the weather tight door on deck 12?
A. No, ma'am. I never did drill or practice of operating the emergency operation of these doors, ma'am.
LCDR MOORE: And then page 14.
BY LCDR MOORE:
Q. And I think you already clarified this for me but under emergency operation, it talks about the portable hand pump and being able to operate the door by external means, but to clarify that, you still have to hook that portable hand pump up inside the space to operate it?
A. Yes, ma'am.

Q. Okay.

LCDR MOORE: And then page 17.

BY LCDR MOORE:

Q. Earlier you were testifying about -- you were talking about a green light, a blinking green light indicator. Would that be on this operation panel?

A. Yes, ma'am.

Q. Can you tell which one of the lights you would expect when you heard that there was a green flashing light?

A. So it will be on this green which we have the name run on it, ma'am.

LCDR MOORE: Okay. The witness is referring to the first green button on the middle row in the second column.

BY LCDR MOORE:

Q. If you had a PLC fault, would that indicate anywhere on this panel or somewhere else?

A. Yes, ma'am. It will indicate here on the green or red, red color fault. So it will also indicate on the computer in the ramp or hydraulic power pack room because there is an indication -- an indicator lights on the panels which would indicate which one is not working, ma'am.

Q. Would the bridge also receive an indication?

A. Yes, ma'am.

LCDR MOORE: Just for the record, the witness identified the red indicator on the first row in the second column.

Okay. Lieutenant Reed, you can take down Coast Guard Exhibit 10. I'm just reviewing really quickly my notes.

BY LCDR MOORE:

Q. So just as the events unfolded on deck 12, were you told any additional problems with the door prior to your arrival after starting to discuss the actions that the crew took?

A. There was no problem with the doors at that time, ma'am.

Q. Okay. That is all the questions that I have for you at this time. So I think I'm going to pass it over to Commander Barger. I think we're going to short break before we move on to any other follow-up questions.

CDR BARGER: Okay. Thank you, Lieutenant Commander Moore.

The hearing will now take a 5 minute recess. The time is now 9:26 p.m. Eastern Standard Time. We'll reconvene at 9:31 p.m. Eastern Standard Time.

(Off the record at 9:26 p.m. EST.)

(On the record at 9:32 p.m. EST.)

CDR BARGER: The time is now 9:32 p.m. Eastern Standard Time, and the hearing is now reconvened and back on the record regarding the fire on board *Grande Costa D'Avorio.* This is a continuation of Mr. Mandapat's testimony.

Mr. Mandapat, as a reminder, you're still under oath.

CHIEF MANDAPAT: Yes, sir.

CDR BARGER: And I will turn it back over to Lieutenant Commander Moore.

LCDR MOORE: Thank you, Commander. I'm now going to go around to the rest of the investigation team for any follow-up questions. Commander Barger, do you have any questions for this witness?

CDR BARGER: Yes. Thank you.

BY CDR BARGER:

Q. Mr. Mandapat, I appreciate all of the great information you've provided us so far. I just have a couple of follow-up questions to ask you.

A. Yes, sir.

Q. Mr. Mandapat, you mentioned on July 5th, 2023, while the ship was in port, that you had some of your engineers doing maintenance on it sounded like several different systems in the ship. Is that correct?

A. Yes, sir.

Q. Was there any maintenance being done on the hydraulic door system while in port that day?

A. No maintenance work carried out, sir.

Q. Okay. And to clarify, that includes any work on water tight door number 12?

A. Yes, sir.

Q. And then with regards to that hydraulic system for the water tight doors, we talked a little bit about what happens when there's a fault in the system. So if there's a fault that occurs with one of the doors, does that render the door inoperable or can

it still be used?
A. When the fault, like if it's open, and it can't be closed, we still have other options where we can manually close this door as well as when it's in open position, we can still have options to manually open the door from using either the one that they have shown with the solenoid valves where you have to push with your pin with a pin or by the use of these external portable hand pump. Q. Okay. And then you mentioned that the hydraulic doors and the decks that can be hydraulically raised and lowered, all operate off the same power pack.
A. Yes, sir.
Q. Is that correct?
A. Yes, sir. That is correct.
Q. Can multiple doors and decks be moved at the same time?
A. Actually they can be moved all at the same time but we prefer to move it one-by-one so hydraulic pressure will not be distributed all over the system.
Q. Okay. But it would be possible to operate more than one at the same time?
A. Yes, sir. It would be possible.
Q. Okay. And if there is a fault or alarm related to the operation of one of the water tight doors, you mentioned an alarm, I believe you said in the hydraulic control room. Is that correct?
A. Yes, sir. That's where the power pack is.

Q. Okay. Would you also hear the alarm in the engine control room?
A. No, sir. It will be just a small LED light that would be indicating -- it will be just blinking, no audible alarm, sir.
Q. Okay. And that blinking light, is that located on the power pack control panel or is that something that is in the engine control room itself?
A. That is in the power pack control itself, sir, on the power pack panel board, sir.
Q. Okay. So if there were to have been a fault with the system while you were in standby, either in the CO2 room or your time in the engine control room, would that have been something that would have come to your attention?
A. Nah, Not unless they will be informing me that they have a problem with the door closing or opening or whatever it is. That's only where we get information and we have to go to the power pack room to see and check which one is the problem and which have this red blinking light is on.
Q. Okay. And do you have a member of the engineering staff standby in the hydraulic room while a door is being operated?
A. During the time, no, sir.
Q. Okay. Switching then to the CO2 system, how often does that low pressure CO2 system get inspected?
A. Well, we always do the -- the pressure is inspected by our electrician every day. He has a log of it taking readings of the

pressure and temperatures every day, and there is also a monitor on the bridge. It's a mimic pressure gauge or pressure indicating system where it is digital and what we have on the CO2 room is analog or it's just a -- you know, the pressure gauge that we have with the dial. So that will be in the CO2 room, and on the bridge will be a digital pressure transmitter. In the control room, in the engine room, we don't have anything to monitor the pressure of the CO2.

Q. And does the CO2 system ever get inspected by an external party that tests the system in its operation?

A. Yes, sir. This one is usually done during dry dock of the vessel or when they are replenishing the CO2 like the CO2 level gets way, way down, that they have to refill it again with CO2. That's the time that they do tests, external -- by external companies. They do tests and check for leaks, why the quantity has dropped to such a level. And they'll be reporting this one to the company for the results that the external companies get.

Q. Okay. And did that ever occur while you were on board the *Grande Costa D'Avorio*?

A. No, sir. It never occurred but from the turnover that the former chief engineer gave to me, the former chief engineer informed me that they were -- that the CO2 system was just recently refilled during the vessel's last dry dock.

Q. Okay. And you mentioned, you mentioned that there's two remote stations where CO2 can be released. I believe you

mentioned deck 12 can only release CO2 into the cargo spaces?
A. Into the cargo spaces. Yes, sir.
Q. Okay. And then the station that's located at deck 3, where can --
A. Yes.
Q. -- that discharge CO2?
A. For the compartments on deck 3, it will be just discharging CO2 into the engine room depart -- engine room spaces only.
Q. Okay. So the CO2 room, the control there is the only place where you can discharge CO2 throughout the entire system?
A. Throughout the entire ship, sir.
Q. Okay. And then you mentioned that it was possible for a second release of CO2.
A. Yes, sir.
Q. Could you describe how that would occur?
A. So this will be just basically I have a certain push button on the panel board of the CO2 where it says additional CO2. So I will just have to push this one and the main valve that I mentioned earlier which automatically closed when -- after an elapsed time of 10 minutes. So I will have to push this button so this valve, main valve will open also thereby releasing CO2 into the affected area. As long as I push this button, it will keep injecting CO2 into the affected area. Once I release this button, this one will close the valve and stop discharging CO2 into the area.

Q. Okay. And, how much CO2 is left in reserve after discharging into Zone C for 10 minutes?
A. For 10 minutes, when I -- when I checked how much level was remaining, I've seen 14 cubic meters of CO2 remaining on the tank by the level itself.
Q. Okay. And by depressing that button, you could discharge all of that remaining CO2 into the -- Zone C?
A. Yes, sir. By pressing this button, I can discharge all of the remaining CO2 into the affected area, sir.
Q. And is it possible to discharge the extra CO2 from either of those remote stations you described?
A. Yes, sir. They can also release it in deck 12, sir.
Q. Okay. And that would be the same procedure?
A. Yes, sir. Just pushbuttons, sir.
Q. Okay. And I believe you previously mentioned that you had advised the captain that there could be a second CO2 release. Is that correct?
A. Yes, sir. I asked if he wants to inject more CO2 into the Zone Charlie or Zone C. And he just told me to -- no, no. We have some person missing. Just keep on standby in the CO2 room.
Q. Okay. And was there ever another discussion on releasing more CO2?
A. No more, sir. He didn't give me any more instructions for releasing CO2, sir.
Q. Okay. And is it possible at all to connect a water supply to

the CO2 system piping so as to use that system as a sprinkler system if you needed to?
A. Yes, sir. In fact, we have a connection for air. We have connection for water to be injected into the affected area, sir.
Q. Okay.
A. And to be used as a sprinkler system.
Q. Okay. And can you describe how that process would work?
A. It would be basically the same thing. Only we will be connecting the hose of the fire, fire hose into the main line and then opening the valve of the fire hydrant going into the system -- going into the CO2 line and going into the branch and spray water into the affected area.
Q. Okay. And is there an existing connection for that to be done or would piping have to be modified?
A. There is already an existing connection. We just need to connect fire hose to it, sir.
Q. Okay. And if you needed to, would the water supply from the ship's own fire pumps be sufficient to run through the system or does it have to be shoreside?
A. It will be available by the power of the fire pumps on board, and it can also be used shoreside fire hoses, sir.
Q. Okay. And was utilizing the system in that way with water something that was ever discussed?
A. Yes, sir. I mentioned it to the captain that if he needs, we can connect fire hose to the CO2 instead of injecting CO2 into the

system. This would serve as injecting water into the system, but he mentioned it to -- we will still have to talk it over as we are afraid for the stability, for the treatment stability of the vessel so that once we inject too much water into the cargo spaces, we might list -- it might enhance the listing of the vessel, sir.

Q. Okay. And did you -- were you ever made aware of whether the CO2 release appeared to be effective on suppressing the fire?

A. When I was injecting or I was on standby in the CO2 room, I didn't have any information whether the fire was out or not. I only had the information when I was going up into the bridge to talk with the captain about the issue of this open water tight door in deck 12, sir.

Q. And when you first got up to water tight -- or up to deck 12, where you saw the water tight door, can you describe the conditions at that door?

A. Well, the condition of the door was it was still open. Smoke was coming out of the -- black smoke and heat was also coming out of this open water tight door. So there was already -- the guys were just keeping a fire wall of -- water wall -- I mean water wall so as to prevent additional smoke or just to lessen the exhaust of the gases as I have just injected the CO2 into the cargo space.

Q. Okay. And can you describe how they were doing the water wall?

A. Well, it was -- the fire hose or the -- the fire was -- the

hose was injected through -- it's like a stream or a fog system, fog mode, where it doesn't have to be on the jet, but it's more on the, you know, the fire that they have to do to pour it on the door. So basically that's just what they were doing when I was releasing the CO2.

Q. And you mentioned that you were made aware by the captain that there was somebody missing in the cargo space. How long after the discharge of CO2 were you made aware of that?

A. Well, actually when I started the CO2. So it took me 10 minutes for -- as per operation. It's 10 minutes time to discharge, and then about -- after I reported to the captain that the valve was automatically closed. So it's just about 5 minutes that the -- I asked the captain if he wants more CO2 to be released but he said, no, no, no, we have some persons missing in the cargo space. So that's when I was thinking that probably some crew who went inside to check if the fire was out or not was lost or something happened with the crew that went to check in. So that's just when I was aware that people are missing already.

Q. And then with regards to the ventilation system, you said you -- when the master or the captain ordered you to, you reset the breaker, and I believe you said that the dampers will reactivate or open automatically. Is that correct?

A. Yes, sir. Once I reset the breakers to where -- to switch on position.

Q. Okay. And then for the extractors, is that something that

has to be manually turned on?
A. Yes, sir. It will be turned on manually.
Q. And do you know by who?
A. By the captain or by the order of the captain to the relief officers on the bridge, sir. The engine room doesn't have any control of operating these dampers. It's only by the computers.
Q. Okay. And then is the -- once they're turned back on, is the only way to turn off the ventilation, the pushbutton on the bridge that you said then shuts off that break again?
A. Yeah. To turn off the fans, they can switch off on the computer but if they want it to be shut down together with the ventilation or with the dampers, so they will have to push this emergency stop button, sir.
Q. Okay. And when the extractors or the ventilation is running, is that something that you can see and monitor in the engine control room?
A. Only it's like a view of the system in the computer, ship's computer, but to operate it, it will be taking -- you have to ask for the chief mate to send the control to the engine control room so I can operate this.
Q. And after or once you've reset the breaker and then the extractors or the ventilation was turned back on, do you know, was it ever -- did the breaker ever trip again to where you had to reset it?
A. Yes, sir. When I reset it on and then I was monitoring it on

the computer and the dampers are already opening up, turning into green colors, and then when I saw the pumps were running, ventilation fans or extractors were running, specifically in deck 10, and then after 30 minutes, the damper -- the circuit breakers again were switched off, sir.

Q. Okay. And did you ever turn them on a second time?

A. No more, sir.

Q. Okay.

A. I just let it on the off position, sir.

Q. Okay. So just one time it was reset, ventilation was turned on, and then it was shut off 30 minutes later?

A. Yes.

Q. Never cycled on and off?

A. No, sir.

Q. Mr. Mandapat, that's all the follow-up questions I have for you. I'll turn it back to Lieutenant Commander Moore.

A. Thank you, sir.

Q. Thank you.

LCDR MOORE: Thank you, Commander. Lieutenant Reed, do you have any questions for this witness?

LT REED: I do.

BY LT REED:

Q. Hi, Mr. Mandapat.

A. Hello, sir.

Q. I have just a few questions for you. Earlier when you were

talking about fire drills, you said that they were usually done at sea. Have you ever done any fire drills in port or simulated for in port?

A. No, sir. I never experience doing fire drills or simulations in port, sir.

Q. Okay. The second question I have for you, you were talking about it's your sole responsibility to activate the CO2 system. Is there anybody else on the vessel that's trained to operate the system?

A. Yes, sir. I have my second engineer or my first assistant engineer knowledgeable of activating the CO2 system.

Q. Okay. Is there anybody else on the boat or is it just primarily you and him?

A. It's -- basically it's me and him, sir.

Q. Okay. And then do you know how many cubic meters of CO2 were dumped in the space initially during that 10 minute timeframe?

A. During the 10 minute time, the amount that was dumped into the affected area was 20 tons or more or less 20 cubic meter.

Q. All right. That's all the questions I have for you. Thank you very much.

A. Thank you, sir.

LCDR MOORE: Mr. Pittman, do you have any questions for this witness?

MR. PITTMAN: I have no questions for the witness.

LCDR MOORE: Lieutenant Commander Ward, do you have any

questions for this witness?

LCDR WARD: I don't either. Thank you.

LCDR MOORE: Okay. Thank you. I'm going to pass to the NTSB. Mr. Barnum, do you have any questions for this witness?

MR. BARNUM: Yes, I do.

BY MR. BARNUM:

Q. Chief Mandapat --

A. Yes, sir.

Q. -- you were talking earlier about the -- your resetting the ventilation. And then earlier you were talking about how when you release CO2 the procedure that you had to do. When you reset the ventilation, did you have also reset anything in the CO2 room? You discussed a pin that had to be removed that tripped ventilation from there.

A. Yes, sir. When the captain told me to go to the CO2 room, and I informed him that I will have to secure the CO2 first before I reset the ventilation dampers. So I put everything back into its -- I put the CO2 into the normal condition that it was prior to releasing, and then I left the CO2 room and went back to the engine control room and reset the breakers for the ventilation and the dampers.

Q. Okay. Great. Thank you. And then the only other question I had was on the exhibit.

MR. BARNUM: Lieutenant Reed, could you bring up Exhibit 8 please, page 4?

LT REED: Yes. One moment. I'll pull it up.

BY MR. BARNUM:

Q. So, Chief Mandapat, you said the captain asked you to go look at the water tight door 12 at some point and see if you could close it. Were you, were you actually, were you actually -- were you able to see the control panel for water tight door 12?

A. From my point of view when I am still -- when I was outside, I cannot see the panel by itself, but what I can see is just two green lights.

Q. Okay. So this here is a picture of a similar control panel --

A. Yes, sir.

Q. -- on a sister vessel. Is this similar to also the *Grande Costa D'Avorio* setup?

A. Yes, sir. It's basically the same setup, sir.

Q. Okay. And the two green lights that you said that you saw, would those also be similar to the ones indicated in this upper picture?

A. Yes, sir.

Q. Okay. If the red -- you were talking earlier about the red fault light. If the red fault light was illuminated, would you expect to have seen it as well?

A. Yes, sir.

Q. Okay. And, just to be clear at any time a red fault light on this panel?

A. Yes, sir. I did not see any red fault light during that time, sir.
Q. Okay. And then you were also talking about the emergency solenoids which are pictured. Could you tell me where they're pictured in this picture?
A. Yes, sir. You can see here on -- from the drawing, on the left -- if you are facing the panel, it's on the left side with the blue colors. So the one in the middle is the white which is an instruction of how to operate this one. And down the white color is a black mechanism. So those are the solenoid valves which have to be activated during emergency. And on the lower portion are valves which are isolating valves which will go to the cylinders and to the pins, sir.
Q. Okay. And did you or your crew make it in this far in order to try to function these solenoid valves?
A. We tried, but we can't get near. Even though it's just a few meters from the door, but it's really the smoke that is preventing us from reaching this part of the ramp.
Q. Okay. So you were not able to actually manually try to shut the --
A. No, sir. We didn't, we didn't. We were not able to do that one, sir.
Q. Okay. And then just a final line here about the fault indicator on this panel.
A. Yes, sir.

Q. I think you said earlier that you'd expect that fault light to be illuminated if there is a PLC fault. Was that accurate?
A. Yes.
Q. What other faults would you expect that light to also be illuminated? Is there some others that would illuminate that light?
A. It could be the -- if you can see on the panel, it will be a big red button on that one, on the right side.
Q. Um-hum.
A. That will be the emergency stop button.
Q. Okay.
A. So if this one is pressed or activated, it would also indicate a fault, and it will also indicate on the bridge and in the hydraulic control room panel, sir.
Q. Okay. Could a -- and you told us this initially I believe in your initial interview, but just for the record here, if there is an emergency pushbutton to press at another station, would it indicate as a fault on this panel?
A. It would indicate whichever door was located with this emergency stop button, sir. So, if like -- if it's activated in deck 12, it should indicate in the mimic diagram in the bridge and in the hydraulic control room that the emergency stop button for deck 12 was activated. If it's in deck 6, it should indicate that such pushbutton was activated in deck 6. So it will relate to each -- its own door with its own emergency pushbutton.

Q. Okay. How about if the emergency pushbutton was depressed locally at the pump unit, the HPU? Would that indicate on all the panels of a fault?
A. Yes, sir. Actually we have an emergency stop button for everything in the hydraulic control room panel. Once you press this one, you cannot operate all doors and all the hoistable decks and even the stern ramp cannot be operated once the emergency stop button in the hydraulic room is activated.
Q. Okay. And so other possibilities of that red light, obviously the communications between that HPU unit in the engine room and this panel is hardwired. Would you expect to receive a fault light if for some reason the wiring was interrupted between the two units?
A. Yes, sir. I would expect that the fault will be coming from deck 12 and there was break of communications from the HPU to the PLC you need into the panels in the cargo -- hydraulic room, sir.
Q. Okay. And then I guess lastly, do you know where -- looking at these photos here, on the bottom of the panel, there's three groupings of wires that goes into a single wire run. Do you know where that wire run leads? How does it --
A. Yes, sir. This wire will have to go down to deck 11, deck 12, and all the way until deck 6, but it will go down to the deck 5 outside. So it will just run down the middle, and it will go aft to -- aft -- when I say aft, I hope you understand aft, that it's going to the backside of the ship. So, it's -- basically

this wire will go down until deck 6 and to deck 5. On deck 6 and deck 5, it will go to the rear of the vessel where it will go down again in deck 5, going to deck 3 where the hydraulic control or the power packs are located.

Q. From where it is right now, it's on the I guess outboard port side.

A. Yeah.

Q. It goes directly down through 11, 10, 9, 8. It stays relatively in the same right there or does it crossover midship to the starboard side or another location?

A. No, sir. This one will go directly to -- until it reaches the power pack whereas another set of control will be also coming from deck 6 which will be already amid ship of the vessel, sir.

Q. Okay. Yep, understood. Thank you, Chief Mandapat. That's all the questions I have.

A. Thank you, sir.

LCDR MOORE: Ms. McAtee, do you have any questions for this witness?

MS. McATEE: I don't have any further questions. Thank you, Chief.

CHIEF MANDAPAT: Thank you, ma'am.

LCDR MOORE: Commander, that's all the initial questions from the investigation team.

CDR BARGER: Okay. Thank you.

BY CDR BARGER:

Q. And, Mr. Mandapat, just one last follow-up question related to Mr. Barnum's last question there about that wire run.
A. Yes, sir.
Q. So it runs straight down the port side you said until you get to deck 6. Where that wiring runs down through like deck 11 and deck 10, is it -- if there was a fire in those cargo spaces, is that wire run exposed to the fire in the cargo space?
A. Yes, sir. The wire run is exposed to fire if there will be fire occurring in decks 6, 7, 8, 9, 10 and 11.
Q. Okay. So it's not protected in any way from being exposed to or open to the garage areas, the cargo areas?
A. Yes, sir. It is open to the garage area, and it's just a rubber sheathing or what we call a -- it's just a group of wires that just passes through the decks.
Q. Okay.
A. No fire protection on this one, sir.
Q. Okay. Thank you.
CDR BARGER: Mr. Mandapat, the parties in interest will now have an opportunity to ask questions as well. As we have done with previous witnesses, in order to ensure equitable time and opportunity for each party in interest to ask questions, each party will have approximately 10 minutes for cross-examination within the scope of the direct examination questions and relevant to inform for the purpose of our investigation.
Grimaldi Deep Sea.

MR. LEVY: Commander, can I go last please? Did you hear me?
CDR BARGER: Yes.
MR. LEVY: May I go last please?
CDR BARGER: Yes, sir. That will be fine. Ports America.
MR. ZONGHETTI: Thank you.
BY MR. ZONGHETTI:
Q. Chief, I just have a few questions for you. Chief Mandapat, I appreciate your testimony. The CO2 system that is aboard the vessel specifically with respected to Zone C, is the amount of CO2 that is designed to be discharged on initial discharge calculated to be discharged when the zone is sealed, meaning the weather tight doors are all closed?
A. As per the amount of quantity that was discharged, it's not as per the designed quantity to be discharged, sir.
Q. How do you know how much to discharge into a zone?
A. Well, the amount of CO2 to be discharged in a zone is stamped on the tank. So I was expecting 30 cubic meters or 30 tons to be discharged into the affected area as per on the stamped quantity, but when I read the gauge, I just got 20 metric tons or 20 cubic meters discharged into the affected area, sir.
Q. Do you know why that happened?
A. I have no idea of why it happened, but I have some theories of the reason -- probably the reason why this one happened.
Q. And what do you believe the reason was?
A. There are a lot of factors. It could be level corrections,

when it's going down. Part of it would be going -- when the level is going down, the pressure is decreasing and that level was already not giving the correct quantity. Or, it could be some -- I don't want to speculate --

Q. Okay.

A. -- but just my theory. It will be just some pipes that are clogged or somewhere else. I don't know.

Q. Okay. That's fine. But the system -- is the -- the system is designed so that all the doors should be shut when the discharge occurs so it's a sealed discharge. Is that correct?

A. Yes, sir. It's a sealed -- supposed to be a sealed discharge, sir.

Q. If -- what time did -- were you called by the captain to go up to deck 12 in order to see about closing that door up there, the weather tight door?

A. I was called by the captain to check on the water tight door, it was about almost like 2 or 3 in the morning already, sir.

Q. Okay. So the fire started about 9 o'clock in the evening on the 5th, and you were not called up until 2 or 3 in the morning on the 6th of July?

A. Yes, sir.

Q. After the order was given to seal the weather tight doors in advance of the CO2 discharge, do you know if anyone from the engineering department was called to deck 12 to see about closing that door?

A. I only had the knowledge after the fire, when we were already booked in the hotel that the captain asked the fire team number 2 to check which is composed of my second assistant -- my first assistant engineer and the fitter. They were asked by the captain to have a look at this water tight door as it was reported to him that it was not yet closed.

Q. Do you know if they went inside this space at all?

A. I'm not sure. I have no idea.

Q. Okay. Anyone who would have gone in there, whether there was a fault or an inability to close the door for any reason, anyone who would have gone in there to close the door or to try to fix any problem would have been closing the door and closing themselves inside of the space where the fire was. Is that correct?

A. Yes, sir. If you were able to close this door, you will still be trapped inside the rampway going down to deck 11 where you will get only exit at the door to deck 11.

Q. Have you served or do you know about Grimaldi vessels that have controls for the weather tight door on the outside of the fire space?

MR. LEVY: Objection. Beyond the scope.

LCDR WARD: Can you please clarify a little further than that as far as why?

MR. ZONGHETTI: Me or Mr. Levy?

LCDR WARD: Mr. Levy.

MR. LEVY: Sorry. The Coast Guard and the NTSB have asked no questions about what Grimaldi might have on other vessels. So this is beyond the scope of the direct examination.

LCDR WARD: Mr. Zonghetti, do you have anything to --

MR. ZONGHETTI: One of the issues certainly here and what's been asked about is, you know, why this door couldn't be closed, and this witness has said he couldn't close it because he would have walked into the fire zone where there was smoke and heat. And certainly whether there are other designs particularly with this owner is relevant to that issue or other designs available period. And --

MR. LEVY: It is absolutely not relevant.

MR. ZONGHETTI: It certainly is relevant.

LCDR WARD: Okay. Excuse me. Excuse me. Excuse me. Can we please one by one. It makes it really difficult to hear both of you but also this is transcribed and I do think the objection is sustained as far as asking his recollection of vessels outside of this particular ship. It's not relevant for the purpose of this witness.

BY MR. ZONGHETTI:

Q. Chief Engineer, would controls on outside of the fire zone have alleviated the problems that were encountered in closing the door on the day of the fire?

MR. LEVY: Objection. It calls for expert testimony.

MR. ZONGHETTI: He's an expert. He's the chief engineer on

the vessel.

MR. LEVY: No, no, no, he's not an expert on --

LCDR WARD: The objection's sustained. It's sustained.

BY MR. ZONGHETTI:

Q. Okay. One of the problems you had getting into the space where the controls were was you couldn't get breathing apparatus. Is there any ability to refill breathing apparatus on the vessel?

A. Yes, sir. We have ability to refill breathing apparatus on the vessels.

Q. Where can you do that?

A. On the fire control station number 1, by the second officer, sir.

Q. And what deck is that on?

A. Deck 12, sir.

Q. Do you know whether that was attempted to be done when you were up there looking for breathing apparatus?

A. The second officer informed me that they tried to refill one or two cylinders but it's taking them some time, sir.

Q. Whatever the fault was or whatever the problem closing the door was, had there been controls on the outside, would you have been able to clear a fault?

MR. LEVY: Objection. He's using the back door to this issue. It's beyond the scope.

MR. ZONGHETTI: It's not beyond the scope. It's --

LCDR WARD: Are you asking -- you're asking for a

hypothetical scenario, and his take on that. Mr. Zonghetti, is that the question you're proposing?

MR. ZONGHETTI: I'm asking if there had been -- okay. I'll break it down.

BY MR. ZONGHETTI:

Q. You had the ability, sir, if you could have gotten into the space to close that door, whether there was a fault due to the emergency stop being pushed or whether there was a lack of alignment in the sensors. Is that correct?

A. Yes, sir.

Q. So the problem was getting into that space where the controls were because the fire was there?

A. Yes, sir.

MR. ZONGHETTI: That's all I have. Thank you.

CDR BARGER: Thank you. American Maritime Services.

MR. HONEA: Thank you.

BY MR. HONEA:

Q. Chief Mandapat, I'm a little confused on the amounts of CO2 we discussed. Can you tell me what was the capacity of the CO2 storage tank?

A. The capacity of the storage tank is 34 tons or 34 cubic meters, sir.

Q. And then how much CO2 would be released for -- what was the full amount of CO2 that would be released for Zone C?

A. For Zone C, it should have released more or less 30 or 29

cubic meters, sir.
Q. Okay. So of the total 34 tons, a full -- the full amount required for Zone C was 30 tons. Is that right?
A. Yes, sir.
Q. Okay. But after you released CO2, how much CO2 was, in fact, released?
A. In fact, as per the gauge that I've seen, there was only about 20 tons or 20 cubic meters that were actually released into the Zone C.
Q. So if that were accurate, then that would mean that roughly 2/3 of the required amount of CO2 was released?
A. Yes, sir.
Q. In addition, that 30 tons though is designated to be released for Zone C, that also considers that all of the ventilation and all of the water tight doors are closed as well, correct?
A. Yes, sir.
Q. And in this case, the door on deck 12 would not close, correct?
A. Yes, sir.
Q. There was some discussion earlier about a PLC fault. Is that a fault that would register on the alarm panel on the bridge or in the engine room?
A. As per PLC fault, it would indicate only a fault on the bridge on the mimic diagram. It's only a mimic diagram where you see the vessel and it's just blinking the location. And on the

engine room, it is located in the power pack room where the panels are there. And there you can isolate or you have a more detailed description of the fault that was indicated.

Q. So a PLC fault for one of the water tight doors, are you saying would result in a blinking light on the water tight door panel?

A. Yes.

Q. Or is -- okay. Let's clarify. Is that on the water tight door alarm panel or somewhere else on the bridge?

A. One will be on the lower side. So you will have a default that should be lit. On the bridge, it will be just red -- small red LED light on the mimic diagram. And in the hydraulic power pack room, it will indicate a more detailed fault where it is located.

Q. The PLC fault, as I understood it, means essentially that the system doesn't know whether the door is opened or closed. Is that right?

A. Yes, sir.

Q. All right. So to tell if the door is opened or closed, a crewmember would have to physically view the door and then could observe whether it was open or closed?

A. Yeah. If there was like a fault on this door, and then -- so what happens is usually the deck department will be informing the officers and the officers will be informing the engine room that we have a fault on the doors or on the ramps or on the stern ramp

system or the hydraulic system. And that's where we just have to go and investigate which is the problem and which is the best -- we can check if there was also this emergency stop pushbutton, emergency stop was activated. And they'll just have to reactivate the emergency stop and the fault will just go away or that there was wire break. If it's wire break, it's a complex matter already that I have to call the electrician, do troubleshooting and everything. And then when it comes to sensor breaks, it'll just be checking, visually checking if we have the magnets and the solenoids are not aligned, that's why it's giving a fault and it's indicating that the pins are not secured or the doors are not open or the doors are closed.

Q. So one possible cause of the PLC fault could be that the emergency stop button was depressed. Is that right?

A. It's a possibility, sir.

Q. And if that were the case, to correct it, one would have to simply pull the button back out, to pull the depressed button out?

A. Pull the button back out, yes, sir.

Q. And if that were the cause, that would clear the fault. Is that correct?

A. Yes, sir.

Q. Okay. And that type of emergency stop button is found on the control panel for the water tight doors. Is that right?

A. Yes, sir. For every water tight door, we have their own individual emergency stop push button.

Q. Okay. There's some talk also about the location of the cabling that leads from the control panel for the water tight door on deck 12 and how it proceeds to the power pack room. Do you recall that testimony?
A. Yes, sir.
Q. Is it right, I understood you to say, the cables from the control panel for water tight door number 12 run directly down to deck 6 on the portside, correct?
A. Yes, sir.
Q. Based on it's location on the ramp, are you familiar with the location of the ramps on deck 11 and deck 10? Would that cabling essentially run directly next to the ramps on those subsequent decks as we go down?
A. Yes, sir. There are --
Q. Go ahead.
A. The cabling on the ramp will be running from deck 11, deck 10 but it will be on the rear side or on the back side of the vessel, sir.
Q. Right. But -- so if someone were standing at the top of the ramp at deck 10, that cabling would be running right next to them down the side of the ship. Is that right?
A. Down the side of the ship, yes, sir.
Q. Okay. I believe those are all my questions. Thank you, sir.
A. Thank you, sir.
CDR BARGER: Thank you. Port Authority of New York-New

Jersey.

BY MR. KIM:

Q. Hi, Chief Mandapat.

A. Hello, sir.

Q. I just have a few questions for you.

A. Yes, sir.

Q. So you mentioned that the ship had two portable hand pumps that might be used if the water tight door couldn't be closed.

A. Yes, sir.

Q. Could you describe how those would be used?

A. We have -- this will be composed of a solenoid -- same solenoid valve as installed on the panels, but this one will just have two external hoses which will be connected to the in and the out of these solenoid valves. So when we connect this one, and we want to open the door, so we have to shift the lever to the in hydraulic hose and then we have to pump, pump hydraulic oil manually to pressurize the cylinder. And when this cylinder is pressurized, you will have to still push the pin so it will go into the local cylinder that will be opening or closing or pulling out the pin or putting in the pin. So when you're -- I'll give an example. Like when you were closing this door, so I will be putting in my hydraulic hoses into the pin first. So the pin and I will be pumping in so the pin will extract from the frame and it will be free. The door will be free from the frame itself. So once the cylinders are already extracted and the pin is already

free from the door, I will have to pull out the hydraulic cylinders again, shift it to the hydraulic cylinders that will open and close the door.

Q. Okay. What is the length of the hose that you need to connect to the solenoid valve?

A. It's like a quick -- it's only a quick clipping hose. It's a pin where you just have to push it in, and twist it to lock it into position.

Q. Okay.

A. So that's just it. And then you just have to pump and push the pin so the hydraulic oil will flow into the cylinder and push the piston of the cylinder to close and the remaining hydraulics on the exhaust side, on the other side, will exhaust thereby not reducing pressure on both ends of the cylinder. So it's like pushing in here and exhausting the other. So when you want to open, you have to push here and then exhaust on the other side also.

Q. Okay.

A. So it's basically just a play (ph.) of in and out of the hydraulic cylinder into the system. So when you -- what we were trying to do is we were trying to get access to this connection where we can connect this hydraulics and hoses but we just can't reach it even though it's just near. With no available facemask and breathing apparatus, we -- it's hard to reach that very short distance.

Q. Where -- could you tell me where exactly that needed to be connected to?
A. It's just from the drawing that they showed a while ago, it's the -- you can see the panel is direct -- that is directly on the panel and on the left side is the blue hydraulic connection.
Q. Okay.
A. So that is where we can connect the portable hose -- portable hand pump.
Q. You're referring to the blue panel, those pictured on Exhibit 8 before?
A. Yes.
Q. Next to the control panel?
A. Yeah, yeah.
Q. Okay. So you described that you and another engineer spent some time with a few firefighters trying to manually close that door by knocking out pins. Is that right?
A. Yeah, yeah.
Q. And how long were you doing that for?
A. Almost like 30 minutes.
Q. Thirty minutes?
A. Yeah. We did -- the ones who were working were basically the firefighters, not our firefighters but port firefighters because they have their own breathing apparatus but still, the weight of the door is just too heavy, and we even tried to, you know, jack it up with a jack so I can just -- we can just push this door up a

little bit, but to free the cylinders or the pins because we already disconnected the hydraulic line on this one. So once we pushed the pin inside, it will just spill hydraulic oil into the outside, you know, area. So -- but then the weight of this door is just too heavy that the pin cannot be extracted manually.

Q. So how many firefighters were you working with at that time?

A. There were three people, three firefighters. Two were interchanging with each other, and the other one was holding the stepladder. So --

Q. Okay.

A. -- probably four firefighters.

Q. And during that process, did you ever mention to them that this door can maybe closed by going to the solenoid panel?

A. No, I never -- I didn't mention it to them.

Q. Okay. Do you know why --

A. But I was, I was trying to borrow some portable fire breathing apparatus from them so I could personally go and see what's wrong with the panel or I can personally go and close this one.

Q. Um-hum.

A. My plan was to close it halfway through and then I'd go out on the same deck, not go down where the fire is. We'll just have to close it halfway, and then just release the hydraulic oil or take out the hydraulic hoses so it will -- the door will just close by gravity from itself. So it will just go like this with

no more hydraulic pressure preventing the door from opening, but it didn't materialize because, you know, I -- we -- I was informed that they'll be sending some breathing apparatus but we waited but no breathing apparatus arrived unfortunately.

Q. Okay. And you said after that, the firefighters tried to seal the door with some kind of tarp --

A. Yeah.

Q. -- but that wasn't working either, right. Okay.

A. It's not working also. So we even -- they even tried to put some ropes around the tarp to hold it in position but it's not working.

Q. Okay. You mentioned that the CO2 system, it can also be used using the ship's fire pumps as a fire sprinkler system. Is that right?

A. Right, right. Yes, sir.

Q. Okay.

A. The fire sprinkler system, sir.

Q. Okay. And you said that you mentioned to the captain as well?

A. Yes, sir.

Q. And do you remember exactly at what point in time you told him that?

A. That's when he called me up to -- and asked me if we -- they have -- we have -- how much is remaining on the CO2, and if I ask him if I -- he wants me to add more. And then when -- after that,

he said just a moment. I'm just recalling this one. Just a moment. There is somebody missing. And then when they started to do the ventilation, fire was out again and they were doing firefighting. And that's when I said we can use -- because we don't have enough, you know, for CO2 to inject into the entire Zone C. So it's just basically what's left in the tank. So I ask -- I suggested that if in case we don't have CO2 any more, we can use fire hydrant or fire hoses to connect into the CO2 line to work as a sprinkler, but he said that we will be injecting -- we might be injecting too much water which would affected the trim and stability of the vessel.

Q. Okay.

A. So it will be like more or less but more -- past midnight already if I'm not -- I'm not sure what time is it, but it's past midnight already.

Q. Do you remember if it was after the ventilation was turned on and then turned off or before then?

A. It was when the fire reignited already. It was already after the ventilation was turned off.

Q. Okay. So sometime -- it's fair to say sometime after the ventilation was turned back off and before you went up to try to shut the door?

A. Yes.

Q. Okay. Thank you. Okay, Chief. That's all the questions that I have for you.

A. Thank you, sir.
Q. Thank you.
CDR BARGER: Okay. Thank you. The City of Newark.
MR. LIPSHUTZ: Thank you very much. I don't have any questions. Thank you.
CDR BARGER: Thank you. And Grimaldi.
BY MR. LEVY:
Q. Chief Mandapat --
A. Yes, sir.
Q. -- let me ask you just a few questions if I could because I'm confused about the chronology of what's happened. First, as I understand it, after the fire started around 9 o'clock, you went down to the engine room. Is that right?
A. Yes, sir.
Q. And then sometime after that, did -- the captain then ask you to go to the CO2 room to prepare to release the CO2. Is that right?
A. Yes, sir.
Q. And about how long between after the fire started did you get to the CO2 room if you can remember? About how long?
A. Because I stayed, it took me more or less about 3 minutes to go down to the -- 3 minutes -- 20 -- 10 minutes. From the fire -- the start of the fire until I went to the control -- to the CO2 room, it took me about -- it took about less than 30 minutes.
Q. Okay. So then once in the CO2 room, the captain authorized

you to release the CO2 into Zone C. Is that right?
A. Yes, sir.
Q. And you did that?
A. Yes, sir.
Q. And I understand from your testimony that when you opened the valves to release the CO2 into the Zone C, there's a timer that's set in the mechanism of releasing the CO2 that goes for 10 minutes in releasing CO2. Do you follow me?
A. Yes, sir. Yes, sir.
Q. Is that correct?
A. Yes, sir. That's correct, sir.
Q. Okay. So when you opened the valves, all the valves you need to open and finally, you know, open the release the CO2, the system will release CO2 for 10 minutes.
A. For 10 minutes.
Q. Is that correct?
A. Yes, sir. That is correct.
Q. Okay. And the quantity that you expected to be released into that zone was 29 to 30 tons?
A. Yes, sir. That is what I expected, sir.
Q. Okay. And after you released the CO2 and after the 10 minutes went by, you looked at the gauge and the gauge showed that only 20 tons had been released. Is that your testimony?
A. Yes, sir.
Q. Okay. So, you must have been sitting there scratching your

head saying what's going on here because you expected 30 tons and the gauge was only showing 20 tons. Did the gauge ever change over time? Did it show that more got released?
A. No, sir. I was monitoring the gauge as it was going down, but when 10 minutes was past, it only showed around 14 tons remaining. So I expected it to be more or less -- more.
Q. Right. But I'm talking about after that. After that first release of the CO2, did you later look at the gauge, and did that gauge show that more CO2 had been released, or that there was less CO2 left in the tank?
A. Well, I double check it after some time before I left when the captain told me to go to the engine control room. I double check the level, and it's still the same, sir.
Q. Okay. Did -- was there a time when you double checked it and you found that it had dropped to only 10 tons?
A. Yes, sir. That was already way after the fire when we were already back on the ship and monitoring everything for preparations for towing. That -- the quantity of the CO2 remaining in the tank has become less --
Q. Okay.
A. -- than I was observing before.
Q. So, what -- tell us about this gauge that you were looking at. Is it a dial gauge?
A. No, sir. It is a magnetic level gauge whereby this works in the form of a magnet which a certain flow is connected where the

level is and it floats at the level of the liquid inside the tank goes up, this one will also magnetize the flaps, and it will indicate which level it is. So when it's going down, so this flow will also go down and whatever the level the liquid is in that position, it will magnetize the flap and there is these two colors, white and red. So when it's white, it means that it's the empty space and the red is the level of the liquid.

Q. Okay. So have you done anything to check whether that gauge is accurate?

A. I didn't check whether this one is accurate.

Q. Okay.

A. But from, but from previous readings of the electrician, this level gauge coincides with the digital. This one is two separate measuring devices. From the bridge, we have the digital level transmitter which coincides the same with the one on this level gauge, sir.

Q. Okay. But you -- when you were looking at the gauge, you didn't go up to the bridge and look at the bridge there, did you?

A. No, I did not check it any more.

Q. Okay. And in any event, in any event, you called the captain and said, do you want me to release more CO2?

A. Yes, sir.

Q. And you did that while you were in the CO2 room?

A. In the CO2 room, sir.

Q. And is that when he told you the people are missing and he

did not -- or one person was missing and he did not want to release the CO2 at that time?
A. Yes, sir.
Q. Okay.
A. I ask him if he want to release more CO2 or what is remaining because I have more CO2 inside the tank, and he said, no way, just keep on standby as --
Q. Okay.
A. -- people are missing in the cargo space.
Q. Okay. When did you learn, if ever, that the missing people were firefighters?
A. It was already after the incident when we were already abandoning the vessel that I heard some sort of a talk between the chief mate and the -- it's just a verbal message that I heard like they were talking about the two firefighters they recovered were already dead or some sort.
Q. Let me ask you this. When you got up to deck 12, the captain called you up to deck 12, whether that was a couple of hours or more after the fire started, was it after midnight that you were called up there?
A. After midnight, sir.
Q. Okay. And when you got up there at midnight or sometime after midnight, were there any firefighters? Did you see any firefighters bodies removed from the vessel?
A. No, I didn't notice firefighters being removed from the

vessel, sir.
Q. So do you think that they -- if there were firefighters lost which we know there were, that they were removed from the vessel before you got to deck 12?
A. Yes, sir, from what I know.
Q. Okay. And so all this effort that you put into trying to close the door to deck 12, that all occurred after the firefighters had removed the two missing firefighters from the ship?
A. That is when the captain already shut off the ventilations and I was asked to do something about -- when fire was reignited, and I was asked to do something about this open weather tight door. Q. Okay. So last questions here deal with the green lights that you saw on the panel. Now, first off, again if you saw them on the panel, it must have been after midnight.
A. Yes, sir.
Q. Okay. And the ship's logs would show when the fault light went off, wouldn't they?
A. It should be, sir. Yes.
Q. Yeah, it should be on the vessel data recorder, right?
A. It should. Yes, sir.
Q. Okay. So when you went and saw -- looked in there if there was green lights and no red light, why could -- why did the door not close then?
A. It's only my opinion, sir. From -- could be that this red

fault, it could be that this indication that a lamp was busted. So it's not indicating any fault.

Q. So it was broken by that point in time?

A. Probably it must have been broken in that point of time, and that is why they were not getting -- they can see that it's all green. It's all normal. So they were trying to operate it but it's not work when, in fact, it has been -- it was already deactivated by the fault.

Q. I see.

LCDR MOORE: Can you clarify with that answer whether you know that or you were speculating that that's the case?

CHIEF MANDAPAT: I'm just, you know, I'm just telling that I was speculating.

LCDR MOORE: Okay. Thank you.

BY MR. LEVY:

Q. Okay. You haven't done any analysis of the control panel that got burned in the fire to see if that told us anything about when the fault light came on, how it -- why it came on, things like that?

A. Yes.

Q. That's correct. You haven't done that.

A. I haven't. It was all just trying to close the door --

Q. Okay.

A. -- in an emergency.

Q. Okay.

CDR BARGER: And, Mr. Levy, just one last question.

MR. LEVY: Yeah. Chief Engineer Mandapat, thank you very much.

CHIEF MANDAPAT: Thank you, sir.

MR. LEVY: And it's Mandapat. Mandapat.

CDR BARGER: Thank you. Do any of the members of the investigation team have any additional follow-up questions?

MR. BARNUM: Yes, sir. I have one question.

CDR BARGER: Okay.

REDIRECT EXAMINATION

BY MR. BARNUM:

Q. Chief Mandapat, Bart Barnum, NTSB. Just one follow-on question from Mr. Levy regarding the level indication on the CO2 tank. You were saying that -- you were describing the type of level indicator. I'm also very familiar with those level indicators. Do you know if -- were you -- when you were observing the level after the CO2 release, did it require any manual encouragement? Did you, did you bang the level indicator at all to see if the level changed or were you just looking at it?

A. I was just looking at it, and I can already see as the CO2 was releasing, the level was also going down, but then it stopped at this certain point when the valve closed automatically after 10 minutes, and the level was just there. And, we tried to look at it after already when the fire was already out or after a few more days when we were already back on the vessel. We tried to, you

know, bang it, if it's working properly, and it still going up, going down but it's still in this 14 ton level. After a few days, it just started to drop slowly going down, down, until what's remaining of it was like less than 10 or about 4 cubic meters or 4 tons remaining.

Q. Okay.

A. That's when the temperature was also going up already.

Q. Okay. So you didn't bang it the night of the fire but a couple of days later, you banged it, and it was still at 14.

A. Yes, sir.

Q. And several days later, that's when you saw it was down to 4?

A. Yes, sir.

Q. Okay. Thank you for that clarification.

MR. BARNUM: That's all the questions I had.

CDR BARGER: Thank you. Do any of the other members of the investigation team have any follow-up questions?

(No response.)

CDR BARGER: Okay. None heard, Mr. Mandapat, that ends the interview today. I want to thank you for your testimony. You are subject to recall, and the sequestration order remains in place until released by me, and you will be notified by Lieutenant Reed, our recorder, once you are released from the proceedings. So thank you very much, sir.

CHIEF MANDAPAT: Thank you.

CDR BARGER: And the time is now 10:52 p.m. Eastern Standard

Time. The hearing will remain in recess pending scheduling of additional virtual testimony.

CHIEF MANDAPAT: Yes, sir.

CDR BARGER: We will now end the recording.

CHIEF MANDAPAT: Sir, just a quick question about the -- I will be --

(Whereupon, at 10:52 p.m., the hearing in the above entitled matter was recessed pending scheduling of additional virtual testimony.)

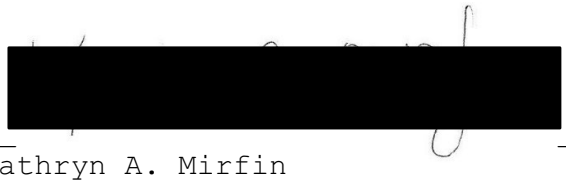
CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	FIRE ABOARD *GRANDE COSTA D'AVORIO* AT BERTH 16 IN THE PORT OF NEWARK IN NEWARK, NEW JERSEY ON JULY 5, 2023 Interview of Renato Mandapat
ACCIDENT NO.:	DCA23FM039
PLACE:	via Microsoft Teams
DATE:	February 22, 2024

was held according to the record, and that this is the original, complete, true and accurate transcript which has been transcribed to the best of my skill and ability.



Kathryn A. Mirfin
Transcriber